Usage of Internet among Science Faculty Members of Karnataka State Universities: An Exploration

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Abstract - This study explore the Internet usage by the science faculty members of Karnataka State Universities in India. A total of 556 faculty members are selected from 11 Universities in Karnataka State. A structured questionnaire used as a tool to collect the primary data. The results indicated that all most all science faculty members used the Internet for various academic works. The study also revealed that (97.48%) of respondents use the Internet every day. Most of the Science faculty members (92.63%) accessed Internet in their respective departments, followed by home (75.18%). Majority of the faculty members (81.83%) used the Internet for academic purpose and 80.40% of respondents used the Internet for research, while 72.12% used it for publishing research articles. 53.4.2% of respondents uses Internet from 11-20 years, while 39.21% of respondents used Internet from 1-10 years. Only 7.37% of respondents used Internet from 20-30 years. The study made it clear that the usage of Internet meets the saturation point among science faculty members, irrespective of their age and designation in the various universities Karnataka state. But the study found that low Internet speed is the major problem faced by the users. To enhance Internet speed to meet the user's satisfaction, the study recommends that there is a need to enhance ICT infrastructure in universities with latest developments. In order to overcome the low Internet speed, increase the Internet network bandwidth in the universities.

Keywords: Internet, Internet use, ICT Infrastructure, Science Faculty, Universities, Karnataka, India

I. INTRODUCTION

According to Savolainen (1999) Internet provides access to unlimited sources of information and search engines is continuously being advanced to provide efficient ways to help users to find what they want. The Internet eases and increases access to a large amount of data, saves time and money, and obtains an opportunity to consult several experts with a single request (via discussion groups), and greater independence from specific time and places for information seeking. Internet as a tool for Interactive learning, teaching and research is a new phenomenon in education area (Kamba, 2007). The use of Internet is rapidly increasing due to its effectiveness and ability in providing right information to the right person at the right time. It works around the clock and links every corner of the world. Internet has become an inescapable need for every institution of higher education (Thanuskodi, 2011, as cited in Sivagamasundari G. & Sivasami K., 2015). Internet has been found to play a very vital role in the teaching and learning environment as it has been seen as an effective means used to widen educational opportunities as well as the single most powerful vehicle for providing access to unlimited information (Kaur, 2006, as cited in Onwuagboke *et al.,* 2014, p.89).

Due to the explosion of information resources on the Internet may have considerable implications for teaching, learning and research. Teachers and students are depending more and more on the Internet for their various educational purposes. Keeping in view the importance of Internet in education. This study has been tried to know the use of Internet by faculty members with special reference to the universities in Karnataka.

II. RESEARCH QUESTIONS

The study has been conducted with the following research questions:
Q1: Since how long the Science faculty members use Internet?
Q2: How frequently the Science faculty members use Internet?
Q3: Which are the preferred places to use Internet by the Science faculty members?
Q4: For what purpose the Science faculty members use the Internet?

III. REVIEW OF LITERATURE

A survey conducted by Kaur & Manhas (2008) on the use of Internet services and resources by students and teachers in the engineering colleges of Punjab and Haryana states of India. The findings revealed that all respondents used the Internet frequently; access points being either college or at home with over 75 percent using Internet mainly for educational and research purposes.

A study by Sampath Kumar and Kumar (2010) showed that the students and faculty who participated in survey are aware of e-sources and also the Internet. 96% of faculties and 76% of students used Internet for different purposes. The major purposes of Internet used for Teaching, Research and sending e-mail. The study also revealed that most of the students and faculty members access the Internet information resources by trial and error method or through the advice of friends.

A study by Olubanke (2013) shows that the use of Internet among the scientists was (100%). Most of the scientist (43.6%) using it every day and Internet use experience is 6.3 years. The majority of respondents (64.5%) accessed the Internet from a commercial cybercafé followed by homes (49.1%). Most of the respondents (59.2%) acquired Internet use skills through colleagues and friends. The respondents used Internet for communication, research and updating knowledge.

Rangaswamy, Manjunatha and Sampath Kumar (2017) conducted a survey on the Internet use among faculty members and students of Engineering college libraries in Tumakuru city. The study revealed that, the majority of respondents accessed the Internet using smart phone (67.40%) and 49.25% of them used at their college campus. Majority of respondents (74.44%) have used Internet for searching information. While, 42.85% of respondents have used it for checking their e-mails. Majority of faculty and students opined that the low Internet speed (46.29%) and high Internet cost (31.48%) are the major problems faced by the users.

Khan, *et al.,* (2017) this paper examines the variety of Internet usage patterns observed in Oman. This work attempts to go beyond the usual applications of the World Wide Web and investigates usage specifics, validity of common beliefs and gaps that need to be bridged in today's seamlessly connected world. The findings of this paper could prove to be insightful inputs to guide future researchers, Internet service providers, and contemporary policy makers. The study conducted by Saeed Ullah Jan., *et al.,* (2018) at the Peshawar Medical College, Peshawar, Pakistan. Census-based approach was adopted. Pre-tested questionnaire was distributed among 115 faculty members of both basic and clinical sciences groups. 57.6% were males and 42.4% were females. Majority (77.27%) of the respondents used the Internet for teaching and research. 33.33% of the faculty members used Library to access the Internet. Low Internet speed, virus on computers and a lack of modern trainings were the major barriers to access Internet.

IV. METHODOLOGY

A structured questionnaire was designed to collect the original data from from the selected population. In the present study, the science faculty members working in various universities of Karnataka State are chosen for the study.

A. Selection of Samples

The total population of science faculty members in the various universities during the academic year 2016-17 was 871.The representative sample of 556 Science faculty

members was chosen based on the following formula given by (Krejcie & Morgan, 1970).

$$s = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

Where

s = required sample size

X^2 = the table value of Chi-square for 1 degree of freedom at the desired confidence level is 95%
N = the population size (871).
P = the population proportion (assumed to be 0.05 since this would provide the maximum sample size).
d = the degree of accuracy expressed as '*p*' (i.e. Margin of error=0.025)
Thus, sample size is 556.

B. Analysis and Interpretation of Data

The analyzed data is presented in the tabular form. The data collected for this study are analyzed using SPSS 21.0V software and calculated the simple percentage, frequencies, and cross-tabulation methods. The results of the analysis are presented in the section.

The data summarized in the table-I show the demographic characteristics of respondents. It can be seen from the table that I. 72.8% of the respondents are male and only 27.2% of the respondents are female. 41.1% of the respondents are under the age group of 40 years, 28.15% between 41-50 years and 33.81% of the respondents fall under the age group above 50 years.

Majority of respondents (61.3%) have PhD degree, while only 19.8% of them have Masters Degrees. Majority of respondents are professors (38.5%) followed by Assistant professors (25.4%) and (25.1%) are Guest faculty members and only 11% are Associate professor.

Distribution of respondents by University is shown in the table II. The table revealed that of the 556 science faculty members 14.2% of them from University of Mysore, Mysuru followed by Mangalore University, Mangaluru (14%), Karnatak University, Dharawada (12.9%), Bangalore University, Bengaluru (10.8%), Kuvempu University, Shivamogga (9.7%), Gulbarga University, Kalaburgi (9.2%), and each 7.6% of science faculty from Tumkur University, Tumakuru and Davanagere University, Davanagere. However only 5% from Rani Chennamma University, Belagavi, 4.9% and 4.1% of respondents from Akkamahadevi Women's University, Vijayapura and Vijayanagara Sri Krishnadevaraya University, Ballary respectively.

TABLE I DEMOGRAPHIC CHARACTERISTICS OF THE SCIENCE FACULTY MEMBERS

Demographic Information	No. of Respondents(n=556)		Percentage
Gender	Male	405	72.8
	Female	151	27.2
Age	Below 40 yrs.	228	41.01
	41-50 yrs.	140	25.18
	Above 50 yrs.	188	33.81
Qualification	Master's Degree	110	19.8
	M.Phil.	12	2.2
	PhD	342	61.5
	Post Doctoral	44	7.9
	Master, M.Phil., PhD	41	7.4
	M.Phil., PhD, Post-Doctoral	7	1.3
Designation	Professor	214	38.5
	Associate Professor	61	11
	Assistant Professor	141	25.4
	Guest Faculty	140	25.1

TABLE II DISTRIBUTION OF RESPONDENTS BY UNIVERSITY

University	Frequency (n=556)	Percentage
Bangalore University, Bengaluru	60	10.8
University of Mysore, Mysuru	79	14.2
Kuvempu University, Shivamogga	54	9.7
Mangalore University, Mangaluru	78	14
Karnatak University, Dharawada	72	12.9
Gulbarga University, Kalaburgi	51	9.2
Tumkur University, Tumakuru	42	7.6
Davanagere University, Davanagere	42	7.6
Rani Chennamma University, Belagavi	28	5
Vijayanagara Sri Krishnadevaraya University, Ballary	23	4.1
Akkamahadevi Women's University, Vijayapura	27	4.9
Total	556	100

TABLE III PLACE OF INTERNET USE BY THE SCIENCE FACULTY MEMBERS

Place	No. of Respondents (n=556)	Percentage
University Library	96	17.27
Department	515	92.63
Computer Lab	78	14.03
Home	416	75.18
Cyber Café	30	5.4

The study has made an attempt to know the place of Internet use by the science faculty members. The table III, reveals that majority of the Science faculty members, i.e., (92.63%) access Internet in their respective departments. While (75.18%) access internet from their home, followed by University Library (17.27%), computer lab (14.03%) Notably, only (5.40%) access internet at cybercafé.

The result of this study shows that State universities have provided ICT infrastructure and internet connections to the departments to access Internet. It also reveals that majority of the Science faculty members have internet connection at their home also. It reflected that steady increase in the use of Internet by the faculty members for their day to day activities.

TABLE IV FREQUENCY OF INTERNET USE BY SCIENCE FACULTY MEMBERS

Frequency	Frequency (n=556)	Percentage
Every day	542	97.48
2-3 days in a week	13	2.33
Once in a week	1	0.19
Total	556	100

TABLE V YEARS OF EXPERIENCE IN THE USE OF INTERNET

Experience in using internet	Frequency (n=556)	Percentage
01-10 years	218	39.21
11-20 years	297	53.41
21-30 years	41	7.38
Total	556	100

The study also tried to find out the frequency of the use of Internet by science faculty members. The table IV clearly indicated that most of the science faculty (97.48%) used the Internet every day, whereas only 2.33% used the Internet 2-3 days in a week.

This study reveals that science faculty members used the internet every day for their day to day activities.

The study also made an attempt to know the years of experience in the use of Internet by the science faculty members. The table- V reveals that the majority (53.41%) of science faculty has 11-20 years of experience in the use of Internet and 39.21% of science faculty has 1-10 years of experience. It also shows that only 7.38% of science faculty members have 21-30 years of experience in the use of Internet.

TABLE VI PURPOSE OF USE OF INTERNET

S. No.	Purpose	To Greater Extent	To a Considerable Extent	To some Extent	To Little Extent	Not at all
1	To keep abreast with the latest developments	387 (69.60%)	115 (20.68%)	33 (5.94%)	14 (2.52%)	7 (1.26%)
2	For educational purpose	455 (81.83%)	82 (14.75%)	15 (2.70%)	3 (0.54%)	1 (0.18%)
3	For Research Purpose	447 (80.40%)	71 (12.77%)	18 (3.24%)	6 (1.07%)	14 (2.52%)
4	To publish research articles	401 (72.12%)	85 (15.28%)	27 (4.86%)	16 (2.88%)	27 (4.86%)
5	To e-mail/chatting	321 (57.73%)	100 (17.98%)	72 (12.95)	34 (6.12%)	29 (5.22%)
6	To use social networks	201 (36.15%)	90 (16.19%)	133 (23.92)	78 (14.03%)	54 (9.71%)
7	For recreation	122 (21.94%)	59 (10.61%)	90 (16.19)	94 (16.91%)	191 (34.3%)

It is clear that data from the table VI shows that not surprisingly, majority of the respondents used the Internet for academic purpose (81.83%), followed by (80.40%) used it for research, (72.12%) used Internet to publish research articles. 69.60% faculty used it to keep abreast with the latest developments, followed by e-mail/chatting to communicate with others (57.73%). Least use social networks (36.15%) and for recreation (21.94%).

Table-VI indicates that faculty members given much emphasis on academic, research, publications, communication and use of social networks. Most of the faculty members who need to keep themselves informed of latest developments in their subject through Internet, the above table reflected that importance given by the respondents to Internet facilities.

V. DISCUSSION AND CONCLUSION

The study has revealed the results with regard to the place, frequency, experience and purpose of using the Internet

among science faculty members. Most of the faculty members, i.e., (92.63%) access Internet in their respective departments, (75.18%), Internet access at home, followed by Internet access at University Library (17.27%). The study indicates that decreasing the use of cyber café day by day. Most of the respondents 97.48% use Internet every day. Only few respondents 2.34% use Internet 2-3 days in a week. 53.4.2% of respondents uses Internet from 11-20 years, followed by 39.21% of respondents use Internet from 1-10 years. Only 7.37% of respondents use Internet from 20-30 years. The data indicates that increasing in the use of Internet by science faculty from last one decade.

Most of the respondents used the Internet for academic purpose (81.83%), followed by (80.40%) used the Internet for research, (72.12%) used internet to publish research articles, whereas (69.60%) of respondents used the Internet to keep abreast with the latest developments. Based on the findings of the study, the following suggestions are made to improve the use of the Internet by the faculty members. Since most of the science faculty members used Internet

regularly at their department as well as at their home. Study also revealed that Internet access at university libraries is gradually decreasing. Because the Internet connectivity at departments and faculty's home leads the internet usage at Libraries gradually reduced. It means internet connectivity is increased and widen geographically. Hence the study found Internet is very essential for science faculty members to meet day to day requirements. The study made it clear that usage of internet meets the saturation point among science faculty members in the various universities of Karnataka state. At the same time the study also found that the low Internet speed is the major problem faced by the science faculty members. To enhance internet speed and meet the respondent's satisfaction, the study recommends that there is a need to enhance ICT infrastructure in universities with latest developments.

In order to overcome the low Internet speed, increase the Internet network bandwidth. A large portion of faculty members in the university used the Internet. But they do not know the use of search techniques, its applications and resources available on the Internet. Librarians should take initiative to conduct training at regular interval to update faculty member's knowledge in the area of ICT arability and search strategies to make use the resources available on the net effectively and efficiently.

The Internet is one the important tool for information communication and dissemination of information in the twenty first century. The Internet facility has enabled the academician's to enhance their academic excellence by providing the nascent information and access to global information. Library persons should provide the information in an organized way on the website, in such a way that the users are able to find the information easily which they need for their academic endeavors.

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