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Perspective of The Search Engines Among The Faculty Members of Autonomous Colleges of Coimbatore: A Study

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PERSPECTIVE OF THE SEARCH ENGINES AMONG THE FACULTY MEMBERS OF AUTONOMOUS COLLEGES OF COIMBATORE: A STUDY

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ABSTRACT

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. Search engine use is an embedded task that is determined by individuals' specific work contexts and needs. The present study attempted to analysis the perspective of the search engines among the faculty members of autonomous colleges in the Coimbatore. The study had the objective of analysis the level of computer and internet proficiency of the faculty members, purpose of using the search engines and evaluation of the search engines. The study highlighted the relationship of the designation and their proficiency of computer and internet search skill and proved that difference between using the search engines by their age.

Keywords: Search Engines, Faculty Members, Autonomous Colleges, Coimbatore

INTRODUCTION

People exercise the web to find information on almost everything from commonplace information, such as city council bus timetable to long-term vacation places and flight information. Internet of things has become part and parcel of our day-to-day life. However, many questions linger over the minds of many people. In today's world of information-driven society, many studies are exploring usefulness and ease of use of the technology. There is urgent need to better understand factors that influence users' perception of web search engine performance and their perceived intention to reuse the system. Measuring users' perception about their web search experience would provide useful information for many purposes, such as evaluating the success of retrieving information from web search engines; other information systems; building personalized web search user interface. A large number of studies have been conducted to identify factors influencing adoption and use of new information technology, and web sites design and usability. It is believed that investigating the factors that influence user acceptance of search engines and adoption in different contexts continues to be a focal interest in IS and information science research. However, these studies have emphasized on factors that influence user acceptance of technology or systems.

Limited studies have explored how user's contextual factors such as prior knowledge affects their perceived level of satisfaction and perceived intension to reuse the systems. Limited studies have also conducted on usefulness and ease of use of web sites and search engines. It

would help information systems and search engines designers to improve the system performance and build optimized search engines. It is also expected that IS, human-computer interactions, IS and information science researchers will benefit from this study to better understand users' interaction with the search engines and explore further research identifying other factors that affect user perception and success of using the systems. This will, in turn, provide insights into designing next-generation user interface to bridge the semantic gap between the system and its perspective users.

What is Search Engine?

Search engine define as "a program that searches documents for specified keywords and returns a list of the documents where the keywords were found". Typically, a search engine works by sending out a spider to fetch as many documents as possible. Another program, called an indexer, then reads these documents and creates an index based on the words contained in each document. Each search engine uses a proprietary algorithm to create its indices such that, ideally, only meaningful results are returned for each query.

REVIEW OF LITERATURE

Kurt, Adile Aşkım (2018) examined students' online information searching strategies, their cognitive absorption levels and the information pollution levels on the Internet based on different variables and to determine the correlation between these variables. It was also found in the study that there were low levels of positive correlations between the students' level of cognitive absorption and encountering information pollution on the Internet and online information searching strategies. Another finding was that male students' average score for online information searching strategies was higher than that of the female students.

Salehi, Sara (2018) examined students' information access while using Web search, through twenty-eight one-on-one study sessions. First, most participating students declared that they use Google search engine as their primary or only information-seeking tool. Second, about 60% of the clicked result links during the study sessions were located in pages more than second of the search results without personalization influencing the relevance of the top-ranked search results. These differences presented a missed information opportunity, an opportunity bias, for students.

Allam, Ahmed (2014) demonstrated the influence of selection and sorting/ranking criteria operating in search engines on users' knowledge, beliefs, and attitudes of websites about vaccination. Search engines delivering websites containing credible and evidence-based medical information impact positively Internet users seeking health information. Users are affected beneficially or detrimentally but are unaware, suggesting they are not consciously perceptive of indicators that steer them toward the credible sources or away from the dangerous ones. In this sense, the online health information seeker is flying blind.

Eke, Helen Nneka (2014) revealed that most of the students were using the Internet to search for materials for writing term papers, projects and other assignments in other to enhance their academic work. The study equally revealed that, the Internet search strategies employed by

the students includes: use of search engines, sourcing information from the university library database and key word searching. Frequent power outage, slow Internet connections, and lack of training in basic Internet skills were found to be the major problems encountered by LIS students while using the Internet for research.

Kinley, Khamsum (2014) examined how users' perceived level of prior knowledge and experience influence their perceived level of satisfaction of using the web search engines, and how their perceived level of satisfaction affects their perceived intention to reuse the system. The study highlighted the relationship between users' prior level of experience and their perceived level of satisfaction in using the web search engines, and their perceived level of satisfaction in using the systems and their perceived intention to reuse the systems.

Jadhav, Rahul J. (2014) aimed to study the significant role of search engine to make the higher education innovative and easily accessible to the students, faculty and researchers. For collecting data and information varied programs are developed and the uses of search engine proved to be the most significant tool for gathering information and knowledge. Search engine is one of the most widely used methods for navigating of cyberspace.

Jato, Michael (2013) examined students' use of search engines for information retrieval on the web in Adeyemi College of Education, Ondo. The study recommend that students should be enlightened on the importance of online resource for their academic success to propel them to use search engines often; and to use a lot of search engines from over 200 search engines available on the net to retrieve vital information. The librarians should embark on a serious publicity via the use of media such as flyers, notice board, face book, bulletins, seminars etc to attract students' patronage to the virtual library.

Lopatovska, Irene (2012) identified search engine features that users find valuable, such as perception of convenience, independence and privacy, as well as specific functionality such as keyword searching, auto complete feature. The study suggested that seekers operate within digital and traditional information fields and do not easily switch between the fields without major disruption to their habitual pattern.

Tsai, Meng-Jung (2012) investigated the role of search context played in university students' online information searching strategies. The study indicated that university students' online search strategies utilized for searching daily life information were significantly better than those utilized for learning activities, especially in behavioural and meta cognitive strategies. There may be an effect of the interaction between search context and gender on students' online searching strategies. Based on the above, suggestions are provided for future design and implementation of online information searching activities.

Du, J. T (2011) investigated how academic users search for information on their real-life research tasks. This article presents the findings of the first of two studies. Eleven PhD students' searching behaviors on personal research topics were observed as they interacted with information retrieval (IR) systems. The analysis of search logs uncovered the characteristics of research tasks and the corresponding search strategies.

Nikolopoulou, Kleopatra (2011) investigated the undergraduate students' information search practices. The results showed that the Web was the primary information system searched in order to find information for university assignments, while the level of database searching was very low.

Jansen, Bernard J (2009) investigated the effect of search engine brand on the evaluation of searching performance. The study highlighted that branding affects overall Web search at four stages such as search engine selection, search engine results page evaluation, individual link evaluation and evaluation of the landing page. The study discussed the implications for search engine marketing and the design of empirical studies measuring search engine performance.

Malik, Amara (2009) explored different aspects of web search behavior of university students, in terms of user's background and experience with web, purpose of use, searching skills, query formulation, frequency of use, favorite search engine, etc. The study stated that the use of web for academic tasks, preference of Google, reformulation of query, use of basic and advance search features, browsing of first ten hits and problem of slow speed.

Rieger, O. Y. (2009) examined the use of Web search engines by faculty and students to support learning, teaching, and research and investigated the satisfaction levels with search outcomes and trust in search engines in supporting specific tasks. It is highlighted that even though there were variations in search engine use among the faculty, graduate and undergraduate students surveyed, there was convergence in means of overall satisfaction with the outcomes of their searches and trust in search engines in supporting their studies and research.

Reichert, Monique (2005) showed the students generally preferred to use the keyword instead of the semantic search function, independently from the judgment on the accuracy of the results yielded by the respective search engine. The results suggested that the pertinence of the results as judged by the students strongly depends on the familiarity of the users with both the formulation of questions and the domain of interest. Also the semantic search engine needs to be improved in order to extract more semantic information.

STATEMENT OF THE PROBLEM

The present study is an attempt to explore the perspective of the search engines among the faculty members of autonomous colleges in Coimbatore district. The usefulness of a search engine depends on the relevance of the result set it gives back. While there may be millions of web pages that include a particular word or phrase, some pages may be more relevant, popular, or authoritative than others. Most search engines employ methods to rank the results to provide the "best" results first. How a search engine decides which pages are the best matches, and what order the results should be shown in, varies widely from one engine to another. Hence the study attempted to study the perspective of the search engines among the faculty members of autonomous college.

OBJECTIVES

1. To study the level of proficiency in computer and internet searching skill
2. To analysis the search techniques used and preferred file formats
3. To spotlight on purpose of using the search engines
4. To analysis the criteria towards evaluation of the search engines and ranked the using search engines.

METHODOLOGY

The present study is descriptive and analytical in nature. The study has made use of both primary and secondary data. Questionnaire used to collect the data. For the study the researcher distributed and collected data from 165 participated from various autonomous colleges in Coimbatore district. After collecting the data, SPSS used to analyze the data. The results were presented in tables with percentage. Some of the data were analyzed with mean and standard deviation values. Using the chi-square and regression, the study hypothesis was proved.

Table 1

Social Demographic Profile

	Variable	**No of Respondents**	**Percentage**
Gender	Male	97	58.79
	Female	68	41.21
	Total	**165**	**100**
Age	Below 30	23	13.94
	30 - 35	28	16.97
	36 - 40	40	24.24
	41 - 45	42	25.45
	45 - 50	20	12.12
	Above 51	12	7.27
	Total	**165**	**100**
Nativity	Rural	94	56.97
	Urban	42	25.45
	Semi Urban	29	17.58
	Total	**165**	**100**
Designation	Professor	36	21.82
	Associate Professor	47	28.48
	Assistant Professor	82	49.70
	Total	**165**	**100**
Department	Science	54	32.73
	Arts	56	33.94
	Humanities	29	17.58
	Languages	26	15.76
	Total	**165**	100

The table 1 shows the social demographic profile of the respondents. Among the gender group, it is noticed that 59.8% of the respondents were male and 41.2% of the respondents were female. Among the age group, it is inferred that 25.4% of the respondents were in the age of 41-45 and 24.2% of the respondents were in the age of 36-40. 17% of the respondents were in the age of 30-35 and 14% of the respondents were below 30 years aged. 12.12% of the respondents were in the age of 45-50 and 7.3% of the respondents were aged above 51 years. Among the nativity, it is clear that majorities (57%) of the respondents were from rural area, 25.5% of the respondents were from urban area and 17.6% of the respondents were from semi-urban area. Among the designation, it is noticed that 50% of the respondents were Assistant professors and 28.5% of the respondents were Associate professors and 22% of the respondents were professors. Among the department distribution, it is noticed that 34% of the respondents were reported from Arts and 33% of the respondents were reported from Science department. Around 16% of the respondents responded from humanities and 16% of the respondents were reported from languages department.

Table 2
Level of proficiency in Computer and Internet searching

Proficiency Level	**Computer**		**Internet**	
	N	%	N	%
Expert	120	72.73	113	68.48
Intermediate	43	26.06	46	27.88
Novice	2	1.21	6	3.64
Total	165	100	165	100

The table 2 shows the level of proficiency in computer and internet searching by the respondents. It understood that 72.7% of the respondents were experts in computer and 68.5% of the respondents were experts in internet searching skill. Around 26.06 % of the respondents were intermediate in computer and 27.9% of the respondents were intermediate in internet searching skills.

Table 3
Chi-Square between designation and their proficiency on computer and internet searching skill

	Computer Skill			Internet Searching Skill		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.916[a]	2	.000	16.832[a]	2	.000
Likelihood Ratio	18.307	2	.000	17.507	2	.000
Linear-by-Linear Association	9.715	1	.002	8.315	1	.004
N of Valid Cases	165			165		

The table 3 discussed the relationship between the designation of the respondents and their proficiency on computer and internet searching skill. From the table, it is inferred that the significant values are between 0.002 and 0.004 which is lesser than 0.05 at the significance level of 95%. Therefore the null hypothesis is rejected. The hypothesis proved that "***There is a significant relationship between the*** **designation of the respondents and their proficiency on computer and internet searching skill."**

Table 4

Mode of using the search engines

Sl. No	Place		Always	Sometimes	Rarely	Total	WAM	Rank
1	Laptop	N	79	52	34	165	2.27	2
		%	47.88	31.52	20.61	100		
2	Departmental Lab	N	55	80	30	165	2.15	4
		%	33.33	48.48	18.18	100		
3	Main Library	N	72	62	31	165	2.25	3
		%	43.64	37.58	18.79	100		
4	Smart Phone	N	87	65	13	165	2.45	1
		%	52.73	39.39	7.88	100		

Table 4 shows the mode of using the search engines. It inferred that 47.9% of the respondents were always and 31.5% of the respondents were sometimes using the laptop for searching. 33.3% of the respondents were always using and 48.5% of the respondents were sometimes using the department lab for searching. 43.6% of the respondents were always using and 37.6% of the respondents were sometimes using the main library for searching. It is highlighted that 52.7% of the respondents were always using and 39.4% of the respondents were sometimes using the smart phone for searching.

It is understand that majorities of the respondents were using the smart phone and laptop for searching.

Table 5

Search Tools and Techniques

Sl. No	Search Technique		Always	Sometimes	Rarely	Total	WAM	Rank
1	Basic Search	N	79	60	26	165	2.32	3
		%	47.88	36.36	15.76	100		
2	Advanced Search	N	81	59	25	165	2.34	2
		%	49.09	35.76	15.15	100		
3	Phrase Search	N	83	62	20	165	2.38	1
		%	50.30	37.58	12.12	100		
4	Field Search	N	67	60	38	165	2.18	4
		%	40.61	36.36	23.03	100		

Table 5 shows the search techniques adopted by the respondents while using the search engines. it is observed that 47.8% of the respondents were always using and 36.4% of the respondents were sometimes using the basic search techniques. 49.1% of the respondents were always using and 35.7% of the respondents were sometimes using the advanced search. 50.3% of the respondents were always using and 37.6% of the respondents were sometimes using the phrase search. 40.6% of the respondents were always using and 36.4% of the respondents were sometimes using the field search.

Among the search techniques, most of the respondents were frequently using the phrase search and advance search techniques.

Table 6
Preferred format form Search Engine

Sl. No	Format		Always	Sometimes	Rarely	Total	WAM	Rank
1	Word	N	87	45	33	165	2.33	2
		%	52.73	27.27	20.00	100		
2	Full-text HTML	N	70	59	36	165	2.21	3
		%	42.42	35.76	21.82	100		
3	PPT	N	65	65	35	165	2.18	4
		%	39.39	39.39	21.21	100		
4	PDF	N	87	65	13	165	2.45	1
		%	52.73	39.39	7.88	100		

Table 6 shows the expected file format from the search engines results. It noticed that 52.7% of the respondents were always and 27.3% of the respondents were sometimes expecting the word files from the search results. 42.4% of the respondents were always and 35.8% of the respondents were sometimes expecting the full text HTML format from their search results. 39.4% of the respondents were always and another 39.4% of the respondents were sometimes expecting the PPT results from the searching. 52.7% of the respondents were always and 39.4% of the respondents were sometimes expecting the PDF as their result of search.

Among the file formats, more numbers respondents were expecting the PDF and word file format from their search results.

Table 7
Purpose of using the Search Engines

Sl. No	Purpose		Always	Sometimes	Never	Total	WAM	Rank
1	Prepare Class notes	N	82	58	26	166	2.35	2
		%	49.70	35.15	15.76	100.61		
2	Research Work	N	81	59	25	165	2.34	3
		%	49.09	35.76	15.15	100		
3	Reference works	N	83	62	20	165	2.38	1
		%	50.30	37.58	12.12	100		
4	Entertainment	N	78	52	35	165	2.26	4
		%	47.27	31.52	21.21	100		
5	Shopping	N	67	60	38	165	2.18	6
		%	40.61	36.36	23.03	100		
6	Other Personal work	N	75	55	35	165	2.24	5
		%	45.45	33.33	21.21	100		

Table 7 shows the various purpose of using the search engines. it is noticed that 49.7% of the respondents were always using and 35% of the respondents were sometimes using the search engines for preparing class notes. 49.1% of the respondents were always and 35.8% of the respondents were sometimes using the search engines for research work. 50.3% of the respondents were always and 37.6% of the respondents were sometimes using the search engines for reference works. It is noticed that 47.3% of the respondents were always using and 51.5% of the respondents were sometimes using the search engines for entertainment purposes. 40.6% of the respondents were always using and 36.4% of the respondents were sometimes using the search engines for shopping purpose. 45.5% of the respondents were always using and 33.3% of the respondents were sometimes using the search engines for other personal works.

Among the academic purposes, more numbers of respondents were using the search engines for reference works and preparing for class notes. Among the personal purposes, more number of the respondents was using the search engines for entertainment and other personal works.

Table 8

Regression between age and purpose of using the search engines

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.387[a]	.150	.120	.732

a. Predictors: (Constant), Prepare Class notes, Research Work, Reference works, Entertainment, Shopping, Other Personal work

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.888	4	2.722	5.073	.001[a]
	Residual	61.704	161	.537		
	Total	72.592	165			

a. Predictors: (Constant), Prepare Class notes, Research Work, Reference works, Entertainment, Shopping, Other Personal work

b. Dependent Variable: age

The table 8 demonstrated the regression test results between age and their purpose of using the search engines. From the table, it is inferred that the significant values are between 0.001 which is lesser than 0.05 at the significance level of 95%. Therefore the null hypothesis is rejected. The hypothesis proved "***There is a significant difference between*** **the age and their purpose of using the search engines"**

Table 9

Evolution of the Search Engines

Sl. No	**Techniques**		**Always**	**Sometimes**	**Never**	**Total**	**Mean**	**Rank**
1	Core Technology	N	79	43	43	165	2.22	6
		%	47.88	26.06	26.06	100		
2	Scalability	N	53	79	33	165	2.12	8
		%	32.12	47.88	20.00	100		
3	Connectors	N	75	55	35	165	2.24	5
		%	45.45	33.33	21.21	100		
4	Content Processing	N	65	57	43	165	2.13	7
		%	39.39	34.55	26.06	100		

5	Indexing	N	90	35	40	165	2.30	3
		%	54.55	21.21	24.24	100		
6	Query Functionality	N	85	50	30	165	2.33	1
		%	51.52	30.30	18.18	100		
7	Search Relevancy	N	75	65	25	165	2.30	3
		%	45.45	39.39	15.15	100		
8	Security	N	74	63	28	165	2.28	4
		%	44.85	38.18	16.97	100		
9	User Interface	N	83	52	30	165	2.32	2
		%	50.30	31.52	18.18	100		
10	Administration, Monitoring, and Maintenance	N	55	73	37	165	2.11	9
		%	33.33	44.24	22.42	100		

Table 9 explains about the opinion about the evolution of the search engines. It is clear that 47.9% of the respondents were always expecting and 26.1% of the respondents were sometimes expecting the core technology support from the search engines. 32.1% of the respondents were always expecting and 47.9% of the respondents were sometimes expecting the scalability from the search engines. 45.5% of the respondents were always expecting and 33.3% of the respondents were sometimes expecting the connectors of the search engines. It observed that 39.4% of the respondents were always mentioned and 34.5% of the respondents were sometimes mentioned about the content processing from the search engines. 54.5% of the respondents were always discussed and 21.2% of the respondents were sometimes discussed about the indexing of the search engines.

It is noticed that 51.5% of the respondents were always expecting and 30.3% of the respondents were sometimes expecting the query functionality from the search engines. 45.5% of the respondents were always expecting and 39.4% of the respondents were sometimes expecting the search relevancy from the search engines. 44.8% of the respondents were always expecting and 38.2% of the respondents were sometimes expecting the security from the search engines. 50.3% of the respondents were always and 31.5% of the respondents were sometimes expecting the user interface. 33.3% of the respondents were always expecting and 44.2% of the respondents were sometimes expecting the administration, monitoring and maintenance of the search engines.

Based on the respondents opinion, the evaluation of the search engines might done based on the Query Functionality, User Interface, Search Relevancy, Indexing, Security and Connectors

Table 10

Preferred the Search Engines

Sl. No	Name	Mean	Std Div	Rank
1	Google	2.02	1.078	1
2	Bing	2.35	1.155	2

3	Ask.com	2.79	1.178	5
4	Baidu	2.61	1.184	3
5	Yahoo!	2.69	1.286	4
6	Altavista	2.82	1.075	7
7	Aol.com	2.81	1.26	6
8	Web Crawler	3.11	1.266	8

Based on the above evaluation criteria, the above table shows the ranking of the top most search engines used by the respondents. It is observed that Google (M:2.02, SD: 1.078) ranked first, Bing(M:2.35, SD:1.155) ranked second, Baidu (M:2.61, SD: 1.184) ranked third, Yahoo! (M: 2.69, SD:1.286) ranked fourth and Ask.com (M:2.79, SD: 1.178) ranked fifth. Aol.com(M: 2.81, SD: 1.26) ranked sixth, Altavista (M: 2.82, SD: 1.075) ranked seventh and Web Crawler (M: 3.11, SD: 1.266) ranked eighth.

Findings

- The study indicated that 59.8% of the respondents were male and 25.4% of the respondents were in the age of 41-45
- The study mentioned that 57% of the respondents were from rural area and 50% of the respondents were Assistant professors.
- It is noticed that 34% of the respondents were reported from Arts and 33% of the respondents were reported from Science department.
- The study found that 72.7% of the respondents were experts in computer and 68.5% of the respondents were experts in internet searching skill.
- The study highlighted that there is a significant relationship between the designation of the respondents and their proficiency on computer and internet searching skill
- The study stated that most of the respondents were using the smart phone and laptop for searching.
- The study stated that most of the respondents were frequently using the phrase search and advance search techniques. Lesser number of respondents was using the basic search.
- The study highlighted that more numbers respondents were expecting the PDF and word file format from their search results. Lesser number of respondents was preferred PPT and full text HTML format.
- More numbers of respondents were using the search engines for reference works and preparing for class notes.
- The study highlighted that There is a significant difference between the age and their purpose of using the search engines"
- Most of the respondents were using the search engines for entertainment and other personal works.
- Majorities of the respondents stated that Query Functionality, User Interface, Search Relevancy, Indexing, Security and Connectors were the evaluation factors of the search engines.

- ❖ It is observed that most of the respondents were using the Google, Bing, Baidu and Yahoo! Moderate level of preference given to Ask.com, Aol.com, Lesser people only using the Altavista and Web Crawler ranked eighth.

CONCLUSION

Search-engines are among the most used resources on the internet. At present hosts over eight billion items and returns answers to queries in a fraction of a second, thus realizing some of the most incredible predictions envisioned by the pioneers of the world wide web. Further internet search engines are considered the biggest source of information and find an important place in libraries as quickest means to access information at any time. But it requires the help of search engines for the effective and optimum use. However, search engine is an aid to find pin-pointed information to save time of the users. This study revealed perception of the search engines of the faculty members on autonomous colleges and information that will be solution to formulating effective search in higher education. This study also revealed that majority of the respondents search for professional and personal information from the search engines. The study highlighted the expectation of the user how a search engines want to prove the results to the academic professionals.

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