

## ELECTRONIC PUBLISHING AND OPEN ACCESS TO INFORMATION: THE NIGERIAN SITUATION

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### ABSTRACT

Publishing has transited from traditional to Electronic format making information resources available to users without much subscription. E-publishing is engendered by the introduction of information and communication technology (ICT), this development has brought about increase in the number of scholarly communication in circulation. The awareness and rate of e-publishing differs among faculties, it based on this that this study was carried out to survey the situation of e-publishing and open access of librarians in three federal universities in Southern Nigeria, five research questions were formulated to guide the study. The methodology adopted is descriptive survey, questionnaire was given to a total population of 64 librarians consisting of librarians from the institutions understudy, the data collected from the study shows that though librarians are aware of e-publishing but they have not being publishing as should have been expected in University of Nigeria Nsukka (UNN) out of the 95% that aware of electronic publishing only 30% have published there articles electronically, in University of Lagos (UNILAG) 100% indicated that they have published electronically while in University of Benin (UNIBEN) 45.4% percent indicated yes while 54.5% said they have not published their articles electronically. On availability of open access it was discovered that they have access as a total of 84% from UNN responded Yes, UNILAG 100% said Yes while in UNIBEN 90.9%. The following problems based on their scoring militating against e-publishing and open access in Nigeria. Inadequate power supply; inadequate computer terminals; inadequate funding for subscription payment.

**Keywords:** Electronic Publishing; Open Access; Library; Research.

### 1 INTRODUCTION

Availability of e-publishing and open access has contributed a lot to research and academic development in the developed countries. This does not seem to be the

case in most developing countries because factors like awareness of electronic publishing and open access database. It is believed that libraries, librarians and academics in developing countries of the world especially Nigeria can also benefit from e-publishing and open access database, though lots of mitigating factors are in play. As, Alasia (2007) categorically stated that poor awareness of its existence amongst the academia, lack of infrastructure and funding, lack of institutional based collaborations to develop internet based archives of scholarly work in Nigeria are mitigating tendencies towards e-publishing and open access database, thus preventing greater accessibility of scholarly based information resources.

In this changing environment of scholarly communication, academic and research libraries need to be agile, creative, risk taking and innovative in order to respond to the need of a new generation of faculty and students. E-publishing and open access database must play a greater role in the Nigerian academic environment in order to address the dwindling level of academic research output. An earlier report by 'Task Force' (2000) showed that the number of scientific publication in Nigeria is on the decline, as the 711 (seven hundred and eleven) articles published in 1995 is significantly less than the publication output of 1.062 (one thousand and sixty-two) scientific publication in 1981 from a comparatively smaller university system. This low research output indicates low priority accorded university infrastructure and facilities, especially the libraries. For example, Hartnett (2000) revealed that Nigerian federal university system spends only 1.3% of its budget on research and library development. This practice has continuously affected libraries mode of operation as no university can function adequately without prioritizing the positioning and use of the library.

The above statement is an indication that the use and subscription to these novel innovations is poor in Nigeria. Aguolu and Aguolu (*apud* OCHOGWU, 2007) expressed this problem many years ago when they observed that the availability of information resources via the electronic format does not necessarily mean its accessibility, not to speak of use.

Most times the librarians lack the necessary ICT skills needed to harness these resources, since it is virtually through the means of ICT that open access

database and electronic publishing could be accessed. Therefore this prompted the researchers to investigate the degree to which librarians use the open access database and e-publishing facilities in university libraries, the importance of the novel trends to Nigeria educational academia and problem hindering their use.

## **2 RESEARCH QUESTIONS**

The following research questions were formulated to guide the study:

- a) Do you have e-publishing facilities and open access database in your institutional library?
- b) Are you aware of e-publishing mediums and open access database in your institutional journals?
- c) Have you published your articles in electronic journals?
- d) Does e-publishing and open access database lead to information resource growth and knowledge sharing in Nigeria?
- e) What are the problem hindering effective access and use of electronic publishing and open access database in Nigeria?
- f) What strategies can be adopted to ensure effective access and use of e-publishing facilities and open access database in Nigeria?

## **3 LITERATURE REVIEW**

The aphorism that there will be a total eradication of print (paper) information resources is gradually taking shape all around the academic and social world. This is significant as the manual process of selection, acquisition, and publishing of information resources has transitioned to electronically enhanced means of performing the library functions of book or journal publishing and information sourcing for patrons, otherwise called electronic publishing and open access.

Electronic publishing connotes the digital publication of books and journal articles and the development of digital libraries and catalogues. Montgomery (2000) was of the opinion that electronic publishing is the availability of means of publishing

an information resource that is usually published manually in electronic form. These materials when published can be accessed in open access or for a subscription fee. It has become so common in publishing where it has been argued that paper journals are in the process of being replaced by electronic publishing. However, a significant barrier still remains in accessing these electronic publications, especially when one considers the financial constraints involved in having access to them, in terms of policy agreements, purchase, subscription, technical know-how and technologies required for easy access.

The advantages of e-publishing can be summarized as follows: fewer overheads such as printing and distribution costs, more information can be stored electronically than on paper. Similarly, Limb (2005) opined that E-publishing in Africa has the potential to achieving savings, great speed of information delivery both within Africa and globally. These benefits therefore are seen by Mutshewa and Rao (2000) are being optimized and used by African publishers, scholars, librarians and administrators.

Circulation of e-publishing is faster because changes can be made on the articles and Publishers can publish manuscripts much faster than they would if they were printed. Majority of the times, these articles are published in open access and can be accessed by users without paying a subscription fee. Also thousands of manuscripts are rejected everyday by traditional publishers. This is the reason behind 'e-publishing' becoming a popular and profitable alternative. You have a better chance of getting published with the help of electronic publishing. E-publishing and open access enhances roles of librarians as it enables access to numerous resources which they utilize in service provision to the library's clientele.

The open access (OA) includes both electronic journal publishing and author self-archive in digital repositories or on personal websites that is aimed at making scholarly interactions freely available on the web. Nwali (1991) opined that Open Access is digital works that are made available often at no cost to the reader on the public internet for purpose of education and research. In addition to that, Wiki (2007) asserts that in publishing, electronic publishing and open access database has

established itself as a major player and advocate in, academic, social research, improvement for participating libraries and academics.

In the words of Kuchma (2009) it promotes participation in policies and practices in international and national arenas. Similarly Hammes (2008) opined that open access supports the vision of the faculty to contribute towards the development of knowledge in our disciplines. This implies other roles for libraries, librarians can use their expertise to help researchers understand how open access will bring faster and broader access to research work. Tonta, Unal and Al (2007) defined open access as “[...] free access to scientific publication” the authors further highlighted that a complete version of the work is deposited and published in an online repository which is maintained and managed by an institution or other agencies that supports open access.

The open access is important because it increases the research impact of academics since the articles can be freely accessed. In addition to that Lawrence (2001) and Harnad and Brody (2004) opined that open access increases the research impact of the publicly funded research, which creates opportunity for more research thereby increasing the return on investment. Similarly the *Budapest Open Access Initiative* (2002) described OA as providing access to literature and information freely available on the public internet, permitting users to read, download, copy, distribute, print, search link to the full text of these articles, pass them as data to software or use them for any other lawful purpose.

It is important to mention that many institutional repositories are built on open access, which has attracted much citation and consequent increase in the visibility of the academics and the institution. This was evidenced in the work of Tonta, Unal and Al (2007) on research impact of open access journal, they identified the total number of articles published in OA journals in 1999, 2001 and 2003 from the 9 (nine) disciplines, 304 (three hundred four) journals were identified from Directory of Open Access Journals (DOAJ<sup>1</sup>), out of which 46 (forty-six) journals were sampled, the total number of articles in the sampled journals is 5.982 (five thousand nine hundred eighty-two) articles, sampling 30 (thirty) articles from each discipline, which totaled 270 (two hundred and seventy) articles for the 9 (nine) disciplines. The 270 (two

hundred and seventy) articles were searched on *Scopus*<sup>2</sup> for citations the result showed that all the OA articles were cited 761 (seven hundred and sixty-one) times and the average number per OA articles ranges between 0.8 (3.2%) and 6.4 (25.2%).

This implies that being in OA platform increases the rate of citation of such articles since the users do not pay for the articles. In another development Vigen (2009) stated that the goal of open access is to grant anyone anywhere, anytime free access to the results of scientific research. The author further highlighted that the OA is driven mostly by the 'serials crises of the ever rising cost of journals which has caused some libraries to cancel some of the subscription and secondly the increasing awareness that results of public- funded research should be generally available for access and use by the public.

Availability of web sites containing electronic publishing information resources that are open for free use by libraries, librarians and entire university community such as *Agora*<sup>3</sup>, *Journal Storage* (JSTOR), *Aluka*<sup>4</sup>, *The Association of Commonwealth Universities* (ACU<sup>5</sup>), *Oxford Online*<sup>6</sup>, *PubMed*<sup>7</sup>, *BioOne*<sup>8</sup>, DOAJ, to mention a few, will in no small way contribute not only to the growth of library collections but to the satisfaction and intellectual growth of library users. In support of this statement, Kuchma (2009) stated that libraries which participate in the *Electronic Information for Libraries* (eIFL<sup>9</sup>) network become effective advocates for knowledge sharing and management, and eIFL work has as a result contributed to increased understanding of open access and adoption of open access policies by Universities, research organization and a growing number of open repositories.

Limb (2005) highlighted that many experts are of the view that microform is the reliable form of preservation, and there are doubts about web reliability and longevity in African conditions. The author further commented the issues the creative solution to the problem of limited bandwidth. This is an important issue to address on E-publishing because it requires a broad bandwidth to facilitate the project.

Besides that Lhotak and Chyla (2009) highlighted that some journals will decide to go open access, but probably not before they have the publishing infrastructure at place and the cost of running the journal. The authors further stressed that, journals will continue to be dependent on the institution to be

dependent on the institute's budget, but open access must not worsen this. Only if this problem is solved in a satisfactory manner can journal make the radical change from the traditional into an open-access mode.

#### 4 METHODOLOGY

This study adopted descriptive survey method. The total population for the study was 64 (sixty four) librarians (Table 1) working in the libraries in the 3 (three) selected federal universities in Southern Nigeria. They are University of Nigeria Nsukka (UNN) in South-East; University of Lagos (UNLAG) in South-West; and University of Benin (UNIBEN) in South-South. The questionnaire was the instrument for data collection, and it has 5 (five) parts: A, B, C, D and E according to the stated research questions. The researchers personally administered the questionnaires to the respondents; it was collected from them after some days. Data collected were analyzed using statistical tools of frequency counts, simple percentages.

#### 5 DATA ANALYSIS PRESENTATION

The collected data were organized and analyzed with the initial research questions.

**Table 1: Rate of response.**

Universities	Number Distributed	Number Returned	%
University of Nigeria Nsukka (UNN)	50	37	74%
University of Lagos (UNILAG)	19	16	84.2%
University of Benin (UNIBEN)	15	11	73%

The Table 1 highlights that out of the 50 (fifty) questionnaires distributed in UNN, only 37 (thirty-seven) (74%) was returned; for UNILAG, 19 (nineteen) was distributed and only 16 (sixteen) (84.2%) was returned, while in UNIBEN 15 (fifteen) was distributed and 11 (eleven) (73%) was used returned. Thus, 64 (sixty four) (76.2%) was returned and found usable for the study. This response rate is adjudged

to be high due to the fact that most people in this part of the world tightly hold on to their opinions and don't usually complete questionnaires.

**Table 2: Qualifications of respondents.**

<b>Universities</b>	<b>B.L.S.</b>	<b>B.Sc.</b>	<b>M.L.S</b>	<b>Ph.D.</b>
UNN	-	11 (30%)	23 (62%)	3 (8%)
UNILAG	-	-	16 (100%)	-
UNIBEN	4 (36.4%)	2 (18.1%)	5 (45.5%)	-

**Legenda:**

Bachelor of Library Science (B.L.S.);

Bachelor of Science (B.Sc.);

Master of Library Science and Information Science (M.L.S.);

Doctorate of Library Science and Information Science (Ph.D.).

The Table 2 showed that in UNN 30% have B.Sc., 62% holds MLS while 8% holds Ph.D. in Library and Information Science. For UNILAG they all have M.L.S. for UNIBEN 36.4% has B.L.S., 18.1% has B.Sc., while 45.5% has M.L.S. This means that majority of the respondents are professionals in the librarianship profession. This is as the calculated percentage indicates they have M.L.S in Library and Information Science, which is good since they professionals will be able to proffer concrete answers to the questions posed by the research given the notion that they are well schooled in librarianship, thus making the findings more reliable and acceptable.

**Table 3: Years of experience.**

<b>Universities</b>	<b>1-5yrs</b>	<b>6-10yrs</b>	<b>11-15yrs</b>	<b>16-20yrs</b>	<b>21yrs &amp; Above</b>
<b>UNN</b>	38%	16%	16%	19%	11%
<b>UNILAG</b>	43.7%	18.7%	6.3%	6.3%	25%
<b>UNIBEN</b>	18.2%	36.4%	9%	18.2%	18.2%

The Table 3 shows that in UNN, out of the respondents majority, (38%) has worked between 1-5yrs, (16%) has worked for between 6-10yrs, and 11-15yrs respectively, while (19%) has worked for 16-20yrs and 11% has worked for 21yrs and above. Also, it was revealed that in UNILAG, (43.7%) of the selected respond have worked for between 1-5yrs, (18.7%) have worked between 6-10yrs, (6.3%) has worked between 11-15yrs and 16-20yrs respectively, while only (25%) has worked



for 21yrs and above. Furthermore, statistics from UNIBEN showed that, (18.2%) respondents have worked between 1-5yrs, (36.4%) have worked between 6-10yrs, (9%) has worked between 11-15yrs, while (18.2) has worked between 16-20yrs and 21yrs and above respectively.

These finding in Table 3, has put the research in good stead, since majority of the respondent as shown in the above table has worked for an average of 13 (thirteen) years. This is an indication that they will be aware of the importance of publishing in academic environment, vis-à-vis will be able to differentiate between e-publishing and manual publishing and also the need to read works by others and also to be read by other researchers. By implication, their responses to questions proffered in subsequent sections will be of immense value to the research findings proper judging by their knowledge gained from years of experience.

### **5.1 Availability of E-Publishing Facilities and Open Access Database**

Respondents were asked if they have access to online journals in their institutions. Majority of the respondents agreed that they have electronic publishing facilities in their universities. Thus, their response is as follows, UNN 84% responded, Yes; UNILAG 100% said Yes; UNIBEN 90.9% responded yes. Furthermore, a follow up question on availability of open access database was coined. It was also revealed that majority of the respondents response showed that there are open access database in universities. Hence, the responses showing that in UNN (76%) indicated Yes; UNLAG (100%) responded Yes, UNIBEN (90.9%) responded Yes. This finding by implication is stating that librarians from institutions under study (universities) are aware of the trend, electronic publishing and open access database and also it signifies the availability of e-publishing facilities and open access database in their institutions.

Further findings corroborated the above findings, as it is revealed that open access databases are available and are being accessed in these institutions, these open access databases as indicated by respondents include; JSTOR, EBSCO Host<sup>10</sup>, Agora, Oxford Online Journals, E-Journals<sup>11</sup>, International Network for the

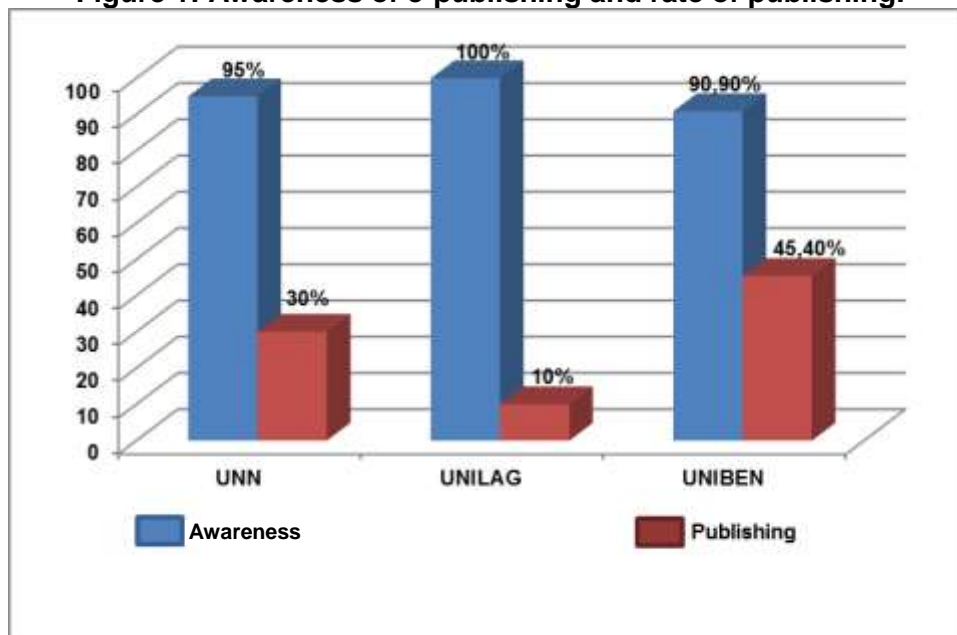
Availability of Scientific Publications (INASP)<sup>12</sup>, UN-Documents<sup>13</sup>, ACU, DOAJ, High Wire<sup>14</sup>. These findings are indications that electronic publishing facilities and open access database are available in university libraries. Based on the responses of librarians from the institutions under study, on availability of e-publishing and open access database, the researcher sought to know if these librarians are aware that they can publish in open access journals, their responses are as shown in table 4 below.

**Table 4: Awareness of e-publishing and rate of publishing.**

<b>Institution</b>	<b>Awareness of E-Publishing</b>	<b>Rate of Publishing</b>
<b>UNN</b>	95%	30%
<b>UNILAG</b>	100%	10%
<b>UNIBEN</b>	90.9%	45.4%

The Table 4 revealed the level of awareness of e-publishing and rate of publishing of librarians. Majority of the respondents (librarians) are aware of the electronic publishing trend. This is based on 95% of the respondents in UNN, 100% of the respondents from UNILAG, and 90.9% in UNIBEN that all indicated that they are aware of the trend. However, awareness of electronic publishing facilities does not correspond with the usage. Findings revealed that the use of e-publishing for publication is poor. This is as only (30%) of the respondents in UNN have published their articles electronically, in UNILAG (10%) of the respondent agreed to have published electronically, while in UNIBEN (45.4%) have published electronically. This analysis showed that librarians are not utilizing electronic publishing facilities properly despite the fact that majority of them indicated that they are aware of the e-publishing facilities in their university libraries. This finding further showed that years of experience in the profession is not a determinant of the rate and extent of electronic publishing by librarians, if not one would have expected the librarians in UNN and UNIBEN to have the highest visibility rate in terms of e-publishing when looked at their years of experience (Figure 1).

Figure 1: Awareness of e-publishing and rate of publishing.



## 5.2 E-Publishing and Open Access as Way for Knowledge Growth and Information Sharing

The respondents were asked if e-publishing facilities and open access database contribute to knowledge sharing among academics and libraries. Responses indicated that e-publishing facilities and open access database contribute to academic activities. This is as majority of the respondents of UNN (95%); of UNIBEN (100%); and of UNILAG (100%), stated that these novel trends in libraries facilitate increase in knowledge base and information sharing. Similarly, the researchers were asked if e-publishing and open access database enhances information publishing by Nigerian academics, majority (95%) from UNN, (75%) from UNILAG, and (100%) from UNIBEN responded positively.

This implies that the librarians have witnessed tremendous increase in their library collection either electronically or manually as a result of open access and electronic publishing; this is quite encouraging as many libraries now resort to online resources because of high subscription rate of printed journals and delays in the selection process of printed materials. The open access encourages knowledge sharing since researchers can access information with complete independence.

**Table 5: Problems militating against e-publishing and open access.**

Problems		VLE	LE	LWE	VLE
1	Inadequate power supply	64%	20%	9%	3%
2	Inadequate computer terminals	40%	40.5%	12.5%	6%
3	Librarians lack of computing skills	2.2%	37.5%	23.4%	12.5%
4	Users lack of computing skills	26.5%	43.7%	18.7%	7.8%
5	Internet Accessibility problem low band width	39%	35.9%	14.0%	10.9%
6	Inadequate funding for subscription payment	40.6%	35.9%	6.2%	4.6%
7	Lack of library personal VSAT facility by patrons	48.4%	30%	15.6%	3%
8	Low level of use of the E-publishing and Open access facilities by patrons	31%	37.5%	21.8%	7.8%

The Table 5 revealed that the problems preventing widespread e-publishing and access to open access database in Nigeria, includes that of Inadequate power supply, inadequate computer terminals, inadequate funding for subscription payment, Lack of library personal VSAT facility by patrons, low level of use of e-publishing and open access facilities by patrons and Internet Accessibility problem (low band width).

## 6 FINDINGS OF THE STUDY

Based on the analyzed data, it was deduced that:

- There exist e-publishing facilities and open access database in university libraries in Nigeria.
- Librarians are aware of the e-publishing facilities and open access database in their libraries.
- The use of the electronic publishing facilities and open access database is poor.
- Librarians are aware that the presence and use of the e-publishing facilities and open access database by scholars and researchers lead to the growth of information resources and knowledge sharing amongst institutions.

- Inadequate power supply, inadequate funding, inadequate bandwidth, and low level of use by patrons are problems that hinder the availability and use of e-publishing facilities and open access database.

## 7 CONCLUSIONS

Electronic publishing facilities and open access database to libraries are *sine qua non* in this age of information globalization. They are now important means of sharing information among scholars and researchers. The main essence of information has shifted from ownership to access, if researchers cannot access the intellectual works produced by colleagues it will not be encouraging because these works are part of our institutional assets and hence should be preserved.

The visibility of research works helps to avoid duplication of the same work by other researchers. This paper revealed the extent of availability, awareness and importance of e-publishing facilities and open access database among academic librarians in the 3 (three) Nigerian University Libraries. From the work it shows that though librarians are aware of e-publishing but they have not being publishing electronically as expected. Though they are aware of the availability of open access journals they have access to a number of them. Our researchers should be encouraged to publish in open access journals as this will help to ensure their rate of visibility, and they will also contribute to the global information network.

## 8 RECOMMENDATIONS

Having looked at the situation of e-publishing facilities and open access database in 3 (three) federal university libraries in southern Nigeria, as shown by the findings, the following recommendations were made in order to improve access and use of electronic publishing facilities and open access database among scholars and researchers in Nigerian universities:

- Creating of awareness on the availability of these facilities, many librarians are not conversant with how to navigate the web to harvest

some of the important resources available it becomes imperative that their colleagues should carry them along;

- Librarians should support open access by publishing their articles in such sites to enable other researchers utilizes their resources;
- If the call for adoption of e-publishing and open access continues on its current trajectory, progressively gaining momentum, it carries with it significant implications for academic libraries in Nigeria. This makes it imperative for librarians to strengthen their role as facilitator in the development of research and learning.

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## NOTES

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- <sup>1</sup> The aim of the *DOAJ* is to increase the visibility and ease of use of open access scientific and scholarly journals, thereby promoting their increased usage and impact. The DOAJ aims to be comprehensive and cover all open access scientific and scholarly journals that use a quality control system to guarantee the content. Source: <<http://www.doaj.org/>>.
- <sup>2</sup> *Scopus* is the largest abstract and citation database of peer-reviewed research literature with more than 20,500 titles from more than 5,000 international publishers. Source: <<http://www.info.sciverse.com/scopus/scopus-in-detail/facts>>.
- <sup>3</sup> The *Agora Project* will improve the spread of European research results in the field of European philosophy and advance new paradigms of open access publishing, peer review and rendering by interlinking current scientific information (scholarly research output) among each other and its underlying datasets (digital reproductions of primary sources and text editions). Source: <[http://ec.europa.eu/information\\_society/apps/projects/factsheet/index.cfm?project\\_ref=270904](http://ec.europa.eu/information_society/apps/projects/factsheet/index.cfm?project_ref=270904)>.
- <sup>4</sup> *Aluka* is an international, collaborative initiative building a digital library of scholarly resources from and about Africa. Today there are three collections that are made available to educational, research, and cultural institutions around the world. Source: <[http://www.aluka.org/page/homepage/welcome\\_en.jsp](http://www.aluka.org/page/homepage/welcome_en.jsp)>.
- <sup>5</sup> As the oldest international university network in the world, the ACU has been serving its members for nearly 100 years. With over 500 members, we are rapidly expanding to be fully representative of the range of public and private universities throughout the Commonwealth. Source: <<https://www.acu.ac.uk/>>.
- <sup>6</sup> *Oxford Online* is mission-driven to facilitate the widest possible dissemination of high-quality research. We embrace both green and gold open access (OA) publishing to support this mission. Source: <<http://www.oxfordjournals.org/oxfordopen/>>.
- <sup>7</sup> *PubMed* comprises more than 22 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites. Source: <<http://www.ncbi.nlm.nih.gov/pubmed/>>.
- <sup>8</sup> *BioOne* sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research. Source: <<http://www.bioone.org/page/about/organization/mission>>.
- <sup>9</sup> *EIFL* works with libraries worldwide to enable access to digital information in developing and transition countries. We are an international not-for-profit organization based in Europe with a global network of partners. Source: <<http://www.eifl.net/home>>.
- <sup>10</sup> *EBSCOhost* databases and discovery technologies are the most-used, premium online information resources for tens of thousands of institutions worldwide, representing millions of end-users. Source: <<http://www.ebscohost.com/>>.
- <sup>11</sup> *E-Journals* presents revised texts in English from open sources. Source: <<http://www.e-journals.org/>>.

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- <sup>12</sup> *INASP* is an international development charity working with a global network of partners to improve access, production and use of research information and knowledge, so that countries are equipped to solve their development challenges. Source: <<http://www.inasp.info/>>.
- <sup>13</sup> At the UN's e-Subscription page you are now able to select what documents you want to receive by email or RSS feed. Available documents include the UN Journal, as well as documents from the General Assembly, Security Council, Human Rights Council, Economic and Social Council and others. Source: <<http://www.un.org/en/documents/>>.
- <sup>14</sup> High Wire is an electronic publications platform of press, independent publishers, societies, associations and university presses, to facilitate the digital dissemination of 1785 journals, reference works, books and conference proceedings. Source: <<http://highwire.stanford.edu/>>.

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