

Awareness and Use of Search Engines for Information Retrieval by Lecturers of Universities in Bauchi State

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ABSTRACT

This study investigates the awareness and use of search engines for information retrieval by lecturers of universities in Bauchi state. Quantitative research methodology through cross sectional survey design was adopted for the study to assess the level of awareness and use of search engines for information retrieval by lecturers of universities in Bauchi state. The respondents of the study were 200 lecturers in both universities in Bauchi state. While descriptive and inferential statistics using percentages through the use of SPSS 20.0 version were used for the data analysis. The results reveal that many lecturers are aware and used search engines daily to pave ways to access information on internet. Google scholar, Chrome and Firefox are the most used search engines among lecturers of Universities in Bauchi state. The study also reveals that lecturers are well skilled in the use of search engines because most of the respondents in the study reveal that their competence in the use of search engines, the study also reveals that there are sufficient ICT infrastructures to support the use of search engines in both universities, it is also reveals that, problem of network failure, lack of information retrieval skills, insufficient power and low network bandwidth are problem hindering the use of search engines in the institutions. It is also recommended that lecturers should be provided with updated or new ICT infrastructures that will aid the use of search engines for Research and academic purpose. Also stable power should be provided to ease the problem of power outbreak while using search engines which seriously affects most of the respondents negatively. The study contributes to knowledge in such a way that it improves upon the use of search engines for information retrieval in universities by stating what is needed for the search engines to function effectively, to bridge on the issue and this geographical zone, it shed more light on the importance of search engines to lecturers and to the entire educational system

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I. INTRODUCTION

Search engine is a software system that is designed to search for information on the World Wide Web. It is an information retrieval system designed to help find information stored on computer system, such as internet, inside a corporate or proprietary network. It is a kind of information retrieval program and it has two major tasks: Searching through the billions of keywords recorded in the index to find information that match the query sent by the user and ranking retrieved records in order of importance so that the user can choose the most relevant. Search engines serve as source of information to researchers particularly lecturers in higher institutions of learning. They are the vehicles through which researchers can access past and current research publications and help to narrow and refine a search for tracing relevant information. Lecturers can also access information on various courses in the institution through these search engines. This will make them have different information resources and materials for their lectures and research work. Search engines also provide easy access to some reference materials like: gazettes, journals, conference proceeding, magazines and newspapers. Search engines provide e-print in details and other types of digital works by authors in an academic department, schools or institutions which comprise of electronic thesis and dissertations and presentations by authors of different

institutions. This has improved the potential for wide banquet online search and retrieval of electronic content easily.

According to Taiwo (2009), awareness means knowledge. Lack of awareness hinders the use of the various search engines. Lack of awareness of the various search engines, among researchers in higher institution will bring to its non-usage. Doris (2012) noted that a good rule of awareness is that someone needs to be exposing to services, several times before he/she is fully aware of the service. Awareness is a necessity to the usage of search engines. For an individual or lecturers to participate in any work or activities, awareness about the environment, how things are done and should be done is very important.

The aim of search engines according to Butters (2009) is to search and circumnavigate, meaning that a successful search engine should sustain its users in an efficient search for contents, and bring detailed information resources with ease to various lecturers. Mark (2012) stated that the search engines obtainable are very many but due to lack of awareness, researchers do not exploit them.

Information retrieval is a field concerned with the structure, analysis, organization, storage, searching, and retrieval of information. It is a well-established discipline in Computer Science since the 1950s. It has however recently enjoyed increased significance because of the information explosion caused by the internet WWW and its related technologies. Not only the absolute amount of information, but also new types of information formats have drawn attention to this field [Lally 2006]. While IR used to be a restricted field with specialized users like librarians and information professionals, today millions of people use IR every day to search the web or search their email, resulting in the need for new user interfaces and query languages [Manning *et al.* 2008; Hearst 2011; Danica *et al.* 2013].

II. REVIEW OF RELATED LITERATURE

Concept and Significance of Search Engines

The Internet is seen as the network of inter-connected networks. Websites in the Internet contain files; every website is also identified using an address for easy location of the website. For instance, Google (www.google.com), is a search engine. The search engines crawls through the websites for information, and then through special algorithm provides organized results for search queries.

According to Louis (2012), search engine is software of a computer that has the capability of searching through large volumes of text or other data for specified keywords, and then returning a list of files where the keywords are found. Search engine helps users track down online information on a wide variety of topics that are valuable. It is a software program that searches a database and gathers reports on information that contains or is related to specified terms. There are different search engines available (Duke, 2010). Bare (2008) noted that search engines are defined as online tools for searching websites, so as to have access to current information as well as numerous information.

Moreover, Kimmon (2012) defines a search engine as a website that connects and organize contents from all over the Internet. He explained further that those wishing to locate something would enter a query about what they like to find and the engine provides links to content that matches what they want. In the light of these definitions, search engines can be described as user's assistant to find and retrieve information. Like any other assistant, the degree to which they are able to help depends on the degree to which the users are able to tell them what they want. Therefore, communicating with search engines is a critical part of the search process. It is a database, because it gathers and stores information. It has a search tool which users search through the database by typing a keyword describing the information desired. In view of this, Chowdhury (1999) stated that, search engine is a kind of information retrieval program and it has two major tasks: Searching through the billions of keywords recorded in the index to find that match the query sent by the user and ranking retrieved records in order of importance so that the user can choose most relevant. Search engines play a vital role in providing the exact or nascent digital information to the users. With the passage of time, several techniques and technologies have emerged for handling the information more speedily and effectively.

Search engines are computer software used to search data (as text or a database) for specified information. It is also a site on the World Wide Web that uses such software to locate key words in other sites. Merriam Webster Dictionary (2014). Veletsianos and Kimmons (2012) see a search engine as a computer program that connects and organizes contents of information resources from the Internet. Based on the above definition, search engines can be seen as tools used to search and retrieve information from the Internet, by inserting a query or a keyword desired by the user. It is an easy, fast and effective ways of getting to the information that one needed in the web. In a normal sense, the Internet users need search engines to access their required information from the Internet because search engines are open for public use with billions of web sites. The web is also large and millions of new pages are added every day. Gulli and Signorini (2005) estimated the size of the web as 11.5 billion pages. This estimation highlights the difficulty any single web search engine has in attempting to crawl and index the entire web. Capra and Quinones (2005) stated that, search engine is an information retrieval system based web site that helps users to retrieve any information from huge Internet

database and it is a kind of tool that crawl in the web according to user direction and it will record everywhere it has been and everything user is looking for.

Many survey reports have also proved that search engines such as Google and Yahoo are popular search tools that people access every day to find information on the web (Asemi, 2005; Patitungkho and Deshpande, 2005). Search engines offer a simple way to access information on the web almost instantaneously. As pointed by Mustafa (2005) search engines have completely changed how people gather information. No longer must we run to a library to look up something; rather we can pull up relevant documents with just a few clicks on a keyboard. New search engines are improving the quality of results by delving deeper into the storehouse of materials available online, by sorting and presenting those results better, and by tracking your long-term interests so that they can refine their handling of new information requests. Keeping in view the concept of search engines, the present study has been conducted to know the awareness of search engines as well as the use of search engines for information retrieval by academics in universities in Bauchi State.

2.3 Awareness of Search Engines in Institution of Higher Learning

An important factor in the use of search engines is awareness. According to Taiwo (2009), awareness means knowledge. Lack of awareness hinders the use of the various search engines. Lack of awareness of the various search engines, among researchers in higher institution will bring to its non-usage (Taiwo, 2009). Doris (2012) noted that a good rule of awareness is that someone needs to be exposing to services, several times before he/she is fully aware of the service. Awareness is a necessity to the usage of search engines. For an individual or academic to participate in any work or activities, awareness about the environment, how things are done and should be done is very important.

Adams (2010) noted that level of awareness of various search engines to researchers in higher institution is very low. Adams further explained that academics have very confused understanding of various search engines and its concept. More so, many researchers are not yet involved with various search engines. Shearer (2012) noted also that the use of the various search engines is very low. At the most basic level researchers lack the existence of the various search engines; many of the researchers according to Shearer are not familiar with the concept of various search engines. In addition, the lack of knowledge or awareness of search engine is a common factor among academics as well as researchers; in fact, this is the situation in most developing countries. In line with the above, Gabriel (2011) asserted that most of the researchers claimed that they got various search engines awareness from their internet debate and workshops level of awareness of search engines issues are varied. The use of the search engines for research underscores the increasing affinity for digital information. The socio-technological environment of universities that began emerging in the late 1990s has led to increasing dependence on the e-resource, which has only grown as many academics enjoy free access 24 hours a day on Internet.

III. METHODOLOGY

A quantitative research methodology is observed by Kamba (2009) as the type of methodology that emanates from research philosophy of positivism that uses number which can be quantified, or an inquiry into an identified problem, based on testing a theory, measured with numbers and analysed using statistical techniques.

For this study, quantitative research methodology was employed because the research approach is considered suitable for the study looking at the area of coverage and the study population, there is a possibility of making generalization of the findings as stated by Gorman and Clayton (2005).

The researcher found it very relevant for this study, as it enables the premises to obtain relevant information from the population or its sample through a well-structured questionnaire. The quantitative research methodology provides significant premises that best describe and explain the major objectives of the study.

Research design is a comprehensive plan for data collection in an empirical research thesis. It is a blueprint for conducting the study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research result.

Questionnaire was used for data collection for this study. A questionnaire is a form containing questions about the research problem that is distributed to the respondents for their reactions. They are meant to discover the feelings, beliefs, experiences or activities of respondents. A questionnaire is observed by Abdulmalik (2006) as an assemblage or set of questions embodied in one document and intended to be answered by several persons in order to provide information for specific purpose. Abdulmalik (2006) described the use of questionnaire as the most important and effective instrument through which reliable and less bias information can be generated and analysed.

Data collected from this study were analysed using frequency distribution tables and descriptive and inferential statistic.

The data was coded, tabulated and analysed using Statistical Package for Social Science (SPSS) software and Excel. Descriptive statistics such as frequency distribution, percentages and mean was used and the mean value is greater than 3.0 of cutting mark as a minimum for acceptance of the sets of questions raised. For inferential statistics t-test was used in testing the hypotheses, the decision rule was to accept the null hypothesis where the t-calculated value of the t-test is less than 0.05% level of significance otherwise is rejected.

IV. ANALYSIS OF DATA COLLECTED

Level of awareness

The study sought to find out the level awareness of Lecturers towards search engines in universities in Bauchi State. The question was addressed to the Lecturers in universities in Bauchi State. Table 4.1 shows the details of the responses.

Summary of Level of Awareness of Lecturers towards the Use of Search Engine

S/N	Level of Awareness	Frequency	Percentage
1.	High	42	21%
2.	Moderate	134	67%
3.	Low	24	12%
	Total	200	100%

Table above shows the summary of level of awareness of lecturers towards search engine. The table revealed that majority (67%) of the respondents had a moderate level of awareness towards search engine, while 42% of the respondents had a very high level of awareness. However, only 12% of the respondents had low level of awareness towards search engine.

Sources of awareness

The table shows the way the respondents get aware of search engines.

Sources of getting aware of search engines

Means	Yes	No
One particular course in the university	79 (39.5%)	121 (60.5%)
Workshop/ seminar/ conferences	84 (42%)	116 (58%)
Friends and colleagues	178 (89%)	22 (11%)
Self-training/ effort	172 (86%)	28 (14%)
Professional training/ short courses	159 (79.5%)	41 (20.5%)

Source: SPSS version 20

From the Table above it indicates that respondents were asked to shows the means at which respondents get aware of search engine. The table revealed that majority 178 (89%) of the respondents got the awareness of search engine through friends and colleagues in the universities. While 172 (86%) of the respondents got awareness from self-training. This is followed by 159(79.5%) of the respondents got awareness of search engines through private training centres. However, only 84(42%) of the respondents got the awareness of search engines through workshop training program in the university. It was only 79 (39.5%) of the respondents that are aware through one particular course in university.

Level of Usage of Search Engines

The study sought to examine the level of usage of search engines by Lecturers in the universities.

Table below shows the details of the usage of search engines

Level of usage of search engines by Lecturers in the universities

sn	Search Engine	Daily	Weekly	Monthly	Occasionally	Never	Mean	Std.Dev
1.	Google scholar	126 (63%)	31 (15.5%)	0	33 (16.5%)	10 (5%)	4.15	1.314
2.	Opera	140 (70%)	35 (17.5%)	8 (4%)	17 (8.5%)	0	4.49	0.919
3.	Yahoo	103	45	15	36	1	4.07	1.165

4.	Bing	(51.5%) 10	(22.5%) 27	(7.5%) 6	(18%) 104	(0.5%) 53	2.19	1.121
5.	Dogpile	(5%) 12	(13.5%) 17	(3%) 12	(52%) 97	(26.5%) 62	2.10	1.116
6.	AltaVista	(6%) 5	(8.5%) 21	(6%) 14	(49%) 98	(31%) 42	2.05	1.014
7.	Ask Jeeves	(2.5%) 23	(10.5%) 16	(7%) 0	(49%) 93	(31%) 68	2.17	1.295
8.	Google chrome	(11.5%) 120	(8%) 40	7	(46.5%) 14	(34%) 19	4.14	1.326
9.	Mozilla Firefox	(60%) 115	(20%) 33	(3.5%) 11	(7%) 24	(9.5%) 17	4.03	1.373
10.	MSN	(57.5%) 24	(16.5%) 32	(5.5%) 19	(12%) 101	(8.5%) 24	2.66	1.230
							Decision Mean	3.00

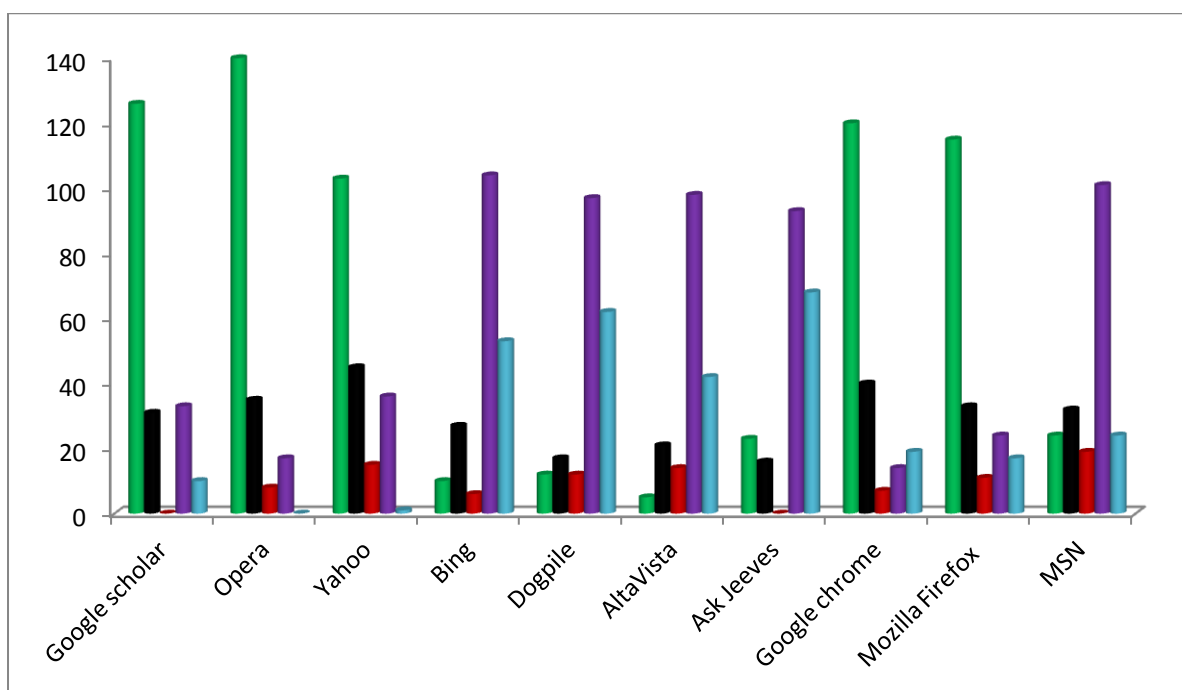


Fig 4: Bar chart showing the level of usage of search engines by lecturers in the universities

Table above shows the level of usage of search engines by Lecturers in the universities. The Table revealed that Items 2, 1, 8, 3 and 9 with mean scores of 4.49, 4.15, 4.14, 4.07 and 4.03 respectively had the mean scores greater than the decision mean (3.00). This implies that those items had higher levels of usage by Lecturers in the universities under study. On the other hand, Items 4, 5, 6, 7 and 10 had mean scores below the decision mean of 3.00. The implication of this is that the level of usage of these search engines by lecturers in the universities of is poor. In the same vein, Fig I buttresses the information on the usage of search engines by lecturers in the universities in a Bar chart format.

Lecturer's skills in the use of search engines

The study sought to find out the lecturers skilled in the use of search engines. The question was addressed to the lecturers of universities in Bauchi State. Table 4.8 below shows the detail of skilled of lecturers on the use of search engines.

Lecturers' skills in the use of search engines in the universities

Skills	Frequency	Percentage
Novice	15	7.5%
Specialist	23	11.5%
Competent	100	50.0%

Proficient	31	15.5%
Expert	31	15.5%
Total	200	100.0%

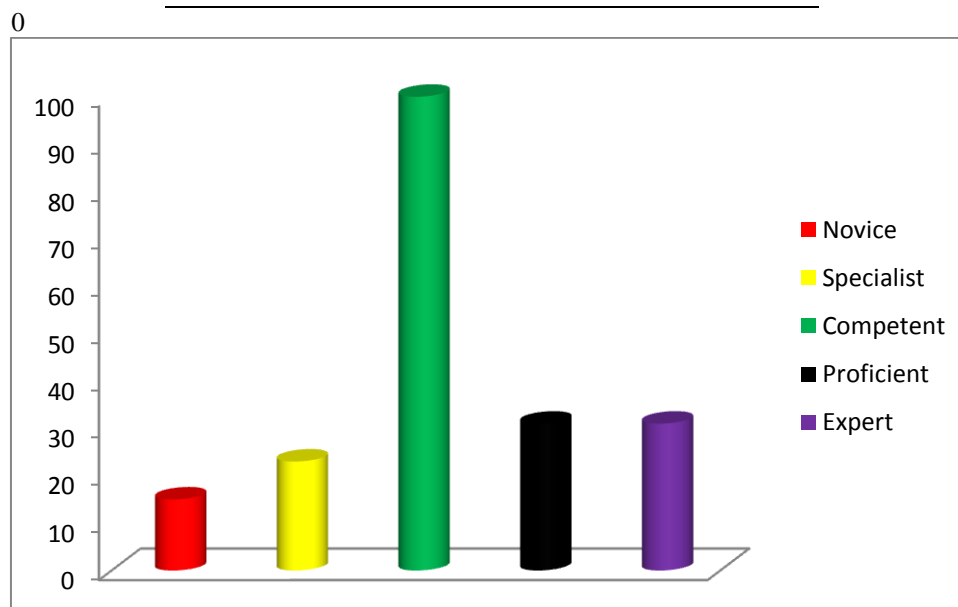


Fig 5: Bar Chart showing the lecturers skills in the use of search engines

Table above shows the lecturers skilled in the use of search engines. The Table and the Chart revealed that 100 (50%) of the respondents are competent in the use of search engines. Also, 31 (15.5%) of the respondents showed proficient and experts in the use of search engines while 23(11.5%) and 15(7.5%) of the respondents are specialists and novice respectively in the use of search engines. The findings revealed that the extent at which the respondents use the search engines is at competent level.

4.7 What are the factors influencing the choice of search engine as information retrieval tools?

Factors influencing the choice of search engine as information retrieval tools

S/N	Factors	Yes	No
	Easy access to information	159 (79.5%)	41 (20.5%)
	Save users' time	164 (82%)	36 (18%)
	Availability of search tools	135 (67.5%)	65 (32.5%)
	Currency	75 (37.5%)	125 (62.5%)
	Ease of use	179 (89.5%)	21 (10.5%)
	Reliability	82 (41%)	118 (59%)
	Quick response time	132 (66%)	68 (34%)
	Access to wider range of information	182 (91%)	18 (9%)

Table above shows the factors influencing the choice of search engine as information retrieval tools. The table revealed that six (6) out of the eight (8) items in the table were selected by the respondents as factors responsible for the choice of search engine as information retrieval tools. The factors are items 1, 2, 3, 5, 7 and 8, while items 4 and 6 were not the major factors influencing the choice of search engine as information retrieval tools.

V. CONCLUSION

The findings of this research revealed that, the extent at which majority of the lecturers in the universities under study used search engine is at competent level. This implies that, the lecturers under study retrieve effect information or information of their needs.

The problems hindering the use of search engines for information retrieval in Bauchi State Universities included: lack of information retrieval skills, confidence in using search engines, insufficient time to make use of search engines, problem of network failure from time to time, high cost of internet access and slow speed of internet service. The findings revealed the above listed problems as threat to the use of search engine for information retrieval. Although the first mention problem as earlier discuss in the discussion of findings is contradicted with the findings of research question 3 which revealed that the lecturers are well skilled in the use of search engines.

VI. RECOMMENDATION

Recommendations are made based on the findings of the study and conclusions drawn thereof, the following recommendations are made:

1. In light of the findings of the study, it is recommended that, there is need for the universities to organize seminars/workshops on information retrieval so that the lecturers will improve their skill of retrieving effective information.
2. For effective use of search engines, the study recommends, the need for the provision of latest ICT infrastructure that will pave way for easy use of search engines in the Universities.

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