Use of internet by faculty members and research scholars in the 21st Century: A study of University Libraries of Karnataka State, India

Gururaj S. Hadagali*

B.D. Kumbar**

ABSTRACT

Internet is becoming more widely used by academic institutions to support the teaching, learning and research activities of faculty members and research scholars. The main aim of this study is to examine the impact of Internet on the users in University libraries of Karnataka State. The present study demonstrates and elaborates the various aspects of internet use, such as frequency of Internet use, place of access, purposes of Internet access, motivating factors to access Internet and most preferred search engines. It was found from the survey that the Internet has become a vital instrument for teaching, research and learning process of these respondents. Some suggestions have been given to make the service more beneficial for the faculty members and research scholars of the University libraries of Karnataka State under study.

Keywords: Internet Use, Faculty Members, Research Scholars. Universities, India, Academic Libraries and Karnataka State.

INTRODUCTION

The current digital revolution, especially Internet technology, integrated with a treasure of information has gained significance as an indispensable tool in pursuit of knowledge and information. At the dawn of information age, professionals are experiencing new vigour in the field of information collection, processing and retrieval. The Internet considered as the electronic mobile library in cyberspace provides an almost universal infrastructure for accessing the information with almost a global reach.

Author's Affiliations: *Assistant Professor, Department of Library and Information Science, Karnatak University, Dharwad – 580 003, Karnataka State, INDIA, Ph: 0836-2215260 and Mobile: 099452 11029, E–mail: gururaj_hadagali@yahoo.co.in.; **Professor, Department of of Library and Information Science, Karnatak University, Dharwad – 580 003, Karnataka State, INDIA, Ph: 0836-2215260, Mobile: 099454 08212, e-mail: bdkumbar@yahoo.com

Reprints requests: Dr. Gururaj S. Hadagali, Lecturer, Department of Studies in Library and Information Science, Karnatak University, Dharwad – 580 003, Karnataka State, INDIA, Ph: 0836-2215260 and Mobile: 099452 11029, e-mail: gururaj_hadagali@yahoo.co.in

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). Internet is undoubtedly, the worlds wonder network carrying information on almost any subject under the sun. Everybody today would like to be on Internet because of the wealth of information which lies there to be exchanged. It is known as the information superhighway.

The Internet or the Net, as it is better known has been perceived to be of several dimensions to its users, a medium of intercommunication between remote users, a mechanism to share information and work collaboratively, a means of publishing globally and a near exhaustive repository of information. The Internet plays an important role in teaching, learning and research processes. The usefulness of Internet lies in its ability to provide access to electronic information resources of library everywhere and at all times. It removes the constraints of time and space and also the dependence on conventional sources for learning. Faculty members and research scholars of Universities of Karnataka increasingly depend on the Internet for their teaching/research activities and for information on recent/current

developments in their study areas than on conventional sources.

REVIEW OF RELATED LITERATURE

Rehman and Ramzy (2004) conducted a study of health care professionals at the Health Sciences Centre of Kuwait University. A questionnaire was administered to all the 180 faculty members in HSC. The extent and patterns of their use of the Internet for 12 applications were analysed. The current level of skills was examined and perceptions for improving them were explored. Also, the impact of the Internet on professional and personal development was explored. It was found that the Internet had become a vital instrument for research, information and communication in the lives of these professionals.

Mishra, Yadav and Bisht (2005) conducted a study to know Internet utilization pattern of the undergraduate students of G.B. Pant University of Agriculture and Technology, Pantnagar. The findings of the study indicated that a majority of the students (85.7%) used the Internet. It also showed that 61.5% of the males and 51.6% of the females used Internet for preparing assignments. A majority of the respondents, i.e., 83.1% male and 31.3% female respondents indicated that they faced the problem of slow functioning of Internet connection.

Asemi (2005) conducted a study which shows that all the respondents were using the Internet frequently because all faculties were provided connection to the Internet. It was revealed from the study that the researchers were getting quality information through the Internet. Fifty five percent of the respondents searched for scientific information through the Internet because the University library had provided access to various databases and online journals for all the students and staff.

Ansari (2006) conducted a study of faculty from four colleges of Kuwait University, i.e. Arts, Social Sciences, Sciences, and Engineering. A questionnaire was used to collect data from faculty. Half of the 491 potential participants were selected as sample, with a response rate of 62.6

percent. Findings of the study indicated that a large majority have been using the computer and internet for more than five years. They use the internet mostly for, and give importance to, e-mail, search engines, and www resources mainly for communication, research, and publication. Slow speed, lack of time, and lack of access from home are the major problems. Most of them are interested in improving the Internet use skills through formal training.

Hadagali, Kumbar and Lakshmiraddy (2007) conducted a study on the use of Internet by the faculty members of Social Science faculty of Karnatak University, Dharwad, India. A questionnaire was prepared which was sent to 50 faculty members and the response rate was 84 %. The results indicated that the use of Internet services by the faculty members is associated with an increase in the number of research papers and with improvement in the quality of research and teaching.

Trivedi and Joshi (2008) conducted a study of faculty at Pramukhswami Medical College (PSMC) and Shree Krishna Hospital (SKH) of H.M. Patel Centre for Medical Care, Education, and Research (HMPCER), Karamsad, Gujarat, India. A total of 194 health care professionals (116 male, 78 female) were administered. It was found from the study that slow Internet speed is the major problems they are facing.

NEED FOR THE STUDY

The ever increasing number of people accessing Internet coupled with recent explosion of information resources on the Internet may have considerable implications for teaching, learning and research. Faculty members and research scholars are depending more and more on the Internet for their various educational purposes.

Lack of access to current materials in libraries of universities in developing countries, is a major problem that hinders research and teaching. Inter Library Loan and Document Delivery Services have not solved this problem by themselves. Internet makes it possible for users to have access to large volumes of information on many

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disciplines irrespective of their geographical location.

The current study is conducted to gather, measure and access the changing users' attitude, and behaviour towards the Internet. It is necessary to examine the Internet facility provided at the campuses of the Universities and to evaluate the use of Internet.

SCOPE OF THE STUDY

The present study has the following limitations:

1. The study is restricted to use of Internet by the science and technology faculty of Universities of Karnataka State.
2. The study population consists of faculty members and research scholars.

OBJECTIVES OF THE STUDY

The main objective of this research was to investigate the impact of Internet on faculty members and research scholars of various Universities of Karnataka State.

The other objectives of the study are:

1. To highlight the importance of the Internet and its services over the traditional library services.
2. To identify the different purposes for which the Internet is used by faculty members and research scholars.
3. To study the various Internet resources and services used by the faculty members and research scholars on the Internet for various activities of teaching, learning and research.
4. To study the impact of Internet on users' research and teaching.
5. To suggest ways and means for the improvement of the Internet facility in the Universities of Karnataka State.

HYPOTHESES

1. Use of Internet has increased the contribution of research papers by the users to a great extent.
2. Internet has a positive impact on teaching / research activities of faculty members and research scholars of Universities in Karnataka state.

METHODOLOGY

The researcher visited all the six State Universities of Karnataka. Questionnaires were distributed among the faculty members, research scholars. A total of 604 questionnaires were distributed among users and 471 duly filled in questionnaires were received, thus resulting into a response rate of 77.98 %.

Faculty members and research scholars are the target population for this study. The survey method has been employed and in that questionnaire tool was used, supplemented with interview as well, to collect the data for the present study. Random sampling technique has been used. The data collected through questionnaires have been fed to computer, using SPSS (Software Package for Social Sciences).

RESULTS AND DISCUSSIONS

Distribution of questionnaires in different Universities of Karnataka State

Table 1 reveals university-wise distribution of questionnaires. The highest response has come from Gulbarga University with 80.95% followed by Karnatak University with 80.91%, Mangalore University with 80.00%, Kuvempu University with 78.21%, Bangalore University with 77.94% and Mysore University with 71.55%, the least.

Table 1: University wise distribution of questionnaires

Sl. No.	Name of the University	No. of questionnaires distributed	No. of questionnaires received	Rate of response
1.	Bangalore University	136	106	(77.94 %)
2.	Gulbarga University	84	68	(80.95 %)
3.	Karnatak University	110	89	(80.91 %)
4.	Kuvempu University	78	61	(78.21 %)
5.	Mangalore University	80	64	(80.00 %)
6.	Mysore University	116	83	(71.55 %)
	Total	604	471	(77.98 %)

Category-wise distribution of respondents

Table-2 reveals the category-wise breakup of respondents. It is observed that, of the total 471 respondents, 231 (49.04%) are faculty members, 240 (50.96%) are research scholars.

Table 2: Category wise distribution of respondents

Category	BU	GU	KU	KVU	MU	MYU	Total
Faculty members	59 (25.55)	33 (14.28)	37 (16.02)	30 (12.99)	36 (15.58)	36 (15.58)	231 (49.04)
Research scholars	47 (19.58)	35 (14.58)	52 (21.67)	31 (12.92)	28 (11.67)	47 (19.58)	240 (50.96)
Total	106 (22.50)	68 (14.44)	89 (18.89)	61 (12.95)	64 (13.59)	83 (17.62)	471 (100.00)

Figures in parenthesis indicate percentage

Geographical background of the respondents

Table 3 depicts the users geographical background. It reveals that the majority of respondents, i.e., 207 (43.94%) belong to rural area, whereas 167 (35.46%) respondents belong to urban area. About 82 (17.41%) respondents belong to semi urban, followed by only 15 (3.19%) respondents who belong to cosmopolitan city.

Table 3: Geographical background of the respondents

Category	Rural area	Semi urban	Urban area	Cosmopolitan City	Total
Faculty members	93 (40.26)	48 (20.78)	85 (36.80)	5 (2.16)	231 (32.72)
Research scholars	114 (47.50)	34 (14.17)	82 (34.17)	10 (4.16)	240 (34.00)
Total	207 (43.94)	82 (17.41)	167 (35.46)	15 (3.19)	471 (100.00)

Figures in parenthesis indicate percentage

Frequency of Internet Use

In order to assess the frequency of using the Internet services, the time gap has been classified into six different categories (see Table - 4). It has been found that 74.73 % of the respondents use the Internet every day and 19.32 % for 2-3 times in a week. It is interesting to note here that 2 (0.86 %) faculty members never used the Internet for their academic and research purpose. Compared to the

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faculty members 205 (85.42%) research scholars use Internet every day. On an average the majority of the users from all the Universities use the Internet every day.

Table 4: Frequency of Internet Use

Frequency	Faculty members N=231	Research scholars N=240	Total N=471
Every day	147 (63.64)	205 (85.42)	352 (74.73)
2-3 times a week	64 (27.70)	27 (11.25)	91 (19.32)
Once a week	16 (6.93)	04 (1.67)	20 (4.25)
Fortnightly	01 (0.43)	03 (1.25)	04 (0.85)
Occasionally	01 (0.43)	01 (0.41)	02 (0.42)
Never	02 (0.86)	00	02 (0.42)
Total	231 (49.04)	240 (50.96)	471 (100.00)

Figures in parenthesis indicate percentage

Place of the Internet access by the faculty members

The faculty members were asked to furnish information regarding the place from where they access Internet. Their responses in this regard are presented in table – 5. It reveals that the majority of the faculty members, i.e., 167 (86.53 %) access Internet in their departments. About 66 (34.19 %) respondents access Internet in the departmental laboratory. The number of the faculty who access Internet at home is 58 (30.05 %), where as about 45 (23.32 %) respondents access Internet at cyber café, and 41 (21.24 %) respondents access from central library.

Table 5: Place of the Internet access by the faculty members

Place of access	BU n=51	GU n=24	KU n=29	KVU n=27	MU n=33	MYU n=29	Total n=193
Cyber Café	9 (20.00)	6 (13.33)	2 (4.45)	14 (31.11)	5 (11.11)	9 (20.00)	45 (23.32)
Department	46 (27.54)	23 (13.77)	25 (14.97)	16 (9.58)	30 (17.96)	27 (16.18)	167 (86.53)
Home	18 (31.03)	3 (5.17)	13 (22.41)	2 (3.45)	9 (15.53)	13 (22.41)	58 (30.05)
Central Library	6 (14.64)	14 (34.15)	4 (9.76)	8 (19.51)	5 (12.19)	4 (9.75)	41 (21.24)
Departmental laboratory	25 (37.87)	6 (9.09)	14 (21.21)	7 (10.61)	7 (10.61)	7 (10.61)	66 (34.19)

Figures in parenthesis indicate percentage

Place of the Internet access by research scholars

Table–6 reveals that the majority of respondents, i.e., 139 (65.26%) access Internet in the department. About 100 (46.95%) respondents access Internet at cyber café. This is followed by 56 (26.29%) respondents who access in the departmental laboratory, 45 (21.13%) respondents who access in central library and the number of those who access Internet at home is 20 (9.39%).

Table 6: Place of the Internet access by research scholars

Place of access	BU n=40	GU n=29	KU n=42	KVU n=30	MU n=27	MYU n=45	Total n=213
Cyber Café	20 (20.00)	11 (11.00)	28 (28.00)	12 (12.00)	9 (9.00)	20 (20.00)	100 (46.95)
Department	27 (19.42)	14 (10.07)	27 (19.42)	18 (12.95)	21 (15.11)	32 (23.03)	139 (65.26)
Home	5 (25.00)	1 (5.00)	4 (20.00)	1 (5.00)	6 (30.00)	3 (15.00)	20 (9.39)
Central Library	10 (22.22)	19 (42.22)	5 (11.11)	15 (33.33)	2 (4.44)	4 (8.88)	45 (21.13)
Departmental laboratory	17 (30.36)	3 (5.36)	23 (41.07)	3 (5.36)	2 (3.57)	8 (14.28)	56 (26.29)

Figures in parenthesis indicate percentage

Purposes of accessing Internet by the faculty members

In the modern era Internet has created the means for the people to communicate with each other and the way information is accessed. It has rapidly become an established medium of communication and connects people across the globe, removing geographic boundaries and simplifying access to information. The rich resources on the Internet are beneficial to all educational endeavours supporting teaching and research and academic in higher education (Biradar, Rajshekhar and Sampath Kumar, 2006). Universities and other higher educational institutions, where academic dialogue and information resources are essential for professional success, are without doubt, the most likely to reap the benefits of the Internet.

The faculty members were asked about the primary use of Internet. The responses of faculty members are recorded in table – 7. It is observed that e-mail seems to be the most primary use of Internet since about 181 (93.78 %) respondents have said so. About 144 (74.61%) respondents mentioned research purpose. Access to e-resources is indicated by 134 (69.43 %) respondents, whereas 127 (65.80 %) respondents indicated teaching as their purpose. Browsing e-journals is the purpose of 122 (63.21 %) respondents. General information and entertainment record relatively lesser preference.

Table 7: Purposes of accessing Internet by the faculty members

Purpose	BU n=51	GU n=24	KU n=29	KVU n=27	MU n=33	MYU n=29	Total n=193
E-mail	50 (27.62)	21 (11.60)	29 (16.02)	24 (13.26)	31 (17.13)	26 (14.37)	181 (93.78)
Entertainment	9 (28.12)	7 (21.88)	5 (15.62)	3 (9.38)	3 (9.38)	5 (15.62)	32 (16.58)
General Information	29 (28.43)	10 (9.80)	18 (17.65)	12 (11.76)	16 (15.69)	17 (16.67)	102 (52.84)
Browse e-journals	32 (26.23)	14 (11.48)	19 (15.58)	17 (13.93)	20 (16.39)	20 (16.39)	122 (63.21)
Access e-sources	40 (29.85)	22 (12.50)	20 (14.92)	14 (10.45)	22 (16.42)	16 (11.94)	134 (69.43)
Research	40 (27.78)	18 (12.50)	22 (15.28)	17 (11.80)	24 (16.67)	23 (15.97)	144 (74.61)
Teaching	33 (25.98)	9 (7.08)	10 (7.87)	21 (16.53)	24 (18.89)	20 (15.75)	127 (65.80)

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Figures in parenthesis indicate percentage

Purposes of accessing Internet by the research scholars

Table-8 reveals that the majority of respondents, i.e., 192 (90.14 %) indicated that e-mail is the primary use of Internet. About 176 (82.63 %) respondents indicated that they access Internet for research. Browsing e-journals is the purpose of 147 (69.01 %) respondents. This is followed by general information, which was sought by 120 (56.33 %) respondents, whereas access to e-resources is indicated by 94 (44.13 %) respondents. Entertainment and teaching record relatively lesser preference with 84 (39.43 %) and 32 (15.02 %) respondents respectively.

Table 8: Purposes of accessing Internet by the research scholars

Purpose	BU n=40	GU n=29	KU n=42	KVU n=30	MU n=27	MYU n=45	Total n=213
E-mail	38 (19.79)	24 (12.50)	39 (20.31)	27 (14.06)	26 (13.54)	38 (19.79)	192 (90.14)
Entertainment	18 (21.43)	5 (5.95)	19 (22.62)	9 (10.72)	8 (9.52)	15 (17.86)	84 (39.43)
General Information	26 (21.67)	12 (10.00)	23 (19.16)	12 (10.00)	21 (17.50)	26 (21.67)	120 (56.33)
Browse e-journals	29 (19.73)	16 (10.88)	23 (15.65)	26 (17.69)	23 (15.65)	30 (20.40)	147 (69.01)
Access e-sources	21 (22.34)	10 (10.64)	24 (25.53)	7 (7.45)	12 (12.76)	20 (21.28)	94 (44.13)
Research	28 (15.91)	26 (14.77)	34 (19.32)	25 (14.20)	24 (13.64)	39 (22.16)	176 (82.63)
Teaching	5 (15.62)	4 (12.50)	5 (15.60)	7 (21.88)	5 (15.62)	6 (18.76)	32 (15.02)

Figures in parenthesis indicate percentage

Motivating factors in the case of the faculty members to access Internet

There are several factors that motivate the faculty members to access Internet. The responses in this regard are presented in table 9. It reveals that the mean value for the factor to keep abreast with area of research interest is one factor, i.e., it is an agreeable fact by all the Universities. Mangalore University (CV=52.16%) respondents' opinion is more stable as compared to that of the respondents of other Universities, and most variable opinion is observed in the case of the respondents from Gulbarga University. Respondents from all the Universities agreed to the factor that *Internet provides faster and reliable information. Search engines provide user friendly interface*, which is almost an agreeable statement in all the Universities and a similar response is again observed in the case of the faculty members *getting most updated information.*

It is further observed from table-9 that the opinion given by the respondents regarding *sending papers to journals /conferences /seminars and wide range of online databases /e-journals* is agreeable. The respondents are uncertain about the statement regarding *expert assistance of library staff* ($\overline{X}$ = 3). The CV is least for Mangalore University (CV=46.42%). Hence the opinion given by the Mangalore University respondents is stable, whereas the respondents of other Universities and the respondents from Gulbarga University are most variable (CV = 77.77 %).

Table 9: Motivating factors in the case of faculty members to access Internet

Motivating Factors		BU	GU	KU	KVU	MU	MYU
To keep abreast with area of research interest / course work	$\overline{X}$	1	1	1	1	1	1
	S.D.	0.81	1.07	0.80	0.66	0.64	0.90
	C.V.	69.88	82.49	64.03	55.36	52.16	73.47
Internet provides faster & reliable information	$\overline{X}$	1	1	1	1	1	1
	S.D.	0.70	1.09	0.85	0.66	0.94	0.91
	C.V.	56.83	76.57	64.30	49.57	62.74	72.51
Search engines provide user friendly interface	$\overline{X}$	2	1	1	2	2	2
	S.D.	1.05	1.03	0.85	1.04	0.80	1.15
	C.V.	66.85	72.44	65.17	58.87	49.83	71.59
Users get most updated information	$\overline{X}$	2	2	2	2	2	1
	S.D.	1.10	1.31	1.12	0.94	0.90	1.06
	C.V.	71.55	78.90	70.05	59.70	54.87	70.37
To send papers to journals / conferences / seminars	$\overline{X}$	2	1	2	1	2	2
	S.D.	1.00	1.16	1.14	1.14	1.18	1.18
	C.V.	60.58	87.28	70.24	72.45	61.58	77.42
Expert assistance by library staff	$\overline{X}$	3	2	3	3	3	3
	S.D.	1.70	1.23	1.87	1.66	1.46	1.61
	C.V.	54.77	77.77	69.15	60.71	46.42	56.14
Wide range of online databases / e-journals being provided by UGC – Infonet at University libraries	$\overline{X}$	2	1	2	2	2	2
	S.D.	1.13	1.03	1.50	1.33	1.24	1.34
	C.V.	60.99	72.44	78.05	62.45	58.59	69.86

Note: $\overline{X}$ – Mean   S.D. – Standard Deviation C.V. – Coefficient of Variation 1–Full extent 2–Some extent 3–Uncertain 4–Very limited extent 5–No influence

Motivating factors in the case of Research Scholars to access Internet

Table – 10 shows that the mean value for the factor to keep abreast with area of research interest is almost 1, i.e., it is an agreeable fact by almost all the University respondents. The CV is least for Kuvempu University (CV = 48.50 %), hence Kuvempu University users' opinion is more stable than that of other universities and most variable opinions are observed in the case of the respondents from Gulbarga University (CV =

75.47%). For statements like Internet provides faster and reliable information, search engines provides user friendly interface, users get most updated information and to send papers to journals/conferences/seminars are agreeable to almost all respondents.

There is a mixed opinion for the statement expert assistance by library staff. The opinion given by the Mangalore University respondents is disagreeable (=4). The CV is least for Mangalore University respondents (CV = 37.98 %), and hence the opinion of the respondents of Mangalore University respondents is more stable, and most varied responses are received from the respondents of Banglaore University (CV=74.20%).

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Table 10: Motivating factors in the case of research scholars to access Internet

Motivating Factors		BU	GU	KU	KVU	MU	MYU
To keep abreast with area of research interest / course work	$\overline{X}$	1	1	1	2	1	2
	S.D.	0.68	1.12	1.05	0.80	0.67	0.87
	C.V.	60.25	75.47	74.99	48.50	50.68	53.13
Internet provides faster & reliable information	$\overline{X}$	1	1	1	2	2	1
	S.D.	0.83	1.31	0.94	0.88	0.92	.093
	C.V.	64.72	95.38	62.62	53.33	57.03	62.41
Search engines provide user friendly interface	$\overline{X}$	1	2	2	2	1	2
	S.D.	0.71	1.01	1.05	0.85	0.55	0.88
	C.V.	59.70	65.47	61.59	54.90	41.47	56.65
Users get most updated information	$\overline{X}$	1	2	2	2	2	2
	S.D.	0.93	1.39	0.98	0.85	0.85	0.93
	C.V.	71.70	77.17	58.85	53.62	45.68	52.09
To send papers to journals / conferences / seminars	X	2	1	1	2	2	2
	S.D.	1.29	1.12	0.94	1.02	1.12	1.22
	C.V.	78.90	78.33	71.89	54.75	51.59	59.49
Expert assistance by library staff	$\overline{X}$	2	3	2	3	4	3
	S.D.	1.72	1.50	1.61	1.28	1.37	1.38
	C.V.	74.20	59.06	67.54	43.05	37.98	39.58
Wide range of online databases / e-journals being provided by UGC – Infonet at University libraries	$\overline{X}$	1	2	2	2	2	3
	S.D.	1.02	1.33	1.12	1.22	1.26	1.30
	C.V.	68.40	64.51	62.01	62.22	50.48	44.01

Note: $\overline{X}$ – Mean   S.D. – Standard Deviation
C.V. – Coefficient of Variation
1–Full extent 2–Some extent 3–Uncertain 4–Very limited extent 5–No influence
Use of Internet Services
A question was raised for the users on different services they avail from Internet. The results are presented in table - 11. It can be seen from study that the majority, i.e. 461 (97.87 %) respondents who use electronic mail service, followed by 459 (97.45 %) respondents use World Wide Web. It is essential to note here that 290 (61.57 %) respondents use List Serves/Discussion Groups service. The usage of two services, i.e. File Transfer Protocol and Frequently Asked Questions (FAQs) are very meager.

Table 11: Use of Internet Services

Internet Services	Faculty members N=231	Research scholars N=240	Total N=471
Electronic Mail (e-mail)	224 (96.97)	237 (98.75)	461 (97.87)
World Wide Web (WWW)	219 (94.80)	240 (100.00)	459 (97.45)
Chatting	04 (1.73)	131 (54.58)	135 (28.66)
Frequently Asked Questions (FAQs)	14 (6.06)	39 (16.25)	53 (11.25)
File Transfer Protocol (FTP)	02 (0.86)	16 (6.67)	18 (3.82)
Bulletin Board Services (BBS)	27 (11.69)	66 (27.5)	93 (19.74)
List Serves / Discussion Groups	128 (55.41)	162 (67.5)	290 (61.57)

Figures in parenthesis indicate percentage
Problems in the use of Internet
A question was asked for the users regarding problems faced in the use of Internet and this is presented in table - 12. It has been observed that 264 (56.05 %) respondents say that slow speed of

Internet community is the major problem. Interesting factors are observed: 46.07 % of the respondents indicate that there is a lack of support from the library staff, irrelevant information and lack of organized information. About 155 (32.91 %) respondents indicate that they face problems due to lack of time to acquire skills needed to use Internet.

Table 12: Problems in the use of Internet

Problems	Faculty members N=231	Research scholars N=240	Total N=471
So much information is available	67 (29.00)	41 (17.08)	108 (22.93)
Irrelevant Information	74 (32.03)	52 (21.67)	126 (26.75)
Lack of organized information	79 (34.12)	87 (36.25)	166 (35.24)
Lack of authenticity	64 (27.70)	71 (29.58)	135 (28.66)
Slow speed	136 (58.87)	128 (53.33)	264 (56.05)
Lack of time	74 (32.03)	81 (33.75)	155 (32.91)
Lack of support from library staff	105 (45.45)	112 (46.67)	217 (46.07)

Figures in parenthesis indicate percentage

Contribution of Research Papers

It is important to study whether contribution of research papers has increased after accessing and using electronic information resources. The responses are presented in table - 13. It reveals that the faculty members' opinion for the above statement is agreeable ($\overline{X}$ = 2). Gulbarga University respondents' opinion is more stable compared to that of the respondents of Mysore University (CV = 64.42 %), which is most variable. Research scholars' opinion in this regard is agreeable ($\overline{X}$ = 2). More stable opinions are received from Kuvempu University (CV=47.98%) respondents, whereas most varied opinions are received from Mysore University (CV=64.88%) respondents.

Table 13: Contribution of Research Papers

Use of Internet has increased the research output / contribution of papers		BU	GU	KU	KVU	MU	MYU
Faculty members	$\overline{X}$	2	2	2	2	2	2
	S.D.	0.96	0.79	0.87	0.76	0.84	1.20
	C.V.	58.43	39.53	55.33	39.94	48.05	64.42
Research scholars	$\overline{X}$	2	2	2	2	1	2
	S.D.	0.90	1.00	0.93	0.93	0.83	1.13
	C.V.	57.34	56.59	56.86	47.98	60.87	64.88
ANOVA Test	F	0.757**	2.936*	0.098	0.830**	2.878*	0.124

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Note: $\overline{X}$ – Mean   S.D.–Standard Deviation C.V. – Coefficient of Variation

1 – Strongly Agree   2 – Agree   3 – Uncertain
4 – Disagree   5 – Strongly Disagree

* Significant at 5 % level

** Significant at 1 % level

It is observed from the data that library users agree ($\overline{X}$ = 2) with the above statement. Further, the opinion of Gulbarga University users has 5% significant difference, whereas other University users' opinion is not up to the significant level. Hence, the **Hypothesis – 1***: Use of Internet has increased the contribution of research papers by the users to a great extent,* is accepted.

IMPACT OF INTERNET ON USERS

Considering the convenience of use, time taken, search and accuracy of output users were asked about the impact of Internet as a source of information on their study / research / teaching. Their responses in this regard are presented in table – 14. It reveals that the mean value (= 1) in the case of faculty members is agreeable. The opinion given by Mangalore University (CV = 46.43 %) respondents is more stable compared to that of the respondents of other Universities in the state. Most varied opinions are observed in the case of Gulbarga University (CV = 69.32 %) respondents.

The mean value (= 1) is also agreeable for research scholars. The opinion given by the Kuvempu University (CV = 41.26 %) respondents is stable, whereas most variable in the case of Karnatak University respondents (CV = 74.99 %).

Table 14: Impact of Internet on users

Considering the convenience of use, time taken, search & accuracy of output, Internet has had a positive impact on my teaching / research		BU	GU	KU	KVU	MU	MYU
Faculty members	$\overline{X}$	1	1	1	2	1	1
	S.D.	0.70	0.92	0.62	0.81	0.64	0.75
	C.V.	57.07	69.32	65.67	49.51	46.43	67.27
Research scholars	$\overline{X}$	1	1	1	2	1	1
	S.D.	0.73	0.87	1.05	0.63	0.55	0.65
	C.V.	54.50	64.98	74.99	41.26	41.47	44.58
ANOVA Test	F	9.689**	1.379	3.615*	4.956**	1.371	2.014*

Note: $\overline{X}$ – Mean   S.D. – Standard Deviation
C.V. – Coefficient of Variation
1–Strongly Agree 2–Agree   3–Uncertain
4–Disagree   5–Strongly Disagree

  * Significant at 5 % level

  ** Significant at 1 % level

Further, statistical analysis, i.e., One Way Analysis of Variance (ANOVA Test) is applied to know the variations with respect to Universities and different types of users. It is found that 1 % significant difference is observed in the case of Bangalore University and Kuvempu University respondents, 5 % significant difference is observed in Karnatak University respondents. This explains impact of Internet on different types of users is significantly variable. Hence the **Hypothesis – 2**: *Internet has a positive impact on teaching / research activities of Faculty Members and Research Scholars at Universities in Karnataka State,* is accepted.

SUGGESTIONS

Based on the opinion given by the respondents and findings of the study, the sfollowing suggestions have been made to improve the Internet facilities in universities of Karnataka State.

1. The majority of users prefer Internet as their first source to look for the needed information. They also agree that it has a significant impact on their teaching / research. Hence, the authorities of the Universities in general, and libraries in particular, must make all out efforts to upgrade Information and Communication Technology (ICT) infrastructure for providing seamless broadband Internet access to users.

2. The responsibility of the library personnel is increasing day-by-day in a changed environment. But the present study / survey revealed that the library staff does not take keen interest to help users in accessing Internet and also users have expressed their displeasure towards the library staff. These behavioural issues should be addressed by providing adequate training to the library staff

about the use of Internet and first make them confidant users. This will certainly bring about some change in their attitude.

3. Orientation / training programmes for the faculty members and research scholars should be conducted at regular intervals regarding the effective use of Internet.

4. Users access Internet from several places like library, department, cyber café and home. However, it has been identified by the survey that the users are facing difficulties in libraries as these are not having enough number of workstations. Libraries must make provision of workstations in commensurate with the number of library users. Non-availability of computers results into users getting frustrated. Hence, it is recommended to the authorities of the University libraries to create necessary infrastructure facilities.

5. Trained personnel having Internet knowledge should be appointed to assist the faculty members and research scholars. It is also suggested by the respondents that the Internet Monitoring Board should be constituted.

6. To facilitate the Internet use, the directory of websites should be prepared and updated frequently.

CONCLUSION

The present study indicates that the concerned University authorities of the University should make attempts to provide the necessary infrastructure facilities such as high speed network connections to access Internet and conduct training programmes for the library professionals and user orientation programmes for the effective use of Internet facilities.

The results of this exploratory study show that Internet use by the academies is related to some more common needs and that some information and communication needs are dependent on proper access to Internet facilities. The results also suggest that some practical measures have to be taken to increase Internet use. Since the Internet is one of the most important resources of scholarly

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activity, and scholarly requirements are critical to academies, the University authorities should do their best to overcome the obstacles for effective usage of the Internet.

In view of the above mentioned findings it is the prime responsibility on the part of the Universities in general and the libraries in particular to provide better internet facilities for the users. It is also suggested that the personnel working in the University libraries has to maintain very healthy and friendly relation with the users, this in turn will enhance the use of available facilities in the University libraries of Karnataka State.

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