Full Length Research Paper

Use of electronic information resources in university libraries of Tirupati (A.P): An analytical study

K. Konappa

Rajiv Gandhi University of Knowledge Technologies, Idupulapaya, YSR Kadapa, A.P-India.

Information is the pivot of which an endurance of any society rests. Information and its use are as old as man. Indeed, without information there cannot be communication. The technology embrace has led to the proliferation of electronically available information resources. The Internet which is the most prominent of this source has made possible access to electronic books and journals; various databases and search engines. All these resources constitute Electronic Information Sources. The present study has been undertaken with an attempt to evaluate the use of electronic resources made available in the Tirupati (A.P) University Libraries under the UGC- INFONET E-Journals / Digital Library Consortium of UGC/INFLIBNET 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 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 electronic resources (e-journals/e-books/databases) for their academic and research activities.

Key words: E-resources, nature of e-resources and electronic information resources and services.

INTRODUCTION

The significant developments in the field of Information and Communication Technology (ICT) have created revolutionary changes in all fields of knowledge. Libraries, being the reservoirs of knowledge, are no exception to this development. The society and environment around the libraries are changing and getting altered. As a result of information explosion users are getting access to vast amount of information. 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 are kept for teaching, learning, research and extension activities.

Electronic information resources are diminishing the central role of traditional libraries. Librarians need to accept their responsibilities as information specialists in

E-mail: konappad@gmail.com.

the new paradigm. Due to information explosion, the traditional library services such as reference service and selective dissemination of information need to be supplemented by selective elimination of information and the evaluation of information to separate quality information from junk. This change has brought libraries and librarians to the threshold of a new era.

E-Resources

Electronic resources represent an increasingly important component of the collection building activities of libraries. "Electronic resources" refer to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile device. They may either be accessed remotely via the Internet or locally. Some of the most frequently encountered types are:

1. E-journals
2. E-books
3. Full-text (aggregated) databases
4. Indexing and abstracting databases
5. Reference databases (biographies, dictionaries, directories, encyclopaedias, etc.)
6. Numeric and statistical databases
7. E-images
8. E-audio/visual resources

Electronic resources whether acquired via purchase or license, free from the web, born digital or multiple format materials (e.g., CD-ROM combined with a book). Electronic resources present a number of challenges not encountered with the selection and acquisition of traditional analog materials and it is advisable for the library to develop clear policies and processes for the selection and management of such resources. This will provide clarity to staff and ensure that electronic resources within the library are developed with due consideration of cost, technical feasibility, licensing, access and preservation requirements, and constraints.

Definitions

a. *E-resources* are defined as those electronic information resources and services that users access electronically via a computing network from inside the library or remote to the library.
b. *Use of E-resources* is defined as searching, browsing, examining, and visiting an e-resource and/or service by a user.
c. *Satisfaction* refers to the feeling of being pleased with results.
d. *Barriers* are obstacles that hinder users' access and/or use of e-resources and/or services.

Nature of e-resources

These electronic resources could be of varied nature. Broadly, we could categorise them as follows:

Primary Sources of Information: These include electronic conferences, electronic journals, electronic pre-prints and e-prints, electronic theses and dissertations, patents, standards, technical reports, project reports including status reports of current ongoing projects, news, software courseware, tutorials, manuals and the like.
Databases, Data sets and other Collections: These include abstracting and indexing databases; digital collections comprising images, audio, video; scientific data sets comprising numeric, properties, structural databases; library catalogues; virtual libraries; museums and archives, etc.
Electronic Books: Such as NetLibrary (http://www.netlibrary.com/); Ebrary (http://www.ebrary.com/), etc. Generally online book selling and print-on demand features also facilitated. For instance Net Library has entered into print-on-demand marketplace. Similarly Amazon.com (termed as the largest library-though not a library in true sense of the word) facilitates online book selling (http://www.amazon.com/)
Reference Sources: such as dictionaries; encyclopaedias; biographies; handbooks; thesauri and the like.
Organisations and People: Information about organisations and people ranging from funding agencies to libraries; information centres; research institutes; and experts; directories of people of varied nature (scientists; archaeologists, etc.)
Meta Resources: Resources that facilitate easier access to network based resources in a defined subject area and a plethora of such resources under various names available on the Internet, such as subject gateways; virtual libraries; clearing house; pathfinders and the like.

Electronic information services

The World Wide Web is a complex information medium. It is both a repository for information and a transmission vehicle. It provides free public access and increasingly fee-based access to an immense body of digital material. The Web also supports a wide range of interactive services including banking and securities trading. E-commerce has moved into many other areas and it is now possible to purchase a wide variety of goods and services on line. Over the last several years, countries such as the United Kingdom, Canada, Australia, the United States and Lithuania are using the Web to disseminate information and to provide online services from government to citizen, government to government and between agencies of the government.

The advent of electronic information services has created a new set of demands for information providers. These services include new reference models, new means for information discovery and delivery, and demands for user and personnel education in the uses of the new resources and technologies. It has also prompted a re-examination of the rights and responsibilities of information providers, intermediaries, and end users (American Library Association, 2000).

A number of services are now offered online that, heretofore, were provided in person or through other print means. Online includes electronic reference and electronic document delivery systems. These services have been expanded to include automated information delivery and built according to various interoperable standards. Electronic information services that have been created include interactive e-commerce and e-governance services as well as various organizational database management needs (including registrations, membership renewals) and other functions.

Objectives

The primary objective of the present study is to examine the use of electronic information resources in university libraries of Tirupati (Hadagali and Kumbar 2011).
The specific objectives are:

1. To study the present situation of the use of Electronic Information Resources (EIRs) available through the UGC-Infonet Programme in the Four University Libraries of Tirupati.
2. To determine the level of Postgraduate student's frequency of access to Electronic Information Sources
3. To study the different purposes of using EIRs.
4. To study the Methods of learning to use EIRs in university libraries.
5. To identify the challenges faced in the use of Electronic Information Sources
6. To suggest suitable recommendations to provide the EIRs and services for the benefit of users.

Scope and limitations of the study

The scope of the present study is limited to study the use of electronic information resources in the university libraries of Tirupati. The present study is limited to four Universities, viz. Sri Venkateswara University, Sri Padmavathi Mahila University, Acharya N.G. Ranga Agricultural University and Rastriya Sanskrit Vidyapeeth. The population of this study consists of P.G. Students of Science and Technology.

METHODOLOGY

This study is based on Survey (questionnaire) method. A structured

questionnaire was designed to collect data from the P.G Students of Science and Technology in the Universities of Tirupati. 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 the response rate is 636 (75.99%), and asked of fill-up the same by allowing sufficient time.

Data analysis

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

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.

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

It is obvious, that the total book collection of Sri Venkateswara University Library is 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 (Table 3).

Sri Venkateswara University Library has collected 3086 of theses and dissertations and 675 various Audio/Video Sources. It is pathetic found from the table that, the CD-ROM products are 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 are in Sri Venkateswara University (1500), Sri Padmavathi Mahila Viswa Vidyalam Library (276) and also Reports/ Patents/Standards are collected inSri Venkateswara University (251), Sri Padmavathi Mahila Viswa Vidyalam Library (126) and Rasthriya Sanskrit Vidya Peetha Library (30).

Table 4 gives general understanding of the frequency of users' visit to library depends upon the resources. Organization maintenance and value added services are provided by the library. Table 4 shows that the majority of 209 (32.86%) respondents use electronic information resources everyday. Also 153 (24.06%) of the respondents use EIRs twice a week and 112 (17.61%) of the respondents use the EIRs once in a week, 81 (12.74%) use EIRs twice a month and 43 (6.76%) use it once in a month. Only 12 (1.89%) of the respondents respectively use it occasionally. It is interesting to note that 26 (4.09%) of the respondents never use electronic information resources.

Table 5 summarizes the situation for all the respondents. It is seen that 49.37% respondents have been using EIRs for more than 3 years and 25.16% respondents have between 2 and3 years of experience in using EIRs. The table also depicts that only 19.50% of the respondents started using the EIRs since between 1 and 2 years and few respondents (5.97%) have less than a year of experience. Overall, respondents had good amount of experience to exploit optimally the electronic sources and services.

The different locations of access for EIRs are depicted in Table 6. About 84.91%, of the respondents indicated that they have access to the computer and use it for EIRs also from library. While 58.02% access the EIRs through the facility at campus computer centre. The respondents who chose 'other places' mainly referred to it as

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
Total		**4188**	**837**	**636**	**75.99**

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
Total		**303**	**47.64**	**333**	**52.36**	**636**	**100**

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
Total		**369837**	**91158**	**134203**	**113996**	**709194**

Table 4. Frequency of use of EIRs.

S.No	Frequency	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Everyday	82	32.03	39	44.83	57	33.33	31	25.41	209	32.86
2	Twice a week	56	21.88	21	24.14	39	22.81	37	30.33	153	24.06
3	Once in a week	43	16.80	12	13.79	31	18.13	26	21.31	112	17.61
4	Twice a month	35	13.67	8	9.20	24	14.04	14	11.48	81	12.74
5	Once in a month	21	8.20	5	5.75	10	5.85	7	5.74	43	6.76
6	Occasionally	5	1.95	0	0	3	1.75	4	3.28	12	1.89
7	Never use	14	5.47	2	2.30	7	4.09	3	2.46	26	4.09
Total		**256**	**100**	**87**	**100**	**171**	**100**	**122**	**100**	**636**	**100**

their home and private cyber café (43.08%). Only 35.85% of the respondents indicated that they use it from their departments.

Majority of the respondents (93.24%) reported that they use electronic information sources for the purpose of preparation of notes. About 63.99% of the respondents use electronic information sources for the purpose of "Ongoing study work". Also 49.37% of the respondents use electronic information sources for their "Project/Dissertation work" and 28.93% of the respondents are

Table 5. Experience in EIRs use.

S.No	Experience	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%		
1	Less than year	18	7.03	6	6.90	9	5.26	5	4.10	38	5.97
2	Between 1 and 2 years	69	26.95	14	16.09	29	16.96	12	9.84	124	19.50
3	Between 2 and3 years	56	21.88	22	25.29	44	25.73	38	31.15	160	25.16
4	More than 3 years	113	44.14	45	51.72	89	52.05	67	54.92	314	49.37
Total		256	100	87	100	171	100	122	100	636	100

Table 6. Location of computer use for EIRs.

S.No	Location	SVU		RSVP		SPMVV		ANGRAU		Total	
		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. Purpose of using EIRs.

S.No	Purpose of using EIRs	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Ongoing study work	162	63.28	56	64.37	121	70.76	68	55.74	407	63.99
2	Preparation of notes	243	94.92	79	90.80	162	94.74	109	89.34	593	93.24
3	Project/Dissertation	126	49.22	42	48.28	89	52.05	57	46.72	314	49.37
4	Writing a article for publication	46	17.97	17	19.54	45	26.32	59	48.36	167	26.26
5	For seminars	62	24.22	19	21.84	39	22.81	64	52.46	184	28.93
6	Curriculum design	58	22.66	16	18.39	19	11.11	21	17.21	114	17.92

Table 8. Methods of learning how to use EIRs.

S.No	Methods	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%		
1	Self study (reading books/articles, tutorials	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
2	With the assistance of collegues/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 (paid, official training)	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

using electronic information sources for the purpose of "Attending seminars". About 26.26% of the respondents use electronic infor- mation sources for the purpose of "Writing article for publication" and only 17.92% of the respondents use the same for "Curriculum Design" (Table 7).

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 method 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 Kaur and Rama (2008). 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 8).

It is clear that, a majority of respondents (78.14%) of the higher education institutions browse the internet for their "Subject specific information websites" followed by 75.16% for "International/Regional

Table 9. Use of specific types of subject and allied areas EIRs.

S.No	Use of specific types	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Subject specific information websites	219	85.55	65	74.71	126	73.68	87	71.31	497	78.14
2	International/Regional institution websites	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
3	E-Journals	164	64.06	56	64.37	121	70.76	68	55.74	409	64.31
4	E-Books	178	69.53	43	49.43	89	52.05	61	50.00	371	58.33
5	CD-ROM databases	115	44.92	47	54.02	91	53.22	69	56.56	322	50.63
6	Research project sites	112	43.75	49	56.32	91	53.22	52	42.62	304	47.80
7	Professional association websites	79	30.86	37	42.53	68	39.77	44	36.07	228	35.85
8	Online bibliographic databases	56	21.88	22	25.29	44	25.73	38	31.15	160	25.16

Table 10. Use of different EIRs by the respondents.

S.No	Different EIRs	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	E-mail	52	20.31	15	17.24	39	22.81	18	14.75	124	19.50
2	Web	111	43.36	39	44.83	79	46.20	62	50.82	291	45.75
3	CD-ROM	44	17.19	14	16.09	11	6.43	11	9.02	80	12.58
4	Professional groups	35	13.67	17	19.54	35	20.47	28	22.95	115	18.08
5	IRC	14	5.47	2	2.30	7	4.09	3	2.46	26	4.09
Total		256	100	87	100	171	100	122	100	636	100

Table 11. Problems encountered while using EIRs.

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 IT skills	178	69.53	43	49.43	89	52.05	61	50.00	371	58.33

institution websites" and 64.31% use the "E-Journals" similarly, 58.33% use the "E-books", while 50.63% use the "CD-ROM databases". 47.80% and 35.85% of the respondents use "Research project sites" and "Professional association websites" respectively. Only 25.16% of the respondents use "Online bibliographic databases" (Table 9).

Table 10 indicated that 45.75% of the respondents indicated that they have used the web. Also 19.50% of the respondents use e-mail. The respondents who chose 'Professional groups' mainly use EIRs. 12.58 and 4.09% of respondents used "CD-ROM" and "IRC" respectively.

Table 11 showed that few computers with internet facilities got 78.14% and also incessant power outage (75.16%) was 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 IT skill was ranked lowest at 77 (3.52%). Similarly, 50.63% of the respondents encounter the problem of inability to use computer, while 47.80% of the respondents 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.

From the analysis it is evident that a large majority (83.33%) of the respondents got better access to information by using EIRs. Also 76.26% of the respondents got saved their time by using of EIRs. Again 75.16% of respondents are able to improve their professional activities due to the use of EIRs (Table 12). Large majority of the respondents agreed to have the benefit of better access to current up-to-date information. The decrease in the use of postal mail was reported by 63.99% of respondents. More than half of the respondents (61.95 and 58.02%) indicated to have

Table 12. Benefits of use of EIRs.

S.No	Benefits of use of EIS	SVU		RSVP		SPMVV		ANGRAU		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Better access to information	215	83.98	71	81.61	135	78.95	109	89.34	530	83.33
2	Time saving	207	80.86	65	74.71	126	73.68	87	71.31	485	76.26
3	Decrease in use of post mail	162	63.28	56	64.37	121	70.76	68	55.74	407	63.99
4	Access to current data/information	164	64.06	57	65.52	124	72.51	65	53.28	410	64.47
5	Improved professional competency	209	81.64	69	79.31	132	77.19	68	55.74	478	75.16
6	Increased professional collaboration with distant colleagues	155	60.55	54	62.07	119	69.59	66	54.10	394	61.95
7	Access to comprehensive information	176	68.75	43	49.43	89	52.05	61	50.00	369	58.02
8	Decrease in the use of printed sources	127	49.61	47	54.02	91	53.22	69	56.56	334	52.52
9	Decrease in use of telephone calls	113	44.14	45	51.72	87	50.88	64	52.46	309	48.58

Table 13. Satisfaction level of access to EIRs.

S.No	Satisfaction level of access to EIS	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
Total		**256**	**100**	**87**	**100**	**171**	**100**	**122**	**100**	**636**	**100**

increased professional collaboration with distant collea-gues, and better access to comprehensive information, respectively due to the use of EIRs. And also 52.52 and 48.58% of the respondents stated that the use of EIRs decrease in the use of printed sources and decrease in use of telephone calls respectively.

The respondents were asked to rate their overall satisfaction with the level of access to EIRs use on a five-point scale from 1 (Highly satisfied) to 5 (Highly dissatisfied) (Table 13).

The respondents are overwhelmingly positive about the level of access to the use of electronic information sources. A majority of the (84.12%) indicated they are moderately to highly satisfied, whereas only 15.88% indicated dissatis-

faction. It can be seen from Table 13 that 13.21% of the respondents indicated that they highly satisfied with the access they have to EIRs. 22.33% of respondents were satisfied with the access to EIRs.

Further, nearly half of the respondents (48.58%) were moderately satisfied whereas only 10.38% were dis-satisfied and 5.50% of respondents were highly dissatisfied with the access they are having in using EIRs in their universities.

FINDINGS

a) The total Book collection of Sri Venkateswara

University Library is 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) It is found that the majority of 209 (32.86%) respondents use electronic information resources everyday.
c) Majority (84.91%) of the respondents indicated that they have access to the computer and use it for EIRs also accessed from the library.
d) Majority of the respondents (93.24) reported that they use electronic information resources for

the purpose of preparing notes.
e) The survey found that learning with the assis-tance of colleagues/friends (78.46%) and Self study (75.16%) of the users are most popular methods of electronic infor-mation resources learning among the respondents.
f) The study found that 58.33% of respondents are using "E-books", while 50.63% use the "CD-ROM databases".
g) The different EIRs used by the respondents (45.75%) indicated that they have used the web.
h) 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.

DISCUSSION

The study had sought to investigate the use of electronic information resources on productivity of P.G. Students of Science and Technology in university libraries (Naidu et al., 2007) of Tirupati. The study revealed that majority of the respondents use electronic information resources everyday and have become familiar with electronic information resources.

The study also revealed that respondents used e-resources to access information available worldwide for preparation of notes and their ongoing study work. The study revealed the extent of experience in both access to and usage of electronic information resources (Sunil 2011). The respondents indicated that they have access to the computer and use it for EIRs also accessed from the library They rather resorted to the trial and error techniques of usage (Ojo and Akande, 2005).

A high level of Subject specific information websites and International/Regional institution websites usage was recorded, giving an indication of users' preference to these Subject and allied areas EIRs services.

The study revealed that the respondents use different electronic information resources such as web, over 19.50 percent used them for e-mail. The study revealed that both lecturers and scholars acknowledged the usefulness and importance of e-resources to research and productivity.

Respondents do not get adequate guidance from the library staff in the use of electronic information resour-ces. Also, the respondents faced problem of the internet connectivity while using electronic information resources (Chandran, 2000).

On the basis of the above analysis and observations, it was found that unfamiliarity with electronic information was the major reason that would discourage users from accessing electronic resources in the university libraries of Tirupati. A large number of users were using elec-tronic information resources for preparing notes and ongoing study work and for keeping abreast with new developments in their areas of interest. Most of the users had become acquainted with their favourite electronic information resources through discussions with collea-gues and from the internet.

A large number of electronic information resources users were however not satisfied with the infrastructure available in the Libraries. Most of the students indicated their dissatisfaction with IT infrastructure. This was attri-buted to inadequate provision of infrastructure occasioned by lack of adequate financial support for both hardware and software infrastructure.

Conclusion

The use of EIRs respondents varied according to their program of study; there is the need to carry out post-graduate students to excel in their academic endeavour and versatility in the use of information technologies to search for information. The current trends in electronic environment, suggest a complete revolution in the status of collection development. As Information Technology (IT) advances, the emphasis of academic libraries has focused upon the intrinsic excellence of collection development suitable to electronic information resources.

The present study reveals that electronic information resources 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 IT skills and determination of higher authorities in allocating appropriate recurring grants to procure, update and maintain IT infrastructure and electronic information resources.

The present study presents the profile of all the selected universities of Tirupati. Further, the study also attempts to make an assessment of the use of electronic information resources on library users. It can be seen that users' attitudes towards library resources are changing, and have realized the importance of electronic informa-tion resources.

Conflict of Interests

The author have not declared any conflict of interests.

REFERENCES

Angello C (2010). The awareness and use of electronic information sources among livestock researchers in Tanzania. J. Inform. Literacy 4(2):6-22. Available on: http://jil.lboro.ac.uk/ojs/index.php/JIL/article/viewFile/PRA-V4-I2-2010-1/1497

Chandran D (2000). Use of Internet resources and services In: S.V. University (Tirupati) Environment. In: Vengan R (Eds.), Information services in a networked environment in India (pp.124-127) Ahmedabad: INFLIBNET.

Hadagali Gururaj S, Kumbar BD (2011). Use of Electronic Resources in University Libraries of Karnataka State. Inform. Stud. 17(4):221-224.

Naidu GHS, Rajput P, Motiyani K (2007). Use of Electronic Resources and services in University Libraries: A study of DAVV Central Library, Indore, In: NACLIN: pp.309-319.

Kaur B, Rama V (2008). Awareness Electronic Journals and their Usage Among the Users: A study of Punjab Engineer college,

Chandigargh. Indian J. Library Inform. Sci. 2(3):113-119.

Ollé C, Borrego A (2010b). Librarians' perceptions on the use of electronic resources at Catalan academic libraries: results of a focus group", New Library World 111:46-54.

Ojo RA, Akande SO (2005). Students Access, Usage and awareness of Electronic Information Resources at the University College Hospital, University of Ibadan, Nigeria. Lagos J. Library Inform. Sci. 3(1):16-24.

Ramesh Babu B, Gopal Krishnan S (1998). Internet: A survey of its use in Chennai (pp.11-17). New Delhi: FID.

Sujatha HR, Mudhol MV (2008). Use of Electronic Information Sources at the College of Fisheries, Mangalore, India. Ann. Library Inform. Stud. 55(3):234-245.

Sunil T (2011). Usage of Electronic Information Sources and Services by Users At Mahatma Gandhi Central Library IIT Roorkee: A Case Study. Int. J. Digital Library Serv. 4(11):84-102.