

Perception and Use of Information & Communication Technologies by Library Professionals: A Study on University Libraries in Kerala

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Abstract

The study examines the library professionals' awareness and use of ICT tools among library professionals of five university libraries in Kerala. The analyses revealed that the library professionals in the university libraries in Kerala have relatively average level of knowledge in using various ICT related tools in libraries. Library professionals working in CUSAT are more conversant compared to others. It is also found that age is not an important factor in determining library professionals' awareness in ICT tools and e-resources. A good number of professionals indicated that the main constraint in the application of ICT in libraries is inadequate training in ICT applications.

Keywords: E-Resources, ICT, Kerala, Library Professionals, University Libraries

1. Introduction

The twenty first century has witnessed the diverse use of Information and Communication Technologies (ICT) in all spheres of activities. The developments in technologies have made extraordinary impact on access and managing information with impressive speed, storage capacity and reliability. New developments in ICT, particularly web technology, can be used to enhance the quality and to promote excellence in higher education. The growth of the Internet and its rapid spread with fast broadband connectivity has also enhanced teaching and learning, library services, research and development, information dissemination. There are varied search engines on the Internet to find information but it is hard to locate materials relevant to a specific task. In this regard the greatest challenge for information managers is to keeping pace with the knowledge and

technological expertise necessary for finding, applying and evaluating information.

The increasing creation and of e-resources and the application of ICT in library operations have led to the emergence of digital libraries and digital librarians. Digital resources means any electronic product that delivers a collection of data, be it text, numerical or geographical. They may include full text databases, electronic journals collection, other multimedia, products, and of course, collection of numerical data, delivered CD-ROM, on tape, via the Internet and so on. Licensing issues are key concerns of e- information. License should clearly state how long the subscriber is tied to the deal, and what options are open for cancelling the subscription, if needed, and for renewal of the license in future. The library professionals in this scenario are meant to be information managers and require new skills to meet with redefined responsibilities.

Kerala is one of the most literate states of the Indian Republic. The population of the study constitutes



the library professionals working in the University Libraries of Kerala. There are sixteen universities including deemed universities are functioning in Kerala, out of which, thirteen are state universities. The present study is confined to the five state university libraries in Kerala viz., University of Kerala, Thiruvananthapuram (1937), University of Calicut, Malappuram (1968), Cochin University of Science and Technology, Kochi (1971), Kerala Agricultural University, Trissur (1972) and Mahatma Gandhi University, Kottayam (1983). These libraries have good library automation and application of ICT offering varied information resources such as e-journals, CD-ROM databases, online databases, web-based resources, and a variety of other electronic resources. In this study an attempt has been made to assess the library professionals' competence in using ICT in university libraries.

2. Previous Studies

Analysis of ICT skills among the library professionals of Kerala University Library was conducted by Seena and Sudhier (2014). The study revealed that the professionals have relatively average level of skills in handling ICT. Again Seena and Sudhier (2014) assessed the Web 2.0 technology skills and attitude of library professionals in the University of Kerala and found that the library professionals have a positive attitude towards the implementation of web 2.0 technologies. ICT literacy of the college librarians in Kerala were analysed by Mehaboobullah and Kabir (2013). It showed that more than one third of the college librarians acquire the ICT skill through self-study and majority expressed that lack of in service training programmes is a major constraint. Susan and Baby (2012) in their study of technological skills for academic librarians among university libraries in Kerala, observed that

ICT based services are being provided by a small group of trained library professionals and majority of the qualified library professionals don't get an opportunity to be familiar with ICT services. The impact of ICT in Nigerian university libraries studied by Krubu and Osawaru (2011) revealed that the less number of staff that acquired ICT skills are through in house- training of staff. Poor funding and epileptic power supply is the major factors acting as a drawback or an impediment to the application of ICT.

3. Objectives of the study

The objectives of the study are:

- ❖ To compare the knowledge of ICT tools and services among the library professionals of university libraries in Kerala,
- ❖ To identify the awareness and use of e-resources among the library professionals,
- ❖ To measure the confidence of library professionals in the use of ICT tools and e-resources,
- ❖ To find out the various methods of acquiring ICT skill,
- ❖ To identify the barriers in acquiring technology skills by library professionals under study.

4. Methodology

The study is based on survey method and in that questionnaire was used as the tool to collect data. The population of the present study constitutes the library professionals working in the five state university libraries of Kerala. Primary data were collected using a structured questionnaire which consists of both optional type and statements in Lickert's 5- point scale. A total of 305 questionnaires

were distributed and 246 dully filled in questionnaires were received, thus resulting into a response rate of 80.66%. The collected data was analysed using latest version of MS-Excel and Statistical Package for Social Science (SPSS) version 17.0 for appropriate analysis and description. Chi- Square Test, Kruskal-Wallis Test and Mann- Whitney U Test were the statistical test used for the study.

5. Data Analysis

5.1 University-wise Distribution of Respondents

Questionnaires were distributed to 305 library professionals and 246 (80.66%) were responded. Table 1 reveals that the response of the respondents was maximum from Kerala Agricultural University (100%) followed by University of Kerala (85.29%) and minimum from Mahatma Gandhi University (69.84%).

Table 1: University-wise Distribution of population

University	Questio-nnaire distributed	Questio-nnaire received	Response rate (%)
University of Kerala (UoK)	102	87	85.29
University of Calicut (UoC)	70	58	82.86
Cochin University of Science and Technology(CUSAT)	54	41	75.96
Kerala Agricultural University (KAU)	16	16	100.00
Mahatma Gandhi University (MGU)	63	44	69.84
Total	305	246	80.66

5.2 Gender-wise Distribution of Respondents

Gender-wise analysis shown in the Figure 1 revealed that male library professionals are more in number than female professionals. It is worth to note that there is only slight variation in the total number of male and female professionals.

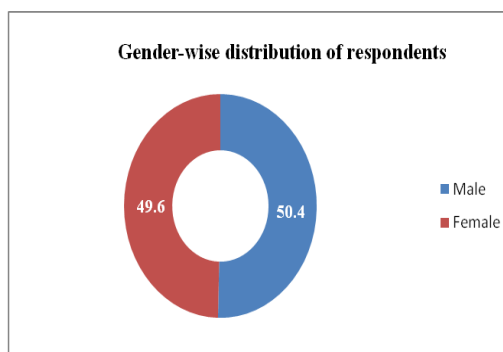


Figure 1 Gender- wise distribution of respondents

5.3 Age-wise Distribution of Respondents

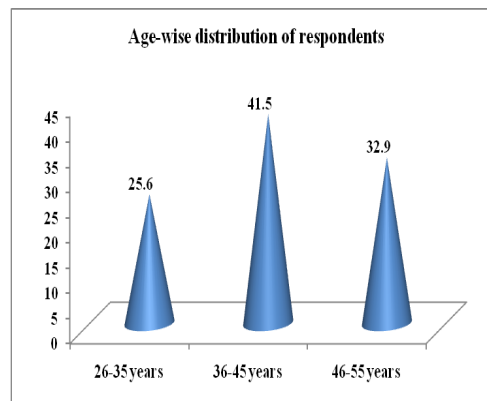


Figure 2 Age- wise distribution of respondents

The results in Figure 2 show that, young professionals are more in numbers (67%) and are more experience to work with technical skills. Age wise distribution shows that more than one third of respondents are from the age group 36-45 years.

5.4 Awareness of ICT Technologies/Tools

Awareness of different types of ICT tools are depicted in Table 2. From the Table it is clear that majority of the library professionals are aware of using Internet (97.6%) followed by barcode scanner

(95.5%). It is also found that majority of the professionals are not aware of the technologies E-book reader (56.9%), Web designing (51.2%) and RFID technology (41.9%).

Table 2 Awareness of ICT Technologies/Tools

Awareness of ICT Technologies	Aware		Not aware	
	Count	%	Count	%
Computer networking	159	64.6	87	35.4
Projector	193	78.5	53	21.5
Laser printer	222	90.2	24	9.8
LCD/Multimedia	194	78.9	52	21.1
RFID technology	143	58.1	103	41.9
Barcode scanner	235	95.5	11	4.5
E-book reader	106	43.1	140	56.9
Internet(leased line, dial up, broad band)	240	97.6	6	2.4
Wireless Internet	203	82.5	43	17.5
Web designing	120	48.8	126	51.2

5.5 Awareness of ICT Technologies/Tools - University wise

University-wise analysis of library professionals' awareness of ICT tools is shown in the Table 3.

Table 3: Awareness of ICT Technologies/Tools - University wise

Awareness of ICT Tools	KAU	CUSAT	UOC	MGU	UOK	χ^2	p
Computer networking	13 (81.3)	26 (63.4)	47 (81)	35 (79.5)	38 (43.7)	29.78**	0.001
Projector	14 (87.5)	27 (65.9)	42 (72.4)	35 (79.5)	75 (86.2)	9	0.061
Laser printer	14 (87.5)	37 (90.2)	48 (82.8)	39 (88.6)	84 (96.6)	7.89	0.096
LCD/Multimedia	14 (87.5)	32 (78)	35 (60.3)	35 (79.5)	78 (89.7)	18.75**	0.001
RFID technology	9 (56.3)	31 (75.6)	27 (46.6)	21 (47.7)	55 (63.2)	11.25*	0.024

Barcode scanner	15 (93.8)	40 (97.6)	51 (87.9)	43 (97.7)	86 (98.9)	11.1*	0.025
E-book reader	10 (62.5)	28 (68.3)	31 (53.4)	26 (59.1)	11 (12.6)	53.1**	0.001
Internet(leased line, dial up, broad band)	15 (93.8)	39 (95.1)	56 (96.6)	44 (100)	86 (98.9)	3.96	0.412
Wireless Internet	13 (81.3)	33 (80.5)	45 (77.6)	41 (93.2)	71 (81.6)	4.63	0.327
Web designing	9 (56.3)	26 (63.4)	26 (44.8)	21 (47.7)	38 (43.7)	5.16	0.271

**:- Significant at 0.01 level, *:- Significant at 0.05 level

In the case of 'RFID Technology' the professionals working in CUSAT are more aware 31 (75.6%), than other universities. The awareness in 'E-book reader' is more by the professionals working in CUSAT followed by KAU compared to others. Chi-square test is applied to find whether there are any differences between the library professionals' awareness of ICT tools with universities. Results show a high statistical significance in the awareness of 'Computer networking' and 'e-book reader' at 0.001 level of significance.

5.6 Awareness of ICT Tools – Gender wise

Table 4 shows that male professionals are more conversant in using web tools as compared to the female professionals. The library professionals in university libraries are well versed in using Internet and barcode scanner irrespective of their gender. It is found that 107 (86.3%) male professionals are aware of the wireless Internet whereas 96 (78.7%) of female professionals are aware of it. The Chi-square value is found relatively highly significant for the professionals' awareness such as E-book reader ($x^2=14.08$) Web designing ($x^2=13.71$) and Projectors ($x^2=13.2$).

Table 4: Awareness of ICT Tools – Gender wise

Awareness of ICT Tools	Male		Female		x^2	p
	Count	%	Count	%		
Computer networking	93	75.0	66	54.1	11.75**	0.001
Projector	109	87.9	84	68.9	13.2**	0.001
Laser printer	115	92.7	107	87.7	1.77	0.183
LCD/Multimedia	106	85.5	88	72.1	6.58*	0.010
RFID technology	83	66.9	60	49.2	7.97**	0.005
Barcode scanner	118	95.2	117	95.9	0.08	0.779
E-book reader	68	54.8	38	31.1	14.08**	0.001

Internet(leased line, dial up, broad band)	120	96.8	120	98.4	0.65	0.420
Wireless Internet	107	86.3	96	78.7	2.46	0.117
Web designing	75	60.5	45	36.9	13.71**	0.001

**:- Significant at 0.01 level, *:- Significant at 0.05 level

5.7 Awareness of ICT Tools – Age wise

The library professionals' awareness about ICT tools is analysed according to the age factor and the result is presented in Table 5.

Table 5: Awareness of ICT Tools – Age wise

Awareness of ICT Tools	26 - 35 yrs		36 - 45 yrs		46 - 55 yrs		x ²	p
	Count	%	Count	%	Count	%		
Computer networking	37	58.7	64	62.7	58	71.6	2.84	0.241
Projector	50	79.4	81	79.4	62	76.5	0.26	0.878
Laser printer	59	93.7	93	91.2	70	86.4	2.28	0.320
LCD/Multimedia	47	74.6	84	82.4	63	77.8	1.49	0.475
RFID technology	41	65.1	54	52.9	48	59.3	2.42	0.298
Barcode scanner	63	100.0	96	94.1	76	93.8	3.97	0.137
E-book reader	29	46.0	44	43.1	33	40.7	0.4	0.817
Internet(leased line, dial up, broad band)	63	100.0	97	95.1	80	98.8	4.67	0.097
Wireless Internet	57	90.5	83	81.4	63	77.8	4.12	0.127
Web designing	34	54.0	50	49.0	36	44.4	1.29	0.525

The awareness of ICT tools like Laser printer, RFID technology, Barcode scanner, Wireless Internet and E-book reader is comparatively high for professionals having 26-35 years of age. The Chi-square analysis carried out to test the awareness of ICT tools indicates that there does not exist any significance difference among different age group

of professionals. Result throws light into the fact that age is not a factor in deciding the library professionals' awareness in using different types of ICT tools in this changed technical environment.

5.8 Awareness of e-resources – University wise

Table 6: Awareness of e-resources –University wise

Awareness of e-resources	KAU	CUSAT	UOC	MGU	UOK	x ²	p
OPAC/Web OPAC	16(100)	40(97.6)	57(98.3)	43(97.7)	87(100)	2.31	0.680
Library website	15(93.8)	41(100)	57(98.3)	44(100)	85(97.7)	3.79	0.435
E-books	13(81.3)	40(97.6)	56(96.6)	41(93.2)	84(96.6)	8.16	0.086
Online journals	16(100)	40(97.6)	57(98.3)	44(100)	87(100)	3.15	0.534
Online databases	13(81.3)	39(95.1)	54(93.1)	44(100)	84(96.6)	9.78*	0.044
ETD	14(87.5)	39(95.1)	52(89.7)	42(95.5)	85(97.7)	5.75	0.219
Search engines	15(93.8)	40(97.6)	56(96.6)	44(100)	87(100)	5.68	0.225
Subject gateways	15(93.8)	37(90.2)	34(58.6)	39(88.6)	82(94.3)	37.9**	0.001
Institutional Repositories	14(87.5)	39(95.1)	48(82.8)	40(90.9)	83(95.4)	8	0.091
Library networks	14(87.5)	39(95.1)	52(89.7)	43(97.7)	84(96.6)	5.55	0.236

**:- Significant at 0.01 level, *:- Significant at 0.05 level

For the purpose of finding the university-wise awareness of e-resources among the library professionals, the Chi-square test is conducted. The result presented in the Table 6 indicates that a good percentage of professionals are aware of e-resources used in libraries. The chi square test result reveals

that except for the e-resources 'Subject gateways' ($x^2=37.9$, $p=0.001$) and 'Online databases' ($x^2=9.78$, $p=0.044$) the awareness of e-resources among the library professionals is more or less similar for those in the different universities.

5.9 Awareness of e-resources – Gender wise

Table 7: Awareness of e-resources – Gender wise

Awareness of e-resources	Male		Female		x ²	p
	Count	%	Count	%		
OPAC/Web OPAC	123	99.2	120	98.4	0.35	0.552
Library website	124	100.0	118	96.7	4.13*	0.042
E-books	121	97.6	113	92.6	3.26	0.071
Online journals	123	99.2	121	99.2	0	0.991

Online databases	120	96.8	114	93.4	1.47	0.225
ETD	119	96.0	113	92.6	1.28	0.258
Search engines	122	98.4	120	98.4	0	0.987
Subject gateways	107	86.3	100	82.0	0.86	0.353
IR	117	94.4	107	87.7	3.34	0.068
Library networks	117	94.4	115	94.3	0	0.975

*: - Significant at 0.05 level

Chi-square analysis is conducted to find out the difference between males and females regarding awareness of e-resources. The gender wise analysis shows that a slight variation is exist between male and female library professionals regarding awareness of e-resources. The Chi-square value proves that except for library websites ($x^2=4.13$, $p=0.042$), there is no significant difference is found between males and females regarding awareness of e-resources.

5.10 Awareness of e-resources – Age wise

Table 8 shows that all the respondents who belong to 26-35 years of age are aware in the resources such as Library websites, online journals, online databases and Search engines. Among those who are in 36-45 years, all the professionals are aware of OPAC 102(100%) and a high majority is aware of Library websites, online journals and Search engines (98%). The Chi-square value shows that age is not an important factor in determining awareness of e-resources among the professionals.

Table 8: Awareness of e-resources – Age wise

Awareness of e-resources	26 - 35 yrs		36 - 45 yrs		46 - 55 yrs		x ²	p
	Count	%	Count	%	Count	%		
OPAC/Web OPAC	61	96.8	102	100.0	80	98.8	3.26	0.196
Library website	63	100.0	100	98.0	79	97.5	1.47	0.479
E-books	60	95.2	95	93.1	79	97.5	1.88	0.390
Online journals	63	100.0	100	98.0	81	100.0	2.85	0.241
Online databases	63	100.0	94	92.2	77	95.1	5.16	0.076
ETD	61	96.8	96	94.1	75	92.6	1.19	0.550
Search engines	63	100.0	100	98.0	79	97.5	1.47	0.479
Subject gateways	55	87.3	89	87.3	63	77.8	3.67	0.159
IR	58	92.1	93	91.2	73	90.1	0.17	0.920
Library networks	60	95.2	97	95.1	75	92.6	0.66	0.717

5.11 Use of e-resources – University wise

Use of e-resources based on university is also identified using Chi-square test and the result is highlighted in Table 9. It is found that respondents' awareness in e-resources is relatively high among those working in CUSAT. For the use of ETD there is high disparity among the respondents in different universities ($x^2=23.85$, $p=0.0001$). In case of use of

'Library websites', UOC library professionals are more 57 (98.3%) followed by those working in UOK 84 (96.6%). Similarly in the use of Online databases ($x^2=10.15$, $p=0.038$), Subject gateways ($x^2=12.45$, $p=0.014$) and Institutional Repositories ($x^2=12.25$, $p=0.016$) there exist a statistical difference at 5% level of significance.

Table 9: Use of e-resources – University wise

Use of e-resources	KAU	CUSAT	UOC	MGU	UOK	x^2	p
OPAC/Web OPAC	16(100)	41(100)	57(98.3)	44(100)	87(100)	3.25	0.516
Library website	12(75)	39(95.1)	57(98.3)	42(95.5)	84(96.6)	15.6**	0.004
E-books	12(75)	37(90.2)	49(84.5)	33(75)	70(80.5)	4.19	0.380
Online journals	14(87.5)	38(92.7)	53(91.4)	41(93.2)	84(96.6)	2.76	0.599
Online databases	10(62.5)	36(87.8)	46(79.3)	41(93.2)	67(77)	10.15*	0.038
ETD	11(68.8)	35(85.4)	43(74.1)	40(90.9)	48(55.2)	23.85**	0.001
Search engines	14(87.5)	40(97.6)	53(91.4)	44(100)	81(93.1)	6.01	0.199
Subject gateways	12(75)	29(70.7)	25(43.1)	31(70.5)	51(58.6)	12.45*	0.014
IR	12(75)	37(90.2)	35(60.3)	33(75)	68(78.2)	12.25*	0.016
Library networks	10(62.5)	33(80.5)	43(74.1)	38(86.4)	65(74.7)	4.86	0.302

**:- Significant at 0.01 level, *:- Significant at 0.05 level

5.12 Use of e-resources – Gender wise

From the Table 10 it is revealed that male professionals' use e- resources more as compared to female professionals. The Chi-square analysis reveals that the use of e-resource between males and females is statistically different. The use of online databases and ETD show high significant difference with Chi-square value 11.1 and 7.71 respectively at 1% level. Use of E-books, Subject

gateways and Institutional Repositories also show significant variation at 5% level of significance.

Table 10: Use of e-resources – Gender wise

Use of e-resources	Male		Female		x ²	p
	Count	%	Count	%		
OPAC/Web OPAC	123	99.2	122	100.0	0.99	0.320
Library website	119	96.0	115	94.3	0.39	0.535
E-books	108	87.1	93	76.2	4.86*	0.028
Online journals	119	96.0	111	91.0	2.51	0.113
Online databases	111	89.5	89	73.0	11.1**	0.001
ETD	99	79.8	78	63.9	7.71**	0.005
Search engines	117	94.4	115	94.3	0	0.975
Subject gateways	83	66.9	65	53.3	4.79*	0.029
IR	100	80.6	85	69.7	3.97*	0.046
Library networks	99	79.8	90	73.8	1.27	0.259

4.13 Use of e-resources – Age wise**Table 11: Use of e-resources – Age wise**

Use of e-resources	26 - 35 yrs		36 - 45 yrs		46 - 55 yrs		x ²	p
	Count	%	Count	%	Count	%		
OPAC/Web OPAC	63	100.0	101	99.0	81	100.0	1.42	0.492
Library website	63	100.0	98	96.1	73	90.1	7.79*	0.020
E-books	53	84.1	87	85.3	61	75.3	3.34	0.188
Online journals	60	95.2	95	93.1	75	92.6	0.44	0.801
Online databases	55	87.3	86	84.3	59	72.8	5.92	0.052
ETD	50	79.4	76	74.5	51	63.0	5.29	0.071
Search engines	60	95.2	100	98.0	72	88.9	7.18*	0.028
Subject gateways	43	68.3	64	62.7	41	50.6	5.08	0.079
IR	50	79.4	78	76.5	57	70.4	1.69	0.430
Library networks	53	84.1	80	78.4	56	69.1	4.72	0.094

*: - Significant at 0.05 level

Table 11 shows the analysis of use of e-resource based on age of library professionals. It is found that majority of the library professionals under different age group shows more or less similar scores toward the use of e-resources. It is clear from the Table that all the professionals participated under each age group use OPAC. In the case of Library

website the professionals who belong to the age group 26-35 years use it followed by those belong to 36-45 years 98 (96.1%). Similarly 100 (98%) of the professionals who belong 36-45 years use Search engine more followed by those in between 26-35 years of age 60 (95.2%).

4.14 Confidence level in using ICT tools

Table 12: Confidence in performing ICT tasks

ICT tasks	Very Low	Low	Moderate	High	Very High	Mean Score	Rank
Using ICT gadgets/ service	15 (6.1%)	56 (22.8%)	122 (49.6%)	48 (19.5%)	5 (2.0%)	2.9	2
Using E-resources	2 (0.8%)	19 (7.7%)	115 (46.7%)	95 (38.6%)	15 (6.1%)	3.4	1

The confidence level of using ICT tools shows that, majority of them are moderately confident in using ICT tasks in libraries. It is clear from the Table 11 that the professionals working in the university libraries are highly confident in using ‘e-resources’ (mean score=3.4) It is observed that the library professionals have lower level of confidence in ‘using ICT gadgets/service’ (mean score=2.9).

4.15 Methods of Acquiring ICT Skills

It is found from the Figure 3 that most important method in acquiring ICT skill adopted by the library professionals are through attending in-service training and IT programmes, as opined by 220 (89.4%) professionals and training through colleagues by 216(87.8%) professionals. It is also found that the effective method of giving ICT skills is being Information literacy programmes, 182(74%) of the professionals responded to it. The least responses are given to the method Informal education 131(53.3%).

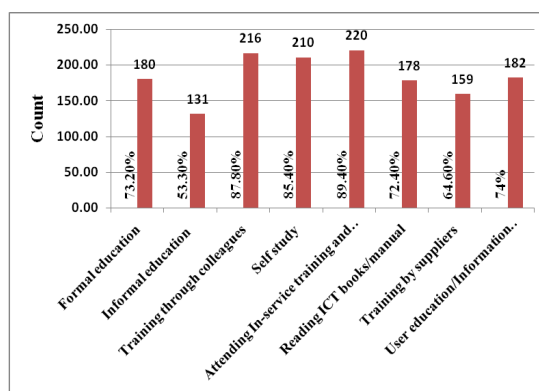


Figure 3: Methods of acquiring ICT skills

4.16 Constraints in Acquiring ICT Skills

The difficulties faced by the library professionals in implementing ICT are shown in the Table 13.

Table 13: Constraints in acquiring ICT skills

Constraints	Mean	SD	Rank
Inadequate training in ICT applications	8.0	2.9	1
Lack of infrastructure & network facility	7.2	2.8	2
Lack of budget for ICT	6.4	2.7	3
Lack of support from authorities for implementing ICT applications in library	6.2	2.7	4
Lack of interest for Library professionals in learning ICT applications	4.9	2.6	5
Lack of co-ordination among library staff	4.8	2.6	6
Lack of updating ICT strategy	4.7	2.4	7
Non availability of consultation services	4.4	2.4	8
Fear of ICT applications	2.8	2.1	9
Overload of working hours	2.5	2.5	10

A significant number of respondents identified that the main issue relating to the application of ICT in libraries is the 'lack of training' (Mean score=8.0) followed by 'lack of infrastructure & network facility' (Mean score=7.2.). The result shows that the least important constraints are the 'overload of working hours' (Mean score=2.5.), 'Fear of ICT applications' (Mean score=2.8,) and 'Non availability of consultation services' (Mean score=4.4).

5. Major Findings

Major findings of the study are:

1. Most of the library professionals are aware of using Internet (97.6%) followed by barcode scanner (95.5%). It is also found that majority of the professionals are not aware of the technologies E-book reader (56.9%), Web designing (51. 2%) and RFID technology (41.9%).
2. The awareness in 'E-book reader', 'RFID Technology' and 'Web Designing' is high among the professionals working in CUSAT compared to others.
3. Study shows that male professionals are more conversant in using web tools as compared to the female professionals.
4. It is also found that age is not an important factor in determining library professionals' awareness in ICT tools and e-resources.
5. The result of the study indicates that a good percentage of professionals are aware of e-resources used in libraries.
6. Except for library websites ($c^2=4.13$, $p=0.042$), Chi-square analysis proved that gender is not a factor for comparing the awareness of e-resources among library professionals.

7. It is found that respondents' awareness in e-resources is relatively high among those working in CUSAT.
8. Usage of ETDs among the professionals working in MGU is much higher 40 (90.9%) followed by those who are in CUSAT 35 (85.4%).
9. It is revealed that male professionals use e-resources more as compared to female professionals.
10. The professionals working in the university libraries are highly confident in using 'e-resources' (mean score=3.4) It is observed that the library professionals have lower level of confidence in 'using ICT gadgets/service' (mean score=2.9).
11. The most important method in acquiring ICT skill adopted by the library professionals employed in the five university libraries are through attending in-service training and IT programme 220 (89.4%).
12. A significant number of library professionals identified that the main issue relating to the application of ICT in libraries is the 'lack of training' (Mean score=8.0) followed by 'lack of infrastructure & network facility' (Mean score=7.2).

6. Conclusion

With the application of ICT, library is transformed its traditional concepts from storehouse of information to digital library. ICT usage in libraries has gained fast momentum in recent years. Effective utilization of ICT is essential in meeting the requirements of users of modern library. Today almost every important reference tools are available

in electronic format which very convenient in use, storage and currency of information. Therefore library professionals of today's age must possess sufficient knowledge and skills in managing new ICT tools and services and using different types of e-resources.

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