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The Extent of Utilization of Open Access Resources in Libraries of Private Universities by Postgraduate Students in Nigeria

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Abstract

The purpose of this study was to determine the extent of utilization of Open Access Resources (OAR) in libraries of private universities by postgraduate students in Nigeria. Four research questions and one null hypothesis guided the study and were tested at .05 level of significance. A descriptive survey research design was used for the study. The population of the study is 603and it is made up of all postgraduate students in Nigerian private universities, irrespective of their courses of study. A total sample size of 120 respondents was selected using multi-stage sampling technique. The researcher developed a questionnaire titled "Utilization of Open Access Resources Questionnaire" (UOARQ) and an observation checklist, which were used to collect data for the study. A total of 120 copies of the questionnaire were distributed to respondents, out of which 113 copies were returned and found to be correctly filled. This gave a response rate of 94.2%. The data collected were analyzed using Mean (X) and Standard Deviations to answer the research questions. The major findings of the study were that the overall availability of open access sources in the libraries was poor. Also, the general utilization of open access resources amongst postgraduate students was also low. Some major challenges that led to the foregoing were that the awareness of open access resources among these students was low, besides the Internet connectivity is slow, erratic power supply, inability of library staff to assist users in searching and using these resources. Based on the findings, it was strongly recommended that the library should often organize seminars and workshops on open access for both students and other library stakeholders, provide power backups like power inverter or solar facilities in the library, increase Internet bandwidth, among others.

Keywords: *University library, Open access resources, Utilization, Postgraduate student*

1.1 Introduction

The concept of private university connotes different meaning to different authors however, according to Gabriel (2013), a private university is one established and is run by entities other than a state or federal government which may include those run by faith-based organizations, individuals, and community development associations, among others. Gabriel further stressed that in Nigeria, faith organizations, group of individuals and individuals largely constitute proprietorship of private universities. Private university education was first articulated in 1983 following a pronouncement of the Supreme Court of Nigeria that it was constitutional to allow individuals to establish private universities. Not until 1999, when President Olusegun Obasanjo rekindled the issue of private participation in University education to complement the effort of the government, which led to the establishment of few private universities where both undergraduate and postgraduate education programmes were run.

Postgraduate education, in the submission of Asogwa, Wombo and Ugwuoke (2014) involves learning and studying for degrees, professional or academic certificates or other qualifications for which a first or Bachelor's degree generally is required and it is normally considered to be part of higher education. Pertinently, those involved in postgraduate education, as the name implies, should also be postgraduate students.

However, a university library is an intellectual power house where these students are expected to be 'baked' and it houses all sorts of materials including books and non-book materials. It is also an important agent in the pursuit of academic excellence in higher institutions. Its main goal is to support the objective of the host institution, which has to do with learning, teaching, research and other services. A university library is also called an 'academic library'. This is why Susan and Skinner (2009) put it that an academic library which also is a university library is attached to a higher educational institution which serves two complementary purposes to support the school's curriculum, and to support the research of the university faculty and students.

Besides, accessing and dissemination of free scholarly publications should be a basic human right which should be advocated and explored because of its ability to close the gap between developed and developing countries. Free exchange and use of information especially research based information forms the basis for economic, cultural, social and scientific development, yet this has been compromised by restricted access model of publishers and the dependency of researchers on research works published in qualitative but restricted access journals (Canada, 2009). Canada further opined that Open Access is capable of fostering information and knowledge sharing within research, educational and scientific communities especially in traditionally or economically disadvantaged regions. Therefore, open access to knowledge has become essential for a country's educational, socio-cultural, and scientific development. Since the emergence of open access initiative, the concept has been defined in different ways by numerous authors. The concept of Open Access was first defined globally by Budapest Open Access Initiative in Swan (2012:15) thus:

Free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself.

Moreover, accepting and implementing open access initiative, while putting into cognizance its numerous benefits,

would be of great advantage to libraries of private universities especially in this time of recession where information resources like foreign journals and books have skyrocketed. The usual inadequate funding of Nigerian university libraries especially libraries of private universities that solely depend on internally generated revenue like school fees has not helped matters. This inadequacy is evident in their limited collection development and has negatively affected users' patronage, students' performance in both internal and external examinations, and even poor theses/research works produced by these students, particularly postgraduate students. Therefore, it is worthy of note that most of these challenges mentioned can be minimized or even eradicated completely if information custodians and library managements can take advantage of open access initiative.

However, the efforts geared towards making a variety of information resources available and accessible in a library will be a waste of time if such materials are not adequately utilized. It is through the use of available library materials that academic excellence can be achieved. This was buttress by Cole (2008), when he said, the broadest possible reason for which we use information concerns the survival of mankind. Conversely, the utilization of information resources, most especially open access resources is a function of how properly the resources are organised and made available for use.

1.2 Statement of the Problem

Libraries in higher institutions of learning are central to the attainment of the goals of their parent institutions. The effectiveness of any library depends to a great extent on the quality and quantity of the resources at its disposal, in-which finance plays a vital role. In fact, effective library services cannot be carried out nor sustained without sufficient funds. Like any other library, a library in a Nigerian private university requires adequate funding for the provision of information, human and physical resources. The proprietors of Private Universities in Nigeria are the major sources of funding for their university libraries and sadly, this major source of funding has been reported to be not forthcoming or grossly inadequate. Besides, private universities rely heavily on tuition fees from the students and other Internally Generated Revenue (IGR) to meet their expenditure. This has adversely affected resources provision which in turn has led to so many of the private universities failing NUC accreditation exercise in many subject areas because of limited or inadequate collection of information resources.

Also, collection development, especially in libraries of private universities has been hampered by high costs of essential information resources. Even for the rich students, these resources are not quite easy to come-by for purchase. Therefore, this has put students' personal and individual search for knowledge and understanding at stake. This has also resulted in poor academic performance of these students in both internal and external professional examinations as a result of shallow knowledge-level. In other words, a basic problem that affects the academia is the rising price of scholarly publications especially the ones published in current International academic journals.

1.3 Purpose of the Study

The general purpose of this study is to investigate the awareness and utilization of open access resources in libraries of private universities by postgraduate students in Nigeria. Specifically, the study sought to:
1. Identify the open access sources available in libraries of private universities for postgraduate students in Nigeria;

2. Determine the extent of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria;

3. Identify challenges associated with utilization of open access resources in libraries of private universities by postgraduate students in Nigeria;

4. Proffer strategies for enhancing open access utilization in libraries of private universities by postgraduate students in Nigeria.

1.4 Research Questions

To achieve the purpose of the study, the following research questions were raised:

1. What are the open access sources available in libraries of private universities for postgraduate students in Nigeria?

2. To what extent is the utilization of open access resources in libraries of private universities by postgraduate students in Nigeria?

3. What are the challenges associated with use of open access resources in libraries of private universities by postgraduate students in Nigeria?

4. What are the strategies for enhancing open access use in libraries of private universities by postgraduate students in Nigeria?

1.5 Hypothesis

The following null hypotheses guided the study and were tested at 0.05 level of significance:

HO_1: There is no significant difference in the mean ratings of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria.

2.1 Review of Empirical Studies

A number of related studies have been conducted on open access awareness and use in libraries in Nigeria. Among such studies is that conducted by Arosanyin and Ajibili (2014). The researchers conducted an empirical study on the awareness and utilization of open access resources in Asom Bur Learning Resource Centre, University of Mkar by undergraduate students. Descriptive survey was employed and questionnaire was the main instrument used for data collection. One hundred (100) undergraduate students, out of a total of about one thousand and fifty (1,050) were randomly selected as sample. However, observation was also applied where necessary. Data collected were analyzed using tables, percentages and frequency distribution. Results revealed that the undergraduate students of University of Mkar were moderately aware of the existence of open access resources (OARs). Majority of the students who used open access resources did so to supplement the library's inadequate relevant information material. Erratic power supply disrupted the flow and stability of Internet service, and lack of Internet searching skills affected the maximal utilization of open access resources. Some recommendations were made such as the training and retraining of librarians who will in turn assist these users explore OARs online, provision of power backup such as power inverters and solar power, organizing open access week/seminars or workshops for sensitization.

In a related work, Mohammed and Garba (2013) investigated the awareness and use of open access scholarly publications by postgraduate students of Faculty of Science in Ahmadu Bello University (A.B.U.) Zaria, Kaduna State, Nigeria. Survey research design was adopted. The population of the study consisted of all the postgraduate students of the Faculty of Science in A.B.U., Zaria. A sample of 100 was purposely selected

from the entire departments in the faculty. Questionnaire was used as an instrument of data collection, 97 were successfully retrieved and analyzed using descriptive statistics. The study found that majority of the postgraduate students of Faculty of Science in A.B.U., Zaria became aware of Open Access publications by surfing or searching through the Internet haphazardly, majority of the respondents were not aware of the major sources of Open Access publications, the respondents predominantly used Open Access publications to support their theses/dissertations work, among others. It was however recommended that libraries should organize training on interval bases for both staff and postgraduate students of Faculty of Science on the importance of Open Access publications. Faculties should guide and encourage their students on the need for publishing in Open Access journals among others.

An empirical study was carried out by Ivwighreghweta and Onoriode (2012) on awareness and use of open access journals by LIS students at the University of Ibadan, Nigeria. The study employed the descriptive research method using ex-post facto type of design. The entire population for the study was one hundred and forty four (144) Master's Degree students of the Department of Library, Archival and Information Science, University of Ibadan. Nigeria. The master's degree students were divided into MLS I and MLS II. MLS I represented master's degree students who were still involved in course work, while MLS II were those that were done with course work and were carrying out their research. Copies of the questionnaire were administered to 144 master's students and 140 questionnaires were retrieved. The questionnaire was divided into six (6) sections A – F. Section A, covered the bio-data information of respondents. Section B was on the students' awareness of open access journals. Section C was on the attitude of students towards the use of open access journals, while Section D was on students' use of open access journals. Section E was on the benefits of using open access journals while Section F covered the problems of using open access journals. The study disclosed that students' use of open access journals was still far from expectation. Majority of the students were not aware of the existence of *Library Philosophy and Practice, Libri* and several others as being open access journals. This situation might have been due to the inadequacy and ineffectiveness of workshop/conferences and poor Internet use due to poor services.

Some recommendations made by the study included: Authorities of postgraduate schools with strong collaboration of heads of departments such as the one under study, the library and other stakeholders should intensify efforts in the creation of awareness of existing research/study aids under which open access journals falls. Such efforts would bring about the practical implementation of an aspect of library function that talked about awareness creation through workshops/conferences. Secondly, librarians and instructors of ICT should sit up by ensuring that students have effective and efficient skills in the use of their gadgets and facilities such as Internet search engines.

Another study was conducted by Obuh and Bozimo (2012) on the awareness and use of open access scholarly publications by Library and Information Science (LIS) lecturers. The study was a descriptive survey and the population was basically lecturers in Southern Nigeria irrespective of their qualifications and gender. About 141 Questionnaires were used as the main instrument for data collection and it was constructed based on a 3-point Likert scale. Descriptive statistics such as frequency counts, percentages and means were used to analyze the data collected for research

questions 1 and 2. Regression analysis was used to establish the relationship between awareness and use of open access publications for research question 3. The study revealed a high level of usage of open access publications by both senior and junior LIS lecturers and that the awareness of open access concepts accounted for the tendency of LIS lecturers in Southern Nigeria to use open access publications.

The study recommends that efforts should be geared towards inculcating the awareness of the concept, techniques, technologies and benefits of open access in scholarly communities. Also, universities should develop and encourage open access strategies such as institutional repositories, open access archives, among others. Furthermore, universities' managements should develop enabling infrastructure and formulate polices that would encourage mandatory deposit of scholarly works in open access archives.

3.1 Research Methodology

A descriptive survey research design was used for the study. The population of the study (603) consisted of all postgraduate students in Nigerian private universities, irrespective of their courses of study. However, a total sample size of 120 respondents was selected using multi-stage sampling technique. The researcher developed a questionnaire titled "Utilization of Open Access Resources Questionnaire" (UOARQ) and an observation checklist, which were used to collect data for the study. A total of 120 copies of the questionnaire were distributed to respondents, out of which 113 copies were returned and found to be correctly filled. This gave a response rate of 94.2%. The data collected were analyzed using Mean (X) and Standard Deviations to answer the research questions.

4.1 Data Analysis and Discussion

Table 1: Percentage Distribution of Respondents on Availability of Open Access Sources

S/N	Open Access Sources (OAS)	Rate Response	Name of University						Overall			
			PAU		MU		IU					
			NA	AV	NA	AV	NA	AV	NA	AV	D R
1	Directory of Open Access Journals	Freq	19	20	26	12	2	34	48	65	AV 3rd
		%	48.7%	51.3%	68.4%	31.6%	5.6%	94.4%	42.5%	57.5%	
2	Directory of Open Access Books	Freq	20	19	26	12	2	34	48	65	AV 3rd
		%	51.3%	48.7%	68.4%	31.6%	5.6%	94.4%	42.5%	57.5%	
3	Journal Storage	Freq	30	9	0	38	2	34	32	81	AV 1st
		%	76.9%	23.1%	.0%	100.0%	5.6%	97.2%	28.3%	71.7%	
4	Bentham Science Publishing	Freq	34	5	36	2	36	0	106	7	NA 9th
		%	87.2%	12.8%	94.7%	5.3%	100.0%	.0%	93.8%	6.2%	
5	Hindawi Open Access Journals	Freq	31	8	36	2	36	0	80	33	NA 6th
		%	79.5%	20.5%	94.7%	5.3%	100.0%	.0%	70.8%	29.2%	
6	BioMed Central	Freq	34	5	36	2	33	3	73	40	NA 5th
		%	87.2%	12.8%	94.7%	5.3%	91.7%	8.3%	64.6%	35.4%	

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7	High Wire Press	Freq	21	18	36	2	36	0	90	23	NA	7th
		%	53.8%	46.2%	94.7%	5.3%	100.0%	.0%	79.6%	20.4%		
8	Open Journals Gate	Freq	30	9	36	2	36	0	102	11	NA	8th
		%	76.9%	23.1%	94.7%	5.3%	100.0%	.0%	90.3%	9.7%		
9	African Journals Online	Freq	30	9	3	35	4	32	37	76	AV	2nd
		%	76.9%	23.1%	7.9%	92.1%	11.1%	88.9%	32.7%	67.3%		
10	Bioline International	Freq	30	9	36	2	36	0	102	11	NA	8th
		%	76.9%	23.1%	94.7%	5.3%	100.0%	.0%	90.3%	9.7%		
11	Online Access to Research in the Environment (OARE)	Freq	30	9	36	2	35	1	67	46	NA	4th
		%	76.9%	23.1%	94.7%	5.3%	97.2%	2.8%	59.3%	40.7%		
12	Health Inter Network Access to Research Initiative (HINARI)	Freq	5	34	2	36	1	35	37	76	AV	2nd
		%	12.6%	87.2%	5.3%	94.7%	2.8%	97.2%	32.7%	67.3%		

*Key1: PAU -Pan Atlantic University, MU -Madonna University, IU-Igbinedion University.
Key2: AV -Available, NA-Not Available, D -Decision, R-Rating.

Table 1 shows the percentage distribution of respondents on availability of Open Access Sources (OAS). The overall ranking showed that Journal Storage/JSTOR had a response rate of 71.7% and was ranked highest among the open access sources available in the library while Bentham Science Publishing which had a response rate of 6.2% was ranked lowest among the open access sources available in the libraries studied. From the results gathered, the table showed that the respondents decisively indicated that only 5 items (Directory of Open Access Journals/DOAJ, Directory of Open Access Books/DOAB, Journal Storage/JSTOR, African Journals Online/AJOL and Health InterNetwork Access to Research Initiative/HINARI) out of the twelve items listed were available in their libraries.

Table 2: Mean Ratings of Extent of Utilization of Open Access Resources in the Library

SN	Items	Name of University						Overall		Rating	Decision
		PAU		MU		IU					
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
1	I do access open access resources from the Internet in the library	3.15	.84	3.13	.41	3.33	.63	3.20	.66	1st	GE
2	I do read articles on open access resources from the Internet in the library	2.28	.83	3.12	.41	3.32	.63	2.90	.79	2nd	GE

3	I do cite articles of open access resources from the Internet in the library	2.59	1.02	2.39	.75	2.58	.91	2.52	.90	3rd	GE
4	I do reference articles of open access resources from the Internet in the library	2.59	1.02	2.39	.75	2.58	.91	2.52	.90	4th	GE
5	I do download articles on open access resources from the Internet in the library	2.23	.81	1.45	.60	2.36	.76	2.01	.83	5th	LE
6	I do publish my work in open access journals	1.13	.41	2.03	.28	1.11	.40	1.42	.56	6th	NE

*Key1: PAU -Pan Atlantic University, MU -Madonna University, IU -Igbinedion University.
*Key2: GE-Great Extent, LE-Low Extent, NE-No Extent.

Table 2 shows the Mean ratings of the respondents on the extent of utilization of open access resources in the library. The overall Mean showed that accessing open access resources from the Internet in the library (Mean = 3.20) was ranked highest, while publishing of work in open access journals (Mean = 1.42) was ranked lowest as extent of utilization of open access resources in the library. Also, using the principles of real limit of numbers, the table shows that open access resources were utilized to a great extent as revealed in items 1-4 (I do access open access resources from the Internet in the library; I do read articles on open access resources from the Internet in the library, I do cite articles of open access resources from the Internet in the library, and I do reference articles of open access resources from the Internet in the library), whereas utilized to a low extent on item 5 and utilized to no extent on item 6 (I do publish my work in open access journals) respectively.

Table 3: Mean Ratings of the Challenges Associated with the Utilization of Open Access Resources

SN	Challenges	Name of University						Overall		Rating	Decision
		PAU		MU		IU					
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
1	Erratic power supply hence, disrupting the flow and stability of the Internet service	2.46	1.05	3.08	.27	3.61	.55	3.04	.84	1st	A
2	Slow Internet connectivity hence, delay in opening and downloading open access resources on the net	2.41	.88	3.05	.23	3.03	.51	2.82	.67	2nd	A
3	Lack of Internet searching skills limits me from accessing open access resources on the net	2.51	.91	3.00	.33	2.72	.61	2.74	.69	3rd	A
4	Inability of library staff in assisting me in searching and using Open Access Resources	2.72	.83	2.50	.56	2.75	.73	2.65	.72	4th	A
5	Inadequate/shortage of computer systems and terminals thus, limiting my access to open access resources on net	2.08	.62	3.08	.27	2.67	.48	2.60	.63	5th	A
6	Lack of knowledge of the existence of Open Access Resources hinders my use of it	2.54	.88	2.53	.95	2.67	.86	2.58	.89	6th	A
7	Unavailability of Internet facilities to browse and access open access resources on the net	1.97	.54	3.05	.23	2.36	.54	2.46	.64	7th	D

*Key1: PAU-Pan Atlantic University, MU-Madonna University, IU-Igbinedion University.
*Key2: A-Agree, D-Disagree.

Table 3 shows the Mean ratings of the respondents on the challenges associated with the utilization of open access resources. The overall Mean showed that erratic power supply hence, disrupting the flow and stability of the Internet service (Mean = 3.04) was ranked highest, while unavailability of Internet facilities to browse and access open access resources on the net (Mean = 2.46) was ranked lowest among the itemized challenges associated with the utilization of open access resources.

Applying the criterion Mean of 2.50, the table shows that the respondents accepted

items 1-6 (erratic power supply hence, disrupting the flow and stability of the Internet service, slow Internet connectivity hence, delay in opening and downloading open access resources on the net, lack of Internet searching skills limits me from accessing open access resources on the net, inability of library staff in assisting me in searching and using Open Access Resources, inadequate/shortage of computer systems and terminals thus, limiting my access to open access resources on net and, lack of knowledge of the existence of Open Access Resources hinders my use of it unavailability of Internet facilities to browse and access open access resources on the net) and disagreed on item 7 (unavailability of Internet facilities to browse and access open access resources on the net) as a challenge associated with the utilization of open access resources.

Table 4: Mean Ratings of Strategies for Enhancing Utilization of Open Access Resources

SN	Items	Name of University						Overall		Rating	Decision
		PAU		MU		IU					
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
1	Library staff should be given in-house training and orientation on the general concept of Open Access and how to help users access these resources online easily	3.72	.51	3.97	.16	3.83	.38	3.84	.39	1st	A
2	Provision of power inverters in the library as backup for stable electricity to checkmate downtime when browsing the Internet	3.67	.48	3.95	.23	3.81	.40	3.81	.40	2nd	A
3	Provision of Internet services in the library to facilitate and ease access to open access resources on the Internet	3.79	.41	3.87	.34	3.50	.51	3.73	.45	3rd	A
4	Increase of computer systems and terminals in the library to encourage capacity usage of open access resources online amongst users	3.62	.54	3.95	.23	3.17	.38	3.58	.51	4th	A
5	Increasing the Internet bandwidth in the library to avoid slow downloading or slow Internet connection when browsing the Internet	3.15	.87	3.97	.16	3.50	.51	3.54	.68	5th	A
6	Making open access a compulsory course to be taught in class by librarians to create its awareness	3.59	.72	3.18	.39	3.17	.51	3.32	.59	6th	A

*Key1: PAU-Pan Atlantic University, MU-Madonna University, IU-Igbinedion University.
*Key2: A-Agree, D-Disagree.

Table 4 shows the Mean ratings of the respondents on the strategies for enhancing utilization of open access resources. The overall Mean showed that Library staff should be given in-house training and orientation on the general concept of Open Access and how to help users access these resources online easily (Mean = 3.84) was ranked highest, while making open access a compulsory course to be taught in class by librarians to create its awareness (Mean = 3.32) was ranked lowest among the itemized strategies for enhancing utilization of open access resources. Using the criterion Mean of 2.50, the table shows that the respondents accepted all the six listed items of strategies for enhancing utilization of open access resources.

4.2 Testing of Hypothesis

Ho1: There is no significant difference in the mean ratings of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria.

Table 5: A Logistic Regression Analysis for Testing the Above Hypothesis

Model	Non-standardized Coefficients		Standardized Coefficients		
	B	Std. Error	**Beta**		**P**
1 (Constant)	2.930	.225		13.016	.000
Postgraduate Students of Private University	.090	.105	.081	-.854	.395

Dependent Variable: Level of utilization of open access resources

Table 5 shows Regression Analysis for testing the hypothesis which stated that there is no significant difference in the Mean ratings of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria**.** The result reveals that postgraduate students in Nigeria have no significant difference in the utilization of open access resources in libraries of private universities (B=.090, P>**.**05). Since this test is not significant, the null hypothesis is accepted showing there is no significant difference in the mean ratings of utilization of open access resources in libraries of private universities by postgraduate students in Nigeria**.**

5.1 Discussion of Findings

In the course of this study, the study found that the reason why users failed to maximize the use of open access resources was majorly due to the ignorance of its existence. There were clear indications that private university libraries rarely organized seminars or workshops to sensitize the students on open access resources. In other words, the promotion and advocacy of open access resources in libraries of private universities was extremely poor and close to non-existing. Private universities through their libraries should consciously uphold, promote and advocate for open access resources via methods recommended by this present study to create its awareness and knowledge amongst students, especially postgraduate students who are the key users of research and scholarly materials. Once adequate awareness is created with good accessibility to Information and Communication Technology (ICT), then maximum utilization is ensured, hence increase in users' productivity e.g. improved academic performance and quality research.

The study revealed that some factors like erratic power supply disrupted the flow and stability of Internet service, low bandwidth which resulted to slow Internet connectivity hence delay in opening and downloading open access resources on the net, likewise lack of Internet searching skills, and even inability of library staff in assisting users search and use open access resources on the net, were all recorded as major challenges associated with the utilization of open access resources hence, appropriate recommendations were made. Also, in the course of this study, the study found that the reason why users failed to maximize the use of open access resources was majorly due to the ignorance of its existence. There were clear indications that private university libraries rarely organized seminars or workshops to sensitize the students on open access resources. In other words, the promotion and advocacy of open access resources in libraries of private universities was extremely poor and close to non-existing.

Conclusion and Recommendations

Private universities through their libraries should consciously uphold, promote and advocate for open access resources via methods recommended by this present study to create its awareness and knowledge amongst students, especially postgraduate students who are the key users of research and scholarly materials. Once adequate awareness is created with good accessibility to Information and Communication Technology (ICT), then maximum utilization is ensured, hence increase in users' productivity e.g. improved academic performance and quality research.

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

1. A prerequisite for utilization of any resource material is in the awareness of its existence hence, as a way of encouraging maximal use of open access resources and minimizing open access ignorance, the university management should occasionally (at least bi-annually or annually) organize seminars or workshops on open access for both students and library stakeholders such as lecturers, researchers and the like.

2. There is need for the library to also provide power inverters or solar power facilities in the library as backup for stable electricity. The power stability will not strictly be because of the Internet services but will also be beneficial in enhancing library services especially for libraries that are digitized or automated.

3. Increasing the Internet bandwidth in the library can help avoid slow downloading or slow Internet connection when browsing the Internet. Internet terminals via Wi-Fi should be increased in the library to encourage capacity use of open access resources among users, especially where the library has limited computer systems.

4. Library staff should be given regular in-house training and orientation on the general concept of open access and how to assist users access these resources easily online. These will in turn equip the staff who are expected to render reference services and other information related queries to library users.

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