
Availability, Use and Constraints to Use of Electronic Information Resources by Postgraduates Students at the University of Ibadan

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ABSTRACT

Availability, awareness and use of electronic resources provide access to authoritative, reliable, accurate and timely access to information. The use of electronic information resources (EIRs) can enable innovation in teaching and increase timeliness in research of postgraduate students which will eventual result into encouragement of the expected research-led enquiry in this digital age. The study adopted a descriptive survey design. Samples of 300 of postgraduate students within seven out 13 Faculties were randomly selected. Data were collected using questionnaire designed to elicit response from respondents and data were analyzed using descriptive statistics methods percentages, mean, and standard deviation. Results indicated that internet was ranked most available and used in the university. Low level of usage of electronic resources, in particular, full texts data bases is linked to a number of constraints: Interrupted power supply was ranked highest among other factors as speed and capacity of computers, retrieval of records with high recall and low precision, retrieving records relevant to information need, lack of knowledge of search techniques to retrieve information effectively, non possession of requisite IT skills and problems accessing the internet. The study recommended that usage of electronic resources be made compulsory, intensifying awareness campaigns concerning the availability, training on use of electronic resources and the problem of power outage be addressed.

1. Introduction

Till recently, libraries used to furnish the information needs of users by means of their vast print sources. However, due to the impact of ICTs, this arena is fast changing. The new electronic era, having Internet in the forefront, is pushing libraries towards the digital environment. This has led libraries to acquire, organise and provide access to electronic resources required for their users.

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It has made it imperative for libraries to have both print and non-print collections. Non-print collections include CD-ROM/ DVD, online full text electronic journals, databases, and e-books.

The emergence of electronic information resources (EIRs) has greatly transformed information handling and management in Nigerian university communities. Ani and Ahiauzu, (2008) assert that electronic information resources have gradually become a major resource in every university community. Electronic information resources are provided in electronic form, and these include CD-ROM database, online databases, online journals, OPACs, Internet and other computer-based electronic networks (Ehikhamenor, 2003; Jagboro, 2003; Shuling, 2007; Tsakonas & Papatheodorou, 2006). Academics in developing countries are fast embracing the Internet as a source of information for teaching and research. Some studies have revealed the use of the Internet, email and search engines for research purposes (Ojedokun & Owolabi, 2003; Oduwole, 2004; Badu & Markwei, 2005).

The growth of information resources has become a global phenomenon, most especially in developed societies due to technological advancement in information technology (IT). Postgraduate students in developed countries are getting access to digital information and creating their information electronically. Academics now have access to global digital information resources, particularly the Internet for their scholarly communication (Ani & Ahiauzu, 2008). Interestingly, the Internet represents different things to different people depending on what is being sought. In the academia, it facilitates the extension of the frontiers of knowledge and constantly enhances the drive to keep abreast of scholarly publications (Ajegbomogun & Akintola, 2004).

The Internet and the World Wide Web provide scholars with quick and easy access to electronic information resources located around the globe. Academic staff members now exchange preliminary drafts of research findings with colleagues and maintain contacts by monitoring electronic bulletin boards, chat rooms and listservs on subjects of interest. Information users now use the Web to access remote databases and full-text document resources that were previously only available through expensive on-site research visits. Researchers use the Web to watch real-time images from remote research stations and satellites or participate in group discussions and group projects. Mashhadi and Han (1996), note that the information and communication revolution which resulted in the advent of the Internet, has been a formidable tool of information exchange which has obliterated distance and time and accelerated the process of creating a global community of inquiry.

Availability of electronic information sources relates to the provision for and inclusion of the resources in the collection of the libraries at the disposal of users in academic institutions. In the words of Roberts (2005) availability of electronic resources provides access to authoritative, reliable, accurate and timely access to information. In addition to this, the resources can enable innovation in teaching and increase timeliness in research.

Awareness is part of availability and it indicates the extent to which users have information and knowledge of electronic resources being subscribed to. When users of a library have adequate information on the electronic resources being subscribed to they are encouraged to use them. Available ICT and e-resources must be known to the users. Madukoma, Onuoha and Ikonne (2014) identified lack of awareness as major contributing factor to non-use of e-resources.

However the use of these resources is likely to be influenced by availability of the resources. This implies that electronic resources must be made available in several brands to the users in

their institutions. Their contents must also be publicized by the library in order to prompt their use. Some constraints may also affect the use of electronic resources. Consequently, this study investigated the availability, level of use and constraints to the use of electronic resources by post-graduate students for academic purposes at the University of Ibadan.

1.1 Objectives of the study

The main purpose of this study is to investigate availability, use and constraints to use of electronic information resources by postgraduate students for academic purposes at the University of Ibadan. The specific objectives of the study are to:

- i . investigate what kind of electronic information resources are available to postgraduates students of the university;
- ii . investigate the level of usage of electronic information resources by the postgraduate students for academic purposes;
- iii . identify the constraints to electronic information resources utilization by postgraduates students at the University of Ibadan; and
- iv . make recommendations to overcome the identified constraints to electronic information resources utilization.

1.2 Research questions

- i . What kinds of electronic information resources are available to postgraduate students of the University of Ibadan?
- ii . What is the level of usage of electronic information resources for academic purposes at the University of Ibadan?
- iii . What are the constraints to electronic information resources utilization by postgraduates' students at the University of Ibadan?

2. Literature Review

2.1 Electronic Information Resources and their roles in higher education

Supporting research and learning activities becomes a major mission for academic libraries. In recent years, academic libraries face pressures like diminished budgets, increased patron demands, and rising costs for book purchases and periodical subscriptions (Ke & Chang, 1999). The thriving growth of electronic publications is reshaping the nature of collections and the mode of delivering and accessing information in libraries. The traditional print resources nowadays face challenges from their electronic counterparts in faster and timely delivery of information as well as in improved access (Bandyopadhyay & Chu, 1999). Among various resources for learning, staff and students

throughout much of the world can retrieve seemingly endless volumes of information from all over the globe in a short span of time. It appears that the rate of production of electronic materials has exceeded that of print-based publications (Dalgeish & Hall, 2000).

Electronic resources have affected the functioning of libraries and the information seeking habit of users (Tenopir, 2003). Resources at today's library are not only available in print but also in electronic format. CD-ROM technology has enabled libraries to provide instant, easy, and convenient access to a substantial amount of relatively current and retrospective information at a fixed or predictable cost. Due to the availability of CD-ROM databases, libraries have reported an increase in the use of journal collections, interlibrary loans services, and microfiche collections. The level of quality of an institution of higher education is determined to a great extent by that of its library, that is, by the adequacy of its collections of books, journals, other research materials, and services.

Higher education is changing rapidly with the advent of technology. According to Shuling (2007), in recent years, electronic information has gradually become a major resource in every university library. The growth and diversity of electronic resources, especially e-journals, in the past few years has led many to predict the extinction of the printed journal (Okello-Obura & Magara, 2008). It has been suggested that a new paradigm is sweeping scholarship (Liew, Foo, & Chennupati, 2000; Harper et al., 2006). Majid and Abazova (1999) argue that technological advancements opened up new horizons for the creation, storage, access, distribution and presentation of information. In the global information communications technology (ICT)-dominated world, "place" is much less important (Ferguson, 2006). "The impact of moving from text-based to resource-based learning has involved heavier use of library materials and a demand for more and varied media sources" (Kinengyere, 2007). This makes the provision and use of Electronic Information Systems (EIS) in academic libraries a critical issue for those working in information and library services (Armstrong et al., 2001; Elam, 2007). The pace at which information resources are being produced and converted into an electronic form is greater today than in previous years (Armstrong et al., 2001). In today's information age it would seem that library users would not only be eager to take advantage of the convenience electronic resources have to offer, but would be fully immersed in the new technologies (Elam, 2007).

Electronic information resources offer today's students different opportunities compared to their predecessors. Brophy (1993) details the advantages of networking for the user as being: the information needed can be delivered from the most appropriate source to the user; the user can re-specify his or her needs dynamically; the information is obtained when it is wanted, so becomes "just in time" rather than "just in case"; the user selects only the information needed to answer the specific question and, finally, the information is only stored should the user wish. Electronic information can therefore provide a number of advantages over traditional print based sources.

These advantages include the fact that electronic information sources are often faster than consulting print indexes, especially when searching retrospectively, and they are more straightforward when wishing to use combinations of keywords. They open up the possibility of searching multiple files at one time, a feat accomplished more easily than when using printed equivalents. Electronic resources can be printed and searches saved to be repeated at a later date; they are updated more often

than printed tools. One main advantage, especially to distance learners or those with limited time to access the library, is their availability from outside the library by dial-up access.

Li, Foo and Chennupati (2000) argue that while reading an e-journal is not the same as reading a printed one, many are beginning to acknowledge the possibility that electronic documents (e-documents) offer users advanced features and novel forms of functionality beyond what is possible in printed form. Years ago Brophy (1993), noted that the advantages of electronic resources over print include speed, ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating and the ability to access from outside the library (a particular advantage for the distance learner). According to Dadzie (2005), electronic resources are invaluable research tools that complement print-based resources in any traditional library. Their advantages include access to information that might be restricted to the user because of geographical location or finances, access to current information, and provision of extensive links to additional resources or related content (Dadzie, 2005). E-resources could be stored electronically thereby saving space, the risk of lost, theft or damage is lessened and costs significantly reduced.

In recent years, there have been a number of changes in the higher education sector in Nigeria and in particular, academic institutions. The emergence of electronic information resources has tremendously transformed information - handling and management in Nigerian academic environments, and University libraries in particular (Ani & Ahiauzu, 2008).

These dramatic changes include the way in which information is provided to the University Communities. A number of electronic resources initiatives have been put in place in Nigeria to assist in the development training and use of electronic resources in a number of academic institutions among who are the Morlenson Center for International Library Programs acting on behalf of MacArthur Foundation to support some selected grantee university libraries; The Electronic Information for libraries Network (eiFL.Net) and MTN Foundation. Their fundamental objective has been to create interfaces with the global knowledge systems.

These initiatives notwithstanding, some inadequacies in the development, provision and utilization of electronic resources had been identified in a number of academic institutions. A number of studies have been made with a view to proffering solutions to problems encountered in the development of electronic information resources. However, little or no efforts have been recorded in the identification of influence and impact of electronic resources for academic purpose of student in University of Ibadan.

2.2 Postgraduate Students' attitude to Electronic Information Resources

There is a noticeable gap in the literature about student perceptions towards electronic information, as Brittain noted, "most user studies have looked at the situation through the eyes of the information professionals, rather than the user" (Bawden, 1990). A number of surveys do exist, in the main relating to the use of CD-ROM, but are significantly lacking considering the amount of technology available. The views of users should be a vital form of analysis into the effectiveness of these sources, as well as enabling the varying needs of students to be met, and monitored. "While user surveys can never tell the whole story of how patrons are responding to a library service, they

can provide valuable ideas about what does and does not work” (Faries, 1992). It is only under these circumstances that effective responses can be made to deal with any possible user reactions, either positive or negative.

Informed library users know that libraries have resources that are more comprehensive and scholarly than most Web sites provide. Libraries provide access to scholarly literature that, as a rule, is not freely available on the Web. Often, it is in college that users become aware of libraries’ resources, usually while having to write research papers. Assuming that on average most students face the same number and type of papers and assignments during their college career, it is critical to understand what makes one student use the library’s electronic resources while another will not think of the library as a place to find specialized resources for their papers.

Understanding how students navigate this maze of resources is important in helping us to develop and assess pedagogy designed to instruct our students in library usage. Students are more and more Web-savvy Kibirige & DePalo (2000) many of them having been brought up around computers and the Internet. However, they matriculate with a diversity of computer and Web-searching skills and experience. Students may not have been exposed to library resources, or not be aware of which resources a library might have, or how to make use of them. It is therefore of interest to us to try and understand what characteristics will make one student branch out and explore library resources, while another one might not.

In a study conducted at Makerere University. A look at the Library and Information Science (LIS) postgraduate students’ responses regarding their attitudes on e-resources, shows an encouragement. The majority (72%) of LIS postgraduate students strongly feel that the standard of their academic work would suffer without e-resources. They believe that in order to perform well, they cannot avoid e-resources. They are divided over the issue of promoting Open Access Journals to help in fighting plagiarism of people’ work. But the majority disagree with the idea of not subscribing to paid journals since Open Access Journals exists. They believe that a University is not worth its name without e-resources and agree that with the advent of e-journals and e-books, CD-ROMS are becoming unpopular among students (Okello-Obura & Ikoja-Odongo, 2010.)

The outcome of a research conducted by Malekani (2007) at Sokoine National Agricultural Library (SNAL) to find out student experiences and perceptions towards the Internet in meeting their learning needs revealed that most students have a positive attitude towards the Internet and use it for academic purposes. Research also revealed that most students perceive information from Internet as current and easier to retrieve compared to print resources. However, result showed that while students prefer the internet, its effective use is hampered by several factors including low band width, few internet access points, and lack of skills. The study recommends that users should undergo basic training in Internet searching skills. It is also recommended that information literacy should be incorporated into the university curriculum. Moreover, there should be a deliberate effort to create awareness on the availability of electronic information resources, particularly in the library.

Given technology increased use, it is important to understand how technologically rich environments are influencing student attitudes toward e-resources access. Many factors influence attitudes. The introduction of open access journals and other resources for instance is creating another attitudinal

tendency towards e-resources. Open access is one of the cheapest routes to electronic resources and over the last few years open access resources have grown and provided an affordable way to provide access to some journal content (Price, 2009). Supporters of open access argue that, when academic articles, dissertations and theses are put online and open to all, it helps in fighting duplication and plagiarism of other people's intellectual works. Although the open access movement has brought access to many valuable resources, and provided libraries with an invaluable amount of resources, many open access projects still face an uncertain future (Price, 2009). Many critics are not sure that the open access model can survive because some are not considered "financially viable" or as high quality as traditionally purchased or subscribed content (Robinson, 2006; Shao, 2007; Turk & Bjork, 2008).

Attitudes towards e-resources access could be attributed to problems faced when accessing e-resources. For instance in a situation where there is inadequate computer technologies to access e-resources or poor Internet connections, students positive attitudes could be affected. That is why the problems that affect e-resources access are addressed in higher learning institutions libraries. The arguments for students using electronic resources are compelling. An adequate knowledge of computers and retrieval techniques is desirable to search these resources effectively. It is necessary to establish what computer skills students require to access electronic information resources in libraries. Amidst all the efforts to access e-resources, postgraduate students face a number of challenges. These are reported in another paper by the same author.

2.3 Use of Electronic Information Resources in Postgraduate studies

There have been many studies on users of electronic resources in the professional literature in the last few years. The surveys of users of electronic resources carried out so far have been summarized by Bar-Ilan and Fink (2005). They show that:

- Use of electronic journals increases with time.
- Age and/or academic position are inversely related to the use of electronic media and journals.
- There is a gradual reduction in the use of printed journals as users prefer and use the electronic format more.
- With increased use, users access the electronic format more frequently.
- The use of a journal is not necessarily an indication of the preference of users. There may be an increase in the acceptance and frequency of use of the electronic format merely because the traditional print format is no longer easily available.
- When respondents were asked about the advantages of electronic journals, accessibility and desktop access, home access, ease of retrieval and hyperlinks to outside content were the arguments cited most often. On the other hand, the disadvantages of electronic journals mentioned most often were the lack of back issues and problems with reading a text from the computer screen.

Electronic resources are widely used in universities. There is a direct relationship between computer literacy and use of electronic resources. Mostly academics are computer literate; however, they

need to develop their searching skills (Ansari, 2010). Studies show that journals are the most valued information communication channel for researchers. Their production dates back to the seventeenth century, and their importance has not diminished. With the advent of the Internet and electronic publishing, they have become more easily accessible. Print books may be around for a long time, but print journals are rapidly being supplanted by e-journals. It is important to study the use of electronic journals, scholars' attitudes, and future patterns of use, for library development, and because of the central role journals play in scientific communication (Kortelainen, 2004).

In an empirical study by Manda and Mukangara (2007) that examined the association between gender and the use of electronic information resources among postgraduate students at the University of Dar es salaam, Tanzania of 100 postgraduate. Findings revealed that gender is associated with the use of electronic information resources and male postgraduate students were more likely to use electronic information resources than female students. Results further showed that even when we controlled for attitude toward the use of electronic information resources or training in the use of e-resources the relationship between gender and electronic information resource use was maintained. Other variables that were found to have positive association with the use of electronic information resources included: training in the use of electronic information resources, access to e-resources, awareness of the availability of resources and year of study.

Shuling (2007) analyzed the use of electronic resources in Shaanxi University of Science and Technology. The sample consists of 909 respondents of all types of library users. The study found that nearly 80 percent of respondents knew little about electronic resources. Nearly half the respondents use both printed and electronic resources, followed by print periodicals.

Ali (2005) highlights the use of electronic information services (EIS) among the users of Indian Institute of Technology (IIT) library in Delhi, India. Data was collected from three hundred IIT library users. Results reveal that 95 percent of users have awareness about EIS provided by the library.

Dadzie (2005) investigated the use of electronic resources by students and faculty of Asheshi University, Ghana, to determine the level of use, the type of information accessed and the effectiveness of the library's communication tools for information research and problems faced in using electronic resources. Results indicate that 85 percent of respondents used the Internet to access information, and that respondents mainly accessed information in the library by browsing the shelves.

Rehman and Ramzy (2004) investigated the awareness and use of electronic information resources among health academics. Results show that libraries are extensively used for research needs, preparation of lectures, and for obtaining current knowledge. Lack of time is the main reason given for not using electronic resources (37 percent). Unfamiliarity with computerized searching comes next (22.6 percent). Majid and Abazova (1999) explored the use of electronic information sources relevant to computer literacy among academic staff of the International Islamic University, Malaysia. Nearly all respondents considered themselves to have good or very good computer skills. Azubogu and Madu (2007) observe that academic staff of the Imo State University, Owerri, Nigeria, have resorted to the use of computer and Internet technologies to search for information because the university library lacks funds to subscribe to scholarly and research journals.

In an exhaustive review of the literature on the subject, Tenopir (2003) analyzed the results

of over 200 studies of the use of electronic resources in libraries published between 1995 and 2003. The main conclusion of this review is that electronic resources have been rapidly adopted in academic spheres, though the behaviour varies according to the discipline. Jamali, Nicholas and Huntington (2005) also reviewed the conclusions of several papers that used log analysis to study the use and users of electronic journals. These papers gave contradictory conclusions on the volume of use of subscriptions through Big Deals, but showed a high degree of concentration in the use of the titles and a clear preference for PDF rather than HTML format. They also provided interesting information on the behaviour patterns of users and the growing preference for searching to the detriment of browsing as the main means of accessing information.

The study carried out by Idiodi (2005) reveals that despite the advent of information and communication technology in Nigerian universities, and automation of library systems, very few users have the capability to use information technology effectively in the libraries. The researcher concluded that a high level of computer illiteracy among librarians is one of the major factors militating against promoting higher level of information literacy of library users.

Kinengyere (2007) examines the effect of information literacy (IL) on the usage of electronic information resources in academic and research institutions in Uganda. The paper reports that availability of information does not necessarily mean actual use. The study shows that some of the available resources have not been utilized at all. This means that users are not aware of the availability of such resources, they do not know how to access them, or they do not know what the resources offer. All this calls for continued information literacy programs. IL is very vital in influencing utilization of information resources. Information professionals are needed to pass on IL skills to library users, while library users should endeavor to find out what information is available online for their consumption.

2.4 Constraints to Use of Electronic Information Resources by Postgraduates Students

Hawthorne (2008), in *Electronic Resource Management in Libraries: Research and Practice* by Yu and Breivold citing (Ranganathan, 1963) observed that:

The pursuit of electronic resources by libraries was driven by the core values of library science. It is possible to recognize in Ranganathan's five laws of library science the motivation that drove libraries to incorporate electronic resources into services and collections. Paraphrased to better suit electronic resources, the laws read: resources are for use, every person his or her resource, every resource its user, save the time of the user, and the library is a growing organism.

Each technological development in library electronic resources during the 20th century was intended to make access to resources more direct, convenient, and timely for the user. The implementation of electronic resources made the library a growing organism as libraries adapted processes and reorganized staff repeatedly to accommodate the changes inherent in the use of constantly changing technology.

Constraints to use of electronic resources on law by law lecturers were identified. These constraints

were identified by the respondents and, the law librarians during the interview sessions. These constraints in ranked order are absence of sufficient training programme; non-availability of desired electronic resources within the universities. Further, low level of local contents in the electronic information resources; poor ICT skills on the part of law lecturers lack of time due to tight academic and job schedule, lack of publicity on the contents of the available electronic resources by the universities or libraries. Also, unorganised nature and proliferation of electronic resources on law, Paucity of workstations to access electronic resources in the universities and, Irrelevance of contents of electronic resources to local academic needs. These findings were in congruence with that of Radijeng (2007) who, in his study on Demand for Electronic Information at the University of Botswana, reported technical problem, lack of infrastructure, inadequate computer literacy, limited printers and printing opportunities, computer phobia, irrelevancy of contents to local needs, economic problems and, problems associated with electronic resources access. Bhardwaj and Madhusudan (2013) identified the followings as constraints to use of ER: Lack of proper arrangement of legal information resources, poor description on legal information sources, lack of online help, poor website design, too many login requirements, lack of expertise in using the databases, lack of printing provision, and confusing search screens.

Corroborating the above findings, Malekani (2007), reported similar constraints at Sokoine National Agricultural Library (SNAL) to find out student experiences and perceptions towards the Internet in meeting their learning needs, revealed that most students have positive attitude towards the Internet and use for academic purposes. Its effective use is hampered by several factors including low bandwidth, few internet access points, and lack of skills.

3. Methodology

The descriptive survey research design was adopted in eliciting information from the students that formed the subject of the study. The random sampling technique was adopted in selecting the study population. This is to ensure equal representation of samples at the faculty and departmental level. The primary sampling units were the 13 faculties with the population of 6,665 postgraduates' students. Seven conventional faculties (Agriculture & Forestry, Arts, Basic Medical Sciences, Education, Science, Social Science and Technology) from the university were selected to a good representation of the postgraduate students in the university. Convenience and purposive sampling techniques were adopted to select respondents from two homogeneous departments from each of the seven conventional faculties. Thus, making a total of 14 departments sampled for the study. These selected departments were considered to have full representation of all departments, considering their population in the university. Hence, 333 postgraduate students out of the 2,623 constituted the sample size. Data used for this study were collected using a test and questionnaire. Descriptive statistics such as percentages, mean, standard deviation, and correlation analysis were used to analyze data collected.

Table 1. Population and sample size

| Faculty | Department | Population | Sample size |
|------------------------|----------------------------------|------------|-------------|
| Agriculture & Forestry | Agric Economics | 211 | 22 |
| | Animal Science | 111 | 27 |
| Arts | English | 158 | 20 |
| | Linguistics | 86 | 10 |
| Basic medical Sciences | Biochemistry | 84 | 10 |
| | Physiology | 37 | 6 |
| Education | Guidance & counseling | 224 | 25 |
| | Teacher Education | 485 | 52 |
| Sciences | Chemistry | 214 | 34 |
| | Computer Science | 171 | 25 |
| Social Sciences | Psychology | 525 | 55 |
| | Sociology | 212 | 25 |
| Technology | Agric& Environmental Engineering | 55 | 12 |
| | Food Technology | 50 | 10 |
| | Total | 2,623 | 333 |

4. Results and Discussion

- **Research question1:** *What kinds of electronic information resources are available to postgraduate students of the University of Ibadan?*

Table 2. Electronic information resources availability

| SN | Electronic resources | Yes | No |
|----|---------------------------------------------|--------------|--------------|
| 1 | CD-ROMS | 171 57.0% | 129 43.0% |
| 2 | Internet | 266 88.7% | 34 11.3% |
| 3 | E-mail | 231 77.0% | 69 23.0% |
| 4 | Electronic journals | 140 46.7% | 160 53.3% |
| 5 | DATAD (database of thesis and dissertation) | 57 19.0% | 243 81.0% |
| 6 | OPAC (online public access catalogue) | 42 14.0% | 258 86.0% |
| 7 | Electronic books | 149 49.7% | 151 50.3% |

Table 2 shows kinds of electronic information resources available to postgraduate students for

use at the University of Ibadan, as perceived by the respondents.

Majority of the respondents indicated that internet 266 (88.7%), e-mail 231 (77.0%) were available for use in the university. About half 149 (49.7%) of the respondents indicated availability of e-electronic books for their use at the University of Ibadan while less than half of the respondents 140 (46.7%) indicated availability of electronic journal for their indicated that there is the availability of electronic journals. OPAC (Online Public Access Catalogue) and DATAD (database of thesis and dissertation) were not available for use by more than two thirds of the respondents 258 (86.0%); 243 (81.0%) respectively.

Results indicated that internet and email were ranked most available and used in the university. This is in consonance with the findings of Adeleke and Emearaha (2016), dependence, coupled with easy access to technology, points toward students spending a substantial quantity of time on the Internet/online. This also supports the findings of (Valentine, 1993) that students of tertiary institution showed that they looked for the fastest way that would lead to satisfactory results when doing research, going for electronic information sources first.

CD-ROM, electronic journals and e-books that were not used by about half of the postgraduate students at the University of Ibadan could be best explained in the light of finding of Kinengyere (2007), that examined the effect of information literacy (IL) on the usage of electronic information resources in academic and research institutions in Uganda. The paper reports that availability of information does not necessarily mean actual use. The study shows that some of the available resources have not been utilized at all.

The findings on the availability and use also revealed that OPAC (Online Public Access Catalogue) and DATAD (database of thesis and dissertation) were not available for use by more than two thirds of the postgraduate students under the study. This present scenario is hinged on the digitization process that was ongoing as at the time of this study. This suggests that those few postgraduate students who used them did so at the faculty, departmental libraries or special/research libraries visited outside the university.

- **Research question 2:** *What is the level of usage of electronic information resources for academic purposes at the University of Ibadan?*

In order to ascertain the level of usage of electronic information resources respondents were asked to indicate the full text databases they accessed and used for their academic work from list e-journals subscribed to and archived by the University of Ibadan for academic purposes. The following findings were made.

The use of SCIECEDIRECT by the respondents accounted for 285 (95.0%) and was ranked highest by the the mean score rating, and was followed by JSTOR accessed and used by 117 (39.0%) respondents. Of all the respondents, less than 100 (33.3%) accessed and used EJOURNALS; AGORA; African journals online; HINARI; PUBMED central; OARE; BIOMED CENTRAL; NIGERIAN VIRTUAL LIBRARY respectively in spite of their relevance to the field of study of the respondents being understudied. INASP PERI was the least accessed and used full text databases by 4 (1.3%) of the respondents under the study.

Table 3. Level of usage of electronic information resources for academic purposes

| S/N | Items | No | Yes |
|-----|--------------------------------------------------------------------|--------------|--------------|
| 1 | SCIENCEDIRECT: | 15 5.0% | 285 95.0% |
| 2 | JSTOR | 183 61.0% | 117 39.0% |
| 3 | E-JOURNALS | 201 67.0% | 99 33.0% |
| 4 | AGORA | 205 68.3% | 95 31.7% |
| 5 | African journals online: | 203 67.7% | 97 32.3% |
| 6 | HINARI | 232 77.3% | 68 22.7% |
| 7 | PUBMED central | 230 76.7% | 70 23.3% |
| 8 | OARE: | 242 80.7% | 58 19.3% |
| 9 | BIOMED CENTRAL | 247 82.3% | 53 17.7% |
| 10 | NIGERIAN VIRTUAL LIBRARY | 267 89.0% | 33 11.0% |
| 11 | Global development network | 269 89.7% | 31 10.3% |
| 12 | Research paper in economics | 278 92.7% | 22 7.3% |
| 13 | BMJ publishing group: | 279 93.0% | 21 7.0% |
| 14 | POPLINE: population information online | 280 93.3% | 20 6.7% |
| 15 | BIOONE: http://www. Bioone.org | 281 93.7% | 19 6.3% |
| 16 | EBSCOHOST | 281 93.7% | 19 6.3% |
| 17 | HIGHWIRE ARCHIVE: | 282 94.0% | 18 6.0% |
| 18 | Proceedings of the American mathematical society | 285 95.0% | 15 5.0% |
| 19 | DOAJ | 286 95.3% | 14 4.7% |
| 20 | WILSONWEB OMNIFILE: | 290 96.7% | 10 3.3% |
| 21 | Transactions of the American mathematical society | 290 96.7% | 10 3.3% |
| 22 | ASSR: Arab social science research | 290 96.7% | 10 3.3% |
| 23 | LanTEEAL | 290 96.7% | 10 3.3% |
| 24 | MATHSCINET | 292 97.3% | 8 2.7% |
| 25 | INASP health links | 294 98.0% | 6 2.0% |
| 26 | ZENTRALBLATT MATH | 295 98.3% | 5 1.7% |
| 27 | INASP PERI | 296 98.7% | 4 1.3% |

The findings of this study revealed that, of the twenty-seven (27) full texts databases subscribed to, archived and provided access to through username and password by the University Library's portal, SCIEDIRECT ranked highest with about 95% usage statistics, followed by JSTOR, E-JOURNALS, AGORA, AJOL, HINARI all falling below 35% usage statistics. The low level of usage of usage could be linked to lack of awareness about the availability, lack of search techniques skills by many postgraduate students of the university to access the myriad of e-resources. This notion is supported by Okello-Obura and Magara (2008) that students are increasingly expected to use electronic information resources whilst at the university. To make use of the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. Thachill (2008) also asserts that electronic resources and the new models of education have generated an even greater need for reference and instruction.

- **Research question 3:** *What are the constraints to electronic information resources utilization by postgraduate students at the University of Ibadan?*

Table 4. constraints to electronic information resources utilization

| S/N | Items | SD | D | A | SA | Mean |
|-----|----------------------------------------------------------------------------|--------------|--------------|--------------|--------------|------|
| 1 | There is usually interrupted power supply | 39 13.0% | 32 10.7% | 99 33.0% | 130 43.3% | 3.07 |
| 2 | I face problems with speed and capacity of computers | 61 20.3% | 75 25.0% | 120 40.0% | 44 14.7% | 2.49 |
| 3 | Too few computers with internet facilities | 90 30.0% | 90 30.0% | 84 28.0% | 36 12.0% | 2.22 |
| 4 | I face problems in locating the most appropriate information resources | 75 25.0% | 105 35.0% | 101 33.7% | 19 6.3% | 2.21 |
| 5 | I retrieve records with high recall and low precision | 63 21.0% | 138 46.0% | 82 27.3% | 17 5.7% | 2.18 |
| 6 | I face problems to retrieve records relevant to my information need | 73 24.3% | 148 49.3% | 61 20.3% | 18 6.0% | 2.08 |
| 7 | Lack of knowledge of search techniques to retrieve information effectively | 91 30.3% | 130 43.3% | 65 21.7% | 14 4.7% | 2.01 |
| 8 | I do not posses requisite IT skills | 127 42.3% | 125 41.7% | 39 13.0% | 9 3.0% | 1.77 |
| 9 | I have problems accessing the internet | 145 48.3% | 110 36.7% | 32 10.7% | 13 4.3% | 1.71 |

In order to identify the constraints to electronic information resources utilization by postgraduate students at the University of Ibadan, respondents were asked to rate some militating factors.

The findings from the table above were made. Power supply was ranked highest by the mean score rating (Mean =3.07). Less than half of the respondents indicated that they were constrained by locating the most appropriate information resources and too few computers with internet facilities followed by problems with speed and capacity of computers (Mean =2.49), Too few computers with internet facilities. Less than twenty percent of the respondents indicated that they were constrained by non possession of requisite IT skills and problems accessing the internet.

5. Conclusion

Results indicated that internet and email were ranked most available and used in the university. Low use of CD-ROM, electronic journals and e-books by postgraduate students at the University of Ibadan in spite of availability explained the notion that availability of information does not necessarily mean actual use.

Low level of usage of electronic resources, in particular, full texts data bases was linked to lack of search techniques skills by many postgraduate students of the university to access the myriad of e-resources is evident from the findings of the study.

Effective use of electronic information resources by postgraduate students at the University of Ibadan is being hampered by a number of factors. Interrupted power supply was ranked highest among other factors as speed and capacity of computers, retrieval of records with high recall and low precision, retrieving records relevant to information need, lack of knowledge of search techniques to retrieve information effectively, non possession of requisite IT skills and problems accessing the internet.

There should be institutional commitment to overcome the identified constraints to use of electronic information resources by postgraduates students in order remain relevance in today's world of teaching, learning and research.

6. Recommendations

- i . Lecturers should insist that postgraduate students use e-resources. Academic staff should promote electronic resources by providing references for students to locate; this may increase the number of students acquiring the necessary information retrieval skills. Lecturers are crucial in the promotion of electronic information resources. Coursework/assignments attached to the use of electronic resources should be evolved. All postgraduate students should be taught e-records management to help them in the management of electronic information obtained from e-resources. This can be an integral part of the course on Information Storage and Retrieval taught to postgraduate students.
 - ii . The University internet bandwidth and computer hardware should be upgraded to enhance speed of download of information. This could be achieved through soliciting external support and charging e-resources fees to be paid by students.
 - iii. The University library should intensify their awareness campaigns concerning the availability of electronic resources. The use of e-mail alert system, text messages and prizes for those who use a lot of e-resources should be considered by the University Library as methods of promotion. Phone short message services should be integrated into library e-resources services provision for awareness services for e-resources.
 - iv . The problem of power outage, a national issue should be critically addressed through special budgetary allocation, an institutional commitment to ensure a 24-hour lighting system in order remain relevance in today's world teaching, learning and research.
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