UTILIZATION OF ICT BASED LIBRARY RESOURCES AND SERVICES OF ENGINEERING COLLEGES: A SURVEY OF NORTH COASTAL DISTRICTS OF ANDHRA PRADESH (INDIA)

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1. Abstract

We are in a digital era. It is difficult to think of any event in our daily life that is not using Information Communication Technology (ICT). We handle enormous data all the time. Data refers to facts, events, activities and transactions which have been recorded. Data is the raw material from which information is produced. Information is the key guiding force of the world today.

2. Purpose

The purpose of creation of information as well as its communication would be served. That the information created, stored, processed, transmitted, displayed and shared is in digital form and through electronic media. The technologies used in these processes are Information and Communication Technologies (ICT).

3. Introduction

Information Communication Technology (ICT) has produced tremendous changes in all the human race of life including economic, political, social and educational system. In the educational system in academic libraries is made more near to the library professions as it gives the user some new services. Due to improved communication and networking facilities, the academic library users are much aware of online databases and other information services. Traditional academic libraries are becoming modern academic libraries to facilitate access to information at the right time to the users.

4. Definition of ICT

UNESCO (2006) has defined ICT as forms of technology that are used to transmit, process, store, create, display, share or exchange information by electronic means. It includes not only traditional technologies like radio and television, but also modern ones like cellular phones, computer and network, hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing. IT and ICT are used somewhat interchangeably. These definitions show how changes in technologies affect the way in which information is accessed, stored and disseminated in libraries.

5. Types of ICT based resources

Type of ICT resources are electronic books and texts, electronic journals, library catalogues, reference sources, statistical sources, sound recordings, image databases, ETDs, blogs or weblog, On-line conference proceedings, databases.

6. ICT and Academic libraries

Information Communication and Technology in libraries has changed the mode of information storage and retrieval, acquisition, cataloguing and classification, circulation of materials, serials control, management statistics and administrative activities such as budgeting. This achieved the provision of more efficient information services to the users and the overall improvement in the performance of the libraries and other related information institution. Information need for users to meet, academic libraries provide various services such as user education, inter-library loan/connection services, abstracting and indexing services, referral services and circulation services. Other services provided include library book loan, reference services, photocopying, online services, compilation of reading list and bibliographies, email, internet connectivity, CD researching and publishing.

7. Sources of Resources in Engineering College Libraries

The sources for accessing resources in engineering college libraries, these are online catalogue, machine readable catalogue, online public access catalogue, web-based catalogue, bibliographic databases, CD-Rom databases, web based databases, on-line databases, electronic serials/journals, electronic books/thesis, e-learning resources.

8. Utilities of Resources and Services

Now a days the reading materials and information sources are changing from print to electronic. Some of such E-Information services are detailed and briefly discussed here:

Sl. No	Information services	Abbreviations
1	Current Awareness Service	CAS
2	Selective dissemination of Information	SDI
3	E-Document Delivery Services	EDDS
4	Online Public Access Catalogue	OPAC
5	Current Awareness Service	CAS
6	Mobile Libraries	M-Libraries

9. Network Services in Engineering College Libraries

A computer network, often simply referred to as a network, is a collection of computers and devices connected by communication channels that facilitates exchange of information. Networking of all types, i.e., local, national, regional and global are operating in the world today.

9.1 National Networks: Over the last ten years the country has successfully seen the emergence of a number of networks like ERNET, I-NET, NICNET, INDONET etc., are examples of such networks. Application networks are setup by or for a specific community for serving well-defined end-users. INFLIBNET, ADINET, BONET, CALIBNET, DELNET, MALIBNET, MYLIBNET, PUNENET etc. belongs to this category.

9.2 International Networks: Apart from the above national networks, the apex body of the public library networks namely the national library can have access to the number of specialized international databases like INIS, AGRIS, MEDLARS, INSPEC, etc, through some of the international and regional networks like the TELENET, TYMNET, DIALNET, ESA/IRS, BLAISE, EURONET, etc.

10. Review of Literature

The present review of literature including information for electronic databases, using the bibliographic management software end note to download records, Internet searching using Netscape, library catalogue searching, off campus student orientation, subject resources, etc.

Chukwusa (2019) investigate the usefulness of ICT in correlation to attitude toward its application in collection development in federal universities in south-east Nigeria, the study found out that acquisition librarians are aware of the usefulness of ICT in collection development, but several challenges hinder the adoption of ICT in collection development in the understudied university..

Vishwas Jeet (2019) studied availability and access of e-resources is very common in the academic libraries in India. E-resources are essentials part of the academic community for their works. The matter of fact is that proper and maximum utilization of e-resources by the users is the need of the hour. The paper examines the satisfaction of e-resources related to the collection, services, and infrastructure available in the library of Panjab University, Chandigarh. The study also highlights the availability of computers and internet connection for accessing e-resources.

Madu (2019) examined the readiness and use of electronic books for information service provision in university libraries in Nigeria. Survey research design was adopted while a multi-stage sampling technique was used to select two universities from each of the six geopolitical zones based on electronic books presence in the university libraries. Questionnaire was used as instrument for data collection, while data collected were analysed with the use of descriptive statistics. Findings revealed that the level of institutional readiness is low, while majority of the respondents agreed that electronic books are useful for information service provision.

Mallikarjuna and others (2020) studied Use of Electronic Information Resources and Services by the Faculty members. In the 21 century the higher education plays an significant role and is one of the key drivers for the growth, performance and competitiveness of an individual at national and international level, due to the rapid growth of the Information and communication technology the higher education system is going through significant changes. The E- resources are playing a major role in enhancing the knowledge of users across the globe.

11. Research methodology

Research methodology is a plan of action for a research project and explains in detail how data is collected, analyzed and presented, so that it will provide meaningful information. This reveals the technical aspects of the study to allow the reader to appraise the quality of the information obtained.

12. Need for the study

ICT based resources have become valuable tool for the students, researchers, faculty members and librarians of engineering field. All engineering college libraries are acquiring ICT based resources through consortium. But how much that resources and services are being used by engineering students, faculty members and librarians has to be examined.

2.4   Research design

It deals with contents and meaning of understanding the study in terms of objectives and process of analysing the objectives in the form of formulation of appropriate hypotheses. Further, the methodology of this study is spelt out in respect of mode of data collection, methods of data analysis, operational definition of key concepts and limitations of the study.

2.5   Objectives of the study

1. To examine the satisfaction levels of the usage of the ICT Based Library Resources by the faculty and Students of engineering colleges of North Coastal districts, Andhra Pradesh.
2. To study the awareness and accessibility of the ICT Based Library Resources by the faculty and Students of engineering colleges of North Coastal districts, Andhra Pradesh.
3. To find out the frequency and purpose of usage of ICT Based Library Resources by the faculty and Students of engineering colleges of North Coastal districts, Andhra Pradesh.

2.6   Scope of the present study

The scope of the research is referred to as the location of the study. One of the primary goals of any library is to satisfy user needs. In engineering college libraries, a through understand of the utilization of ICT based sources and services is fundamental for effectively supporting their users. Such an understanding is expected to develop library collections and services that are more likely to satisfy their information. he study has been undertaken mainly to understand the ways and means of acquiring information by the engineering college libraries.

2.7 Methodology

The researcher has employed a well-structured questionnaire for collecting the data from the B. Tech, M. Tech students and faculty members and librarians of north coastal Andhra Pradesh engineering

college libraries. The investigator could collect the questionnaires from 2196 out of 2400 users, among whom the questionnaires were distributed. This constitutes 91.40% of the total response.

3.1 Analysis of Data

In order to find out whether there exists any difference between the male and female users in terms of their level of awareness regarding use electronic recourses and services provided by the engineering colleges. The sample was selected covering both male and female users and faculty. Users belong both graduation and post-graduation i.e., B. Tech and M. Tech in various departments.

3.2 Category wise respondents of the users

The following table will present the details of the male and female users where they were representing from three different groups .i.e. B. Tech, M. Tech and faculty members.

Table No-1: *Category wise respondents of the users*

S. No	Category	No. of Respondents			Total (N=2196)
		B. Tech	**M. Tech**	**Faculties**	**(%)**
1	Male (N=1248)	587 (47.00) (56.01)	564 (45.16) (57.26)	98 (7.85) (60.12)	1249 (100.00) (56.88)
2	Female (N=947)	461 (48.68) (43.99)	421 (44.46) (42.74)	65 (6.86) (39.88)	947 (100.00) (43.12)
	Total	1048 (47.72) (100.00)	985 (44.85) (100.00)	163 (7.42) (100.00)	2196 (100.00) (100.00)

Above table analyses regarding status with category wise respondents reveal that among the respondents; nearly 57 percent of them belong to male respondents in all categories of users. Second highest percent of them belongs (43.12) female users in terms of all categories .i.e. B. Tech, M. Tech and faculty members
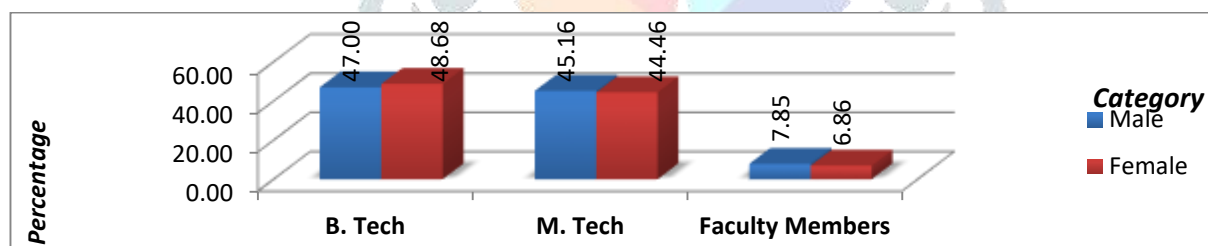

Figure-1: Category wise respondents of the users

3.3 Purpose wise Visit to the College library

The value of the library facility to the users can be determined by recognize their intention of visits to the library. Different options were given to illustrate various reason(s) for visiting the library by the users.

Table No-2: *Purpose of visit to the college library*

S. No	Information Services used	Total (N= 2196) (%)
1	Recreational reading (N=1785)	1785 (81.28)
2	Borrowing/lending (N=1698)	1698 (77.32)
3	Consulting Reference material (N=1599)	1599 (72.81)
4	Preparing for competitive exams (N=1935)	1935 (88.11)
5	Photocopying relevant materials (N=1289)	1289 (58.70)
6	Reading text books (N=1798)	1798 (81.88)

7	Net surfing (N=2022)	2022 (92.08)
8	Any others (N=983)	983 (44.76)

The data analysed in the above table explains the reasons for visiting the college library by the users surveyed. The highest percent of the users said that they are visiting the library for net surfing (nearly 92%). Second highest percent of them (88.11) are visiting the library for the preparation of competitive examinations and followed by the percent of users (81.88) visiting the library for 'recreational reading' nearly the same percent of them (80.51) approaching the library for 'reading text books'. Above 77 percent of them visiting the library borrowing/lending purpose which very important service offered by the college libraries. Nearly 73 percent of the users are using the library for 'consulting reference material' in their parental college libraries and above 58 percent of the users using the library for 'photocopying relevant materials, nearly 45 percent of the users visiting the library and other purposes.
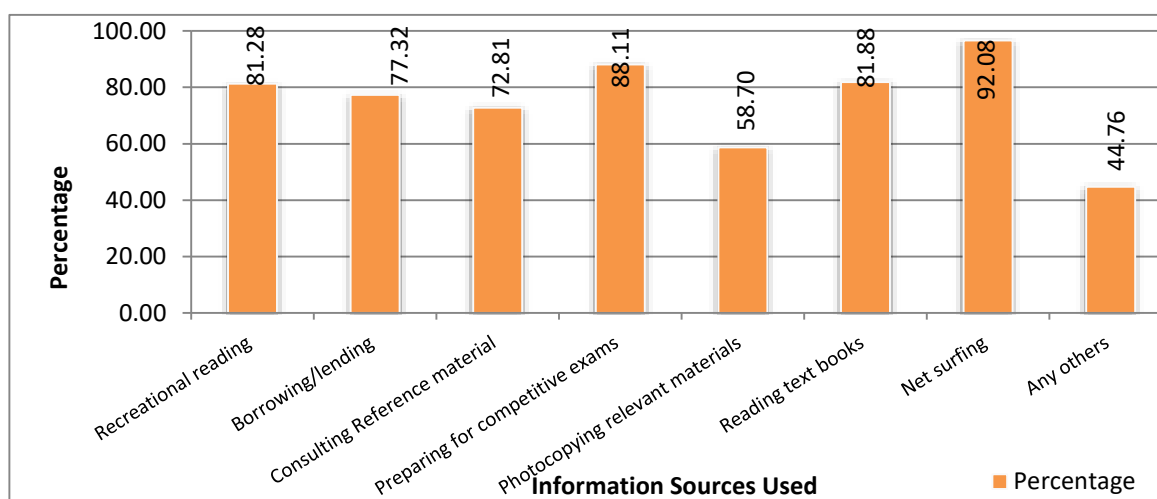

Figure-2: Purpose wise Visit to the College library

3.4 Most frequently used Sources of Information -category wise analysis

In order to consider the extent of use of information sources in the library the users were asked by various categories about their use of this resource. The reaction was examine and presented in the subsequent below table.

Table No-3: *Most frequently used Sources of Information-category wise analysis*

S. No	Most frequently used sources	No. of Respondents			Total (N=2196) (%)
		B. Tech	M. Tech	Faculties	
1	Books (N=1426)	910 (63.81)	402 (28.19)	114 (7.99)	1426 (100.00) (64.93)
2	Periodicals (N=1395)	721 (51.68)	548 (39.28)	126 (9.03)	1395 (100.00) (63.52)
3	Electronic Newspapers (N=1836)	926 (50.44)	812 (44.23)	98 (5.34)	1836 (100.00) (83.60)
4	Reference books (N=1635)	714 (43.67)	802 (49.05)	119 (7.28)	1635 (100.00) (74.45)
5	In-house databases (N=1276)	537 (42.08)	615 (48.20)	124 (9.72)	1276 (100.00) (58.10)
6	Library OPAC (N=1521)	711 (46.75)	768 (50.49)	42 (2.76)	1521 (100.00)

					(69.26)
7	Online databases (N=967)	383 (39.61)	422 (43.64)	162 (16.75)	967 (100.00) (44.03)
8	E-Journals (N=893)	403 (45.13)	381 (42.67)	109 (12.21)	893 (100.00) (40.66)
9	Internet (N=2122)	956 (45.05)	910 (42.88)	156 (7.35)	2122 (96.63)
10	Any other (please specify)	378 (35.80)	515 (48.77)	163 (15.44)	1056 (100.00) (48.08)

Category wise analysis shown the results regarding the most frequently used sources of information by the users. It is clearly evident that the above table, all categories of the library users are depending on different sources of information. In the order of priority, highest percent of B. Tech users (nearly 64) are frequently using books as main sources of information followed by those who are using periodicals (51.68). The percent (50.44) of B. Tech users are using 'Electronic news papers' Library OPAC (46.75) e- journals (45.13) Internet (43.53) respectively.

When it capered to M. Tech users highest percent of them are using (50.49) Library OPAC as a most frequently used source of information in their parental library and followed by (49.05) the percent of same category of them are using reference books as most frequently used source. Any other purposes (48.76) In house data bases (48.20) Electronic Newspapers (44.23) online data bases (43.64) electronic journals and (42.67) Internet (41.43) using most frequently by M. Tech users.

Faculty wise references shown that the above table, online databases (16.75) are occupied first place and any other purposes (15.44) stood second position, e-journals (12.20) in house data bases (9.72) periodicals (9.03) as main sources approaching by the faculty members in frequent manner.
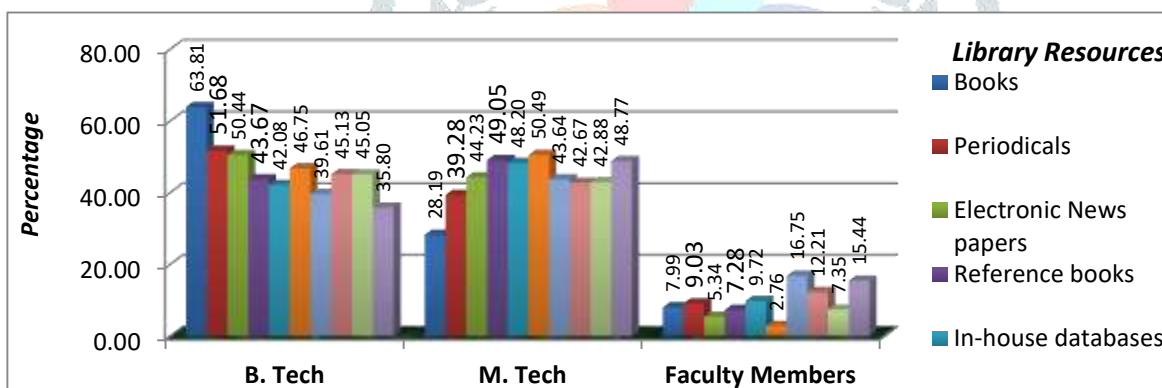

Figure-3: Most frequently used Sources of Information-category wise analysis

3.5 Use of ICT based library Services -category wise analysis

The following table will explain the opinion about the use of ICT based library services by category wise users.

Table No-4: *Use of ICT based library Services ICT based library Services –category wise analysis*

S. No	Library Services	B. Tech	M. Tech	Faculties	Total (N=2196) (%)
1	Retrieve information through WWW environment(N=1863)	974 (52.28)	728 (39.08)	161 (8.64)	1863 (100.00) (84.84)
2	E-journals and e-books (N=1956)	1012 (51.74)	788 (40.29)	156 (7.98)	1956 (100.00) (89.07)
3	CD-ROM Services (N=1251)	635 (50.76)	464 (37.09)	152 (12.15)	1251 (100.00) (56.97)
4	Online Data base	410	491	149	1050

S.No	Service				
	searching (N=1251)	(39.05)	(46.76)	(14.19)	(100.00) 47.81)
5	Book Reservation and Borrowing Services (N=2196)	660 (45.52)	642 (44.28)	148 (10.21)	1450 (100.00) (66.03)
6	News Clipping Services (N=2098)	548 (47.65)	454 (39.48)	148 (12.87)	1150 (100.00) (52.37)
7	Abstracting & Indexing Services (N=1869)	921 (49.28)	787 (42.11)	161 (8.61)	1869 (100.00) (85.11)
8	Web OPAC (N=1736)	897 (51.67)	687 (39.57)	152 (8.76)	1736 (100.00) (79.05)

Analysis above purpose of use of ICT based library services by category of users reveals that highest percent of B. Tech users (52.28) using ICT based library 'retrieve information through WWW environment', second highest percent of them (51.74) use ICT based library services for access e-journals and e-books. About 49 percent of the same category of them operating abstracting & indexing services and followed by CD-ROM (50.76) services, newspaper clipping services (47.65) reservation of book and borrowing (45.52) respectively.

When it comes to M. Tech users, highest percent of (46.76) Online Data base, followed by the percent of them (44.27) book reservation and borrowing services. Third highest percent of the users are (42.11) are retrieved 'abstracting and indexing' related information, followed by the percent of users (40.29) accessed e-books and e-journals, web OPAC (39.57) retrieved information through WWW environment, newspaper clippings (39.47) respectively.

Among the faculty members highest percent of (nearly 14) are accessed online databases may be it helps for their teaching and research activities followed by newspaper clipping searching (12.86), CD-ROM services (12.15) retrieve online information through WWW environment, web OPAC (8.76), abstracting and indexing (8.61) are occupied 1-5 positions carries pleadingly.
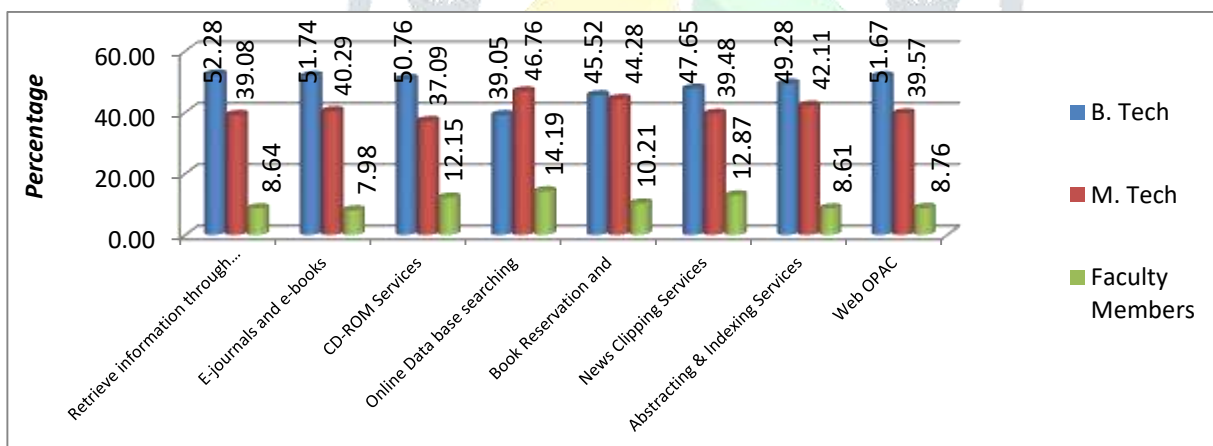

Figure-4: Use of ICT based library Services-category wise analysis

3.6 Searching ICT based library Resources and Services

Library and information centres provide variety of sources and services online / offline. Users may have access a variety of textual information. These are different kind of wed based resources and service for retrieving information from their library OPAC, gateways, subject portal, e-journals, online databases and search engines etc. The following table indicate web based library resources and services and presented the results.

Table No-5: *Searching ICT based library Resources and Services*

S. No	Search Engine	Total (N=2196) (%)
1	Search engines (N=856)	856 (38.97)
2	Library Websites	763

	(N=763)	(34.74)
3	Institution library portals (N=458)	458 (20.86)
4	Subject gate ways (N=119)	119 (5.42)
	Total	2196 (100.00)

Above table shown results for uses searching and retrieving of web based information. Highest percent of users (nearly 39) have use search engines accessed for their relevant information, followed by nearly 35 percent of them approaching websites for searching their needed information. About nearly 21 percent of them have accessed institutional library portals few of them have (5.42%) also accessed subject gate ways in this purpose.
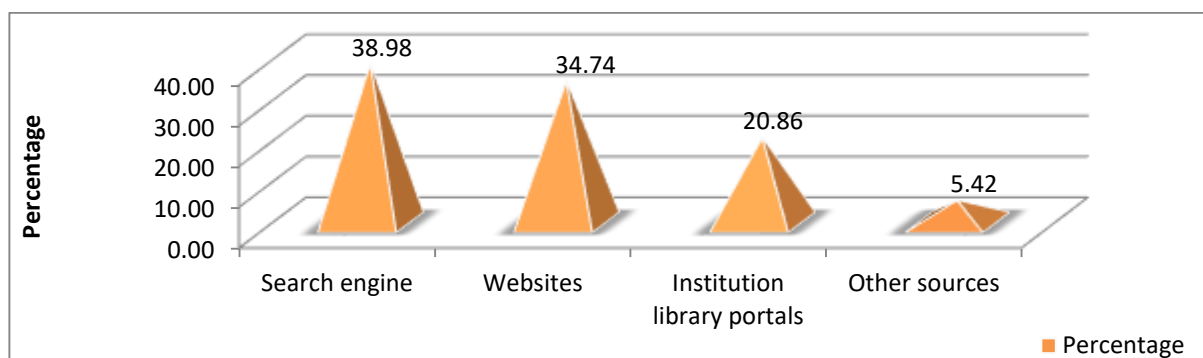

Figure-5: Searching the ICT based resources and services

4.1 Findings

In order to find out whether there exists any difference between the male and female users in terms of their level of awareness regarding use electronic recourses and services provided by the engineering colleges, The study sample was selected covering both male and female students and faculty. The students belong both graduation and post-graduation i.e., B. Tech and M. Tech in various departments.

Regarding status with category wise respondents reveal that among the respondents; highest percent of them belong to male respondents in all categories of users, second highest percent female are responded.

Regarding the most frequently used sources of information by the users. It is clearly evident the analysis of the study, all categories of the library users is depending on different sources of information. Highest percent of B. Tech students are frequently using books as main sources of information next highest are using periodicals. M. Tech student's highest percent of them are using Library OPAC as a most frequently used source of information in their parental library and second highest percent of same category of them are using reference books as most frequently used source.

It is evident from the table that the majority of B. Tech respondents are using ICT for games/entertainment. The analysis shows opinion about M. Tech respondents in this regard, majority of them are using this facility for 'Job opportunities. When it comes to faculty members, the analysis exposed the results majority of the faculty members are being use this feature for 'games/entertainment searching subject databases.

4.2 Conclusion

The articles also represent from engineering colleges, it is found that the students are the leading users of e-resources in terms of represents form higher education found that band width should be increased or better Wi-Fi connects should be provided to avoid slow Internet connection. The study also suggested the need of training to remove the fear in accessing E-resources. Some of other articles represent in Moodle, UGC info net digital consortium etc.

Key words: Awareness, Use, ICT based Library resources and services, engineering college libraries

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