

## Awareness and Use of Open Access Scholarly Publications by Postgraduate Students of Faculty of Science in Ahmadu Bello University Zaria (ABU), Kaduna State, Nigeria

By

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### Abstract

*The study investigated the awareness and use of Open Access scholarly publications by postgraduate students of Faculty of Science in Ahmadu Bello University Zaria (ABU), Kaduna State, Nigeria. The study was guided by four research objectives namely to determine the channels of awareness of Open Access publications, among postgraduate students of faculty of science in Ahmadu Bello University, Zaria, to determine the major sources consulted for Open Access Publications by postgraduate students of the faculty, and to determine the impediments of using Open Access publications by postgraduate students of faculty of science in Ahmadu Bello University, Zaria. Survey research design was adopted. The population of the study consists of all the postgraduate students of Faculty of Science in Ahmadu Bello University 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 analysed using descriptive statistics. The study found that majority of the postgraduate students of Faculty of Science in Ahmadu Bello University Zaria became aware of OA publications by surfing/searching through the Internet haphazardly, majority of the respondent are not aware of the major sources of OA publications, the respondents predominantly use OA publications to support their thesis/dissertations among others. It is however, recommended that libraries should organise training on interval base for both staff and postgraduate students of Faculty of Science on the importance of OA publications Faculties should guide and encourage their students on the need for publishing in OA journals among others.*

### Introduction

The dissemination of research findings through the use of traditional print journals by research scholars is proven to be mundane, inefficient and slow. The advent of information and communication technology (ICTs), Internet and World Wide Web (WWW) technology had changed the process of scholarly publications dramatically. The Berlin declaration on Open Access to knowledge in the sciences and humanities stated that the "mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society" BOAI (2002). The publication of scientific journals according to Smith (2007) began in 1665 to enable researchers share their work quickly and widely and to establish priority with investigating the same problems. Journals published then could not pay the authors, hence, the tradition of writing for impacts rather than payment was in vogue and prevailed. But with the passage of time, "serial crisis" rooted in subscription price became barrier to information access and a serious concern to the stakeholders of scholarship. Only a small number of libraries in the developing world could afford journal subscriptions. Considering the fact that these journals are published in the developed world, researchers in developing countries had to wait for months prior to the arrival of these journals by surface mail. This was the remote cause of looking for an alternative model which turned out to be Open Access (Albert, 2006). It is currently estimated that only 15% of the annual research output is immediately made freely available through Open Access (Brody et al, 2007). This means that a greater portion of the research output is still published using the conventional system. It is

acknowledged that it will take some time for Open Access (OA) mode of scholarly communication to gain substantial adoption due to the fact that open access is disrupting the already well-established system (Johnson, 2002; Fullard, 2007). This has necessitated the interventions by proponents of Open Access to promote its adoption. Accordingly, various initiatives, statements and declarations have been made globally i.e. The Budapest Open Access Initiative (BOAI) in 2001 and at the national level for example in 2008 Ahmadu Bello University (ABU) Department of Library and Information Science organized a 2-day workshop in collaboration with EIFL on "Open Access Repositories: New Model for Scholarly Communication" and a follow-up workshop in November 2009 with the theme "Open Access: Maximizing Research Quality and Impact". These workshops were facilitated by Ezra Shiloba Gbaje (Ph.D), EIFL Open Access country coordinators nominated by Nigerian University Libraries Consortium (NULIB CONSULTS NIG. LTD). As a result of these workshops the Department converted its two journals from toll access journals to OA: The Samaru Journal of Information Studies and The Information Manager (UNESCO, 2013). Chan (2009) also reported that at the beginning of this millennium, more than half of the research-based institutions in the poorest countries had no current journal subscriptions and over 20% had an average of two subscriptions. Now, in the age of the World Wide Web, it is possible for research findings to be disseminated widely regardless of time and resource, free of charge to anyone who wishes to read them provided he is online.

### **Open Access Publications**

Open Access (OA) literature comprises of free online peer-reviewed journal articles and conference papers as well as technical reports, thesis and working papers. In the view of Suber (2005) OA literature ensures free availability on the public Internet, permitting 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 lawful purpose without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself. The primary goal of OA is therefore to maximize the accessibility of the research publications that forms the basis for future scientific development. Open Access can be provided in two ways. The first is through self-archiving process or what Jensen (2010) called “Green” open access. Self-archiving is where authors deposit their work on the institutional digital repository which may be a subject-based repository, or a combination of several subjects. The same item may well appear in a traditional journal, which may be print, parallel published or electronic only, OA Journals also known as “Gold” according to Jensen (2010) provides access to full-text contents of scholarly, peer reviewed journals which could be available either in electronic version or in both electronic and print versions. BOAI (2001) defines an open access publication to include publications that meet the two conditions below:

- a. The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.
- b. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences, PubMed Central is such a repository). BOAI (2001) also stated that open access journals have the following characteristics:
  - i. they are scholarly,
  - ii. they utilize quality control mechanisms like those of conventional journals,
  - iii. they are digital,
  - iv. they are freely available

- v. they may allow authors to retain their copyrights and
- vi. they may use creative commons or similar licenses

A growing number of studies have confirmed that OA scholarly publications are more likely to be used and cited than one behind subscription barriers. There is enough evidence that OA documents are most likely to be cited than commercial journals, these assertion is supported by The Open Citation Project (2004), which reported that in some disciplines, online files receive on average of 300% more citations than materials available only in paper format. This gives OA authors an advantage over other authors who are skeptical about OA. Also, Google Scholar gives preferential treatment to materials in Institutional Repositories (IR); a paper picked up from an IR would appear higher up on the Google results list (Ashworth, 2006). Scholars are paid by research funders and/or their universities to do research; the published article is the report of the work they have done, rather than an item for commercial gain. The more the article is used, cited, applied and built upon, the better for research as well as for the researcher's career (Suber, 2006).

### **Statement of the Problem**

The emergence of Internet technology and the growing popularity of Open Access journal scholarly publication model over the years have ignited many postgraduate students resolved to use this model to satisfy their ever increasing information needs. Curiously, the researchers observed that despite the potentials of Open Access publications, there are many postgraduate students in Nigeria who are not fully aware of the inherent benefits accruing from the use of such system. However, the researchers noticed that most of the studies such as Christian (2008), Swan and Brown (2004), Sanchez-Tarrago and Fernandez-Molina (2009) among others did not cover postgraduate students awareness on OA. However, postgraduate students are very important because they are being trained to become future researchers and scholars. In addition, in the process of preparing and writing their thesis and dissertations, they need access to scholarly, accurate and timely information. Furthermore, the thesis and dissertations produced by them usually form an important output for open access repositories. Eqbal and Khan (2007) submitted that the use of OA Scholarly publications by scholars and researchers assist them in updating their knowledge and research. Does Postgraduate students in faculty of Science, Ahmadu Bello University, Zaria derived the use of OA Scholarly publications? Postgraduate students are therefore among the key beneficiaries of open access opportunities especially in developing countries. It is against this background that the researchers embark on this study to ascertain the level of

awareness and use of Open Access publishing among postgraduate students of faculty of science in Ahmadu Bello University, Zaria.

### **Objectives of the Study**

The study seeks to:-

1. Determine the channels through which postgraduate students of faculty of science get aware of Open Access publications
2. To determine the major sources consulted for Open Access Publications by postgraduate students of faculty of science in Ahmadu Bello University, Zaria.
3. Determine the reasons for using Open Access publications by postgraduate students of faculty of science in Ahmadu Bello University, Zaria.
4. Determine the impediments of using Open Access publications by postgraduate students of faculty of science in Ahmadu Bello University, Zaria.

### **Review of Related Literature**

The concept of Open access is still not widely known among academic researchers in developing world. Several international and national large scale surveys have investigated the researcher's awareness attitude and usage of open access as well as associated facilitating and inhibiting factors of open access adoption. According to Dinev (2005) "awareness raises consciousness and knowledge about a certain technology and its personal and social benefits". In the open access environment, awareness has also been acknowledged as an important factor determining usage of this mode of scholarly communication (Ramachandran, 2004 and Fullard, 2007). Some of the studies indicated that open access was an unknown concept to many researchers (Greyson, et al 2009 and Christian, 2008). A study by Christian (2008) also for example, revealed that while only 3% of 66 respondents at the University of Lagos were aware of the open access concept, 22.7% others knew very little about it and a majority (74%) of the respondents were completely unaware of open access. It should be noted that even where open access awareness is reported, the level of understanding was not uniform for different open access terms. For example, a study by Swan and Brown (2004), established that subject repositories or archives were the most known types to the respondents who claimed to be aware of open access repositories than open access journals. A similar study by Sanchez-Tarrago and Fernandez-Molina (2009) revealed different knowledge of open access related initiatives among scholars from a group of health researchers in Cuba. According to this study, while 44.8 percent of the respondents (N = 160) were reported to be aware of open access journals,

Dulle (2008) found in his study that the most common known terms or initiatives by researchers were open access journals (59.6 percent respondents) and open access repositories (22.8 percent respondents). Very few respondents knew about specific open access initiatives such as Budapest open access initiative (none), Open access movement, (8.6 percent) and the OAIster.org (2.9 percent) respectively.

The study by Pelizzari (2003) indicates that colleagues, professional literature, and libraries have been the main sources of learning about open access to those who claimed to be aware of it. On the other hand, self-archiving by their peers, open access debate, institution or library and established subject-based archives promotions were established as being the main means through which researchers were exposed to open access (Swan and Brown, 2004). The most common ways in which open access related terms have been discovered include searching the Internet, participation in debates or via colleagues in their disciplines (Allan, 2005). Open access journals have become an important source for scientific research and development. Eqbal and Khan (2007) found that 88.24% faculty of science are more aware about open access journals. The majority of research scholars in faculty of science and 67.64% and 69.23% faculty of Engineering use Open access journals for research work; whereas 35.29% in faculty of science use Open access journals to update their knowledge and 23.70% in faculty of engineering use them for study. Burton and Chadwick (2000) found that researchers are mostly concerned with access, giving the most positive ratings to sources that were easy to find and understand. Ehikhamenor (2003) states even though 77.5 percent of Nigerian scientists rated Open Access journals as "important" or "very important," their rating was based on expectation rather than actual use. Gbaje (2010) writing on Nigerian academic libraries, found that only 20 percent of those surveyed provide access to open access resources. Many studies have also been conducted to determine the use of Open Access Journals and other e-resources. Smith (2007) looked at South Africa, finding that insufficient bandwidth was a major problem, and the range of open access journals in the respondents' field of interest was fairly limited. Okoye and Ejikeme (2010) also identified unstable power supply and unavailability of internet facilities as constraints to the use of open access to researchers.

The study conducted on the awareness, attitudes, and use of Open Access Journals by Master's Degree Students of the Department of Library, Archival, and Information Studies, University of Ibadan, Nigeria by Ogbomo and Ivwighrehweta (2010) revealed that masters' degree students' of the

Department of Library, Archival and Information Studies, University of Ibadan use of open access journals is high and they have positive attitude towards their use. On the benefits of Open Access journals, the study found that it provides free cost access to their contents, it increases the impact of researchers work and that it makes for easy accessibility of the researchers work. It was also revealed that retrieval of too much irrelevant information, unavailability of internet facilities, download delay, limited access to computer terminals and power outages were some of the problems facing postgraduate students found in the study.

**Research Methodology**

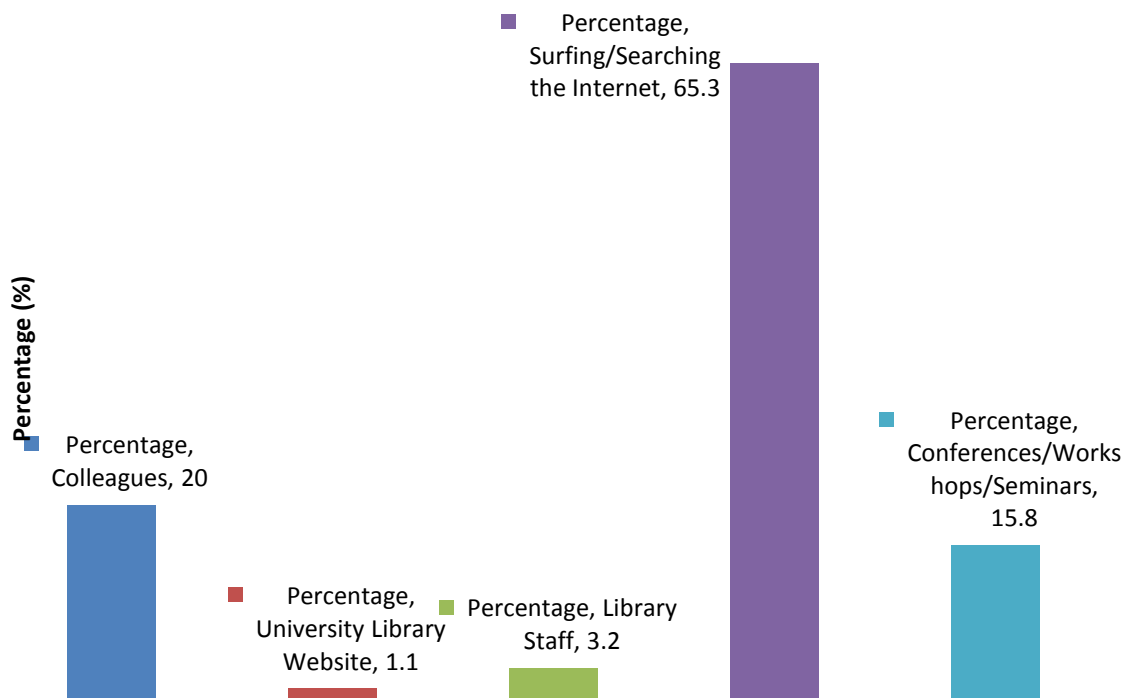
The study employed survey research method. The population of the study consists of all the Postgraduate students in the faculty of science in Ahmadu Bello University, Zaria, Kaduna state Nigeria. A sample size of 100 students were purposively selected from the entire departments in the faculty, purposive sampling will ensure that we get some information from the respondents who are crucial to the study (Aina, 2002). And a total of 100 structured questionnaire entitled “awareness and use of Open Access publications (AUOAP)” were placed in all the departmental libraries within the faculty. 97 copies of the questionnaires were retrieved successfully from the respondent representing 97% respondent rate. Data analysis was

carried out using Statistical Package for Social Science (SPSS), and the outputs were presented with frequency counts and percentages in tables and figures.

**Results and Discussions**

In response to the Awareness and Use of Open Access Scholarly Publications by Postgraduate Students of Faculty of Science in Ahmadu Bello University Zaria (ABU), Kaduna State, Nigeria the following response was provided by the respondents.

Figure 1 sought to find out the channels through which the postgraduate students became aware of OA publications, it shows that 62(65.3%) of the respondents which represent the majority became aware of OA publication by surfing through the Internet. 19(20%) through colleagues, 15(15.8%) through conferences/seminars/workshops, 3(3.2%) through library staff while only 1(1.1%) through library websites. This finding revealed that large number of postgraduate students became aware of OA publication by searching/surfing through the Internet haphazardly; the study is not in conformity with Pelizzari (2003) who indicated that colleagues, professional literature, and libraries have been the main sources of learning about open access to those who claimed to be aware of it, it is also clear from the revelation that library websites are not including links to the popular sources of OA in their websites



**Figure 1: Channels of Awareness of Open Access Publications**

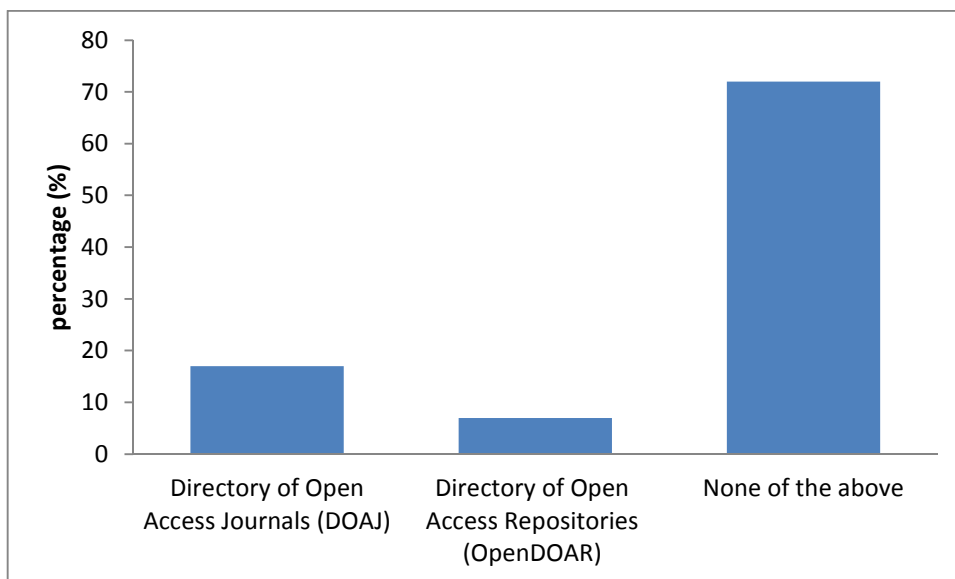


Figure 2: Major sources consulted for Open Access Scholarly Publications

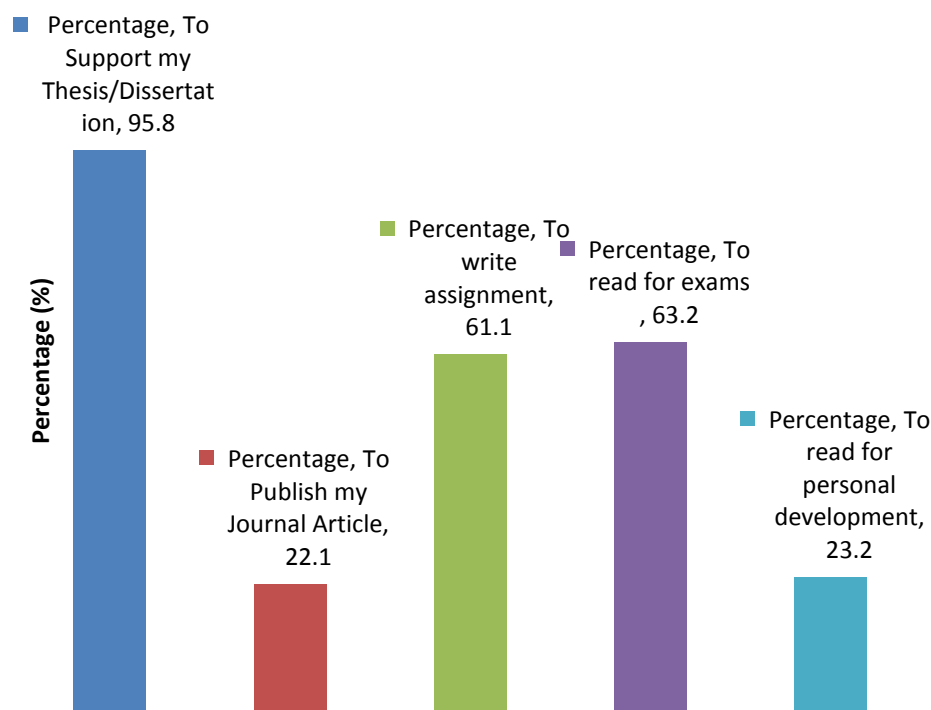
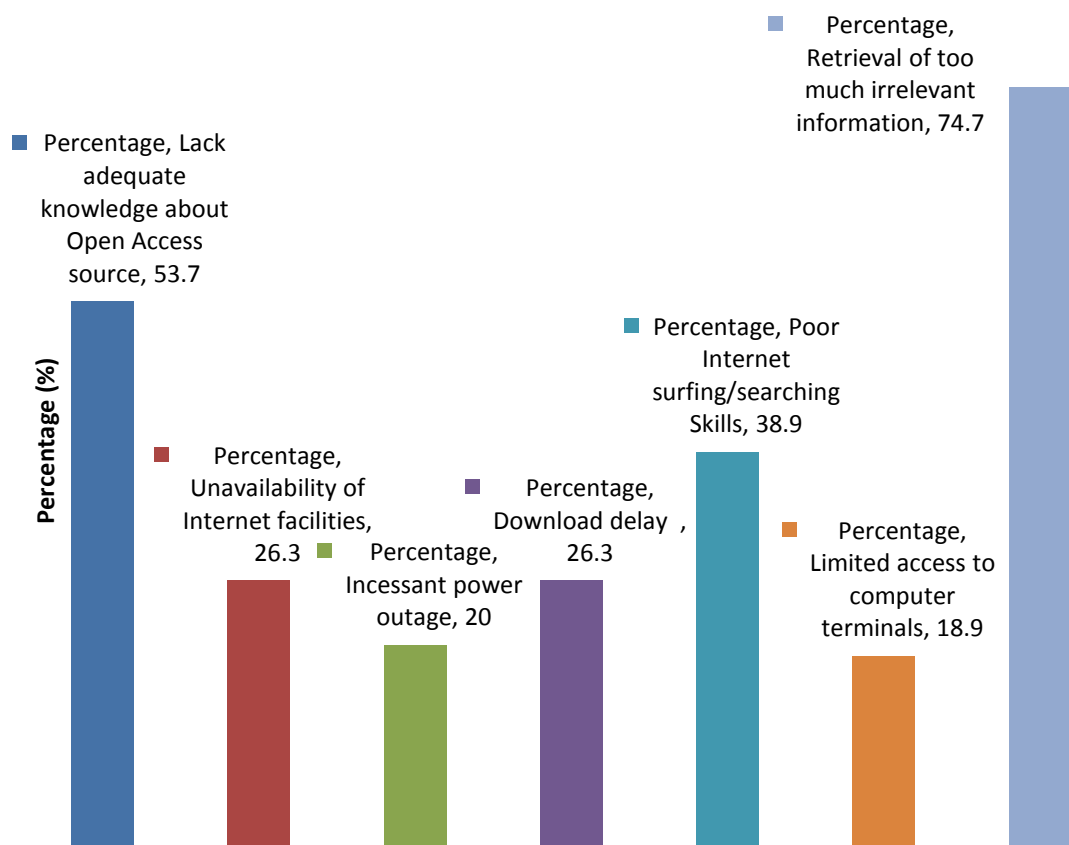


Figure 3: Reasons for Using Open Access Publications

Figure 2 revealed that 72(75.8%) of the respondents are not aware of any of the major sources of OA publications. It shows only 17(17.9%) consult directory of Open Access journals, 7(7.4%) consult directory of OA repository. However, from the table it is clear that the postgraduate students in faculty of science, ABU are not familiar with the most popular

sources of OA literatures. This is in lined with the findings of Greyson, et al (2009) and Christian, (2008) which indicated that open access was an unknown concept to many researchers. In addition to that, it should be noted that even were OA awareness is reported the level of understanding was not uniform for various OA terms.





**Figure 4: Problems Encountered while Using Open Access Publications**

Reasons for the use of OA publication by postgraduate students in ABU as shown figure 3 indicates that 91(95.8%) of the respondent use OA to support their thesis and dissertation, 60(63.2%) use it to read for exams, 58(61.1%) use it to write assignments, 21(22.1%) indicated that their using OA to publish their journal articles. In like manner, almost all the items listed on the table received positive responses which might also be due to free cost of open access journals. This collaborated with the findings of Eqbal and khan (2007) which stated that, majority of the research scholars in faculty of science and faculty of Engineering respectively 67.64% and 69.23% used Open Access journals for research work; whereas 35.29% in faculty of science use Open access journals to update their knowledge and 23.70% in faculty of engineering use them for study.

Lastly, table 4 and figure 4 revealed the challenges encountered by postgraduate students in ABU while accessing OA publication. 71(74.7%) respondents indicated that their encountered problem of retrieval of too much irrelevant information, 51(53.7%) indicated lack of adequate knowledge of OA sources, 37(38.9%) said poor Internet surfing skills, 25(26.3%) are as a result of unavailability of

Internet facilities and download delay respectively, 19(20.0%) said incessant power supply, 18(18.9%) said limited access to computer terminals. It is apparent to note that the problem of retrieval of too much irrelevant information may not be unconnected with the poor searching skills of the students; the study is also contrary to the findings of Okoye and Ejikeme (2010) which revealed that unstable power supply and unavailability of Internet facilities as constraints to the use of open access to researchers. The students face less problem of Internet connectivity compared to past studies as result of the campus network available in ABU, Zaria.

### Conclusion

The study investigated Awareness and Use of Open Access Scholarly Publications by Post graduate students in faculty of Science, Ahmadu Bello University, Zaria, Kaduna State, Nigeria. The study revealed that, the postgraduate students of faculty of science in Ahmadu Bello University Zaria are not fully aware of the major sources of OA publications; surfing/searching through the Internet haphazardly is the major channel through which they became aware of OA publications; postgraduate students of faculty of science in Ahmadu Bello University Zaria

predominantly use OA publications to support their thesis/dissertations; majority of the students encounter challenge such as excess irrelevant information while using OA publications. The relevance of OA Scholarly publications will assist scholars and researchers in no small measure with the complete, accurate, available, timely and relevant information for research and development.

### Recommendations

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

1. Librarians, Lecturers and others stake holders in the faculty should intensify efforts in making awareness on the important of OA Scholarly Publications.
2. Academic libraries should organise training on interval basis to educate postgraduate students on the major sources of OA publications.
3. Faculties and academic libraries should also guide and encourage postgraduate students on publishing in OA journal.
4. Libraries and other relevant stakeholders should organise training on interval basis to acquaint postgraduate students with effective Internet searching skills.

### References

- Albert, K.M. (2006). Open Access: Implications for Scholarly Publishing and Medical Libraries. *Journal of Medical Library Association* 94(3): 253–262.
- Allan, J. (2005). Interdisciplinary differences in attitudes towards deposit in institutional repositories. Unpublished. Masters dissertation, Manchester Metropolitan University. Retrieved on 03/07/2013 from <http://eprints.rclis.org/archive/00005180>.
- Ashworth, S. (2006). Role of Librarians in the Development of Institutional Repositories Retrieved on 03/07/2013 from <http://www.pfsl.poznan.pl/oa/ppt/2.ppt>.
- Brody T., Carr L., Gingras Y., Hajjem C., Harnad S. and Swan, A. (2007). Incentivizing the open access research web. CTWatch quarterly. retrieved on 09/06/2013 from <http://www.ctwatch.org/quarterly/articles/2007/08/incentivizing-the-open-access-research-web/>.
- Budapest Open Access Initiative (BOAI). 2002. Retrieved on 03/07/2013 from <http://www.soros.org/openaccess/read.shtml>.
- Burton, V., & Chadwick, S.A. (2000). Investigating the practices of student researchers: Patterns of use and criteria for use of Internet and library sources. *Computers and Composition*, 17 (3): 309-328.
- Chan, L. (2009). Open Access: Promises and Challenges of Scholarship in the Digital Age. Retrieved on 03/07/2013 from [http://www.academic\\_matters\\_printable\\_article.aspx.Catelogitemid>2477](http://www.academic_matters_printable_article.aspx.Catelogitemid>2477)
- Christian, G. E., (2008). Open access Initiative and the Developing World African Journal of Library, Archives and Information Science, 18 (2). 21-23
- Dinev, T. Hu, Q. & Goo, J. (2005). “User Behavior toward Preventive Technologies – Examining Cross-cultural Differences between the United states and South Korea”, Proceedings of the 13th Annual Cross-Cultural Research in Information Systems Conference (CCRIIS 2005). Las Vegas, USA.
- Dulle, F. W. (2008). Open Access Publishing: The Emerging Opportunity for Wider Dissemination of Scholarly Output. A paper presented at PANTIL Annual Research Workshop, 06-09 October, 2008, Dodoma, Tanzania.
- Ehikhamenor, A. (2003). Internet Resources and Production in Scientific Research in a Nigerian University. *Journal of Information Science* 29 (2):102-116
- Eqbal, M., & Khan, A. (2007). Use of Electronic Journals by the Research Scholars of Faculty of Science and Faculty of Engineering, Amu, Aligarh: A comparative study. *Library and Information Networking (NACLIN), DELNET, New Delhi*, pp 98-132.
- Retrieved on 24/05/2013 from [http://eprints.rclis.org/archive/00010749/01/SAJLIS\\_73\(1\)04.pdf](http://eprints.rclis.org/archive/00010749/01/SAJLIS_73(1)04.pdf).
- Fullard, A. (2007). South African responses to open access publishing: a Survey of the Research Community.” *South African Journal of Library and Information Science* 73 (1), 40–50.
- Gbaje, E. S. (2007). Awareness of Electronic Journals. Retrieved on 03/07/2013 from <http://www.anc.edu/publ/scomm/lib.456.htm>.
- Gbaje, E.S. (2010). Open Access Journal Publishing in Ahmadu Bello University Zaria, Nigeria. Paper Presented at the 76th General Conference and Assembly of the International Federation of Library

- Associations and Institutions (IFLA), 10 - 15 August, 2010, Gothenburg, Sweden.
- Greyson, D, Vezuna, K, Morrison, H, Taylor, D & Black, C. (2009). University supports for open access: a Canadian national survey. *Canadian journal of higher education*, 39 (3): 1-32. Retrieved on 20/05/2013 from: [http://spectrum.library.concordia.ca/6566/1/university\\_supports\\_for\\_OA.pdf](http://spectrum.library.concordia.ca/6566/1/university_supports_for_OA.pdf)[www.ifla.org/files/hq/papers/ifla75/105-kiran-en.pdf](http://www.ifla.org/files/hq/papers/ifla75/105-kiran-en.pdf).
- Jensen, M. (2010). Open Access: Lowering the Costs of International Bandwidth in Africa, APC Issue Papers. Accessed on April 02, 2013 from [http://www.researchictafrica.net/images/upload/open\\_access\\_EN.pdf](http://www.researchictafrica.net/images/upload/open_access_EN.pdf).
- Johnson, R. K. (2002). Institutional Repositories: Partnership with Faculty to Enhance Scholarly Communication. *D-Lib magazine*, 8 (11). Retrieved on 03/07/2013 from <http://www.dlib/november02/Johnson/11johnson.html>
- Ogbomo, M. O. and Iwighrehweta, O. (2010). Awareness, Attitudes, and Use of Open Access Journals by Master's Degree Students of the Department of Library, Archival, and Information Studies, University of Ibadan, Nigeria. Retrieved on 01/05/2013 from <http://unlib.unl.edu/LPP/PNLA%20Quarterly/ogbomo-ivrighwewheta77-2.htm>.
- Okoye, M., & Ejikeme, A. (2010). Open access, Institutional Repositories and Scholarly publishing: The role of librarians in South East Nigeria. *Journal of Nigeria Library Association: 48th National Conference*.
- Papin–Ramcharan, J. I. & Dawe, R. A (2006). Open access publishing: A developing country view. *First Monday: Peer-Reviewed Journal on the Internet*, 11(6) Retrieved on 22/06/2013 from [http://firstmonday.org/issues/issue11\\_6/papin/index.html](http://firstmonday.org/issues/issue11_6/papin/index.html).
- Pelizzari, E. (2003). Lecturers use, perception and expectations about open-access archives: a survey of social science sector at Brescia University. Retrieved on 10/05/2013 from: [http://prints.rclis.org/archive/00000737/01/Academic\\_staff-perception\\_abot\\_arch](http://prints.rclis.org/archive/00000737/01/Academic_staff-perception_abot_arch).
- Sanchez-Tarrago, N & Fernandez-Molina, J.C. (2009). The open access movement and Cuban health research work: an author survey. *Health information and libraries journal*, 27 (1): 66-74. Retrieved on 21/03/2013 from: <http://www3.interscience.wiley.com/cgi-bin/fulltext/122647800/PDFSTART>
- Smith, T. (2007). Survey of open access barriers to scientific information: providing an appropriate pattern for scientific communication in Iran. In: *GL7 Conference Proceedings*. Retrieved on 03/07/2013 from <http://www.greynet.org/>.
- Suber, P. (2006). Open Access Overview. Retrieved on 29/04/2013 from <http://www.earlham.edu/~peters/fos/overview.htm>.
- Swan, A. & Brown, S. (2004). JISC/OSI Journal authors survey report, key prospects, Truro. Retrieved on 11/06/2013 from: [http://www.jisc.ac.uk/uploaded\\_documents/JISCOAreport1.pdf](http://www.jisc.ac.uk/uploaded_documents/JISCOAreport1.pdf)
- The Open Citation Project. (2004). The Effect of Open Access and Downloads ('hits') on Citation Impact: A Bibliography of Studies. Retrieved on 03/07/2013 from <http://opcit.eprints.org/oacitation-biblio.html>.
- Warlick, S. E. & Voughan, K. T. (2006). Factor influencing publication choice: why faculty choose open access. *Biomedical digital libraries* 4 (1). Retrieved on 04/04/2013 from: <http://www.pubmedcentral.nih.gov/picrender.fcgi?article=1832218blobtype=pdf>.