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## USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTS AND SERVICES IN UNIVERSITY LIBRARIES OF TIRUPATI (A.P.): AN ANALYTICAL STUDY

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**ANANTAPUR**

### ABSTRACT

*The present study has been undertaken with an attempt to evaluate the use of Information and Communication Technology (ICT) products and services made available in the Tirupati (A.P) University Libraries amongst the P.G students of Science and Technology with special reference to Sri Venkateswara University, Sri Padmavathi Mahila Viswa Vidyalayam, Acharya N.G. Ranga Agricultural University and Rastriya Sanskrit Vidyapeeth which represent truly population. For that purpose, survey method has been adopted by the investigators, which comprises of administration of questionnaire, observation of the participants, and interview of some of the participants for knowing the opinion of the respondents in respect of use of ICT) products and services for their academic and research activities.*

### KEYWORDS

ICT, information technology, Internet, P.G students of Science and Technology.

### INTRODUCTION

In this information explosion era, libraries play a pivotal role in preserving and serving the information requirements of the users. In the present scenario, libraries are the main facilitators in the scholarly communication system. The communicated information has been selected, acquired, processed, stored and retrieved by the library for current use and for prosperity. Therefore, the library is a place where books and other sources of information kept for teaching, learning, research and extension activities.

Owing to ICT enabled products & services, and the availability of online information resources have changed the way the services academic institutions and libraries now provide to their users. ICT is the integration of computer and communication technology used to process, store and disseminate information. It has changed the traditional practices of library and information centers in delivery of services to the end users. In the present scenario, users can have access to a variety of information and digital archives of libraries from any corner. It also helps to users to access, manage, integrate, evaluate, create, and communicate with other users more easily than ever. The significant developments in ICT have forever changed the way of information gathering, processing and disseminating. While the ICT products and services processing, storage and retrieval facilities are provided by computers, telecommunication provides the facilities for the transfer or communication of information.

### MEANING OF ICT

The term 'Information and Communication Technology' (ICT) first appeared in the mid 1980s and was defined as "All kinds of electronic systems used for broadcasting telecommunications and mediated communications", with examples including personal computers, video games, cell phones, internet and electronic payment systems and computer S/W etc.

The ICT is made of computer and communication technology. The computer technology is the tool for storing and processing information in digital form while communication technology helps us to transfer and disseminate digital information. Additionally ICT means a variety of technological applications in the process and communication of information. The word ICT is a combination of two words information, communication & technology. Information means knowledge and technology means use of computer & communication. The term ICT can be defined as "the integration of computing, networking and information processing technologies and their applications".

Thus, ICT means a combination of computer applications' and communication technology for gathering, processing, storing and disseminating of Information.

### BENEFITS OF ICT BASED PRODUCTS & SERVICES

The ICT products & services are beneficial for the libraries in the following ways:

1. It provides efficient and accurate services;
2. It saves the time, space, energy and resources;
3. It helps for controlling the tremendous escalation of information;
4. It assist to provide high quality of services and increases the range of services;
5. It has invented the ways of resource sharing by co-operation and co-ordination;
6. It helps for the betterment of library image by providing better services in modern ways.

### OBJECTIVES

The primary objective of the present study is to examine the use of ICT products and services in university libraries of Tirupati.

The specific objectives are:

- To find out the level of use and purpose of using various ICT products and services.
- To know the frequency of use of ICTs and time spent.
- To find out the level of expertise of users regarding the use of ICTs.
- To study the Methods of learning to use ICTs in university libraries.
- To find out the problems encounter by the users while using ICTs.

### SCOPE AND LIMITATIONS OF THE STUDY

The scope of the present study is limited to four Universities, viz. Sri Venkateswara University (SVU), Rastriya Sanskrit Vidyapeeth (RSVP), Sri Padmavathi Mahila Viswa Vidyalayam (SPMVV) and Acharya N.G. Ranga Agricultural University (ANGRAU). The population of this study consists of P.G. Students of Science and Technology.

### METHODOLOGY

The survey method was adopted for the present study and a questionnaire was used as a data collection tool. The majority of the questions were objective type designed keeping the objective of the study in view. The questionnaire was distributed to all the P.G. Students of Science and Technology. In total 837

questionnaires were distributed among the P.G. Students of Science and Technology and responded with the response rate is 636 (75.99%), and asked of fill-up the same by allowing sufficient time.

**DATA ANALYSIS**

A total 636 out of 837 regular Postgraduate students are selected four universities they were taken for the study of Tirupati, and responded with the response rate is 75.99%, which is presented in Table 1.

**TABLE 1: DISTRIBUTION OF QUESTIONNAIRES AND RESPONSES**

S.No	Universities	PG students	Distributed	Received	Percentage
1	SVU	1856	372	256	68.82
2	RSVP	524	104	87	83.65
3	SPMVV	981	196	171	87.24
4	ANGRAU	827	165	122	73.94
<b>Total</b>		<b>4188</b>	<b>837</b>	<b>636</b>	<b>75.99</b>

As already noted, the total sample of users covered in the study is 636, comprising 75.99% postgraduate students. University wise 87.24% of the Sri Padmavathi Mahila Viswa Vidyalayam, 83.65% of the Rastriya Sanskrit Vidyapeeth 73.94% of the Acharya N.G. Ranga Agricultural University and remaining 68.82% Sri Venkateswara University postgraduate members.

**TABLE 2: CLASSIFICATION OF RESPONDENTS BY SEX**

S.No	Universities	Male		Female		Total	
		No.	%	No.	%	No.	%
1	SVU	164	64.06	92	35.94	256	40.25
2	RSVP	56	64.37	31	35.63	87	13.68
3	SPMVV	0	0.00	171	100.0	171	26.89
4	ANGRAU	83	68.03	39	31.97	122	19.18
<b>Total</b>		<b>303</b>	<b>47.64</b>	<b>333</b>	<b>52.36</b>	<b>636</b>	<b>100</b>

Hence this result shows the sex wise distribution of respondents. Of the total 636 respondents surveyed, 303 (47.64%) are male and about 333 (52.36%) respondents are female. It can be inferred from table 2 that female respondents dominate over male respondents.

**TABLE 3: LIBRARY COLLECTION DEVELOPMENT OF UNIVERSITY LIBRARIES**

S.No	Library Collection	SVU	RSVP	SPMVV	ANGRAU	Total
1	Books	355000	88871	124896	90125	658892
2	Journals	325	175	256	276	1032
3	Thesis/Dissertations	3086	2000	1782	9064	15932
4	Reports/Patents/Standards	251	0	126	30	407
5	CD-ROM Databases	-	-	630	11536	12166
6	Microfilm/Microfiches	1500	100	276	-	1876
7	Audio/Video Sources	675	12	237	-	924
8	On-line Databases/E-Journals	9000	-	6000	2965	17965
<b>Total</b>		<b>369837</b>	<b>91158</b>	<b>134203</b>	<b>113996</b>	<b>709194</b>

It is obvious, that the total Book collection of Sri Venkateswara University Library being the highest while University clearly sweeps its strength in Journal collection by subscribing 325 scientific journals and also 9,000 of online databases (e-Journal) are subscribed.

Sri Venkateswara University Library has collecting the 3086 of theses and dissertations and 675 various Audio/Video Sources. It is pathetic find from the table that, the CD-ROM products, a major information storage and retrieval sources in the Internet era. Acharya N.G Rang Agricultural University (11,536) and Sri Padmavathi Mahila Viswa Vidyalam (630) are the only libraries having CD-ROM Information Technology products. Microfilm/Microfiche readers have in Sri Venkateswara University (1500), Sri Padmavathi Mahila Viswa Vidyalam Library (276) and also Reports/Patents/Standards are collecting of Sri Venkateswara University (251), Sri Padmavathi Mahila Viswa Vidyalam Library (126) and Rasthriya Sanskrit Vidya Peetha Library (30).

Respondents were asked to express their level of use of various ICT products for their research work. Table 4 shows that 85.55 percent of Sri Venkateswara University postgraduate science and technology students used computer for their study. On the other hand 78.14% respondents are used computer for their study. A majority of (75.15 per cent) used their personal Laptops. Followed by 64.1% of the respondents are used Internet. As far as various application software are concerned, it was found that while 58.33% of the respondents are used MS Word, 50.63% MS PowerPoint, and 47.80% MS Excel. Only 35.85% of the respondents are use printers. It is interesting to note that 30.35% and 25.16% of the respondents are used DVD/CD/Pen Drive and Scanner.

**TABLE 4: USE OF ICT PRODUCTS**

S.No	ICT Products	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Computer	219	85.55	65	74.71	126	73.68	87	71.31	497	78.14
2	Laptop	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
3	Internet	164	64.06	56	64.37	121	70.76	68	55.74	409	64.31
4	MS-Word	178	69.53	43	49.43	89	52.05	61	50.00	371	58.33
5	MS-Power Point	115	44.92	47	54.02	91	53.22	69	56.56	322	50.63
6	MS-Excel	112	43.75	49	56.32	91	53.22	52	42.62	304	47.80
7	Printer	79	30.86	37	42.53	68	39.77	44	36.07	228	35.85
8	Scanner	56	21.88	22	25.29	44	25.73	38	31.15	160	25.16
9	DVD/CD/Pen Drive	67	26.17	36	41.38	59	34.50	31	25.41	193	30.35



**TABLE 5: PURPOSE OF USING ICT PRODUCTS AND SERVICES**

S.No	Purposes	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Electronic books	157	61.33	52	59.77	96	56.14	66	54.10	371	58.33
2	Electronic journals	205	80.08	71	81.61	132	77.19	93	76.23	501	78.77
3	E-mail	215	83.98	72	82.76	136	79.53	99	81.15	522	82.08
4	Ongoing study work	162	63.28	56	64.37	121	70.76	68	55.74	407	63.99
5	Preparation of notes	243	94.92	79	90.80	162	94.74	109	89.34	593	93.24
6	Project/Dissertation	126	49.22	42	48.28	89	52.05	57	46.72	314	49.37
7	Writing a article for publication	46	17.97	17	19.54	45	26.32	59	48.36	167	26.26
8	For seminars	62	24.22	19	21.84	39	22.81	64	52.46	184	28.93
9	Search Web OPAC/OPAC	56	21.88	22	25.29	44	25.73	38	31.15	160	25.16
10	Curriculum design	58	22.66	16	18.39	19	11.11	21	17.21	114	17.92

Table 5 describes that Majority of the respondents (93.24%) reported that they use ICT product and services for the purpose of Preparation of notes. 82.08% of respondents are used e-mail; 78.77 per cent for electronic journals; 63.99 per cent to ongoing study work; 58.33 per cent for electronic books. Also 49.37% of the respondent's use of ICT products and services for their "Project/Dissertation work" and 28.93% of the respondents are using for the purpose of "Attending seminars". About 26.26% of the respondents use ICT products and services for the purpose of "Writing a article for publication" and only 25.16% of the respondents use the same for "Web OPAC/OPAC".

The less used services among PG students of science and technology were Curriculum design. The investigator feels that the PG students of science and technology might not have got proper training/guidance and assistance from the staffs/librarians which is very necessary for the effective use of ICT products and services.

**TABLE 6: FREQUENCY OF USE OF COMPUTER AND INTERNET**

S.No	Frequency	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Everyday	88	34.38	39	44.83	59	34.50	34	27.87	220	34.59
2	Twice a week	57	22.27	21	24.14	41	23.98	37	30.33	156	24.53
3	Once in a week	46	17.97	12	13.79	33	19.30	26	21.31	117	18.40
4	Twice a month	37	14.45	8	9.20	24	14.04	14	11.48	83	13.05
5	Once in a month	23	8.98	5	5.75	11	6.43	7	5.74	46	7.23
6	Occasionally	5	1.95	2	2.30	3	1.75	4	3.28	14	2.20
<b>Total</b>		<b>256</b>	<b>100</b>	<b>87</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>122</b>	<b>100</b>	<b>636</b>	<b>100</b>

Table 6 shows that the majority of 220 (34.59%) respondents are use of ICTs of an everyday. Also 156 (24.53%) of the respondents use ICTs on twice a week and 117 (18.40%) of the respondents are using the ICTs once in a week, 83 (13.05%) of respondents are use ICTs on twice a month and 46 (7.23%) of use it once in a month. Only 14 (2.20%) of the respondents respectively use it occasionally.

**TABLE 7: LOCATION OF INTERNET USE FOR ICTS**

S.No	Location	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Library	219	85.55	73	83.91	137	80.12	111	90.98	540	84.91
2	Computer centre in campus	176	68.75	43	49.43	89	52.05	61	50.00	369	58.02
3	Department	79	30.86	37	42.53	68	39.77	44	36.07	228	35.85
4	Other places	95	37.11	49	56.32	91	53.22	39	31.97	274	43.08

Table 7 indicates that, Majority (84.91%) of the respondents indicated that they have access to the internet and use it for ICTs also access it from library. While 58.02% access the ICTs through the facility at campus computer centre. The respondents who choose 'other places' mainly referred to it as their home and private cyber cafe accessed internets from this location were 43.08%. Only 35.85% of the respondents indicated that they use it from their respective departments.

**TABLE 8: EXPERTISE IN USING ICTS**

S.No	Level of Expertise	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Very expert	51	19.92	14	16.09	36	21.05	30	24.59	131	20.60
2	Expert	57	22.27	21	24.14	41	23.98	37	30.33	156	24.53
3	Average user	88	34.38	39	44.83	59	34.50	34	27.87	220	34.59
4	Poor	37	14.45	8	9.20	24	14.04	14	11.48	83	13.05
5	Very Poor	23	8.98	5	5.75	11	6.43	7	5.74	46	7.23
<b>Total</b>		<b>256</b>	<b>100</b>	<b>87</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>122</b>	<b>100</b>	<b>636</b>	<b>100</b>

Table 8 shows that only 20.60% of respondents indicated that they are very expert in using ICTs, while 24.53% of respondents indicated that they are expert users of ICT. 34.59% respondents indicated that they are average users of ICTs.

The reasons for less expertise in using ICTs are that a majority of the PG students of science and technology do not have a formal knowledge or a computer training programme.

**TABLE 9: METHODS OF LEARNING TO USE ICTS**

S.No	Methods	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Self study	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
2	With the assistance of colleagues/friends	221	86.33	65	74.71	126	73.68	87	71.31	499	78.46
3	Courses offered by institution/college	112	43.75	49	56.32	91	53.22	52	42.62	304	47.80
4	By attending formal courses	98	38.28	41	47.13	72	42.11	63	51.64	274	43.08
5	Guidance from library staff	26	10.16	12	13.79	19	11.11	21	17.21	78	12.26

According to their responses, it was found that learning with the assistance of colleagues/friends (78.46%) and Self study (75.16%) is the most popular methods of electronic information sources learning among the respondents. It was followed by 47.80% of the respondents who learnt to use electronic information sources through courses offered by their institutions. Another 43.08% respondents learnt by attending formal course, either paid or through official training. Guidance or skills offered by the library (12.26%) play a minor role. That does not mean that support from the library is regarded as unimportant.

TABLE 10: PREFERRED SEARCH ENGINES

S.No	Search Engine	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Google	237	92.58	81	93.10	162	94.74	109	89.34	589	92.61
2	Firefox	168	65.63	56	64.37	121	70.76	68	55.74	413	64.94
3	Yahoo!	116	45.31	42	48.28	89	52.05	57	46.72	304	47.80
4	AltaVista	37	14.45	8	9.20	24	14.04	14	11.48	83	13.05
5	MSN	23	8.98	5	5.75	11	6.43	7	5.74	46	7.23

Regarding the use of search engines respondents were asked to indicate multiple answers according to their use. Table 4 shows that 92.61% of respondents are use Google. Followed by 64.94% of respondents also use Firefox. It is found that 47.80% of respondents use Yahoo!, while 13.05% AltaVista, and only 7.23% MSN.

TABLE 11: PROBLEMS ENCOUNTER WHILE USING ICTS

S.No	Items	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Too few computers with internet facilities	219	85.55	65	74.71	126	73.68	87	71.31	497	78.14
2	Incessant power outage	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
3	Slow internet connectivity	164	64.06	56	64.37	121	70.76	68	55.74	409	64.31
4	Non-connectivity	56	21.88	22	25.29	44	25.73	38	31.15	160	25.16
5	Inability to use computer	115	44.92	47	54.02	91	53.22	69	56.56	322	50.63
6	Selecting search terms	112	43.75	49	56.32	91	53.22	52	42.62	304	47.80
7	Finding relevant information	79	30.86	37	42.53	68	39.77	44	36.07	228	35.85
8	Lack of ICT skills	178	69.53	43	49.43	89	52.05	61	50.00	371	58.33

The above table showed that few computers with internet facilities were got 78.14% and also incessant power outage (75.16%) highest among the problems encountered by the respondents. More than half of the respondents (64.31% and 58.33%) are indicated to have slow internet connectivity and Lack of IT skills. This was followed by incessant power outage which was ranked at 910 (41.61%) while lack of ICT skills was ranked lowest at 77 (3.52%). Similarly, 50.63% of the respondents are encounter the problem of Inability to use computer, while 47.80% of the respondents are encounter the problem of selecting search terms. 35.85% and 25.16% of the respondents are encountering the problem of "Finding relevant information" and "Non-connectivity of internet" respectively.

TABLE 12: SATISFACTION LEVEL TO USE OF ICTS

S.No	Satisfaction level to use of ICTs	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Highly satisfied	42	16.41	9	10.34	21	12.28	12	9.84	84	13.21
2	Satisfied	57	22.27	16	18.39	37	21.64	32	26.23	142	22.33
3	Neutral	113	44.14	45	51.72	87	50.88	64	52.46	309	48.58
4	Dissatisfied	26	10.16	14	16.09	17	9.94	9	7.38	66	10.38
5	Highly dissatisfied	18	7.03	3	3.45	9	5.26	5	4.10	35	5.50
<b>Total</b>		<b>256</b>	<b>100</b>	<b>87</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>122</b>	<b>100</b>	<b>636</b>	<b>100</b>

The respondents were asked to rate their overall satisfaction with the level of access to ICTs use on a five-point scale from 1 (Highly satisfied) to 5 (Highly dissatisfied).

The respondents are overwhelmingly positive about the level of access for the use of electronic information sources. A majority of the (84.12%) indicated they are moderately to highly satisfied, whereas only 15.88% indicated dissatisfaction. It can be seen from Table 5.13 that 13.21% of the respondents indicated that highly satisfied with the access they have to use ICTs. Followed by 22.33% of respondents were satisfied with the use of ICT products and services. Further, nearly half of the respondents (48.58%) were moderately satisfied whereas only 10.38% were dissatisfied and 5.50% of respondents were highly dissatisfied with the access they are having in using ICT products and services in their universities.

**FINDINGS**

- a) The total Book collection of Sri Venkateswara University Library being the highest while University clearly sweeps its strength in Journal collection by subscribing 325 scientific journals and also 9,000 of online databases (e-Journal) are subscribed.
- b) More than seventy percent of the respondents are used computer and their personal Laptops of ICT Products.
- c) Majority of the respondents (93.24%) reported that they use ICT product and services for the purpose of Preparation of notes and 82.08% of respondents are used e-mail.
- d) It is found that the majority (220) of respondents is use of ICT products and services an everyday.
- e) Majority (84.91%) of the respondents indicated that they have access to the internet and use it for ICTs also access it from library.
- f) The study found that, 34.59% respondents indicated that they are average users of ICTs. The reasons for less expertise in using ICTs are that a majority of the PG students of science and technology do not have a formal knowledge or a computer training programme.
- g) The survey found that learning with the assistance of colleagues/friends (78.46%) and Self study (75.16%) of the users, most popular methods of electronic information resources learning among the respondents.
- h) The study found that 92.61% of respondents are use "Google" search engine for browsing the ICT products and services.
- i) It can be inferred from the data that the majority of users do face problems of few computers with internet facilities and incessant power outage.
- j) The respondents are overwhelmingly positive about the level of access for the use of Information and Communication Technology products and services. A majority of the (84.12%) indicated they are moderately to highly satisfied.

**CONCLUSION**

The use of information and communication technology (ICT) products and services respondents varied according to their program of study, the need to carry out postgraduate students to excel in their academic endeavour and versatility in the use of information and communication technologies to search for information. The current trends in electronic environment, suggest a complete revolution in the status of collection development. As Information and Communication Technology (ICT) advances, the emphasis of academic libraries has focused upon the intrinsic excellence of collection development suitable to information and communication technology (ICT) products and services.

Academic libraries are changing very fast by ICT based products and services. The change enforced by ICT, to adoption of products and services of ICT in libraries are robust indicator of this response. It provides a means for overcoming historically intractable problems of isolation and lack of access to information and knowledge, crucial impediments to libraries development. The ICT products and services have reshaped the educational landscape by transforming the content and modes of release of information. Apart from facilitating the global networked ICT, also enhances knowledge creation and innovation.

The present study reveals that information and communication technology (ICT) products and services have a positive impact on library users. The future of the library and information services at academic libraries depends upon major factors, like, availability of manpower in adequate proportion, which continuously

keeps updating its ICT skills and determination of higher authorities in allocating appropriate recurring grants to procure, update and maintain ICT infrastructure and products and services.

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