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Information Seeking Behaviour in ICT Environment among Users in Karnataka State Agricultural University Libraries: A Study

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Abstract - *This study investigates the impact of information communication technology on information seeking behaviors of users in state Agricultural University libraries in Karnataka. For the present study a well structured questionnaire has been formulated and distributed among the students, research scholars and faculty members of Agricultural Universities in Karnataka in order to ascertain the impact of information communication technology on information seeking behaviors of users i.e. library membership, time spent on ISB activities, problems faced while seeking information, purposes of seeking information, information seeking habits relevant to academic work, sources most convenient for information seeking, opinion about necessity of training for using electronic (ICT) resources, opinion about direct influence of ICT on study, teaching, research and extension activities, use of ICT based digital resources compare to traditional print resources. The outcome and suggestions of the study would be beneficial to take appropriate measures to improve ISB with the aid of ICT.*

Keywords: Information Seeking, Information and Communication Technology (ICT), Information Seeking Behaviour (ISB), Agricultural University Libraries.

1. Introduction

The information and communication technology is rapidly changing the whole world creating new challenges and opportunities. It is offering new ways for communicating and exchanging information and knowledge. Computers, communication and information access technologies are effecting revolutionary changes in the way the information is stored, retrieved, and disseminated. Information technologies had an everlasting impact on the library and information centres. Libraries are getting themselves transformed from traditional ones to digital libraries having widespread use of computers, telecommunications and microelectronics to facilitate on-line searching, easy access to information through CD Rom, DVD Rom, database, multimedia,

network etc. Information Technology has changed the traditional methods of storing recording and retrieval. The art prints, charts, diagrams, equipment, filmstrip, flash cards, games, globes, kinescopes, kits, maps, microfilms, microfiche, microprints, motion pictures films, Programmed instruction, disks, slides, study print, tape recording and videotapes etc. are multimedia materials, controlling and disseminating information, which have become challenges for today's librarians. Effectiveness of a library service is now largely depends upon the information and communication technology (ICT). Agriculture libraries like other libraries have to adopt the applications of information and communication technologies for their obvious benefits to library and information centres.

The information seeking behaviour of users especially in developing countries has been a significant and eventful issue from last few decades, libraries have become increasingly aware of the revolutionary impact of developments in information and communication technology on their key functions. The application of ICT facilitates easy and instantaneous access to information. It provides opportunities for libraries and information centres to widen the scope of their resources and services and to increase their significance within the organization they serve. This study investigates the impact of information and communication technology on information seeking behaviour of agricultural scientists, teaching faculty, research scholars and students, for their course-work and research activities, the extent to which they use the library, the types of activities they are likely to use the library for, their awareness and use of the electronic library and any assistance they have received in using the ICT based library services and its resources. This reveals that the majority of users are finding difference in their Information Seeking Behaviour due to ICT.

The Indian Council of Agricultural Research (ICAR), the controlling agency for agricultural universities in India, has implemented a special project with the assistance of the World Bank to modernize the Library and Information Systems of all agricultural universities and the ICAR Institutes in the country. The project included special funding, technical assistance and training for the library staff, teachers and students. Substantial improvement in the operations and performance has been achieved with this project. The university libraries have automated most of their operations and many of them could develop digital libraries of theses and dissertations. To accomplish ICMR mission, the National Agricultural Innovation Project (NAIP) Division (ETD) of ICAR assumes the major responsibility of executing the related mandate i.e. "To develop human resources in the field of science communication, library, documentation and information science, and S&T information management systems and services". The users of agricultural university libraries are to gather information from various means and methods, a better understanding is required to know the needs, kinds of resources and ICT based services that could make education and research work more effective and efficient. Day by day physical visit of users are decreasing, however online access has increased drastically, making the newly emerged ICT environment capable of providing best platform for developing information resources and human resources using in an effective manner. The present study covers students, research scholars and faculty members of five Agricultural Sciences Universities in Karnataka i.e. University of Agricultural Sciences, Bengaluru, University of Agricultural Sciences,

Dharwad, University of Agricultural Sciences, Raichur, University of Horticultural Sciences, Bagalkot and University of Agricultural & Horticultural Sciences, Shivamogga.

2. Review of Literature

Numerous studies have been undertaken to explore the impact of ICT on ISB among users to meet their academic and research needs. The researcher made an elaborate review of the research material available on the study. There were many studies related to the different issues concerning Impact of Information and Communication Technology on Information Seeking Behaviour of Users. This concept appeared in the literature since 1990s onwards, there are too many developments in ICT infrastructure and ISB patterns. Literature published in related topic was scanned and selected reviews of articles are presented.

Sahu,Hemant Kumar and Singh, Surya Nath (2010)[1] on Impact of ICT on information seeking behaviour of users in astronomy and astrophysics centres of India was designed to determine the information seeking behaviour (ISB) of astronomy and astrophysics users in India. The main objective of study was to determine to the sources consulted and the general pattern of information gathering system by users and impact of information and communication technology (ICT) on Astronomy and Astrophysics (AA) user's information seeking behaviour. The study examined what information resources they prefer and their methods of access, as well as publishing habits. It shows that AA users have developed a unique information seeking behaviour to carry out their education and research, etc. Majority of respondents reported that more information is available in different resources. Consequently they were able to devote time to find out relevant information in the current ICT scenarios. The study also revealed that in spite of preferred electronic source AA users are still using printed materials.

Sridhar M S (2010)[2] assessed that the most of information and communication technology (ICT) tools like chat, discussion forum, e-mail, messenger, open archive, Wiki and other collaborative working tools and particularly social networks on the Internet greatly facilitate information transfer and sharing from one-to-one as well as one-to-many. However, it is human variables that make more difference in seeking, sharing or withholding information than technological variables. And the information seeking behaviour, technologists from a high organization were asked whether they freely share work-related technical information with other colleagues in the organization the most basic condition for effective sharing of information is mutual trust. Further, confidence, rapport, motivation, team spirit and group discussions increase the chances of sharing, where as professional jealousy, potential threat arising out of competition, compartmentalized organizational structure and the status consciousness come in the way of sharing information.

Haneefa, Mohamed (2006)[3] in his study concluded that most of the special libraries in Kerala need proper ICT infrastructure including hardware, software, and human ware and library staff have to be trained properly to make use of the resources optimally both conventional and digital resources. And Application of ICT in libraries has become inevitable in an era of information

explosion and widespread use of digital information resources. Effective application of ICT in libraries helps in performing their operations and services most efficiently. This investigation has provided a useful summary of the application of ICT in special libraries in Kerala.

Mahajan, Preeti (2009)[4] discussed the kinds of academic information needed by respondents, which resources they prefer, whether they are satisfied with the library collections, and the general pattern of information-seeking, with special reference to the influence of course of study. Impact of ICT on information seeking shows as Undergraduates 98%, Postgraduates 99% and Researchers 100%, Since information is available in different formats as a result the implementation of ICT, users were asked to indicate its impact on their information-seeking behaviour. Virtually all users were aware of its impact and found it beneficial. Users prefer information in both print and electronic form, however, the students desire more exposure to electronic sources, and they also expressed a need for training in the use of these resources.

Sridhar, M. S. (1990)[5] has emphasized that the correlation of user- characteristics with information seeking behaviour is mainly concerned with demographic-characteristics, personality- characteristics, organizational& professional characteristics and individual as the unit of analysis and also deals with the Motivation & Purposes of Seeking Information and it can be concluded that the Information Seeking Behaviour of the Indian Space Technologists varies significantly with status, qualifications, nature of work, specialization and professional activities and achievements.

3. Objectives of the Study

The study was conducted with the following objectives:

- To find out the various characteristics of library users of agricultural universities in Karnataka as variables of their information seeking behaviour and relate selected characteristics of their information seeking behaviour in ICT environment.
- To examine at what extent information seeking behaviour of library users of agricultural universities in Karnataka has changed in the changing digital era.
- To identify average time spent for ISB activities in the library and the sources which are most convenient for information seeking.
- To study the purpose of information seeking by agricultural university library users in Karnataka.
- To find out the problems faced while seeking information and necessity of training for using ICT based e-resources by agricultural university library users in Karnataka.
- To know the extent of use of ICT based digital resources compare to traditional print resources.
- To find out the opinion about direct influence of ICT based digital information resources on academic and extension activities.

4. Methodology

The survey method was adopted, using questionnaire as a tool for data collection. A total of 2544 questionnaire were distributed among the students, research scholars and faculty of Agricultural Sciences Universities in Karnataka, of which 1961 filled-up questionnaire were received back consisting of 77.08% responses. The highest numbers of questionnaire have been received from University of Agricultural Sciences, Bengaluru with 547 (79.97%) responses, followed by 512 (77.81%) responses from University of Agricultural Sciences, Dharwad, 368 (74.04%) responses from University of Agricultural Sciences, Raichur, 286 (75.26%) responses from University of Agricultural & Horticultural Sciences, Shivamogga and 248 (76.30%) responses from University of Horticultural Sciences, Bagalkot. In addition to questionnaire method, interview schedule and observation method were also used to collect required information as a supplement to the questionnaire method to bring more clarity to the data which are essential and use for analysis and interpretation of data.

5. Analysis and Interpretation of Data

The data was collected by different methods were analyzed and interpreted and same presented in the following tables.

5.1 .Gender Wise Distribution

The gender wise distribution of respondents under the study has been shown in Table-1. The Table-1 shows that out of the 1961 total respondents, 1354 (69.04%) are 'Male' and the remaining 607 (30.95%) are 'Female'.

Table-1: Gender Wise Distribution

Gender	Students (N=1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
Male	678 (65.00)	294 (76.96)	382 (71.26)	1354 (69.04)
Female	365 (34.99)	88 (23.03)	154 (28.73)	607 (30.95)

The Table-1 also depicts that out of 1043 students,678 (65.00%) are 'Male' and remaining 365 (34.99%) are 'Female'. Among the 382 research scholars, 294 (76.96%) are 'Male' and remaining 88 (23.03%) are 'Female'. Out of 536 faculty members, 382 (71.26%) are 'Male' and remaining 154 (28.73%) are 'Female'.

5.2. Registered Library Membership

The respondents are asked about registration for university library membership. The opinion gathered has been summarized in Table-2. The Table-2 depicts that 1840 (93.82%) of respondents have membership in university library and 121 (06.17%) of respondents do not have membership in university library.

Table-2: Registered Library Membership

Opinion	Students (N= 1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
Yes	1043 (100.00)	318 (83.24)	479 (89.36)	1840 (93.82)
No	00 (00.00)	64 (16.75)	57 (10.63)	121 (06.17)
(X^2=160.944,d.f.=2, P=.000=<.005)				

The Table-2 also depicts that 1043 (100.00%) of students, 318 (83.24%) of research scholars and 479 (89.36%) of faculty members opine as 'Yes' i.e. they have membership in university library and 64 (16.75%) of research scholars and 57 (10.63%) of faculty members opine as 'No' i.e. do not have membership in university library.

5.3 Time Spent for ISB activities in the Library

The time spent per week for ISB activities in the library has been summarized in Table-3. The Table-3 depicts that 571(29.12%) of respondents spent '5-6 Hours' in a week for ISB activities in the library with mean value of 1.535902 and SD .7677879, followed by 543 (27.69%) of respondents spent '3-4 Hours' in a week with mean value of 1.738490 and SD .9059719, 381 (19.43%) of respondents spent '7-8 Hours' in a week with mean value of 1.611549 and SD .6892200, 376 (19.17%) of respondents spent '1-2 Hours' in a week with mean value of 2.276596 and SD .9021959 and 90 (04.59%) of respondents spent 'Above 9 Hours' in a week for ISB activities in the library with mean value of 1.377778and SD .7677879.

Table-3: Time Spent for ISB activities in the Library

Time Spent (in hours per week)	Students (N= 1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)	Mean	SD
1-2	115 (11.03)	42 (10.99)	219 (40.86)	376 (19.17)	2.276596	.9021959
3-4	312 (29.91)	61 (15.97)	170 (31.72)	543 (27.69)	1.738490	.9059719
5-6	362 (34.71)	112 (29.32)	97 (18.10)	571 (29.12)	1.535902	.7677879
7-8	193 (18.50)	143 (37.43)	45 (08.40)	381 (19.43)	1.611549	.6892200
Above 9	61 (05.85)	24 (06.28)	05 (00.93)	90 (04.59)	1.377778	.5916607

The Table-3 also depicts that 362 (34.71%) of students spent '5-6 Hours' in a week for ISB activities in the library,143 (37.43%) of research scholars spent '7-8 Hours' in a week for ISB activities in the library and 219 (40.86%) of faculty members spent '1-2 Hours' in a week for ISB activities in the library.

5.4. Problems Faced while Seeking Information

The problem faced while seeking information by the respondents has been summarized in Table-4.The Table-4 depicts that 723(36.86%) of respondents face problem because of information scattered in too many sources, followed by 648 (33.04%) face problem due to delay and time consuming to search printed information resources in the library, 583(29.72%) information is too vast, 565 (28.81%) don't know the sources available in the library, 544 (27.74%) materials are not available, 436(22.23%) do not know how to use the information retrieval tools, 297(15.14%) information materials are old and 145(7.39%) of respondents face problem because of library staff are unwilling to provide services.

Table-4: Problems Faced while Seeking Information

Problems	Students (N= 1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
Materials are not available.	279(26.74)	117(30.62)	148(27.61)	544(27.74)
Don't know the sources available in the library	413(39.59)	105(27.48)	47(8.76)	565(28.81)
Delay and time consuming to search printed information resources in the library.	327(31.35)	140(36.64)	181(33.76)	648(33.04)
Information is too vast.	438(41.99)	91(23.82)	54(10.07)	583(29.72)
Information materials are old.	93(8.91)	69(18.06)	135(25.18)	297(15.14)
Do not know how to use the information retrieval tools.	365(34.99)	58(15.18)	13(2.42)	436(22.23)
Information scattered in too many sources.	475(45.54)	89(23.29)	159(29.66)	723(36.86)
Library staff are unwilling to provide services.	118(11.31)	22(5.59)	05(00.93)	145(07.39)
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentageis exceeded to more than 100%.				

The Table-4 also depicts that 475(45.54%) of students face problem because of information scattered in too many sources, 140(36.64%) of research scholars face problem because of delay and time consuming to search printed information resources in the library and 181(33.76%) of faculty members face problem because of delay and time consuming to search printed information resources in the library.

5.5. Purposes of Seeking Information

The purpose of seeking information by the respondents has been summarized in Table-5.The Table-5 depicts that 962(49.05%) of respondents seek information for the purpose of examination, followed by 941(47.98%) of respondents seek information for research work, 751(38.29%) for teaching, 733(37.37%) to acquire and update knowledge in the field, 678(34.57%) for general awareness, 623(31.76%) to prepare project proposal, 578(29.47%) for self improvement, 348(17.74%) for continuing education and 306 (15.60%) of respondents seek information to maintain professional competence.

Table-5: Purposes of Seeking Information

Purpose	Students (N= 1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
For teaching.	208(19.94)	160(41.88)	383(71.45)	751(38.29)
For research work.	411(39.40)	252(65.96)	278(51.86)	941(47.98)
To prepare project proposal.	135(12.94)	189(49.47)	299(55.78)	623(31.76)
For self improvement.	368(35.28)	133(34.81)	77(14.36)	578(29.47)
To acquire and update knowledge in the field.	364(34.89)	147(38.48)	222(41.41)	733(37.37)
For exam purpose.	789(75.64)	139(36.38)	34(06.34)	962(49.05)
For general awareness.	396(37.96)	191(50.00)	91(16.97)	678(34.57)
For continuing education.	130(12.46)	84(21.98)	134(25.00)	348(17.74)
To maintain professional competence.	43(04.12)	76(19.89)	187(34.88)	306(15.60)

Note: Figures in parentheses indicate percentage and because of multiple choice options the percentageis exceeded to more than 100%.

The Table-5 depicts that 789(75.64%) of students seek information for the purpose of examination, followed by 252(65.96%) of research scholars seek information for the purpose of research work and 383(71.45%) of faculty members seek information for the purpose of teaching.

5.6. Information Seeking Habits Relevant to Academic Work

The information seeking habits relevant to academic work has been summarized in Table-6. The Table-6 depicts that 581(29.62%) of respondents have 'Most relevant' on habit of information seeking through library catalogue, followed by 549(27.99%) have 'Somewhat relevant', 446 (22.74%) have 'Relevant', 363 (18.51%) have 'Moderately relevant' and 22 (01.12%) of respondents have 'Least relevant'.

About 773 (39.41%) of respondents have 'Most relevant' on directly at the self, followed by 399 (20.34%) have 'Moderately relevant', 342(17.44%) have 'Relevant', 258 (13.15%) have 'Somewhat relevant' and 189 (09.63%) of respondents have 'Least relevant'.

About 611(31.15%) of respondents have 'Relevant' on face to face discussion with colleagues, followed by 549(27.99%) have 'Most relevant', 507 (26.36%) have 'Moderately Relevant', 186 (09.48%) have 'Somewhat relevant' and 108 (05.50%) of respondents have 'Least relevant'.

About 904 (46.09%) of respondents have 'Least relevant' on discussion with librarian, followed by 496 (25.29%) have 'Somewhat relevant', 228 (11.62%) have 'Relevant', 216 (11.01%) have 'Moderately relevant' and 117 (05.96%) of respondents have 'Most relevant'.

Table-6: Information Seeking Habits Relevant to Academic Work

Options	Total (N= 1961)				
	1	2	3	4	5
Through Library Catalogue.	22(1.12)	549(27.99)	363(18.51)	446(22.74)	581(29.62)
Directly at the shelf.	189(9.63)	258(13.15)	399(20.34)	342(17.44)	773 (39.41)
Face to face discussion with colleagues.	108(5.50)	186(9.48)	507(26.36)	611(31.15)	549(27.99)
Discussion with librarian.	904(46.09)	496(25.29)	216(11.01)	228(11.62)	117(5.96)
E-mailing co-workers or other experts.	481(24.52)	652(33.24)	392(19.98)	216(11.01)	220(11.21)
Attending conference/colloquia/workshops.	550(28.04)	145(7.39)	804(40.99)	194(9.89)	268(13.66)
Searching electronic databases.	313(15.96)	259(13.20)	343(17.49)	459(23.40)	587(29.93)
Reading electronic journals.	269(13.71)	344(17.54)	215(10.96)	451(22.99)	682(34.77)
Reading e-mail alerts.	202(10.30)	692(35.28)	627(31.97)	284(14.48)	156(7.95)
Reading books/articles.	102(5.20)	283(14.43)	313(15.96)	471(24.01)	792(40.38)
Note: 1=Least Relevant, 2-Somewhat Relevant, 3- Moderately Relevant,4-Relevant 5=Most Relevant					
(X^2=5373.594, d.f.=36, P=.000=<.005)					

About 652 (33.24%) of respondents have 'Somewhat relevant' on e-mailing co-workers or other experts, followed by 481 (24.52%) have 'Least relevant', 392 (19.98%) have 'Moderately Relevant', 220 (11.21%) have 'Most relevant' and 216 (11.01%) of respondents have 'Relevant'.

About 804 (40.99%) of respondents have 'Moderately relevant' on attending conference/colloquia/workshops, followed by 550 (28.04%) have 'Least relevant', 268(13.66%) have 'Most Relevant', 194 (09.84%) have 'Relevant' and 145 (07.39%) of respondents have 'Somewhat Relevant'.

About 587 (29.93%) of respondents have 'Most relevant' on searching electronic databases, followed by 459 (23.40%) have 'Relevant', 343 (17.49%) have 'Moderately Relevant', 313 (15.96%) have 'Least Relevant' and 259 (13.20%) of respondents have 'Somewhat Relevant'.

About 682 (34.77%) of respondents have 'Most relevant' on reading electronic journals, followed by 451 (22.99%) have 'Relevant', 344 (17.54%) have 'Somewhat Relevant', 269 (13.71%) have 'Least Relevant' and 215 (10.96%) of respondents have 'Moderately Relevant'.

About 692 (35.28%) of respondents have 'Somewhat relevant' on reading e-mail alerts, followed by 627 (31.97%) have 'Moderately Relevant', 284 (14.48%) have 'Relevant', 202 (10.30%) have 'Least Relevant' and 156 (07.95%) of respondents have 'Most Relevant'.

About 792 (40.38%) of respondents have 'Most relevant' on reading books/articles, followed by 471 (24.01%) have 'Relevant', 313 (15.96%) have 'Moderately Relevant', 283 (14.43%) have 'Somewhat Relevant' and 102 (05.20%) of respondents have 'Least Relevant'.

5.7. Sources Most Convenient for Information Seeking

The sources most convenient for information seeking has been summarized in Table-7. The Table-7 depicts that 654 (33.35%) of respondents feel print format as convenient for information seeking with mean value of 1.603976 and SD 0.8541670, followed by 402 (20.49%) of respondents opine as all the options mentioned in the table are convenient for information seeking with mean value of 1.410448 and SD 0.6797317, 379 (19.32%) of respondents opine soft copy (on screen or as a file on-CD-ROM, Pen drive or Internet) as convenient for information seeking with mean value of 2.018470 and SD 0.8081442, 273 (13.92%) of respondents opine professional forums (via lectures, seminars, conferences etc) as convenient for information seeking with mean value of 2.172161 and SD 0.8888782, 134 (06.83%) of respondents opine Electronic media (TV or radio) as convenient for information seeking with mean value of 1.708955 and SD 0.8480373 and 119 (06.06%) of respondents opine Telephone/ Mobile phone message as a convenient for information seeking with mean value of 1.781513 and SD .8845152. The Table-7 also depicts that 419 (40.17%) of students prefer printed format as most convenient for information seeking, followed by 132 (34.55%) of research scholars prefer soft copy (on screen or as a file on-CD-ROM, Pen drive or Internet) as most convenient for information seeking and 160 (29.85%) of faculty members prefer printed format as most convenient for information seeking.

Table-7: Sources Most Convenient for Information Seeking

Options	Students (N=1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)	Mean	SD
Printed format (on paper).	419 (40.17)	75 (19.63)	160 (29.85)	654 (33.35)	1.603976	0.8541670
Soft copy (on screen or as a file on-CD-ROM, Pen drive or Internet).	120 (11.50)	132 (34.55)	127 (23.69)	379 (19.32)	2.018470	.8081442
Telephone/mobile phone	62 (5.94)	21	36	119	1.781513	.8845152

message.		(05.49)	(06.71)	(06.06)		
Electronic media (TV or radio).	73 (06.99)	27 (07.06)	34 (06.34)	134 (06.83)	1.708955	.8480373
Professional forums (via lectures, seminars, conferences etc).	88 (08.43)	50 (13.08)	135 (25.18)	273 (13.92)	2.172161	.8888782
All the options mentioned above.	281 (26.94)	77 (20.15)	44 (8.20)	402 (20.49)	1.410448	.6797317
(X^2=255.295, d.f.=10, P=.000=<.005)						

5.8. Opinion about Necessity of Training for Using Electronic (ICT) Resources

The opinion about necessity of training for using electronic (ICT) resources by the respondents has been summarized in Table-8.The Table-8 depicts that 766 (39.06%) of respondents opine necessity of training for using electronic (ICT) resources as 'Very Important' with mean value 1.498695 and SD 0.7966422, followed by 695 (35.44%) of respondents opine necessity of training for using electronic (ICT) resources as 'Important' with mean value 1.517986 and SD 0.7976236 and 500 (25.49%) of respondents opine necessity of training for using electronic (ICT) resources as 'Not Required' with mean value 2.424000 and SD 0.6458004.

Table-8: Opinion about Necessity of Training for Using Electronic (ICT) Resources

Opinion	Students (N=1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)	Mean	SD
Very Important	531 (50.91)	88 (23.03)	147 (27.42)	766 (39.06)	1.498695	.7966422
Important	469 (44.96)	92 (24.08)	134 (25.00)	695 (35.44)	1.517986	.7976236
Not Required	43 (4.12)	202 (52.87)	255 (47.57)	500 (25.49)	2.424000	.6458004

The Table-8 also depicts that 531 (50.91%) of students opine necessity of training for using electronic (ICT) resources as 'Very Important', followed by 202 (52.87%) of research scholars opine necessity of training for using electronic (ICT) resources as 'Not Required' and 255(47.57%) of faculty members opine necessity of training for using electronic (ICT) resources as 'Not Required'.

5.9. Opinion about Direct Influence of ICT (Digital Information Resources) on Study, Teaching, Research and Extension Activities

The Opinion about Direct Influence of ICT (Digital Information Resources) on Study, Teaching, Research and Extension Activities has been summarized in Table-9. The Table-9 depicts that 888(45.28%) of respondents opine as 'Yes' i.e. there is direct influence of ICT (Digital Information Resources) on study, teaching, research and extension activities and 1073 (54.72%)

of respondents opine as 'No' i.e. there is no direct influence of ICT (Digital Information Resources) on study, teaching, research and extension activities.

Table-9: Opinion about Direct Influence of ICT (Digital Information Resources) on Study, Teaching, Research and Extension Activities

Opinion	Students (N=1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
Yes	451 (43.24)	224 (58.63)	213 (39.74)	888 (45.28)
No	592 (56.76)	158 (41.37)	323 (60.26)	1073 (54.72)

The Table-9 also depicts that 451 (43.24%) of students, 224 (58.63%) of research scholars and 213 (39.74%) of faculty members opine as 'Yes' i.e. there is direct influence of ICT (Digital Information Resources) on study, teaching, research and extension activities and 592 (56.76%) of students, 158 (41.37%) of research scholars and 323 (60.26%) of faculty members opine as 'No' i.e. there is no direct influence of ICT (Digital Information Resources) on study, teaching, research and extension activities.

5.10. Use of ICT (Digital Resources) Compare to Traditional Print Resources

The use of ICT (Digital Resources) compare to traditional print resources by the respondents has been summarized in Table-10. The Table-10 depicts that 332 (16.93%) of respondents use of ICT (Digital Resources) compare to traditional print resources because it provides fast access and delivery of information, followed by 278 (14.14%) of respondents opine as it saves time on communication (by using e-mail)and search for information, 277 (14.12%) of respondents opine as it provide access to more comprehensive information, 258 (13.15%) of respondents opine as it provide access to more recent and accurate information, 245 (12.49%) of respondents opine that it is used to share information/research with distant colleagues, 241(12.28%) of respondents opine that digital resources explores wider area of information sources nearer to your topic, 225 (11.47%) of respondents opine they can interact with their own resources within and outside without the help of librarians and 105 (05.35%) of respondents opine the use of digital resources can supplement the existing print materials. The Table-10 also depicts that 224 (21.47%) of students use of ICT (Digital Resources) compare to traditional print resources because it provides fast access and delivery of information, followed by 80 (20.94%) of research scholars use of ICT (Digital Resources) compare to traditional print resources because it explores wider area of information sources nearer to their topic and 92 (17.16%) of faculty members use of ICT (Digital Resources) compare to traditional print resources because it provide access to more comprehensive information.

Table-10: Use of ICT (Digital Resources) Compare to Traditional Print Resources

Opinion	Students (N=1043)	Research Scholars (N=382)	Faculty Members (N=536)	Total (N=1961)
Fast access and delivery of information.	224 (21.47)	51 (13.35)	57 (10.63)	332 (16.93)
Exploring wider area of information sources nearer to your topic.	83 (7.95)	80 (20.94)	78 (14.55)	241 (12.28)
Access to more recent & accurate information.	99 (9.49)	76 (19.89)	83 (15.48)	258 (13.15)
Access to more comprehensive information.	143 (13.71)	42 (10.99)	92 (17.16)	277 (14.12)
To share information/research with distant colleagues.	150 (14.38)	33 (8.63)	62 (11.56)	245 (12.49)
Saves time on communication (by using e-mail)and search for information.	181 (17.35)	36 (9.42)	61 (11.38)	278 (14.14)
Interact with my own resources within and outside without the help of librarians.	119 (11.40)	40 (10.47)	66 (12.31)	225 (11.47)
Digital resources can supplement the existing print materials.	44 (4.21)	24 (6.28)	37 (6.90)	105 (5.35)

Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.

6. Recommendations

- The Authorities of State Agricultural Universities should conduct training programme for Information Communication Technology (ICT application) / Internet awareness, access of E-resources, E-Books, E-journals for the users of State Agricultural University Libraries and they should be encouraged to take part in these activities.
- The study indicates the need of orientation/workshop on e-resources for faculty members, research scholars and students.
- State Agricultural Universities should send library professionals periodically to attend conference and seminars, so as to keep themselves updated with recent technologies.
- The controlling authorities like Indian Council Agricultural Research (ICAR) and Department of Agricultural Research and Education (DARE) should develop the infrastructural facilities to their constituent institutes like CAUs /SAUs, so that the proper and effective Internet/ Web Resources service to the users.
- The State Agricultural Universities in Karnataka should be provided requisite financial benefits for rendering highly technical and modern library services to the users as they demand.
- The State Agricultural Universities of Karnataka need to change their curricula focusing more on ICT and changing library environment.

7. Conclusion

Due to rapid advancement in Information Communication Technology the internet has become an inseparable part of today's educational system. The electronic resources have changed the information seeking and retrieval method of the respondents. It is also found from the study that training programme offered by the institution are much utilized by the students, research scholars and faculty members of the universities. The use of Internet recorded in this study probably related to its expansion, the growing familiarity with e-resources. It can be summarized that maximum users use e-resources for their research and educational needs. Due to ICT and availability of all e-resources on user's desktop, their library's visit is affected to some extent, But the users visit their parent library for books/monographs and communicate with library staff through e-mails/Instant Messaging and asking help and giving suggestions as and when is required. There are more challenges to library professionals for exciting new initiatives to be discovered unfamiliar places about more opportunities are also coming up due to Information Communication Technology. The library should organize seminars, workshops and orientation programmes for users at regular interval of time to keep them up to date with latest technologies.

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