Availability of Information Resources As Determinants of Undergraduates' Use of Internet Search Engines in Two Universities in Oyo State, Nigeria

Chuks Daniel Oriogu (Blis, Mlis)

Nigerian Turkish Nile University Library Abuja, Nigeria

Abstract

This study focuses on the extent of use of Internet search engines, availability, accessibility and adequacy of information resources to undergraduates' of university of Ibadan and Lead City University Ibadan in Oyo State, Nigeria. The findings shows that majority of the respondents use Internet search engines very often but do not use Boolean operators and advanced options of search engines in searching information on the Web. However, the study revealed that books, journals, Internet, reference sources, Online Public Access Catalogue (OPAC), library catalogue, newspapers /magazines, theses/dissertation etc are available, adequate and accessible but e-books, e-journals, e-database are available, adequate but not accessible in the university libraries. Therefore, university libraries should sensitize students by creating awareness of numerous functional Internet search engines and their search mechanism and also make provision for access to and use of e-resources.
Key Words: Availability of information resources, Use, Internet search engines, Oyo State, Nigeria.

Introduction: The application of information technology in creation, storage, retrieval and dissemination of information has provides users with easy access to information, provision of remote access to information, provision of round the clock access to users, up-to-date and unlimited access to information from different sources. Jaeger (2007) asserts that without access to information, there can be no exchange, use, collection or management of information.

Nwalo (2012) assert that, the World Wide Web and the Internet have created a new mode of universal access whereby information seekers, by mere click of the mouse on the computer or the button in other electronic devices can have access to a whole world of information. It is this greatest exponent of information revolution that is now the main source and means of retrieval in the world. Thus, Internet search engines are currently the most used means for searching the Web. However, the main problem is that the indexing techniques that employ often result in large number of search hits or result, many of which may not be relevant. In addition, many users are not skilled at searching techniques and so many find searching on the Web rather daunting. Search engines are different in speed, size, contents, ranking schemes and searching options. Some require quotes around phrases and others do not, some supports the use of Boolean operators in advanced searching. Therefore, it is imperative to know search engine of your choice in order to search effectively (Moahi, 2002).

Literature Review: The proliferation of information resources has a significant impact on the way academic community access, use and retrieves information. With the availability of information resources in all areas of knowledge; without information search tools, a user would be frustrated in knowing if the information required exist and where and how to find it. Based on this, Ojedokun (2007) assert that the research process requires a user to find information on a particular subject/topic depends on the users' skillful use of the appropriate access tool.

Therefore, search engine is a popular term for information retrieval (IR) system. It is the practical application of information retrieval techniques to a large scale text collection. Basically, Muller (2003) said that a search engine is a searchable database of Internet files collected by a computer program which consists of three parts: a spider, an index and a search engine mechanism. According

to Salako and Tiamiyu (2007) search engine is a set of computer programs that search for Web pages on the Internet, index the pages in the database and makes the database available for searching by information seekers through an appropriate user interface at its Web site.

Search engines have become an integral part of our information environment. Increasingly, they are replacing the role of libraries in facilitating information discovery and access. Googling has become synonymous with research (Mostafa, 2005). The active role of search engine in tertiary institutions have been recognized as the roving encyclopedia in the world of information because of its ability to aid academics and students in surfing the Internet for relevant and timely information. As recent statistics indicate that Google has become the search interface of choice for many faculty and students to address their information needs, far exceeding, the use of library catalogs or other online citation databases (Griffiths and Brophy, 2005). Bond (2004) found that the most successful way of finding the Web documents was by efficient use of search engines and a lack of understanding of the patterns of developing search strategies and poor searching skills were the main underlying factor for the successful retrieval of Web documents.

Popoola (2005) posits that the survival man in society depends on information availability, accessibility and utilization for problem solving, planning, decision-making and control. Aiyepeku (1989) said that:

> *'Information' is used to describe mankind's accumulated 'knowledge' derived from all subjects, in all forms and from all sources that could help its users to reduce their level of uncertainty. Specifically, 'information' is defined as 'data' of value in planning and decision-making, execution, monitoring and evaluation of the public and private sector programmers for any institutions or community…*

Access to information is critical for enabling citizens to exercise their voice… the volume of information in the world, especially the volume of electronically-stored information on our computers has increased exponentially since the 1980s (Atinmo,2012). Information and Communication Technology (ICT) have brought about an unprecedented level of information explosion to every sphere of our lives. Yet information continues to increase seamlessly altering and extending the boundaries of knowledge (Eaton and Bawden, 1991) so much that the period from the latter decades of the Twentieth Century to the present day, is called, "the Information Age".

According to Hof, Sluijs, Asamoah-Hassan and Agyen-Gyasi (2010) the abundance of information is not itself enough to build an information society. What matters most is having the necessary skill and abilities to effectively use information.

More so, users of the academic libraries should possess requisite skills in order to harness information resources at their disposal. However, academic institutions greatly depend on availability of information resources which are driving force for making an educated system. The growth of information resources has become a phenomenon, especially in developed societies, owing to technological achievement in information technology. Availability of information resources is the presence of information in both print and non-print format. Thus, information resources are print and electronic materials that could be sourced and accessed manually or electronically by users. It is also the information carrier materials which could be print or in electronic form.

According to Popoola and Haliso (2009) information resources are those information bearing materials that are in both print and electronic format, such as text books, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, the Internet/E-mail, video tapes/cassettes, diskettes, magnetic disk, computers, microforms and so on. Accessibility of information source is an important recurring theme in the literature. Aguolu and Aguolu (2002) assert that resources may be available in the library and even identified bibliographically as relevant to one's interest but the user may not be able to lay hands on them. One may identify citations in indexes, but may not have access to the sources containing the relevant article. They further maintain that availability of an information source does not necessarily imply its accessibility because the source may be available but access to it, is prevented for one reason or the other.

Therefore, library is a repository of resources; it is an integral part of the educational system whose primary function is to serve users. Nwalo (2012) said that with the application of appropriate technology, web resources are also by extension, part of the library's information resources. And as the library has successfully organized materials in its collection over the centuries, so shall it also

govern the resources on the web. Electronic resources are the prime ingredients and they become a common part of the suite of most academic library resources today.

Electronic information is a broad term that encompasses abstracting and indexing services, full-text materials such as newspaper and reference books, electronic journals and the offering of electronic 'aggregators', article delivery services and free resources on the Internet. These electronic information resources can be accessed via networks from third party information providers or mounted locally within the institution or within the library. There is also a growing corpus of digital research materials produced by scholars as part of their research (Jenkins and Morley, 1999). Students seek information in order to gather, interpret, store and use for various purposes. Therefore academic institutions should make available the provision of adequate information resources and create easy access to its use.

Objectives of the Study: The main objective of this study is to investigate the availability of information resources as determinants of undergraduates' use of Internet search engines. The specific objectives to the study are to:
1. determine the extent to which undergraduates' of University of Ibadan and Lead City University use Internet search engines to surf information on the web;
2. find out the Internet search engines that are familiar to the undergraduate students for information retrieval;
3. identify the extent of availability of information resources to the undergraduates';
4. identify the extent of accessibility of information resources availability to the undergraduates';
5. identify the extent of adequacy of information resources to the undergraduates';

Methodology: Survey research method was adopted for the study and structured questionnaire was used to collect data. The target population for this study comprises of undergraduate students of University of Ibadan and Lead City University which is made up fourteen thousand one hundred and eighty-five (14,185). A total of four hundred respondents (400) were sampled, out of which three hundred and eighty two copies were completed for analysis using frequency counts, simple percentage, mean, and standard deviation to answer the research questions. Thus, Random sampling technique was used to administer the questionnaire.

Findings:

Table 1: Distribution of the respondents by Name of Institution

Name of Institution	Frequency	Percentage
University of Ibadan	349	91.4
Lead City University	33	8.6
Total	382	100.0

Table 1 show the information culled from the questionnaire on demographic information. It was revealed that 349(91.4%) of the respondents were from University of Ibadan, while 33(8.6%) were from Lead City University.

Table 2: Distribution of the respondents by Gender

Gender	Frequency	Percentage
Male	181	47.4
Female	201	52.6
Total	382	100.0

Table 2 shows that 181(47.4%) of the respondents were males while their female counterparts were 201(52.6%).

Table 3: Distribution of the respondents by Age

Age	Frequency	Percentage
Under 18 years	18	4.7
18-22 years	163	42.7
Above 23 years	201	52.6
Total	382	100.0

Table 3 above shows that 18(4.7%) of the respondents were under 18 years, 163(42.7%) were aged 18-22 years, while 201(52.6%) were above 23 years

Table 4: Extent of Internet Search Engine Use

Sl. No.	Internet Search Engine Usage	Never	Occasio nally	Often	Very often	Mea n	Std
1	Do you use the internet search engine to surf the internet for academic purpose?	2 0.5%	29 7.6%	94 24.6%	257 67.3%	3.59	.65
2	To what extent do the use of search engines provides you with relevant information?	14 3.7%	42 11.0%	139 36.4%	187 49.0%	3.31	.81
3	To what extent do you use search engines?	3 0.8%	47 12.3%	166 43.5%	166 43.5%	3.30	.71
4	Are you confident and proficient in the use of search engines?	25 6.5%	55 14.4%	140 36.6%	162 42.4%	3.15	.90
5	Do you use advanced search options of search engines?	91 23.8%	147 38.5%	94 24.6%	50 13.1%	2.27	.97
6	Do you use Boolean operators in search of information with search engines?	202 52.9%	95 24.9%	34 8.9%	51 13.4%	1.83	1.0 6

Table 4, reveals the divergent opinions by undergraduate students on the rating of the items on Internet Search Engine Usage; Do you use the internet search engine to surf the internet for academic purpose ? (Mean=3.59) ranked highest in the mean score rating and was followed by To what extent do the use of search engines provides you with relevant information? (Mean=3.31), To what extent do you use search engines? (Mean=3.30), Are you confident and proficient in the use of search engine? (Mean=3.15), Do you use advanced search options of search engines (Mean=2.27) lastly followed by Do you use Boolean operators in search of information with search engines? (Mean=1.83).

Table 5: Familiarization of Internet search engines

Sl. No.	Types of internet search engines	NF	FF	F	HF	Mean	S.D
1	Google	21 5.5%	6 1.6%	11 2.9%	344 90.1%	3.77	.73
2	Yahoo!	35 9.2%	3 .8%	100 26.2%	244 63.9%	3.45	.90
3	Alta vista	258 67.5%	51 13.4%	40 10.5%	33 8.6%	1.60	.98
4	Allthe web	270 70.7%	38 9.9%	35 9.2%	39 10.2%	1.59	1.02
5	Infoseek	282 73.8%	63 16.5%	25 6.5%	12 3.1%	1.39	.75
6	Dogpile	290 75.9%	49 12.8%	32 8.4%	11 2.9%	1.38	.76
7	Hotbot	284 74.3%	60 15.7%	29 7.6%	9 2.4%	1.38	.73
8	Inktomi	302 79.1%	46 12.0%	32 8.4%	2 0.5%	1.30	.64
9	Excite	303 79.3%	48 12.6%	28 7.3%	3 0.8%	1.30	.63
10	Lycos	323 84.6%	31 8.1%	18 4.7%	10 2.9%	1.25	.66

Table 5, shows the reaction of undergraduate students on familization of Internet search engines on the rating of items on the types of Internet Search Engines preferred .It shows that Google (Mean =3.77) ranked highest in the mean score rating and was followed by Yahoo! (Mean =3.45), Alta vista (Mean =1.60), Allthe web (Mean =1.59), Infoseek (Mean =1.39), Dogpile (Mean =1.38), Hotbot (Mean =1.38), Inktomi (Mean =1.30), Excite (Mean =1.30) and lastly followed by Lycos (Mean =1.25).

Table 6: Availability of information resources

Sl. No.	Availability	NA	VRA	RA	A	Mean	S.D
1	Journals	24 6.3%	51 13.4%	102 26.7%	205 53.7%	3.28	.92
2	Books	12 3.1%	96 25.1%	57 14.9%	217 56.8%	3.25	.94
3	Library catalogue	58 15.2%	57 14.9%	68 17.8%	199 52.1%	3.07	1.13
4	Newspapers\Magazines	39 10.2%	88 23.0%	77 20.2%	178 46.6%	3.03	1.05
5	Reference sources	56 14.7%	73 19.1%	63 16.5%	190 49.7%	3.01	1.13
6	Internet	62 16.2%	77 20.2%	71 18.6%	172 45.0%	2.92	1.14
7	Online public access catalogue	94 24.6%	42 11.0%	56 14.7%	190 49.7%	2.90	1.26
8	Theses\Dissertation	61 16.0%	106 27.7%	52 13.6%	163 42.7%	2.83	1.15
9	Search engines	52 21.5%	77 20.2%	57 14.9%	166 43.5%	2.80	1.21
10	E-journals	112 29.3%	50 13.1%	71 18.6%	149 39.0%	2.67	1.26
11	E-books	132 34.6%	40 10.5%	52 13.6%	158 41.4%	2.62	1.33
12	Electronic databases	140 36.6%	34 8.9%	58 15.2%	150 39.3%	2.57	1.33
13	CD-ROM databases	200 52.4%	22 5.8%	29 7.6%	131 34.3%	2.24	1.39

Note: NA= Not Available, VRA=Very Readily Available RA=Readily Available, A=Available

Based on the level of Availability of information resources, Table 6 reveals the rating of the items on Availability of Information Resources. It is shown that: Journals (Mean =3.28) ranked highest in the mean score rating and was followed by Books (Mean =3.25), Library catalogue (Mean =3.07), Newspapers\Magazines (Mean =3.03), Reference sources (Mean =3.01), Internet (Mean =2.92), Online public access catalogue (Mean =2.90), Theses\Dissertation (Mean =2.83), Search engines (Mean =2.80), E-journals (Mean =2.67), E-books (Mean =2.62), Electronic databases (Mean =2.57) and lastly followed by CD-ROM databases (Mean =2.24).

Table 7: Accessibility of information resources

Sl. No.	Accessibility	NA	VRA	A	RA	Mean	S.D
1	Books	32 8.4%	72 18.8%	94 24.6%	184 48.2%	3.13	1.00
2	Journals	53 13.9%	55 14.4%	139 36.4%	135 35.3%	2.93	1.02
3	Reference sources	79 20.7%	53 13.9%	119 31.2%	131 34.4%	2.79	1.13
4	Internet	68 17.8%	90 23.6%	123 32.2%	101 26.4%	2.67	1.05
5	Search engines	86 22.5%	76 19.9%	114 29.8%	106 27.7%	2.63	1.11
6	Theses\Dissertation	91 23.8%	74 19.4%	113 29.6%	104 27.2%	2.60	1.12
7	Online public access catalogue	127 33.2%	39 10.2%	127 33.2%	89 23.3%	2.47	1.18
8	Library catalogue	133 34.8%	54 14.1%	94 24.6%	101 26.4%	2.43	1.21
9	E-journals	123 32.2%	54 14.1%	129 33.8%	76 19.9%	2.41	1.13
10	E-books	149 39.0%	32 8.4%	123 32.2%	78 20.4%	2.34	1.19
11	Electronic databases	161 42.1%	39 10.2%	109 28.5%	73 19.1%	2.25	1.19
12	CD-ROM databases	213 55.8%	21 5.5%	104 27.2%	44 11.5%	1.95	1.14

Note: NA=Not Accessible, VRA=Very Readily Accessible, RA= Readily Accessible, A=Accessible
Table 7, shows the rating of the items on Accessibility of Information Resources. It is shown that: Books (Mean =3.13) ranked highest in the mean score rating and was followed by Journals (Mean =2.93), Reference sources (Mean =2.79),Internet (Mean =2.67), Search engines (Mean =2.63), Theses\Dissertation (Mean =2.60), Online public access catalogue (Mean =2.47), Library catalogue (Mean =2.43), E-journals (Mean =2.41), E-books (Mean =2.34),Electronic databases (Mean =2.25) and lastly followed by CD-ROM databases (Mean =1.95).

Table 8: Adequacy of information resources

Sl. No.	Adequacy of information resources	VI	I	A	VA	Mean	S.D
1	Books	28 7.3%	18 4.7%	92 24.1%	244 63.9%	3.45	.88
2	Reference sources	50 13.1%	26 6.8%	145 38.0%	161 42.1%	3.09	1.00
3	Journals	36 9.4%	23 6.0%	201 52.6%	122 31.9%	3.07	.87
4	Search engines	68 17.8%	18 4.7%	127 33.2%	169 44.2%	3.04	1.10
5	Theses\Dissertation	75 19.6%	24 6.3%	112 29.3%	171 44.8%	2.99	1.14
6	Internet	50 13.1%	48 12.6%	170 44.5%	114 29.8%	2.91	.97
7	E-journals	61 16.0%	81 21.2%	147 38.5%	93 24.3%	2.71	1.01
8	Library catalogue	86 22.5%	68 17.8%	107 28.0%	121 31.7%	2.69	1.14
9	Online public access catalogue	86 22.5%	75 19.6%	105 27.5%	116 30.4%	2.66	1.13
10	E-books	67 17.5%	95 24.9%	132 34.6%	88 23.0%	2.63	1.02
11	Electronic databases	108 28.3%	84 22.0%	122 31.9%	68 17.8%	2.39	1.08
12	CD-ROM databases	123 32.2%	134 35.1%	91 23.8%	34 8.9%	2.09	.95

Note: VI= Very Inadequate, I= Inadequate, A= Adequate, VA= Very Adequate

Table 8 shows the rating of the items on Adequacy of Information Resources. It is presented as follows: Books (Mean =3.45) ranked highest in the mean score rating and was followed by Reference sources (Mean =3.09), Journals (Mean =3.07), Search engines (Mean =3.04), Theses\Dissertation (Mean =2.99), Internet (Mean =2.91), E-journals (Mean =2.71), Library catalogue (Mean =2.69), Online public access catalogue (Mean =2.66), E-books (Mean =2.63), Electronic databases (Mean =2.39) and lastly followed by CD-ROM databases (Mean =2.09).

Discussion of Findings: The findings show that female undergraduate students formed the majority of the respondents. This is against the study of Ford, Miller and Moss (2001) who found that female students intended to experience more difficulty in finding information online. The students believed that they were confident of their abilities to use Internet search engines and they use it to surf information on the Internet for academic purposes. However, findings shows that majority of the respondents most probably use very simple queries, as they were mostly unaware of the advanced search options of Google or Yahoo! (their most preferred search engines) or the possibility of using Boolean operators to broaden or narrow their searches on the Web. Jansen, etal (1998) generally recognize this task as difficult because the inputs supplied by the users are generally insufficient for collecting suitable data. The finding also shows that the respondents are familiar with Google and Yahoo!

   It is pertinent to note that undergraduate students need a wide variety of information to meet their academic needs. Therefore, information is a very crucial tool for students, thereby how they access and use information are key determinants of their performance. This recognition underpins students' needs for access to useful information and the necessary skills for using such information. Moreover, the study revealed that books, journals, Internet, reference sources, Online Public Access Catalogue (OPAC), library catalogue, newspapers /magazines, theses/dissertation etc are available, adequate and accessible but e-books, e-journals, e-database were available, adequate but not accessible in the university libraries. This is in the view of Aguolu and Aguolu (2002) that availability of an information source does not necessarily imply its accessibility, because the source may be available but access to it is prevented for one reason or the other. Also Osundina (1974) studied the relationship accessibility and library use by undergraduate in Nigeria and noted that the problem of Nigeria students is not the question of wanting to use the college library, but whether or not the university library can provide for their needs and whether there is access to what is provided.

Conclusion and Recommendations: The growth of Internet resources is reshaping the nature of collections and mode of availability, access, and use of information resources in academic libraries due to its easy and timely retrieval of information as well as the efficiency, precision and capabilities.

   However, the present generation of students is surrounded by different types of search engines that motivate them to have a high level of confidence with information searching on the Internet. Therefore, university libraries should endeavor to develop and improve undergraduates' searching patterns so as order to create an enabling environment for learning and research and also they should make available, adequate and accessible electronic information resources for the growth of knowledge and utilization.

References:

Agulu, C. C. Aguolu, I. E. (2002) Library and Information management in Nigeria. Maidugari: Ed-Linform Services.

Aiyepeku, W.O. (1989) Developing information for development information. An Inaugural Lecture delivered at the University of Ibadan.

Atinmo, M. I. (2012) Including the excluded: Providing equitable access to information; an inaugural lecture delivered at the University of Ibadan. University of Ibadan. Ibadan University Press.7

Bates,M.J. (2010) Information behaviour. In Encyclopedia of Library and Information Sciences. 3rd ED. New York: CRC Press, vol.3, pp.2381-2391.

Eaton, J. J. and Bawden, D. (1991) What kind of resource is information? *International Journal of Information Management.* 11. 2. 156-165.

Ford, N.,Miller,D., and Moss, N. (2001) The role of individual difference in Internet searching: An empirical study. *Journal of American Society for Library and Information Science Technology.* 52.12: 1049-1066.

Griffith, R, T. (2002) History of the Internet, Internet for historians (and just about everyone else). Chapter three: History of the electronic mail. Retrieved 16th, 2013, from http://www.let.leidenuniv.nl/history/ivh/chap3.htm.

Hof, V.S.; Sluijs, J.; Asamoah-Hassan, H.; Agyen-Gyasi, K. (2010) Information literacy training in an African context: Case study of IL course development at KNUST in Kumasi, Ghana. KIT Working Papers Series I3. Amsterdam: KIT.

Jansen,B., Spink, A., Bateman, J., and Saracevic, T. (1998) "Real life information retrieval: a study of users queries on the web." ACM SIGIR Forum. 32 .1:5-17.

Jenkins, C. and Morley M. (Eds) (19991) Collection management in an academic library. 2nd ed. England: Ashgate Publishing Limited. 108.

Moahi, K. H.(2002) Computer application in library and information search research. In Aina, L. O. (2002) (eds). Research in information science: an African perspective. Ibadan: Stiring-Horden Pub.156-183

Muller, J. F. (2003) A librarians guide to the Internet: Searching and evaluating information. Oxford : Chandos Publishing. 31-52

Mostafa. (2005)"Seeking better Web searching."Scientific American. 292. 2: 67-73.

Nwalo, K. I. N. (2012) Imposition of order on chaos: Cataloguing as a soul of librarianship, A Faculty lecture delivered at the University of Ibadan.University of Ibadan: Faculty of education. . 26

Ojedokun, A. A. (2007) Information literacy for tertiary education students in Africa. Ibadan: Third World Information services, 76

Osundina, O (1974) The relationship between accessibility and use made of the academic library by undergraduate students. Nigeria libraries.P.12.

Popoola, S. O. 2005. Library and Information Science Profession: The new direction in the 21st Century in Nigeria. Paper presented at the AGM of NLA. Osun State chapter. 30th Dec.

Popoola, S. O and Haliso, J. (2009) Use of library information resources and services as predictor of the teaching effectiveness of Social Scientists in Nigeria Universities. *African Journal of Library, Archival and Information Science,* 19 (1): 65

Salako, O. A. and Tiamiyu, M.A. (2007) Use of search engines for research by Postgraduate students of the University of Ibadan, Nigeria. *African Journal of Library and Information Science* 17. 2: 103-115

Subba-Roe, (2001) Networking of Library and information center: Chellenges to India.. Library Hi Tec. 19.2:167-179

✱✱✱✱✱