

Research Scholars' Attitudes and Perceptions on Search Engines: A Study of Karnatak University, Dharwad

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Abstract

The present study demonstrates the research scholars' attitudes and perceptions on the search engines. A sample population was selected among research scholars of Science & Technology discipline in Karnatak University, Dharwad. The overall analysis of the findings reveals that Google has a significantly higher rate of performance in retrieving web resources as compared with the other search engines. Among the different Internet Browsers, Google Chrome, a newly launched Browser has been given top priority, followed by Mozilla Firefox.

Keywords: Boolean operator; Karnatak university; Research scholars; Search engines; Search strategy; Syntax formulation.

Introduction

In recent years, Internet has emerged as a powerful information retrieval tool. With the increasing impact of information technology on higher education, all those concerned with higher education today are attempting to grasp how information technology could help in modernizing the process of teaching, research and learning. In this context, Internet has emerged as a one stop point wherein it facilitates access to a wealth of information on the web for the academic community to support their academic and research activities (Shettar, 2005).

The Internet has emerged as the most powerful medium for storage and retrieval of

information. In the era of networked information, Internet, the largest worldwide network of networks has emerged as the most powerful tool for an instant access to information (Rajeev Kumar and Kaur, 2005). But, in the present Information and Communication Technology (ICT) with a tremendous amount of content on the Internet, retrieving relevant information cannot be achieved easily. Retrieving relevant information from the overwhelming amount of information has become the need of the hour. But the effective use of search engines for retrieval of information is a crucial challenge for any Internet user. At this juncture, search engines come into rescue.

This situation is like having a Food Court with thousands of food items where one cannot trace his / her favorite dish easily. Liaw and Huang (2006) explain that search engines are essential tools for finding information on the World Wide Web (WWW). Number of search engines on the web can help the end users find any information, anytime and anywhere on the web. Thus, search engines have become a major tool for searching information over Internet (Wirth *et al*, 2007). The Internet and World Wide Web (WWW) are increasingly becoming popular at all levels of professional career. Hence, the present study investigates the research scholars'

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attitudes and perceptions towards the search engines.

Review of Related Literature

Griffiths and Brophy (2005) undertook a study on students' searching behaviour on the web. The students preferred to locate information or resources via a search engine and found that Google was the search engine of choice. Xie (2004) and Hadagali *et al.* (2013) in their respective studies found that Google is one of the most popular search engines. The results of the study conducted by Hadagali *et al* (2007) and Hadagali and Kumbar (2010) indicate that the use of Internet services associated with an increase in the number of research papers and with improvement in the quality of research and teaching. Kadli *et al* (2010) study reveals that in the present Internet influenced academic environment, information literacy skills are necessary to use Internet effectively. Internet use skills were acquired by majority of students by self study and they learnt through their friends. Santhi *et al* (2011) analyze the use of Internet and related issues among the teachers and students of engineering colleges at Karur, Tamil Nadu. Guruprasad *et al* (2011) opine that the Internet has changed the way the scientists look for information, the various means by which they get required information. Shivaraj *et al* (2013) opine that Internet is a useful tool for all in a technologically advanced world. Most of the students find that the Internet knowledge is essential for study and course work. Ansari (2013) examines the patterns of use by the scientists and other users in four libraries of Council of Scientific & Industrial Research (CSIR) located in Lucknow.

Scope and Limitations of the Study

The scope of the present study is to investigate the research scholars' attitudes and perceptions towards the search engines. The study is restricted to Karnatak University, Dharwad. The population of the study consists of research scholars of Science & Technology discipline.

Objectives

The primary objective of the present study is to investigate the research scholars' attitudes and perceptions towards the search engines. The specific objectives of the study are:

1. to find out the research scholars' acquaintance with the Internet sources;
2. to study about the awareness of Internet Browsers;
3. to know the extent of importance given to general and subject search engines;
4. to study the factors that influence the use of search engines;
5. to elicit the opinion about the accuracy of information available through search engines; and
6. to suggest different ways for accessing information effectively and efficiently through search engines.

Methodology

Research Scholars constitute the target population for the present study. The census survey method has been employed and questionnaire tool was used to collect data, supplemented with the interview method. The authors distributed questionnaires to all the research scholars of Science & Technology discipline. The data collected through questionnaires were fed into MS-Excel and simple frequency calculation was used to analyse the collected data.

A total of 150 questionnaires were distributed among the Science & Technology research scholars and 123 duly filled in questionnaires were received, thus resulting into response rate of 82 %.

Analysis

Department Wise Distribution of Questionnaires

Table 1 depicts the department wise

Table 1: Department Wise Distribution of Questionnaires

Sl. No.	Name of the Department	No. of questionnaires distributed	No. of questionnaires received	Dept. wise percentage (%)	Overall Percentage (%)
1	Chemistry	50	37	74.00	30.08
2	Physics	28	20	71.43	16.26
3	Botany	15	13	86.67	10.56
4	Zoology	14	12	85.71	9.75
5	Biotechnology and Microbiology	14	12	85.71	9.75
6	Biochemistry	7	7	100.00	5.69
7	Mathematics	6	6	100.00	4.87
8	Statistics	6	6	100.00	4.87
9	Geography	4	4	100.00	3.29
10	Computer Science	3	3	100.00	2.43
11	Applied Genetics	2	2	100.00	1.64
12	Geology	1	1	100.00	0.81
	Total	150	123		100.00

Table 2: Gender Wise Distribution of the Questionnaires

Sl. No.	Gender	No. of respondents	Percentage (%)
1	Male	89	72.36
2	Female	34	27.64
	Total	123	100.00

distribution of questionnaires. There are 14 Science departments in Karnatak University, out of which 12 departments are offering M.Phil. and Ph.D. degrees (the Dept. of Electronics and Electronic Media are not offering M.Phil. and Ph.D. degrees). Hence, only 12 departments are considered for the study. From a total study population of 150 (regular research scholars), 123 (82%) questionnaires were received back. It is observed from the data that the responses from the department of Chemistry are highest, i.e. 37 (30.08 %) compared to other departments. They are followed by Physics department with 20 responses, Botany with 13 and Zoology and Biotechnology and Microbiology Departments with 12 each. Other department research scholars' responses are given in table 1.

Gender Wise Distribution of the Questionnaires

It is observed from the table 2 that 89 (72.36 %) respondents are male and 34 (27.64 %) respondents are female. In this study, like other

studies the male respondents dominate over female. Basically the female students' strength at Post-Graduation level in Karnatak University, Dharwad is always high in science departments. But very few female students are coming forward to continue their research studies.

Use of Internet

The study shows a good sign that all the respondents are aware of Internet. In the 21st century one needs to know the basics of computer in general and Internet in particular. Knowledge about Internet, World Wide Web (WWW), search engines etc. is essential to survive in the Information Technology (IT) driven society. The data about the use of Internet is presented in table 3.

Place of Internet Access

A question was asked to the respondents about the place of Internet access. The data

reveal that 71 (57.72 %) respondents access Internet from the department laboratory and 41 (33.33%) respondents access Internet in research cubicles / sections in the department, and only 2 (1.62 %) respondents access internet from the central library. The study also reveals that 13 (10.56 %) respondents use data cards to access Internet through laptops. It is observed from the study that most of the respondents access Internet in the departments from various access points, because Science departments in the Karnatak University, Dharwad are good at Information and Communication Technology (ICT) infrastructure for conducting research at various levels.

Internet Browsers

Internet Browsers are very much essential to access Internet. Browsers are nothing but a gateway through which one can access pool of information resources available over

Internet. There are number of choices these days for Internet Browsers or simply web Browsers. Choosing a right web browser is a prerequisite to access Internet in an effective way. A question was posed about the preference of Internet Browsers.

It is evident from the study that with a plenty of options 83 (67.47%) respondents prefer Google Chrome as their best Internet Browser, followed by 74 (60.16%) respondents prefer Mozilla Firefox as their Internet Browser. It is observed from the study that the Internet Browsers which are recently launched have gained popularity compared to other browsers. Only 1 (0.81%) respondent still uses Netscape Navigator which is the oldest browser compared to others.

Use of Different Search Engines

Search Engines are considered as an effective information retrieval tool. There is an

Table 3: Use of Internet

Sl. No.	Use of Internet	No. of respondents	Percentage (%)
1	Yes	123	100.00
2	No.	Nil	Nil
	Total	123	100.00

Table 4: Place of Internet Access

Sl. No.	Place of Access	No. of respondents	Percentage (%)
1	Department Laboratory	71	57.72
2	Research Cubicles / sections in the department	41	33.33
3	Home	32	26.01
4	Browsing Center	15	12.19
5	Using data cards	13	10.56
6	Faculty chamber	08	6.50
7	Central Library	02	1.62

Table 5: Internet Browsers

Sl. No.	Internet Browser	No. of respondents	Percentage (%)
1	Google Chrome	83	67.47
2	Mozilla Firefox	74	60.16
3	Internet Explorer	29	23.57
4	Opera	10	8.13
5	Netscape Navigator	01	0.81

Table 6: Use of Different Search Engines

Sl. No.	Use of different Search Engines	No. of respondents	Percentage (%)
1	Google	123	100.00
2	Yahoo	25	20.32
3	My Web Search	05	4.06
4	Ask	03	2.43
5	AltaVista	02	1.62
6	Bing	02	1.62
7	Lycos	01	0.81
8	Web Crawler	01	0.81
9	Dogpile	01	0.81

Table 7: Use of Different Subject Search Engines

Sl. No.	Subject search engines	No. of respondents	Percentage (%)
1	Science Research	68	67.32
2	World Wide Science	40	39.60
3	Scirus	27	26.73
4	Scitation	19	18.81
5	Scientific Commons	14	13.86
6	Science Accelerator	13	12.87
7	Sciseek	04	3.96
8	Techxtra	03	2.97

Table 8: Factors that Influence the Use of Search Engines

Sl. No.	Factors	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1	Easy to browse the Internet sources	75	43	3	1	1
2	User friendly features	55	53	6	5	4
3	I know the search strategy of the search engine	37	59	15	8	4
4	Search engine is most popular	58	45	11	4	1
5	Recommendations by library staff / colleagues	38	35	23	9	16
6	More information can be retrieved	54	55	7	5	2
7	Advanced search feature helps in achieving relevant output	56	53	10	2	2

information overload over the Internet. Hence, search engines are essential components in the whole process.

Google top the list among the various Search Engines used in accessing information. All the respondents (100%) opine that Google is the best Search Engine (with various options) compared to other search engines. About 25 (20.32%) respondents use Yahoo along with Google. The least preferences were given to AltaVista, Bing, Lycos, Web Crawler and Dogpile. Hence, the study reveals that Google is one of the most popular search engines. The

data related to different search engines are presented in table 6.

Use of Different Subject Search Engines

A general search engine fetches general information about all subjects. It is better to have subject related search engines to search subject information. A question was asked about the use of different Subject search engines. The study indicates that the respondents are aware of subject search engines and also they are using it. The data

Table 9: Browsing Search Results

Sl. No.	Search results	No. of respondents	Percentage (%)
1	1 st page	14	11.38
2	2 nd page	32	26.02
3	3 rd page	20	16.26
4	Beyond 4 th page	57	46.34
	Total	123	100.00

related to subject search engines are presented in table 7. It is observed that 68 (67.32%), (since 101 respondents are aware of subject search engines) respondents are using Science Research, followed by 40 (39.60%) respondents use Worldwide science, 27 (26.73%) respondents use Scirus. The respondents have given less preference to other subject search engines.

Factors that Influence the Use of Search Engines

There are factors which influence the research scholars while accessing information over Internet. The majority, i.e. 75 respondents strongly agree to the statement, *easy to browse the Internet sources*, followed by 56 respondents strongly agree to the statement, *advanced search feature helps in achieving relevant output*. The respondents are agreeing for all the statements except for the statement, *recommendations by the library staff / colleagues*. The data about the factors that influence the use of search engines are presented in table 8.

Browsing Search Results

Whenever we search information over Internet, lakhs or crores of results will appear together on the screen depending upon the nature of information that the users are accessing. Normally, in any of the search

engines, the maximum number of results appear per page is 50. No user wishes to see the results beyond 3rd or 4th page if the number of results runs into lakhs or crores. It is evident from the study that 57 (46.34%) respondents look for results beyond 4th page (irrespective of results per page). About 26.02% (32) respondents look for results up to 2nd page, followed by 20 (16.26%) respondents look up to 3rd page and 14 (11.38%) respondents find in the 1st page itself.

The reasons for restricting their search to a page reveal that they know how to form the syntax and they are also aware of Boolean operation and search strategy.

Accuracy or Trustworthiness of Information Available Through Search Engines

There is no dearth for information over Internet. It is important to check for accuracy or trustworthiness of information available over Internet before one should use it. A question was raised about the accuracy of information available through search engines. It is evident from the study that 67 (54.47%) respondents opine that they can rely on the information available over Internet. Most of the respondents are aware of intricacies of Internet, how to search, how to use strategy, how to form syntax etc. And 12 (9.75%)

Table 10: Accuracy or Trustworthiness of Information Available through Search Engines

Sl. No.	Opinion about accuracy of information	No. of respondents	Percentage (%)
1	Strongly Agree	12	9.75
2	Agree	67	54.47
3	Neither agree nor disagree	35	28.45
4	Disagree	7	5.69
5	Strongly Disagree	2	1.64
	Total	123	100.00

Table 11: Problems Encountered by the Respondents

Sl. No.	Opinion about accuracy of information	No. of respondents	Percentage (%)
1	Not being able to find the information I am looking for	57	46.34
2	Not being able to efficiently organize the information I gather	17	13.82
3	Not being able to find a page I know is out there	25	20.32
4	Not being able to return to a page I once visited	8	6.50
5	Not being able to determine where I am (i.e., 'lost in hyperspace problem)	3	2.43
6	It takes too long to view / download pages	55	44.71
7	Encountering links that do not work	18	14.63
8	Encountering pages with bad HTML	23	18.69
9	Having problems with my browser e.g. freezing up, poor interface, getting disconnected, timing out).	18	14.63
10	Sites that are not compatible with all browsers	24	19.51
11	Too many 'junk' sites	47	38.21
12	Encountering sites that want me to pay to access information	28	22.76

respondents strongly agree that they can trust information available over Internet, whereas, 35 (28.45%) respondents are uncertain about the accuracy or authenticity of the information available over Internet. Very meager portion of the respondents opine that they cannot rely on the information available over Internet.

Problems Encountered

A question was raised about the problems encountered while accessing Internet. It is observed that 57 (46.34%) respondents encountered the problem, '*not being able to find the information I am looking for*', whereas 55 (44.71%) respondents agree to the statement, '*it takes too long to view/download pages*'. About 38.21% (47) respondents observed that '*there are junk sites while searching information over the Internet*'. The problems encountered by the respondents are given in table 11.

Discussions and Conclusion

In the early emergence of the web, search engines could meet users' information needs to a certain extent, but as resources developed in the dynamic environment, search engines

have been overloaded by thousands of documents resulting in information overload or chaos (Moghaddam and Parioikh, 2006).

Like other studies show, the respondents also use popular browsers like Google Chrome, Mozilla Firefox and Internet Explorer. Most of the respondents are not aware of other search engines apart from Google and Yahoo. Most of the respondents are aware of subject related search engines, they need some kind of literacy programmes regarding specific features of different search engines, how to use them and more focus should be placed on subject related search engines. This can definitely infuse in them a kind of confidence and make them competent in accessing the web effectively and efficiently.

One may say that user satisfaction depends upon the search strategies deployed by the user. But at the same time it also depends upon the quality of search engine used for information retrieval. Today, there are many search engines used for resource discovery. They display the results of the searches made in readily-comprehensible manner with lots of customization possibilities including refining and sorting.

This study helps the researchers to

understand how their research might go in a better way if the researcher possesses knowledge such as 'which search engine gives results', 'in what way', 'which search engine is efficient to find and get what kind of information' and 'how to optimize their search using the right search engines'.

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