

Use of Electronic Resources in VIT University: An Empirical Study

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ABSTRACT

The usage of e – journals has increased. There has been a considerable increase in awareness among the users about the library e – resources and e-services. A substantial amount has been earmarked by the academic institutions towards e-resources. In this study attempt has been made to identify the use and opinion of e-resources and services available in VIT – a deemed university in Tamil Nadu. Out of 575 questionnaires distributed 507 were responded and the response rate works out to 88.18%. Out of 507 respondents, 384 (75.74%) were from Vellore campus and the remaining 123 (24.26%) from Chennai campus. Further 267 (52.68%) belongs to faculty and 240 (47.32%) belongs to research scholars. The validation has been carried out two ways - One with reliability test and second with use and opinion of e-resources by the respondents. The Cronbach alpha value, a bench mark for Reliability test, for the use of e-resources and opinion on available e-resources were greater than

0.7 which indicates the acceptability of the responses. The frequency of use of seven different types of e-sources such as e-books, e-journals, e-magazine/ newspapers, NPTEL, E-theses/dissertation, Audio/ visual products(CD) and e-database using four point scale such as frequently, occasionally, rarely and not at all from the respondents were ascertained. The preferences were given to “e-journal”, “e-books”, “E-magazine/ newspapers” and “E- database”. Least preferences was given to “Audio/Visual products”, “NPTEL” and “E-theses/ dissertation”. The opinion on available e-resources in Vellore and Chennai campus of VIT University has also ascertain using five point scale such as highly satisfied, satisfied, neither satisfied/nor dissatisfied, dissatisfied, highly dissatisfied from the respondents. All the e-resources in both VIT campuses were effectively utilized by both the faculty and the research scholars.

Keywords: e-resources, Use and opinion, Reliability test, Validation

1.INTRODUCTION

Traditional print journals are being replaced by electronic journals with benefits for libraries and users apparent in many ways. Users can access, download and print out papers quite easily. Therefore the usage of e – journals has increased. Further there has been a considerable increase in awareness among the users about the library e – resources and e-services. Use of electronic journals improves the quality of research by providing enriched contents

on different subjects of study. A number of studies have been conducted to measure the use and impact of electronic journals.

2. E-RESOURCES

Sharma (2009)¹ identifies e-resources to include journals, data archives, manuscripts, maps, books, magazines, theses, newspapers, e-mail, research reports, and bibliographic databases. Ibrahim (2004)² adds library websites, online catalogues, and online reference works, while Aramide and Bolarinwa (2010)³, mention A-V resources, instructional audio tapes, instructional video tapes, VCD/DVD, radio, television, multimedia projectors, e-resources-electronic databases, e.g., JSTOR, ERIC, e-documents, Internet/e-mail facility, CD-ROMS, computers, telephone facility (GSM/Landline), VSAT, printers, and digital cameras. Omotayo (2010)⁴, Thanuskodi (2010)⁵, Sharma (2009)¹, Borrego (2007)⁶, and Ibrahim (2004)² have all reported that e-journals are the most used among the arrays of available electronic resources.

3. VIT UNIVERSITY

VIT University or VIT, formerly called Vellore Engineering College, is an Indian institute of higher education and a deemed university under Section 3 of the UGC Act. Founded in 1984, as Vellore Engineering College, by Mr. G. Viswanathan. It has campuses both at Vellore and Chennai, Tamil Nadu, India. VIT offers academic programs in Engineering, Technology, Applied Sciences, and Management. It offers 20 undergraduate programs, 34 postgraduate, four integrated MS courses and four doctoral programs. VIT has consolidated its disciplines into 10 Schools of Study with the addition of the VIT Law School at its Chennai campus. Research centres are part of the schools to encourage collaboration between the research and coursework areas and provide opportunity for coursework students to participate in research projects. VIT's research strength spans disciplines like CAD/CAM, Rapid Prototyping, Manufacturing, Product Design, Energy, Biomedical Research, Information Technology, Nanotechnology, Optoelectronics and Materials Engineering. The research output of many educational institutions is steadily growing - as indicated in the recently released report of Scopus, an abstracting and indexing database that includes over 19,000 titles from more than 5,000 international publishers. While IIT-Madras, Chennai and Anna University tops the list of institutions in the state with the highest number of research papers indexed by the database, VIT University is a close 3rd. On the nationwide level VIT University is ranked 5th, placing it ahead of IIT Delhi and Bombay, with Indian Institute of Science, Bangalore ranked first.

With the help of the e – journals, library is in a position to render the services to its users which they have not able to provide with its print journals. VIT library provides the following services to the users.

(i).Subscribed more than 760 national and international printed journals which also contain the journals published by IEEE & IET and as per the policy of the publisher the users are getting free access to the electronic version of the printed one.

(ii).The subscribed e-resources are ASCE Journals, ASME Journals, ASTM Journals and Standards, IEL online (IEEE & IET), Science Direct, EBSCO Business Source Complete, EMERALD Management 200 Journals, SCIFINDER Scholar, SAE Technical Papers, Indian Standards Codes, British Standards Euro Codes, ACM, ProQuest ABI/Inform Complete, ProQuest Dissertation and Thesis (ETD), Springer link 1600+ Journals, Math SciNet, Nature Publishing Group Journals, Scopus (e-bibliographic database with 15,100 peer reviewed journals indexing and abstracts).

(iii).Also subscribed Engineering Village - Referex subject collections e-books and ebrary e-book collections.

4. REVIEW OF RELATED LITERATURE

A large number of research studies have been conducted on the use of electronic resources. Electronic resources are widely used in universities. Many studies have been conducted in India and abroad which gives information on use of electronic resources by the users of library. This will be helpful to the library staff and authorities of the university to decide whether they have to invest more on the development of electronic collection or to go for some other format of journals.

Use of electronic resources in Shaanxi University of Science and Technology (Shuling,2007)⁷, Asheshi University, Ghana, (Dadzie, 2005)⁸, International Islamic University, Malaysia (Majid and Abazova, 1999)⁹, Indian Institute of Technology (IIT) library in Delhi, India (Ali, 2005)¹⁰ were few studies among faculties and researchers indicated the extensive use of e-resources. Further Moghaddam, and Talwar(2008)¹¹ conducted a survey at IISc and found that,

electronic journals were mostly used for research needs and PDF was the most preferred format. Similarly Sadanand (2012)¹² reports the use of electronic journals by the users of University of Pune and stated that electronic journals are really helpful in finding out the appropriate references.

Baljinder Kaur and Rama Verma(2009)¹³ observed that the impact of e-resources was visible from the decrease in number of printed journals in comparison to the increase in number of electronic journals. The use of e-journals has increased manifold. The printed material is being quickly replaced by the electronic resources. Thanuskodi and Ravi(2011)¹⁴ found that utilization of digital resources by faculty and research scholars of Manonmaniam

Sundaranar University, Tirunelveli. Results show that 67.14 per cent of the faculty is familiar with the use of digital resources, and majority of these members are using digital resources for research purpose. Study also reveals that majority of the faculty members are learning the required skills for the usage of digital resources through self-study.

5.NEED FOR THE STUDY

Electronic information sources are becoming more and more important for the academic community (Kumar and Kumar, 2008)¹⁵. University academics as well as the researchers are a unique population and rely on recent and timely information. Electronic resources are now used more often than print resources (Morse and Clintworth,2000)¹⁶. There is a great need to study the use of electronic resources and investigate the level of satisfaction among academics and researchers.

6. OBJECTIVES

The objectives of the study are

- To identify the validity of the study on use of e-resources
- To identify the use of e-resources among faculty and research scholars.
- To identify the opinion about the e-resources subscribed in the university

7. HYPOTHESIS

The following hypotheses were formulated

- Their exist study validity and data validity
- There is no significant difference in the use of e-resources among faculty and research scholars
- There exist significant differences in the use of e-resources among faculty and research scholars.

8. SAMPLE

The Vellore Institute of Technology (VIT) has two campuses viz Vellore campus and Chennai Campus. A total of 575 questionnaire were distributed of which 430 questionnaire were distributed in Vellore campus and 145 distributed in Chennai campus among faculty and research scholars. The questionnaire distributed and responses received in each campus were shown in Table 1.

In all 430 questionnaires were distributed in Vellore campus, of which 230 were faculty members and 200 Research scholars. Out of 230 faculty members 203(88.26%) responded. Similarly out of 200 research scholars 181(90.50%) responded. Out 430 distributed 384 respondents and the response rate in Vellore campus works out to 89.30%.

In the case of Chennai campus 145 questionnaires -75 faculty members and 70 research scholars – 123 responded and the response rate of Chennai campus works out 84.92%.

Out of 575 questionnaires distributed 507 were responded and the response rate works out to 88.18%. Out of 507 respondents, 384 (75.74%) were from Vellore campus and the remaining 123 (24.26%) from Chennai campus. Further 267 (52.68%) belongs to faculty and 240 (47.32%) belongs to research scholars

Table 1. Questionnaire Distributed and response

S.No	Position	Vellore campus			Chennai Campus			Overall Total	% of response
		Distrib uted	Receiv ed	%	Distribut ed	Receiv ed	%		
1	Faculty	230	203	88.26	75	64	85.33	267	52.68
2	Research scholars	200	181	90.50	70	59	84.28	240	47.32
	Total	430	384	89.30	145	123	84.82	507	100

9. DEMOGRAPHIC DETAILS

The demographic details of the respondents of campus wise were shown in Table 2. In the case of Vellore campus, there are 203 (76.0%) responses received from Faculty members and 181 (75.4%) were Research scholars. In Chennai campus, there are 64 (24.0%) responses received from faculty members and 59 (24.6%) were research scholars. Out of 384 respondents from Vellore campus, 191(69.0%) were males and 193(83.9%) were females and in the case of Chennai campus 86(31.0%) were males and 37(16.1%) were females. Based on their age, the respondents are divided in to 4 groups such as in Vellore campus 21 to 30 (90.4%), 31-40 (60.7%), 41-50(66.1%), 50 and above (67.9%) and in the case of Chennai campus 9.6%, 39.3%, 33.9% and 32.1% respectively. Similarly based on the discipline, the respondents are divided in to three groups, Science 86(52.4%), Engineering 262(91.6%) and 36(63.2%) in Vellore campus. But in Chennai campus Science 78(47.6%), Engineering 24(8.4%) and Management 21(36.8%).

• Table 2. Demographic detail of respondents

S.No	Description	Vellore		Chennai	
Category					
1	Research Scholar	181	75.4%	59	24.6%
2	Faculty	203	76.0%	64	24.0%
Gender					
1	Male	191	69.0%	86	31.0%
2	Female	193	83.9%	37	16.1%
Age					
1	21-30	217	90.4%	23	9.6%
2	31-40	111	60.7%	72	39.3%
3	41-50	37	66.1%	19	33.9%
4	50 and above	19	67.9%	9	32.1%
Domain					
1	Science	86	52.4%	24	8.4%
2	Engineering	262	91.6%	78	47.6%
3	Management	36	63.2%	21	36.8%
Overall					
	Total	384	75.7%	123	24.3%

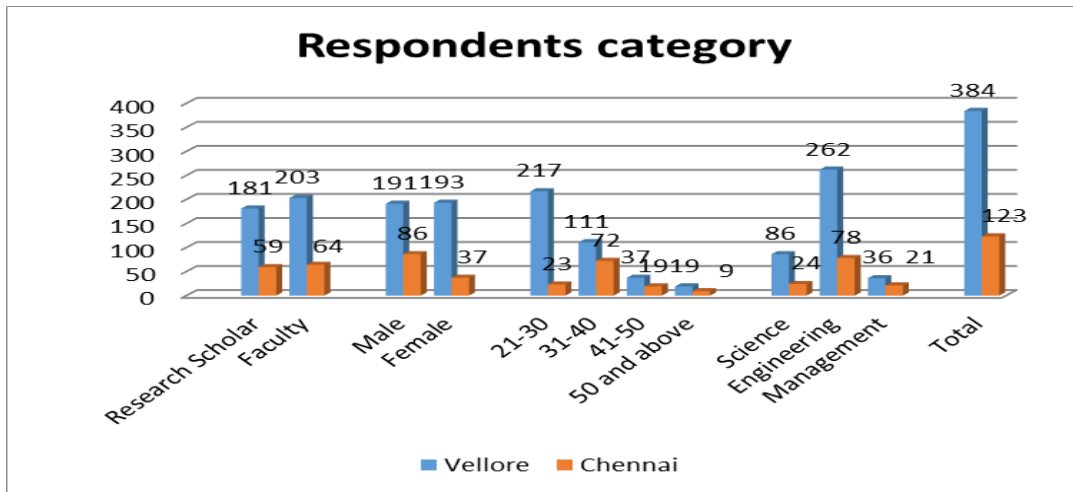


Figure. 1 Respondents category

10. VALIDATION OF THE STUDY

Validation is a process of establishing documentary evidence demonstrating that a procedure, process, or activity carried out in production or testing maintains the desired level of compliance at all stages.

The guidelines on general principles of validation as four types of validation:

- Prospective validation (or premarket validation)
- Retrospective validation
- Concurrent validation
- Revalidation

In view of demands for high quality service, many systems aim to assess professional performance of established services. As the ability to self-assess has shown to be limited, there is a need for external assessments. Reliable, valid, feasible and effective measures of performance are vital to support these efforts. Since 1993, multisource feedback or 360-degree evaluation is increasingly used in service sectors as a way of assessing multiple components of professional performance. Multi source feedback involves external evaluation of performance on various tasks by peers with knowledge of a similar scope of practice and Users.

In this study the validation has been carried out two types - One with reliability test and second with use and opinion of e-resources by the respondents.

10.1 Reliability Test

Reliability is concerned with consistency of a variable. There are two identifiable aspects of this issue: external and internal reliability. Nowadays, the most common method of estimating internal reliability is Cronbachs alpha (α)

The formula used α

$$\frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{y_i}^2}{\sigma_x^2} \right)$$

A commonly accepted rules for describing internal consistency using Cronbachs alpha (Cronbach, Lee and Shavelson 2004)¹⁸ are $\alpha \geq 0.9$ (Excellent), $0.9 > \alpha \geq 0.8$ (Good), $0.8 > \alpha \geq 0.7$ (Acceptable), $0.7 > \alpha \geq 0.6$ (Questionable), $0.6 > \alpha \geq 0.5$ (Poor) and $0.5 > \alpha$ (Unacceptable).

The concepts taken up for the study, variables and the Cronbach alpha value are shown in Table 3.

Table 3 Reliability test

S.No	Concept	No. of variables	Cronbach alpha value
1	Use of e-resources	7	0.7685
2	Opinion on available e-resources	7	0.7446

The Cronbach alpha value for the use of e-resources and opinion on available e-resources were greater than 0.7 which indicates the acceptability of the responses.

10.2 Use of e-resources

The frequency of use of seven different types of e-sources such as e-books, e-journals, e-magazine/ newspapers, NPTEL, E-theses/dissertation, Audio/ visual products(CD) and e-database using four point scale such as frequently, occasionally, rarely and not at all from the respondents were ascertained. The mean and standard deviation were calculated. Ranks were assigned based on mean and standard deviation. The opinion, mean, standard deviation and rank were shown in Table 4.

Table 4 Use of e-resources

S.No.	Description	Frequently	Occasionally	Rarely	Not at all	Mean	Std	Rank
1	E-books	340 (67.1)	146 (28.8)	13 (2.6)	8 (1.6)	1.39	.620	2
2	E- journals	431 (85.0)	65 (12.8)	7 (1.4)	4 (.8)	1.18	.472	1
3	E-magazine/ news papers	151 (29.8)	204 (40.2)	86 (17.0)	66 (13.0)	2.13	.986	4
4	NPTEL	84 (16.6)	139 (27.4)	151 (29.8)	133 (26.2)	2.66	1.041	6
5	E-theses/ dissertation	126 (24.9)	178 (35.1)	104 (20.5)	99 (19.5)	2.35	1.057	5
6	Audio/visual products(CD)	65 (12.8)	97 (19.1)	157 (31.0)	188 (37.1)	2.92	1.035	7
7	E-database	179 (35.3)	165 (32.5)	106 (20.9)	57 (11.2)	2.08	1.004	3

The mean value of all the variables ranges between 1.18 and 2.92 which indicates that the use of e-resources lies between rarely and frequently. The standard deviation ranges between 0.472 and 1.057 which indicates that there were no significant differences in respondents' opinion. E-journals has been indicated as a first preference among the respondents. It is followed by e-books, e-database and e-magazine/newspapers. The least preferences were indicated to Audio/visual products and NPTEL. The study was further extended to age group, gender, campus and position of the respondents. For visibility and comparison overall rank order for Use of e- resources is indicated in Table 5.

Table 5. Use of e-resources Vs Rank of different category of respondents

S.No	Description	Overall	Vellore	Chennai	Male	Female	Research Scholar	Faculty	21-30	31-40	41-50	50>
1	E-books	2	2	2	2	2	2	2	2	2	2	2
2	E- journals	1	1	1	1	1	1	1	1	1	1	1
3	E-magazine/ news papers	4	3	4	3	4	4	4	3	4	4	4
4	NPTEL	6	6	6	6	6	6	6	6	6	6	6
5	E-theses/ dissertation	5	5	5	5	5	5	5	5	5	5	5
6	audio/visual products(CD)	7	7	7	7	7	7	7	7	7	7	7
7	E-database	3	4	3	4	3	3	3	4	3	3	3

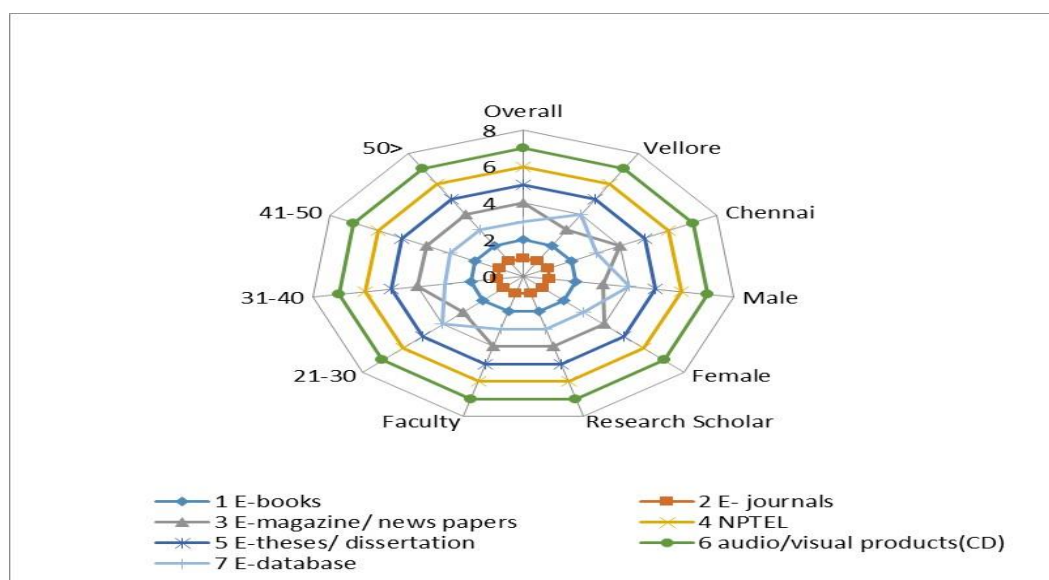


Figure 2. Use of e-resources

From Figure 2 it can be inferred that the top preference was given to “e-journal”. It is followed by “e- books”. Third and fourth preference alone was interchanged between “E-magazine and news papers” and “E- database”. Least preferences was given to “Audio/Visual products” , “NPTEL” and “E-theses/ dissertation” uniformly by all the respondents.

10.3 Opinion on available e-resources

The opinion on available e-resources of seven different types of e-sources such as e-books, e-journals, e-magazine/newspapers, NPTEL, E-theses/dissertation, Audio/visual products(CD) and e-database using four point scale such as highly satisfied, satisfied, neither satisfied/nor dissatisfied, dissatisfied, highly dissatisfied from the respondents were ascertained. The mean and standard deviation were calculated. Ranks were assigned based on mean and standard deviation. The opinion, mean, standard deviation and rank were shown in Table 6.

Table 6. Opinion on available e-resources

S.No	Description	Highly Satisfied	Satisfied	Neither Satisfied/Nor dissatisfied	Dis satisfied	Mean	Std	Rank
1	E-books	268 (52.9)	203 (40.0)	29 (5.7)	7 (1.4)	1.56	.667	2
2	E-journals	304 (60.0)	187 (36.9)	15 (3.0)	1 (0.2)	1.43	.563	1
3	E - magazine and newspapers	111 (21.9)	200 (39.4)	155 (30.6)	41 (8.1)	2.25	.888	4
4	NPTEL	83 (16.4)	146 (28.8)	155 (30.6)	123 (24.3)	2.63	1.024	6
5	E-theses/ dissertation	118 (23.3)	187 (36.9)	103 (20.3)	99 (19.5)	2.36	1.043	5
6	Audio/Visual products(CDs)	78 (15.4)	110 (21.7)	179 (35.3)	140 (27.6)	2.75	1.024	7
7	E-databases	172 (33.9)	182 (35.9)	122 (24.1)	31 (6.1)	2.02	.909	3

The mean value ranges between 1.43 and 2.75 which indicates that all the e-resources available in the institute were lies between satisfied and highly satisfied Audio/visual products (CDs). The standard deviation also ranges between 0.563 and 1.024 which indicates that there is much deviation in the respondents’ opinion. The respondents’ opinion on e-journal (mean value 1.43) lies between satisfaction and highly satisfaction. Similar opinions were expressed in respect to e-books and e-databases. Even in the case of least preferences i.e., audio/visual products(CDs) and NPTEL, the respondents opinion lies between Neither Satisfied/Nor dissatisfied and satisfied. It can be inferred that all the e-resources in VIT were effectively utilized by both the faculty and the research scholars.

10.4 Opinion on available e-resources of category of respondents

The rank thus assigned based on responses, mean and standard deviation for different category of the respondents were identified and the same has been shown in Table 7.

Table 7 Opinion on available e-resources Vs Rank of different category of respondents

S.No	Description	Overall	Vellore	Chenna	Male	Female	Researc h Scholar	Faculty	21-30	31-40	41-50	50>
1	E-books	2	2	2	2	2	2	2	2	2	1	2
2	E- journals	1	1	1	1	1	1	1	1	1	2	1
3	E-magazine/ news papers	4	4	4	4	4	4	4	4	4	4	4
4	NPTEL	6	6	6	6	6	6	6	6	6	6	6
5	E-theses/ dissertation	5	5	5	5	5	5	5	5	5	5	5
6	audio/visual products(CD)	7	7	7	7	7	7	7	7	7	7	7
7	E-database	3	3	3	3	3	3	3	3	3	3	3

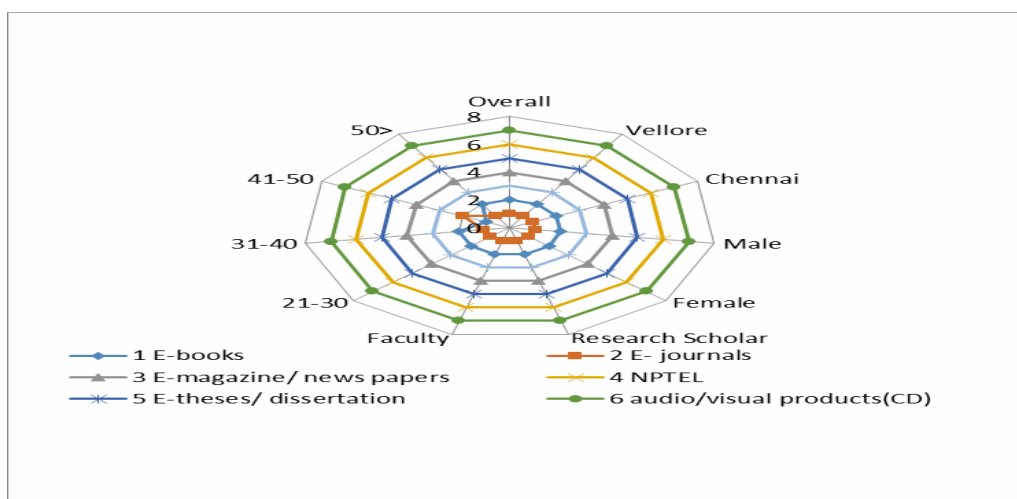


Figure 3. Opinion on e-resources

From Figure 3 it can be inferred that the top preference was given to “e-journal” all the respondents except the respondents of age group 41-50. It is followed by “e-books”. All the remaining e-resources are given uniform responses.

11. FINDINGS

The findings of the study are

- Out of 575 questionnaires distributed 507 were responded and the response rate works out to 88.18%. Out of 507 respondents, 384 (75.74%) were from Vellore campus and the remaining 123 (24.26%) from Chennai campus. Further 267 (52.68%) belongs to faculty and 240 (47.32%) belongs to research scholars.
- The validation has been carried out two ways - One with reliability test and second with use and opinion of e-resources by the respondents. The Cronbach alpha value, a bench mark for Reliability test, for the use of e-resources and opinion on available e-resources were greater than 0.7 which indicates the acceptability of the responses. The hypothesis that their exist study validity and data validity has been accepted. It can be inferred that there is no significant difference in the use of e-resources among faculty and research scholars
- The frequency of use of seven different types of e-sources such as e-books, e-journals, e-magazine/newspapers, NPTEL, E-theses/dissertation, Audio/visual products(CD) and e-database using four point scale such as frequently, occasionally, rarely and not at all from the respondents were

ascertained. The preferences were given to “e-journal”, “e-books”, “E-magazine/ newspapers” and “E- database”. Least preferences was given to “Audio/Visual products”, “NPTEL” and “E-theses/ dissertation”. The hypothesis there exist significant differences in the use of e-resources among faculty and research scholars has been deferred. The study shows that there have been no significant differences in the use of e-resources among faculty and researchscholars.

The surveys of users of electronic resources carried out so far have been summarized by Bar-Ilan et al (2003)¹⁹ that

- Use of electronic journals increases with time.
- Age and/or academic position are inversely related to the use of electronic media and journals.
- There is a gradual reduction in the use of printed journals as users prefer and use the electronic format more.
- With increased use; users access the electronic format more frequently.
- The use of a journal is not necessarily an indication of the preference of users. There may be an increase in the acceptance and frequency of use of the electronic format merely because the traditional print format is no longer easily available.

This study also strengthens the uses summarized above.

12.CONCLUSION

E-resources have been widely accepted in academic environment. The academics and researchers have widely indicated that they can ably use and access electronic resources. E-journals are the most used among available electronic resources. Databases and electronic journals are used by faculties for both teaching and research, among many other uses. Faculties and researchers have indicated high level of satisfaction with their use of electronic resources and have committed their interest to the continuous use of e-resources because their use leads to better research and enhances scholarly communication. The paper has shown high level of acceptance of electronic resources by academics in universities. Libraries and information centres should as a matter of importance acquire, subscribe and create access to electronic resources. Due to heavy use of e-journals, this study suggests that libraries and information centres to improve upon e-journal subscriptions be it open or restricted access.

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