

Use and Impact of Information Communication Technology Based Library Resources and Services in the Universities of Tamil Nadu, India: A Study

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ABSTRACT: Libraries play a vital role in providing access to information and fostering lifelong learning in communities. With the rapid advancement of Information Communication Technology (ICT), libraries are embracing digital tools and services to enhance their offerings and extend their reach. In today's interconnected world, the utilization of Information Communication Technology (ICT) resources and services has become imperative for various sectors. This study examines the utilization of ICT-based resources and services by libraries, focusing on key technologies such as digital libraries, online databases, electronic resources, and library management systems. It explores how these technologies enable libraries to expand their collections, improve accessibility, and deliver personalized services to users. The present study is an attempt to examine uses of information communication technology based library resources and services at university of Tamil Nadu. In this paper, the majority of the users' use of ICT based resources and services are study purpose. The majority of the respondents that satisfaction of ICT based resources and services have developed academic skills.

KEYWORDS: Information Communication Technology, E-resources, ICT, Internet.

1. INTRODUCTION

In the ever-evolving landscape of knowledge dissemination and access, libraries have been at the forefront of innovation, adapting to the digital age with the integration of Information Communication Technology (ICT). This transformation has revolutionized the traditional concept of libraries, expanding their reach beyond physical boundaries and enhancing the quality and accessibility of resources and services. The integration of ICT in library resources and services has significantly impacted various aspects of information management, retrieval, and dissemination. With the proliferation of digital collections, e-books, online databases, and multimedia resources, libraries now offer an extensive array of materials accessible anytime, anywhere, transcending the limitations of physical space and time. Moreover, ICT has facilitated the development of innovative services such as virtual reference assistance, online cataloging, and digital preservation, empowering users with efficient and personalized access to information. Collaborative platforms and social media integration have further enriched user engagement and interaction, fostering a dynamic community of learners and researchers. In essence, the integration of ICT in library resources and services represents a paradigm shift in the way knowledge is acquired, organized, and disseminated. By leveraging technology, libraries

are not only preserving the legacy of human civilization but also shaping the future of information access and discovery in the digital age.

2. OBJECTIVES OF THE STUDY

The main objective of this study is Use and Impact of Information Communication Technology Based Library Resources and Services in the Universities of Tamil Nadu, India: A Study. The specific objectives are to:

- ✓ To study frequency of using the ICT based resources.
- ✓ To determine purpose of using ICT based resources.
- ✓ To know the Benefits of Library automation.
- ✓ To find out level of satisfaction of the ICT based services.
- ✓ To study the impact of ICT resources and services.
- ✓ To analyze the overall satisfaction of ICT based resources and services have developed academic skills.

2. METHODOLOGY

The present study adopts descriptive research design. The purpose of descriptive research is to describe the existing or past state of affairs. Simple Random Sampling Method is used for selection of sample. Primary and secondary data are used for the study. Secondary data is gathered from books, journals, search engines, etc. Primary data are collected from users of the library services. Structured questionnaire is used for collection of data with both open ended and close ended questions. The sample size for the study is 10 State government universities with specialization to Arts and Science in Tamilnadu. Fifty respondents are selected for a sample of the research from each of the following 10 universities and received 483 questionnaires and hence the sample size is 483.

The following table depicts the sample size:

Description of Sample of Respondents (Library Users)

Name of the University Library	Questionnaires distributed to Library Users	Questionnaires received
Alagappa University, Karaikudi	50	48
Bharathiar University, Coimbatore	50	49
Bharathidasan University, Tiruchirappalli	50	47
Madurai Kamaraj University, Madurai	50	50
Manonmaniam Sundaranar University, Tirunelveli	50	47
Mother Teresa Women's University, Kodaikanal	50	48

Periyar University, Salam	50	48
Tamil University, Thanjavur	50	49
Thiruvalluvar University, Vellore	50	48
University of Madras, Chennai	50	49
Total	500	483

4. DATA ANALYSIS AND INTERPRETATION

Table 4.1: Gender and age – wise distribution of respondents

Particulars		No. of Respondents	Percentage
Gender	Male	307	63.6
	Female	176	36.4
Total		483	100
Age	20 to 25	200	41.4
	26 to 30	213	44.1
	31 to 35	57	11.8
	36 to 40	10	2.1
	41 and above	3	0.6
	Total		483

Source: Primary data

Table 4.1 reveals the gender and age-wise distribution of respondents. In this study, 307 (63.6%) respondents are male while 176 (36.4%) respondents are female. Hence more than three fifths of the respondents belong to the category of male. Among the overall 483 respondents, 200 (41.4%) respondents belong to the category of age between 20- 25, 213 (44.1%) respondents belong to between 26-30, 57 (11.8%) of them between 31-35, 10 (2.1%) of them between 36-40 and 3 (0.6%) of them between 41 and above age category. Hence most of the respondents belong to the category of age between 26-30.

Table 4.2: Distribution of respondents according to Marital Status and Residing sector

Particulars		No. of Respondents	Percentage
Marital Status	Married	150	31.1
	Unmarried	333	68.9
Total		483	100
Residing Sector	Urban	222	46
	Rural	261	54
Total		483	100

Source: Primary data

Table 4.2 describes the distribution of respondents according to marital status and residing sector. Among the overall 483 respondents, 150 respondents (31.1%) are married category whereas 333 respondents (68.9%) are unmarried. Hence a majority of the respondents are unmarried respondents. Table 4.2 also indicates that 222 respondents (46%) belong to urban areas while 261 respondents (54%) who belong to rural areas.

Table 4.3: Frequency of using ICT based resources by Marital Status – wise respondents

S. No.	Marital Status	Frequency (%)						Total N
		Daily	Once in a week	More than two times in a month	Once in a month	2-3 times in a month	Occasionally	
1.	Married	85 (56.7)	19 (12.7)	25 (16.7)	6 (4)	7 (4.7)	8 (5.3)	150
2.	Unmarried	224 (67.3)	26 (7.8)	43 (12.9)	14 (4.2)	15 (4.5)	11 (3.3)	333
Total		309	45	68	20	22	19	483

Source: Primary data

Table 4.3 presents the frequency of using the ICT based resources by marital status-wise respondents. Among the overall married respondents, 85 (56.7%) of them use the ICT based resources daily, 19 (12.7%) of them once in a week, 25 (16.7%) of them two to three times in a week, 6 (4%) of them once in a month, 7 (4.7%) of them 2-3 times in a month and 8 (5.3%) of them occasionally. Among the overall unmarried respondents, 224 (67.3%) of them use the ICT based resources daily, 26 (7.8%) of them once in a week, 43 (12.9%) of them two to three times in a week, 14 (4.2%) of them once in a month, 15 (4.5%) of them 2-3 times in a month and 11 (3.3%) of them occasionally.

Table 4.4: Purpose of using ICT based resources

S. No	Purpose	No. of Respondents	% of overall responses N=757	% of valid respondents N=483	Rank
1.	For Study purpose	273	36.1	56.5	1
2.	Research	158	20.9	32.7	2
3.	Professional development	113	14.9	23.4	4
4.	Publishing	121	16	25.1	3
5.	Accessing Online Data bases	24	3.2	4.9	6

6.	Downloading e-resource	51	6.7	10.6	5
7.	Others	17	2.2	3.5	7
Total=483		757	100	156.7	

Source: Primary data

Table 4.4 reveals the Search options in purpose of using ICT based resources. It could be noticed from the above study, 56.5% of the respondents have used ICT based resources for study purpose and it has got first rank followed by 158 (32.7%) research and it has got second rank, 121 (25.1%) publishing and it has got third rank, 113 (23.4%) professional development and it has got the fourth rank, 51 (10.6%) downloading e-resources title and it has got the fifth rank, 24 (4.9%) accessing online databases and it has got the sixth rank. Besides cited above, there are some other purposes also (3.5%) and it has got the seventh rank.

Table 4.5: Opinion about the Benefits of Library automation

S. No	Benefits of Library automation	Opinion (%)				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	It reduced the manpower	161 (33.4)	126 (26.1)	75 (15.5)	68 (14.1)	53 (10.9)
2	It reduced the unit costs of operation	175 (36.2)	139 (28.8)	54 (11.2)	58 (12)	57 (11.8)
3	It help the networking and the resource sharing	155 (32.1)	158 (32.7)	63 (13)	65 (13.5)	42 (8.7)
4	It improves library operation	163 (33.7)	137 (28.4)	49 (10.1)	73 (15.1)	61 (12.6)
5	It eliminates duplication of works	139 (28.8)	147 (30.4)	68 (14.1)	79 (16.3)	50 (10.3)
6	It encourage the time saving and efforts	178 (36.8)	143 (29.6)	56 (11.6)	65 (13.4)	41 (8.4)
7	It easily perform the tasks	141 (29.2)	162 (33.5)	71 (14.7)	53 (10.9)	56 (11.6)

Source: Primary data

Table 4.5 shows the Opinion about the Benefits of Library automation. The total weightages, mean and ranking of opinion about the benefits of library automation of university libraries are presented in the table below.

Relative frequency of Opinion about the Benefits of Library automation

In order to know the relative opinion about the Benefits of Library automation, scores of 5, 4,3,2 and 1 are given to responses of strongly agree, agree, neutral, disagree and strongly disagree respectively. Total weightage is calculated for each opinion about the benefits of library automation of university libraries. Mean Weightage is calculated by dividing the total weightage by the number of respondents included in the sample.

Based on the Mean weightage the opinion about the benefits of library automation of university libraries have been ranked.

Table 4.6: Distribution of Respondents according to their relative frequency of opinion about the benefits of library automation of university libraries (N=483)

S. No	Services	Total weightages	Mean weightages	Rank
1	It reduced the manpower	1723	3.57	5
2	It reduced the unit costs of operation	1766	3.65	3
3	It help the networking and the resource sharing	1768	3.66	2
4	It improves library operation	1717	3.55	6
5	It eliminates duplication of works	1695	3.51	7
6	It encourage the time saving and efforts	1801	3.73	1
7	It easily perform the tasks	1728	3.58	4

Source: calculated value

Table 4.6 elicits the distribution of Respondents according to their relative frequency of opinion about the benefits of library automation of university libraries such as, total weightage, mean weightage and ranks. Data presented in table 4.6 show that the library users have mentioned as benefit of the library automation is “It encourage the time saving and efforts”, and it has got first rank. The option “It help the networking and the resource sharing” has got second rank, “It reduced the unit costs of operation” has got third rank, “It easily perform the tasks” has got the fourth rank, “It reduced the manpower” has got fifth rank, “It improves library operation” has got sixth rank, and “It eliminates duplication of works” has got seventh rank respectively.

Table 4.7: Level of satisfaction of the ICT based services

S. No	Types of services	Satisfaction (%)				
		Highly Satisfied	Satisfied	Moderately satisfied	Dissatisfied	Highly Dissatisfied
1.	Current Awareness Services	135 (28)	148 (30.6)	78 (16.1)	67 (13.9)	55 (11.4)

2	SDI service	121 (25.1)	164 (34)	73 (15.1)	53 (11)	72 (14.9)
3	Subject Bibliography	142 (29.4)	98 (20.3)	85 (17.6)	73 (15.1)	85 (17.6)
4	Electronic Document delivery	121 (25.1)	143 (29.6)	94 (19.5)	63 (13)	62 (12.8)
5	Multimedia database service	139 (28.8)	127 (26.3)	102 (21.1)	64 (13.3)	51 (10.6)
6	CD/DVD based service	117 (24.2)	149 (30.8)	95 (19.7)	53 (11)	69 (14.3)
7	Online databases	145 (30)	137 (28.4)	97 (20.1)	48 (9.9)	56 (11.6)
8	E-Journals	157 (32.5)	143 (29.6)	107 (22.1)	45 (9.3)	31 (6.4)
9	E-books	141 (29.2)	156 (32.3)	88 (18.2)	61 (12.6)	37 (7.7)
10	Library website	129 (26.7)	146 (30.2)	89 (18.4)	66 (13.7)	53 (11)
11	Web OPAC (E-catalogue)	111 (23)	161 (33.3)	77 (15.9)	71 (14.7)	63 (13)
12	Reprographic Services	128 (26.5)	149 (30.8)	92 (19)	65 (13.5)	49 (10.1)

Source: Primary data

Table 4.7 shows the level of satisfaction of the ICT based services of the University Libraries in Tamil Nadu by the users. The computed results of mean, standard deviation and coefficient of variation of users' level of satisfaction of the ICT based services of University Libraries in Tamil Nadu are given below.

Table 4.8: Level of satisfaction of the Library ICT based services

S. No	Types of Services	Mean	Standard Deviation	Coefficient of Variation
1	Current Awareness Services	3.49	1.33	38.05
2	SDI service	3.43	1.36	39.77
3	Subject Bibliography	3.28	1.46	44.65
4	Electronic Document delivery	3.40	1.33	39.10
5	Multimedia database service	3.49	1.31	37.61

6	CD/DVD based service	3.39	1.34	39.53
7	Online databases	3.55	1.32	37.18
8	E-Journals	3.72	1.19	32.03
9	E-books	3.62	1.23	34.13
10	Library website	3.48	1.31	37.67
11	Web OPAC (E-catalogue)	3.38	1.33	39.37
12	Reprographic Services	3.50	1.28	36.81

Source: Computed data

Table 4.8 shows the level of satisfaction of the Library ICT based services. In order to know the coefficient of variation of level of satisfaction of the Library ICT based services, scores of 5,4,3,2 and 1 are given to responses of highly satisfied, satisfied, moderately satisfied, dissatisfied and highly dissatisfied respectively.

With regard to coefficient of variation, it was higher in Subject Bibliography which constituted 44.65 per cent and lower in E-Journals which constituted 32.03 per cent. It is concluded that from the above analysis, the coefficient of variation is higher in Subject Bibliography which leads to less consistent or stable and it is less in E-Journals which leads to more consistent or stable with regard to the level of satisfaction of the ICT based services of University Libraries in Tamil Nadu.

Table 4.9: Opinion about the impact of ICT resources and services

S. No	Option	Opinion (%)				
		Very useful	Useful	Average	No comments	Not useful
1.	Access to current information	141 (29.2)	162 (33.5)	98 (20.3)	45 (9.3)	37 (7.7)
2	Collecting study materials	169 (35)	123 (25.5)	104 (21.5)	31 (6.4)	56 (11.6)
3	Expedite research process	136 (28.2)	158 (32.7)	103 (21.3)	59 (12.2)	27 (5.6)
4	Document Exchanges	139 (28.8)	126 (26.1)	63 (13)	87 (18)	68 (14.1)
5	Improved Professional Competencies	168 (34.8)	159 (32.9)	54 (11.2)	59 (12.2)	43 (8.9)
6	For carrier development	125 (25.9)	136 (28.2)	95 (19.7)	79 (16.3)	48 (9.9)
7	Preparing presentations,	159	162	55	69	38

	Proposals etc.	(32.9)	(33.5)	(11.4)	(14.3)	(7.9)
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Source: Primary data

Table 4.9 shows the Opinion about the impact of ICT resources and services. The total weightages, mean and ranking of opinion about the impact of ICT resources and services of university libraries are presented in the table below.

Relative frequency of Opinion about the impact of ICT resources and services

In order to know the relative opinion about the impact of ICT resources and services, scores of 5, 4,3,2 and 1 are given to responses of very useful, useful, average, no comments and not useful respectively. Total weightage is calculated for each opinion about the impact of ICT resources and services of university libraries. Mean Weightage is calculated by dividing the total weightage by the number of respondents included in the sample. Based on the Mean weightage the opinion about the impact of ICT resources and services of university libraries have been ranked.

Table 4.10: Distribution of Respondents according to their relative frequency of opinion about the impact of ICT resources and services of university libraries (N=483)

S. No	Services	Total weightages	Mean weightages	Rank
1	Access to current information	1774	3.67	3
2	Collecting study materials	1767	3.65	4
3	Expedite research process	1766	3.65	5
4	Document Exchanges	1630	3.37	7
5	Improved Professional Competencies	1799	3.72	1
6	For carrier development	1660	3.43	6
7	Preparing presentations, Proposals etc.	1784	3.69	2

Source: calculated value

Table 4.10 elicits the distribution of Respondents according to their relative frequency of opinion about the impact of ICT resources and services of university libraries such as, total weightage, mean weightage and ranks. Data presented in table 4.10 show that the library users have mentioned as the impact of ICT resources and services is “Improved Professional Competencies”, and it has got first rank. The option “Preparing presentations, Proposals etc” has got second rank, “Access to current information” has got third rank, “Collecting study materials” has got the fourth rank, “Expedite research process” has got fifth rank, “For carrier development” has got sixth rank, and “Document Exchanges” has got seventh rank respectively.

Table 4.11: Opinion about the overall satisfaction of ICT based resources and services have developed academic skills by Gender – wise respondents

S. No	Gender	Opinion (%)					Total N
		Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree	
1.	Male	83 (27)	187 (60.9)	24 (7.8)	7 (2.3)	6 (2)	307
2.	Female	20 (11.4)	110 (62.5)	24 (13.6)	15 (8.5)	7 (4)	176
Total		103	297	48	22	13	483

Source: Primary data

Table 4.11 describes the overall satisfaction of ICT based resources and services have developed academic skills by gender– wise respondents. Among the overall male respondents, 83 (27%) of them strongly agree that satisfaction of ICT based resources and services have developed academic skills, 187 (60.9%) of them agree, 24 (7.8%) respondents have not expressed any comments, 7 (2.3%) of them disagree and 6 (2%) of them strongly disagree respectively. Among the overall female respondents, 20 (11.4%) of them strongly agree that satisfaction of ICT based resources and services have developed academic skills, 110 (62.5%) of them agree, 24 (13.6%) respondents have not expressed any comments, 15 (8.5%) of them disagree and 7 (4%) of them strongly disagree respectively.

Testing of Hypothesis

H₀ Null Hypothesis

There is no association between the gender of the respondents and their opinion about the overall satisfaction of ICT based resources and services have developed academic skills.

Chi-Square Summary Result

Chi- square Calculate Value	Degrees of Freedom	Chi- Square Table Value @ 5%	Inference
28.03	4	9.488	Significant / Null hypothesis rejected

Source: Computed data

The table value of χ^2 for 4 degrees of freedom at 5% level of significance is 9.488. The calculated value of χ^2 is higher than this table value and hence the Null hypothesis is rejected. It is concluded that there is an association between the gender of the respondents and their opinion about the level of overall satisfaction of ICT based resources and services have developed academic skills.

5. FINDINGS

- 63.6% of the respondents belong to the category of male.
- 44.1 % of the respondents belong to the category of age between 26-30.
- 68.9 % of the respondents are unmarried respondents.
- 54 % of the respondents belong to rural.
- 64 % of the respondents use the e-resources daily.
- 56.5% of the respondents have used ICT based resources for study purpose.
- The library users have mentioned as benefit of the library automation is “It encourages the time saving and efforts”, and it has got first rank.
- The coefficient of variation is higher in Subject Bibliography which leads to less consistent or stable and it is less in E-Journals which leads to more consistent or stable with regard to the level of satisfaction of the ICT based services of University Libraries in Tamil Nadu.
- The library users have mentioned as the impact of ICT resources and services is “Improved Professional Competencies”, and it has got first rank.
- 61.5 % of the respondents that satisfaction of ICT based resources and services have developed academic skills.
- There is an association between the gender of the respondents and their opinion about the overall satisfaction of ICT based resources and services have developed academic skills.

6. CONCLUSION

Information communication technology (ICT) has revolutionized library resources and services, making information more accessible and interactive than ever before. Through digital databases, online catalogs, virtual reference services, and e-books, libraries can now reach a wider audience and offer more personalized assistance. ICT has transformed libraries into dynamic hubs of knowledge exchange, fostering lifelong learning and empowering individuals and communities worldwide. As technology continues to evolve, libraries will continue to adapt and innovate, ensuring that they remain vital resources for generations to come. Now a days the libraries most of the academic libraries adopt ICT based services for providing updated information immediately to the academics. The University library changes their traditional environment to ICT based environment for attracting its users to maximize to use the library sources and services. Reading the traditional print sources is pleasure at the same time when anyone wants to get some information immediately no one avoids using the ICT technology. The study shows that most of the library users are satisfaction of ICT based resources and services have developed academic skills by the university libraries of Tamil Nadu. Hence the University Grants Commission and Government of Tamil nadu should take care about the university libraries and sanction more financial assistance to enhance the ICT based services.

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