

## **Usage and Search Patterns in Digital Libraries by the Users of Engineering Colleges in Chittoor District: A Study**

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### **ABSTRACT**

Electronic/ Digital information resources are becoming more and more important for the academic community. The growth of engineering colleges in Andhra Pradesh is quite significant and ahead of many states of India. Digital resources are considered as important resources of teaching, research and training. Thus, digital resources in a library play a significant role in academic libraries as they are mostly tuned for the promotion of academic excellence and research. Digital libraries support electronic learning by providing information to the users related to their educational and research purposes. In view of all these there is a need for a study to awareness about the digital resources available in engineering college libraries. The study aims at investigating the awareness and use of digital information resources among the faculty members of engineering college libraries in Chittoor district of Andhra Pradesh State only.

**Keywords:** Digital Library, e-resources, engineering college libraries, students and Faculty members.

## **1. INTRODUCTION**

The spirit of any research or academic institution is Library. The libraries form the most significant forum of education, particularly in the field of engineering/technology education. Due to the rapid growth in various fields of science and technology, it becomes dire essential for the libraries to remain up-to-date and become accessible to their users.

The competent library professionals are to be recruited in engineering college libraries. The libraries are to be equipped with carefully chosen reading materials, printed books and electronic information resources and audio-visual aids for learning, teaching and research. The engineers should be informed of the modern developments in the engineering subjects concerned, and the library is the prime mover of the engineering college.

Libraries prefer digital collections for many reasons. Digital resources can be linked from and to indexing and abstracting databases. Access can be from the user's home, office or dormitory whether or not the physical library is opened. The library can get usage statistics which are not available for print collections. Digital collections save space and are relatively easy to maintain. When the total processing and space costs are taken into account, electronic collections may also result in some overall reductions in library costs. The electronic information can be accessed by any number of users at any time from any place irrespective of the distance. The digital information environment has copiously changed the way in accessing information by the students. The present survey focuses on the use of the digital resources by the users of engineering college libraries in Chittoor district of Andhra Pradesh.

## **2. DEFINITIONS OF DIGITAL LIBRARY**

A digital library, digital repository or digital collection is an online database of digital objects which can include text, images, audios, videos or other digital media formats. Objects can consist of digitized content like print or photographs as well as originally produced digital content like word processor files or social media posts. In addition to strong content, digital libraries provide many means for organizing, searching and retrieving the content contained in the collection.

## **3. DIGITAL RESOURCES**

Digital resources usually comprise e-books, online journals, online databases, institutional repositories, OPAC and Web OPAC, websites, e-images, e-news, e-theses and e-dissertations, CD-ROMs, DVDs etc. Therefore, the resources which are available online in digital formats are called digital resources. The digital resources can be used by users through online access. The main objective of an engineering college library is to assist engineering professionals in enhancing and updating their knowledge and skills, and to provide them information regarding new innovation, theories, engineering education and research. The primary role of engineering college

library is to collect and organize recorded information in engineering and allied subjects to meet the needs of users.

#### **4. REVIEW OF LITERATURE**

**Doraswamy (2007)** made a survey on the use of digital resources by the faculty members of Engineering Colleges affiliated to Acharya Nagarjuna University. The data was collected from a sample of 160 faculty members using questionnaire method. The results show that most of the faculty members (55.63%) are familiar with the usage of digital resources. Twenty four point three seven per cent of the faculty members are using the computer two or three times a week, 23.75% daily, and 5.63% never used. Twenty five per cent, 33.13%, 38.13%, 36.87%, and 21.25% of faculty members are using CD-ROM, Internet, E-mail, search engines, and college website 'daily' respectively. However, 25% of the faculty members are using online databases, online public access catalogue 'once in a month' and 18.75% of the faculty members are using online journals 'rarely'. Majority of the faculty members (86.87%) are using digital resources for enhancing and upgrading their communication skills. Majority of the faculty members (45%) opined that they were acquiring skills to use digital resources through 'self-study' method. Majority of the faculty members (49.37%) opined that the information available in the digital resources is always 'adequate'. The major problems faced by the faculty members in securing access to digital resources are lack of training (50.62%) and lack of time (41.25%).

**Fazlur Rahiman (2011)**. studied the Information Seeking Behavior of Students of Professional Colleges In and Around Coimbatore: A Study, The purpose of this study is to investigate the information needs, use of information channels, information seeking process and information seeking behavior of students of colleges affiliated to Anna University, Coimbatore. The study attempts to know the primary dependent source of students to gather information. On the sidelines, the study enables to know the statistics of the library resources and the infrastructure. The study also investigates the sufficiency of the library resources and the level of satisfaction on library services. The study was conducted through survey by distributing questionnaires among 650 students and 74 percentages of students responded.

#### **5. SCOPE OF THE STUDY**

The scope of the present survey is limited to the students and faculty members of engineering colleges accredited by NBA in Chittoor District of Andhra Pradesh. The survey covers 6 engineering colleges in Chittoor district.

#### **6. NEED OF THE STUDY**

The primary role of engineering college library is to collect and organize recorded information in engineering and allied subjects to meet the needs of users. Engineering college libraries in Chittoor offer diverse information resources and services including

SDI and end-user training. They subscribe the digital resources like e-journals, e-books, CD-Rom databases, online databases, web based resources and a variety of other electronic resources. The electronic information resources have acquired a major portion of library collections. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the students and faculty members of engineering colleges. Therefore, a need was felt to conduct a study to assess the use of digital library resources search patterns to access them by the users of Engineering College Libraries in Chittoor District.

## **7. OBJECTIVES**

- ❖ To know the status of Digital Libraries in the selected engineering college libraries.
- ❖ To know the awareness and purpose of using digital resources.
- ❖ To study the usage of digital resources by students and faculty members.
- ❖ To assess the search patterns used by users in accessing digital resources.
- ❖ To know the satisfaction of users with Digital library resources and facilities and
- ❖ To examine the problems faced by the users in utilizing the digital resources.

## **8. METHODOLOGY**

The present study focuses on the availability of usage of digital library resources and services in selected engineering college libraries in Chittoor district. Survey method for research is used. Questionnaire tools are used for data collection.

### **8.1 Sample Selection**

The population of this study consists of 5715 students and 1450 faculty of these college libraries. There are total number of 5715 students and 1450 faculty users registered in the college libraries. As the population is large in terms of cost, time and labour involved, the investigator selected of 1700 students (29.74%) and 640 faculty (44.13%) were questionnaires were distributed. After repeated visits it became possible to collect questionnaires from 1450 students (85.29%) and 520 faculty (81.25%) from the users of the sample colleges. simple random sampling method used in this study.

## 9. DATA ANALYSIS AND INTERPRETATION

### 9.1 Gender wise distribution

**Table 1**

<b>Gender</b>	<b>Students</b>	<b>Faculty</b>	<b>Total</b>
Male	830(57.24%)	334(64.23%)	1164(59.08%)
Female	620(42.76%)	186(35.77%)	806(40.92%)
<b>Total</b>	<b>1450(100%)</b>	<b>520(100%)</b>	<b>1970(100%)</b>

The above Table 1 depicts that the majority of the respondents were male 1164(59.08%) from faculty 334(64.23%) and students 830 (57.24%) from engineering and remaining respondents female 806(40.92%) were belongs same category. It shows that the majority of the faculty and students respondents were male community.

### 9.2 knowledge of digital library

To access the digital libraries the users require computer knowledge with the proper knowledge and skills, users can access and use of digital libraries effectively and efficiently if any users have excellent knowledge on usage of computers, websites and search techniques they can access and use of digital libraries easily. In order to know the knowledge of the respondents on how they are accessing digital libraries in the table 4.10.

**Table-2: Knowledge of digital library**

<b>knowledge of digital library</b>	<b>Students</b>	<b>Faculty</b>	<b>Total</b>
Yes	1450(73.60%)	520(26.40%)	1970(100%)
No	-	-	-
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is evident from the table 2 shows 100 percent the respondents (students and faculty members) are having knowledge of access digital libraries using and accessing of digital resources.

### 9.3 Experience of using Digital Library

The respondents were asked about their experience of using digital library the analysis is given in table. The quality of using e-resources entirely depends upon the acquisition of quality of electronic information resources plays the vital role. Therefore, study emphasizes to find out the level of experience of the students of the Engineering College libraries with e-resources.

**Table-3: Experience of using Digital Library**

Experience of using Digital Library	Students	Faculty	Total
6 months – 1 year	224(11.37%)	22(1.12%)	232(11.77%)
1-2 years	336(17.05%)	32(1.62%)	368(18.68%)
2-4 years	456(23.15%)	186(9.44%)	642(32.58%)
More than 4 years	492(24.97%)	280(14.21%)	772(39.18%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

We can understand from table-3 that the majority 772(39.18%) of the respondents (students and faculty) having more than 4 years experience in using e-resources and digital library. Followed by 642(32.58%) respondents having 2-4 years experience, 368(18.68%) of them having 1-2 years experience and the remaining 232(11.77%) of the respondents having 6 months – 1 year experience in using of digital library.

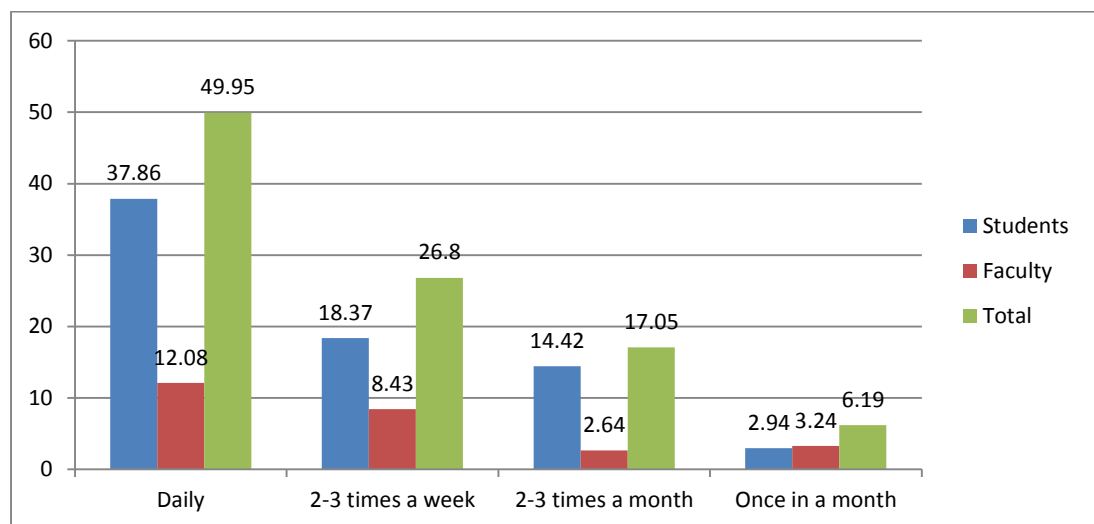
### 9.4 Frequency of visit to the Digital Library

A question has been put to the respondents to know the frequency of library visit the responses given by them are shown in table 9.4.

**Table: 4. Frequency of visit to the Digital Library**

Frequency of visit to the Digital Library	Students	Faculty	Total
Daily	746(37.86%)	238(12.08%)	984(49.95%)
2-3 times a week	362(18.37%)	166(8.43%)	528(26.80%)
2-3 times a month	284(14.42%)	52(2.64%)	336(17.05%)
Once in a month	58(2.94%)	64(3.24%)	122(6.19%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

**Figure: 1. Frequency of visit to the Digital Library**



It is clear from the table shows that majority of the respondents 984(49.95%) replied that visit library daily, followed by 528(26.80%) of the respondents 2-3 times a week, 336(17.05%) of the respondents visit library 2-3 times a month and the remaining 122(6.19%) respondents visit the library Once in a month.

### 9.5 Time spent in the Digital Library

A digital library is a distributed electronic collection that covers virtually all fields of human Endeavour to serve a defined community. The basic idea of digital library is to provide universal access to digitized information throughout the world. The present table shows the respondents how much time spends in digital library. The replies are given in the table 9.5.

**Table: 9.5 Time spent in the Digital Library**

Time spent in the Digital Library	Students	Faculty	Total
Less than 1 hour	217(11.02%)	192(9.75%)	409(20.76%)
2 hours	637(32.33%)	156(7.92%)	793(40.25%)
3 hours	410(20.82%)	78(3.95%)	488(24.77%)
More than 3 hours	186(9.44%)	94(4.77%)	280(14.21%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is clear that the table-5 that majority of the respondents 793(40.25%) spent time 2 hours for day digital library, followed by 488(24.77%) of the respondents spent time 2 hours, 409(20.76%) of the respondents spent time Less than 1 hour and the remaining respondents 280(14.21%) of the spent time more than 3 hours in digital library.

### 9.6. Purpose using e-Resources

The purpose is essential for understanding the usage of e-resources. E-resources have become an important component in academic research activity as it plays a pivotal role in pursuing information and communication needs of students and faculty members. Users and information for different purposes like students need information for preparing notes, writing assignments, etc. ICT made publishers to bring their publications in electronic form various e-resources are now made available in the market. Users interest towards using e-resources has been changing as the publications are available in electronic form keeping this in view the respondents were asked whether they are using e-resources available in the library for their need table 9.6.

**Table 9.6. Purpose using e-Resources**

<b>purpose you mainly use the e-Resources</b>	<b>Students</b>	<b>Faculty</b>	<b>Total</b>
Research	483(24.52%)	210(10.65%)	693(35.17%)
Education	571(28.98%)	192(9.74%)	763(38.73%)
Any other	396(20.10%)	118(5.99%)	514(26.09%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is clear that the table-6 from the majority of the respondents 763(38.73%) are using mainly purpose of e-resources required information for developed education, followed by 693(35.17%) are using e-resources in developed research and the remaining respondents 514(26.09%) are using e-resources in other activities.

### 9.7 Access point for search pattern of e-resources

The responses according to their access point for search pattern of e-resources by the respondents are shown in table 9.7.

**Table: 7 Access point for search pattern of e-resources**

<b>search pattern</b>	<b>Students</b>	<b>Faculty</b>	<b>Total</b>
Title	986(50.05%)	356(18.07%)	1342(68.12%)
Subject headings	334(16.95%)	112(5.68%)	446(22.64%)
Author	130(6.59%)	52(2.64%)	182(9.24%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is evident from the table-7 shows that majority 1342(68.12%) of the respondents are searching title based accessing for e-resources, followed by 446(22.64%) of the respondents are access point for searching e-resources in subject headings and remaining 182(9.24%) of the respondents are searching Author based search pattern.



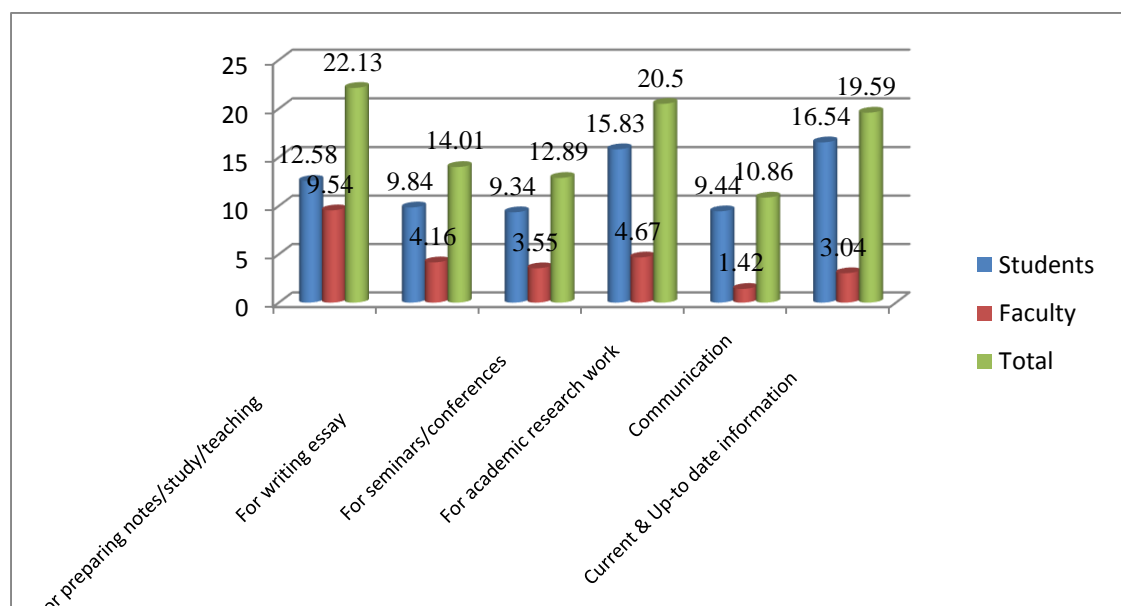
### 9.8 Purpose of accessing e-Resources

E-resources have become the important art of today’s libraries. It has rapidly changing the way of seeking and disseminating information. The e-resources has also influenced educational world tremendously. Academic institutions are new information technology to provide e-resources as an important part of their learning and teaching strategies from the below table 9.8 shows purpose of accessing e-resources.

**Table: 8 Purpose of accessing e-Resources**

Purpose of accessing e-Resources	Students	Faculty	Total
For preparing notes/study/teaching	248(12.58%)	188(9.54%)	436(22.13%)
For writing essay	194(9.84%)	82(4.16%)	276(14.01%)
For seminars/conferences	184(9.34%)	70(3.55%)	254(12.89%)
For academic research work	312(15.83%)	92(4.67%)	404(20.50%)
Communication	186(9.44%)	28(1.42%)	214(10.86%)
Current & Up-to date information	326(16.54%)	60(3.04%)	386(19.59%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

**Figure: 2 Purpose of accessing e-Resources**



It is evident from the table-8 and figure-2 show that majority 436(22.13%) of the respondents are accessing e-resources for preparing notes/study/teaching purpose, followed by 404 (20.50%) for academic research work, 386(19.59%) of the

respondents are using e-resources Current & Up-to date information, 276(14.01%) of the respondents accessing e-resources for writing books/articles for seminars and conferences, 254(12.89%) of the respondents accessing e-resources for seminars and conferences and the remaining respondents 214(10.86%) of the respondents accessing e-resources for communication purpose.

### 9.9. Assistance from the library staff

A question has been put to the users to take assistance from the library staff for using e-resources. The success of any information based institution is directly related to the management of the available resources and successive benefit for the target community. Libraries being a service institution need cordial and friendly staff, serving the readers which, in turn attract more and more users to the library. Assistance from the part of staff is necessary for proper use of any type of e-resources and tools. The users were asked to indicate their personal opinion about the library staff working in engineering college library whether they are services minded or helpful.

**Table: 9 Assistance from the library staff**

assistance from the library staff	Students	Faculty	Total
Yes	892(45.27%)	356(18.07%)	1248(63.35%)
No	558(28.32%)	164(8.32%)	722(36.65%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is evident from table-9 that the data reveals that 1248(63.35%) of the respondents state that they are taking assistance from the library staff for using of e-resources. The remaining 722(36.65%) are not taking assistance from the library staff.

### 9.10. Difficulties in using e-resources

A question has been put to the respondents to know the problems in contributing to using e-resources. The respondents are given to them in table 4.27 shows that the distribution of respondents to their replies with regard to the difficulties in using of Electronic Information Resources in Engineering College Libraries.

**Table: 10 Difficulties in using e-resources**

difficulties in using e-resources	Students	Faculty	Total
Yes	672(34.11%)	152(7.71%)	824(41.83%)
No	788(40.00%)	368(18.68%)	1146(58.17%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is evident that majority 1146(58.17%) of the respondents facing difficulties in using e-resources. the remaining 824(41.83%) of the respondents facing not facing difficulties in using e-resources.

### 9.11 General problems faced while using e-resources

Access to e-resources generally has problems like networking, speed of the Internet, permissions, lack of computer knowledge, electricity problems, library timings, lack of awareness of users in using e-resources etc. users with these problems cannot access the e-resources and use them effectively.

**Table: 11 General problems faced while using e-resources**

General problems	Students	Faculty	Total
Lack of basic operating skills	248(12.59%)	16(0.81%)	264(13.40%)
Lack of awareness on search techniques	236(11.98%)	76(3.85%)	312(15.83%)
In consistent power supply	129(6.54%)	43(2.18%)	172(8.73%)
Uncomfortable furniture	139(7.06%)	68(3.45%)	207(10.50%)
Less number of terminals	146(7.41%)	52(2.63%)	198(10.05%)
Insufficient time slot	293(14.87%)	61(3.09%)	354(17.96%)
Slow server	171(8.68%)	124(6.29%)	295(14.97%)
Frequent break down of the system	88(4.46%)	80(4.06%)	168(8.52%)
<b>Total</b>	<b>1450(73.60%)</b>	<b>520(26.40%)</b>	<b>1970(100%)</b>

It is evident from the above table-11 the majority of the 354(17.96%) of the respondents problems facing insufficient time slot, followed by 312(15.83%) lack of awareness on search techniques, 295(14.97%) of the respondents facing Slow server 264(13.40%) of the respondents facing lack of basic operating skills, 207(10.50%) of the respondents facing Uncomfortable furniture, 198(10.05%) of the respondents facing Less number of terminals, 172(8.73%) of the respondents facing In consistent power supply and the remaining 168(8.52%) of the respondents facing Frequent break down of the system.

## 10. FINDINGS

1. The total respondents' gender wise distribution of the sample population is 1970 surveyed. Among the population 1164(59.08%) are male and 806(40.92%) are female.
2. The total respondents wise distribution of the sample population is

1450(73.60%) students and 520(26.40%) of the faculty members.

3. Majority 772(39.18%) of the respondents (students and faculty) having more than 4 years experience in using e-resources and digital library.
4. Majority of the respondents 984(49.95%) replied that visit library daily, followed by 528(26.80%) of the respondents 2-3 times a week.
5. Majority of the respondents 793(40.25%) spent time 2 hours for day digital library.
6. Majority of the respondents 763(38.73%) are using mainly purpose of e-resources required information for developed education.
7. Most of the respondents 1342(68.12%) are search pattern for title based accessing for e-resources.
8. Majority of the users 436(22.13%) are accessing e-resources for preparing notes/study/teaching purpose.
9. Most of the respondents (68.12%) searching required information name of the title used e-resources.
10. Majority of the respondents find various problems like less number of terminals and insufficient time slot are the problems for using and accessing of electronic information resources.

## **11. CONCLUSION**

The study aimed to find out the usage of the electronic information resources and level of satisfaction with the available electronic information resources available in their libraries by the students and faculty members of the Engineering Colleges, Chittoor District, Andhra Pradesh. The study reveals that electronic information resources are most useful for their academic work. The respondents opined that they are accessing e-resources frequently. The digital resource provides a wealth of information on any subject field. Students and Faculty members are using the digital resource increasingly and it occupies an important place among various information sources. It is widely used by the academic community for their educational and research purposes and it plays an active role in the searching of information. The supplementation of library services with digital resource will benefit users in getting the right information at the right time.

## **12. SUGGESTIONS**

- The majority of the users are using e-resources from digital library only. Wi-Fi and LAN

Facility may be extended to the department and computer centre so that users shall use the e-resources from hostel and other locations.

- It is suggested that adequate power backup facility be provided in order to maintain e-resources to the expectations of the users.
- It is suggested to the authorities that the N-List programme should be provide to the users which is giving by the UGC-Info-net digital library consortium.

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