UTILIZATION OF ICT BASED RESOURCES AND SERVICES IN ENGINEERING COLLEGE LIBRARIES: CASE STUDY OF SIVAGANGAI AND RAMANATHAPURAM DISTRICTS

G. Stephen
Research Scholar , Dept. of Library and Information Science, Alagappa University Karaikudi , India.

Co - Author Details :

S. Thanuskodi
Associate Professor & Head i/c, Dept. of Library and Information Science,
Alagappa University Karaikudi , India.

ABSTRACT

Information and Communication Technology (ICT) has brought unprecedented changes and transformation to academic library and information services, conventional LIS such as OPAC, users services, reference services, bibliographic services, current awareness services, Document delivery, interlibrary loan, Audio visual services and customer relations can be provided more efficiently and effectively using ICT, as they offer convenient time, place, cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process. The impact of ICT characterized on information services by changes in format, contents and method of production and contents and method of production and delivery of information products. This study explains about the ICT based resources and services in engineering college libraries in Sivagangai and Ramanathapuram districts. The data is collected through a questionnaire to study the ICT based library resources and services among UG students, PG students and faculty members. This study found about purpose of using ICT based resources, aware about engineering databases, criteria for use, problem while access the ICT based resources and found library performance about ICT based resources and services.

KEYWORDS :ICT, Engineering Databases, e-learning, Internet, E-mail, online information.

INTRODUCTION :

Information and Communication Technologies (ICTs) are often associated with the most sophisticated and expensive computer-based technologies. But ICTs also encompass the more conventional technologies such as radio, television and telephone technology. While definitions of ICTs are varied, it might be useful to accept the definition provided by United Nations Development Programme (UNDP): 'ICTs are basically information-handling tools- a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICTs of radio, television and telephone, and the 'new' ICTs of computers, satellite and wireless technology and the Internet. These different tools are now able to work together, and combine to form our ' networked world' – a massive infrastructure of interconnected telephone

services, standardized computing hardware, the internet, radio and television, which reaches into every corner of the globe'. It is included library.

REVIEW OF LITERATURE

Isabella and Dhanavanthan (2015) examined Perception of Web-Based Tools and Services by College Library Professionals in South Tamil Nadu, India. This paper focuses on the perception of web technology tools by library professionals in various engineering colleges in the South Tamil Nadu, India. The purpose of the study is to determine to what extent the library professionals there are familiar with web-based tools and use them in library operations. 140 copies of a questionnaire were distributed to library professionals in that region, of which 123 were completed and returned. Simple percentage and weighted average maturity (WAM) were used to analyze the data collected. The findings show that of the 123 college library professionals participated in the survey, a large percentage of them are expert users of many web-based tools such as digital library software, e-learning management systems, and content management systems. shows how frequently the respondents used web resources.

Maranna (2015) surveyed Use of Internet Resources and Services by Marine Science Faculties in South India. He found that study about faculty members, www (91.3%), E-mail (74.6%) and online databases (63.5%) are highly utilized Internet services and they are ranked first, second and third respectively. One can also observe from table-5.3 that a large number of respondents i.e. in the range of 60% to 90% never used freeware/shareware, Gopher, Telnet and FTP. The reasons for under utilization of these services would be either a need does not arise or lack of knowledge about these services.

Stephen and Thanuskodi (2015) surveyed Effects of Information literacy skills in the use of ICT based resources and services among engineering faculties of Ramanathapuram district. They found that most respondents (109, i.e., 74%) response search engine is medium of searching the ICT based services. A significant number (17, 11%) responses other sources followed by websites (16%) and Institution library portals (3%).reveals that 98 (66.6%) out of 147 (N) respondents stated that E-Mail& Document Exchange is Very High Level Purpose followed by 88 (60%)To access the Electronic journal, 70 (47%) utilizing the social networking sites, 69(46%) collect the data through internet, 56(38%) updating the knowledge and carrier development.

Ajaegbu, Ehioghae & Oreoluwa (2014) surveyed "Awareness and Utilization of ICT Based Library Services: Case Study of a Nigerian Private University". The factors considered for the level of awareness of ICT based library services are: Internet Services, OPAC, Electronic Data, E-journal, Fax Machine, Document Delivery, Scanner, Printing Facilities, CD ROM, Desktop and Laptops. Found that the level of internet service awareness as ICT based library service is the highest followed by the use of Desktop and Laptops and then Printing Facilities while the level of unawareness of Fax Machine services is highest followed by Document Delivery and OPAC..

Zabed Ahmed (2014) investigated the use of IT based information services, An investigation into the current status of public universities in Bangladesh in terms of library resources and services, IT infrastructure and training requirements for the establishment of a centralized, networked electronic library for the universities in the country. A survey was conducted in March-April 2012 to ascertain the level of library automation practices, access to online resources and IT facilities utilized by the public universities in Bangladesh.

Qutab ,Rubina, and Shafi (2014) surveyed about "Adoption of ICT's For Library Operations and Services: A Comparison of Public and Private University Libraries of Pakistan". They found that Different types of internet connections were used by university libraries. LAN was used by 28(65%); WiFi by 25(58); Cable network by 9(21%); PERN by 16(37%); Dial up and Leased line by one library and DSL by

three libraries. It is also notable that sometimes even more than one type of connections is available in one library. Internet speed is important to get rapid and timely information.

Stephen and Thanuskodi (2014) carried a survey among the research scholars in Alagappa University about use of ICT. They found that study 112(85.49%) respondent for download the e-resources, 23(17.56%) respondents for online shopping, 104(79.39%) respondents for prepare assignments. The study also reveals that most of the respondents opined the impact of ICT in Higher education as excellent (54.19%). The survey also found that a majority of respondents believe that ICT is essential for higher education and research. In order to assess the attitude of research scholars towards ICT, they were asked whether they felt that higher education and research would not be effective without ICT.

Jyoti Bhatnagar (2013) Surveyed "Use of ICT Applications by Students, Faculty Members & Academic Staff in ITM Group of Institutions' Gwalior, India: A Statistical Survey". He found that out of 24 respondents i.e. Majority of Student 22(91.66%) was using Internet facility, 20(83.33%) were using the OPAC and online Search, 10(41.66%) were using the reprographic Service and 06(25%) were surfing internet. It also indicates that out of 12 respondents i.e. Faculties 8(66.66%) was using the OPAC, Internet facility and online search. 06(50.00%) were using reprographic Service. 04(33.33%) was using the Surfing Internet.

Thanuskodi (2012) the purpose of this study is to identify the information channels used by the Tamil Nadu Dr. Ambedkar Law University faculty members, information sources preferred by them, methods employed for getting the needed information and their library use pattern. A questionnaire was distributed to 20 Tamil Nadu Dr. Ambedkar Law University faculty members and 18 filled in questionnaires were returned, giving an overall response rate of 90 percent. It was found that respondents used various sources for acquiring the needed information. Books were ranked as the most important source for teaching and research purposes, followed by law reports and statutes. Respondents preferred to first consult their personal collection before resorting to other information providing sources and agencies. The Online Public Access Catalogue (OPAC) and CD-ROM were the most frequently used IT-based sources and facilities.

OBJECTIVES OF THE STUDY
- To find out the different purposes of using ICT based resources and services by respondents.
- To observe the frequency, experience, place of access of ICT based resources and services by users.
- To examine the awareness level, familiarity level of various engineering databases by users.
- To identify the favorite search engines used by users.
- To notice the familiarity of engineering consortium and repository by users.
- To determine the level of library performance about ICT based resources and services by respondents.
- To expose the various problems faced by users while using the ICT based sources and Services.
- To discover the preferable format of ICT based resources to use by the respondents.

HYPOTHESIS
There will be no significant difference between the respondents use of various ICT based resources.

There will be no significant difference between respondents frequency of usage of ICT based resources.

There will be no significant difference between the respondent's types of documents formats preferred while using ICT based resources.

RESEARCH METHODOLOGY

Fourteen colleges are located in Ramanathapuram and Sivagangai districts. Two colleges from Ramanathapuram district and six colleges from sivagangai district were selected as sample and totally eight colleges have been taken by the researcher for the present study. The researcher has employed a well-structured questionnaire for collecting the data from the students and faculties of Ramanathapuram and Sivagangai district engineering colleges. The questionnaire has been prepared in such a way that the respondents could easily understand the items. Stratified random sampling method has been adopted for this study. A total number of 800 questionnaires were distributed among the UG-320, PG-320 and 160 Faculty members. They are personally requested to fill up the questionnaire at their earliest convenience in order to help the investigator to collect the same during his next visit. The investigator has to make second, third and fourth visits to the college for collecting the filled-in-questionnaires from the UG & PG students and faculty members. During these visits, the investigator could collect questionnaires from only 732 out of 800 students and faculty among whom the questionnaires were distributed. This constitutes 91.5% of the total response.

Data Analysis and Discussion
Status wise respondents

Table 1.Status wise respondents

Status	Respondents	Percentage
UG Students	292	39.89
PG Students	303	41.39
Faculty Members	137	18.72
Total	**732**	**100**

The status wise distribution of respondents under the study is shown in Table 1. It shows that out of 732 total respondents, 292 (39.89%) respondents are UG students, 303 (41.39%) respondents are PG students and the remaining 137 (18.72) respondents are faculty members.

Gender wise respondents

Table 2. Gender wise respondents

Gender	UG Students	PG Students	Faculty Members	Total (%)
Male	159 (54.45)	179 (59.07)	82 (59.85)	420 (57.40)
Female	133 (45.55)	124 (40.93)	55 (40.15)	312 (42.60)
Total	292 (100)	303 (100)	137 (100)	732 (100)

Table 2 shows that among 732 students, 420 (57.40%) were male and 312 (42.60%) were female. This suggests a balance between male and female respondents. It is clear that this study got more respondents from male.

Frequency of Library Visit

Table 3. Frequency of library visit

Frequency	Respondents	Percentage (%)
Daily	345	47.13
Weekly Twice	227	31.01
Weekly Once	121	16.53
When required	39	5.33
Total	**732**	**100**

Data presented in table-3 indicate the respondents' frequency of visit to the institution library. It could be noted that out of the total 732 respondents, 345 (47.13%) respondents are visit daily, 227 (31.01%) respondents are visit weekly twice, 121 (16.53%) respondents are visit weekly once and 39 (5.33%) respondents are when required.

Purpose of library visit

Table 4. Respondents purpose of library visit

Purpose	Respondents	Percentage (%)
Updating subject knowledge	529	72.3
For Circulation	634	86.6
Prepare for examination	487	66.5
For Taking Notes	447	61.1
For Browsing Internet	604	82.5
To complete assignments	446	60.9
To prepare research paper	537	73.4
For Recreation	91	12.4
Reading newspaper	405	55.3
Consult periodicals / journals	524	71.6

Data presented in table-4 indicate the age wise respondents' purpose of visit of institution library. It could be noted that out of the total 732 respondents, 634 (86.6%) respondents purpose of visit of institution library for circulation. Followed by browsing internet (82.5%), to prepare research paper (73.4%), updating subject knowledge (72.3%), consult periodical and journals (71.6%), prepare for examination (66.5%), for taking notes (61.5%), for complete assignments (60.9%), reading newspaper (55.3) and only 12.01 percent respondent's purpose is recreation.

Use of Available library services

Figure 1 shows the use of available library services by the respondents. 100% respondents used ICT based services and book reservation and circulation services. Followed by reference service, CD ROM. Almost Inter library loan and photo copy service least use by the respondents. The response rate is 44%.
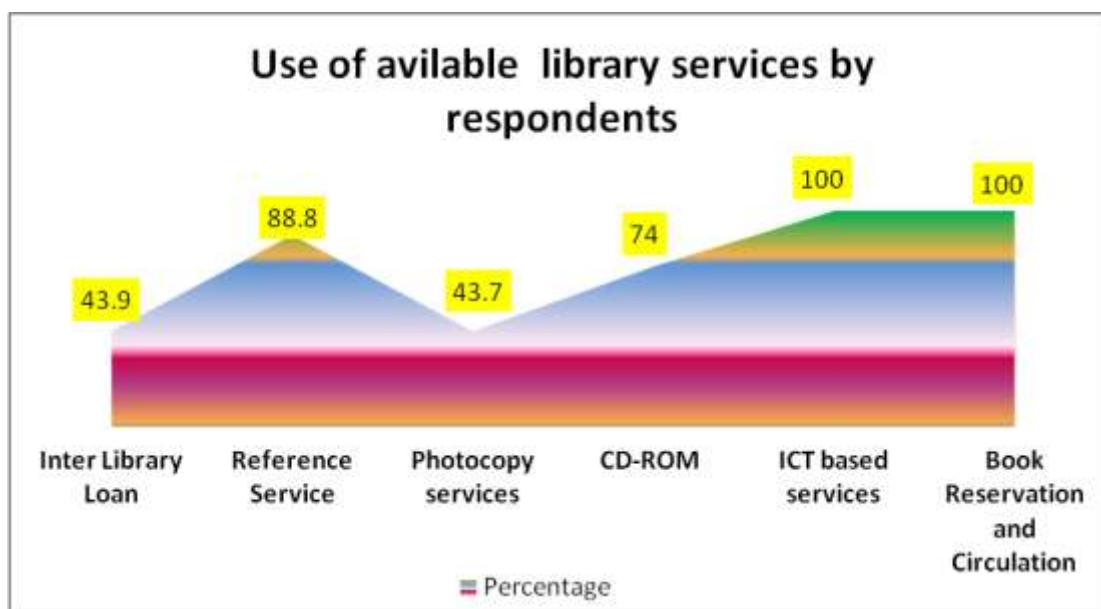
Figure 1. Use of available library services

Purpose of using ICT based resources and services

Table 5. Purpose of using ICT based resources

Purpose	Frequency	Percentage
To use OPAC	655	89.5
To use Online Database	509	69.5
To use E-Mail facility	732	100
To scan and Print	398	54.4
To search CD / ROM	399	54.5
To browse Internet	555	75.8
Access e –journals	632	86.3

Table 5 shows that the purpose of using ICT based services. It is evident from table that 100% respondents purpose were to use email facility, 89.5% respondents purpose were to use OPAC, 86.3% respondents purpose were access e-journals, 75.8% respondents were to browse the internet, 69.5% respondents were to use online database and 54.5% respondents were both to search CD-ROM, to scan and print.

The one way ANOVA model is applied for further discussion. The computed ANOVA value is 11.56, which is greater than its p value at 5 percent level of significance. Hence, there is significant status wise distribution of respondent's purpose of using ICT based services. Hence hypothesis is rejected.

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	55841.33	2	27920.67	11.56321	0.000915	3.68232
Within Groups	36219.17	15	2414.611			
Total	92060.5	17				

Frequency of using ICT based resources

Table 6. Frequency of using ICT based resources

Frequency	Responses	Percentage
Daily	498	68.0
2-3 times in a week	75	10.2
Above 4 times in a week	117	15.9
Once in a week	20	2.7
Monthly	13	1.8
Occasionally	9	1.2
Total	732	100

Regarding frequency of use of ICT based library resources and services, the analysis of data of Table 6 showed that out of 732 respondents, 498 (68%) used on daily basis. It was followed by above 4 times in a week (15.9%), 2-3 times in a week (10.2%), once in a week (2.7%), monthly (1.8%) and occasionally (1.2%).

Methods of learning to use the ICT based resources and services

Table 7. Methods of learning

Methods	Frequency	percentage
Trial and error	352	48.1
Guidance from library staff	339	46.3
From friends and colleagues	557	76.1
Formal education / Training	428	58.5
Seminar / workshop	184	25.1
Teachers / Supervisors	131	17.9

Table 7 shows the frequency of methods of learning to use of ICT based services. From friends and colleagues is the main way to learn about the use of ICT based services with a response rate of 76.1% as revealed from the above analysis? Followed by 58.5% respondents learn from formal education and training, 48.1% respondents learn from trial and error method, 46.3% of the respondents learn from guidance from library staff, 25.1% respondents learn from seminar and workshops and only 17.9% respondents learn from teachers and supervisors.

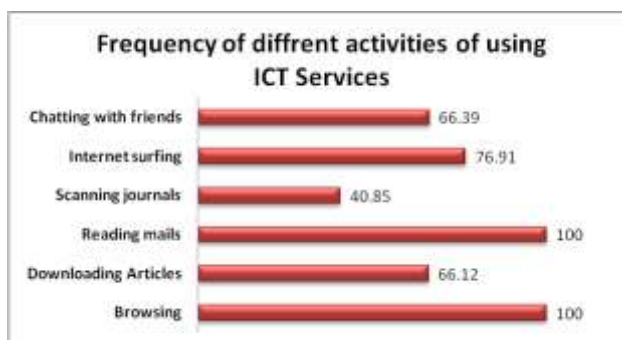## Activities of using ICT based resources and services

Figure 2. Activities of using ICT based resources

Figure 2 depicted that frequency of respondent's different activity of using ICT based services. Majority of the respondents 100% respondents activity is both reading mails and browsing followed by internet surfing (76.91%) , chatting with friends (66.39%), downloading articles (66.12%) and scanning the journals 40.85%.

Place of accessing ICT based resources and services

Table 8. Place of accessing ICT based resources and services

Place	Frequency	Percentage
Library	557	76.09
Computer lab / Dept	582	79.51
Cybercafé	369	50.41
Home / Hostel	341	46.58
Other place	278	37.98

Table 8 shows the place of using ICT based resources and services. Majority of the respondents, 582 (79.51%) respondents were use computer lab/ department. Followed by 76.09% respondents use the central library, 50.41% respondents use the cyber café, 46.58% respondents using Home / Hostel and only 37.98% respondents using other places for using ICT based resources and services.

Frequency of use of ICT based library services

About frequency of use the ICT based library services. About digital library 53.14% respondents use very often, followed by 28.96% respondent use often, 10.38% respondents use sometimes, 6.69% respondents use rarely, 0.83% respondents not use the digital library. About Internet and email, 64.62% respondents use very often, followed by 18.58% respondent use often, 14.48 % respondents use sometimes, 2.32% respondents use rarely and no respondents for not the use of internet and email. About institution repository, 24.45% respondents use very often, followed by 22.82% respondent use often, 31.42% respondents use sometimes, 6.97% respondents use rarely and 14.34% respondents not use the institution repository. About online databases, 43.31% respondents use very often, followed by 28.69% respondent use often, 16.80% respondents use sometimes, 9.43% respondents use rarely and 1.77% respondents not use the online databases. About Open access e resources, 55.05% respondents use very often, followed by 25.41% respondent use often, 14.75% respondents use sometimes, 4.78% respondents use rarely and zero percent of respondents not use the open access e-resource. About OPAC, 40.85% respondents use very often, followed by30.47% respondents use often, 14.89% respondents use sometimes, 9.15% respondents use rarely and 5.33 % respondents not use the OPAC.

Ranking the ICT based services to need for current trend

About digital library 21.72% respondents ranked first, followed by 16.80% respondents ranked second, 11.20% respondents ranked fifth and only 0.82% respondents ranked tenth position. About internet and email 36.88% respondents ranked the first position, followed by 24.73% respondents ranked second, 8.20% ranked the third place, 7.65% respondent's ranked fourth place and only 1.37% respondents ranked last place. About social networking majority of the (24.45%) respondents gives second rank, 20.76% respondent's gives first rank. About Access the e-resources 37.16% respondents ranked first followed by other ranks. About OPAC, 24.73% respondents ranked first position and followed other ranks.   About scanning, printing, photocopying services majority of the respondents

ranked third positions.

Purpose level of using ICT based service

This study found the distribution of respondent's purpose level of using ICT based services. It is evident from the table that out of 732, 473 (64.62%) respondents using email and document exchange were very high level, followed by 18.58% respondents using high level, 14.48% respondents moderate level and only 2.32% respondents using the low level. About to read and down load the e-books, 25.82% respondents using very high level, followed by 19.81% respondents using high level and 176 (24%) respondent using low level. About collect the data through internet service, out of 732, 32.79% (240) respondents using moderately level, 203 (27.73%) respondents using very high level. About access the online databases, 43.31% respondents using very high level, 28.67% respondents using high level and 16.80% respondents using moderately level. About the purpose of access e-journals, 55.05% respondents using very high level, 25.41% respondents using high level and only 4.78% respondents using low level.

Search engine used for accessing the ICT – resources

This study found that distribution of respondents search engine used for accessing the ICT based resources. About Google, out 732 respondents, 473 (64.62%) respondents used always, 136 (18.58%) respondents used often, 106 (14.48%) respondents used sometimes and 17 (2.32%) respondents used rarely for accessing the ICT based resources and services. About Yahoo search engine, out 732 respondents, 317 (43.31%) respondents used always, 210 (28.69%) respondents used often, 123 (16.80%) respondents used sometimes , 69 (9.43%) respondents used rarely and 13 (1.77%) respondents used never for accessing the ICT based resources and services.

Types of ICT product mostly frequently used

Table 9. Respondent's types of ICT product mostly frequently used

ICT product	Frequency	Percentage
Desktop	501	68.44
Laptop	432	59.02
Mobile	732	100
Internet	732	100
Scanner / printer	476	65.03
CD / DVD/ Pen drive	652	89.07
MS office	693	94.67
Others	102	13.93

Table 9 indicates the distribution of the respondents types of ICT product mostly frequently used. It could be noted that 100% (732) respondents mostly frequently use mobile and internet. Followed by 94.67% (693) respondents use MS office, 89.07% (652) respondents use CD/DVD/Pen drive, 68.44% (501) respondents use desktop PC, 59.02% (432) respondents use laptop and only 13.93% (102) respondent use other tools.
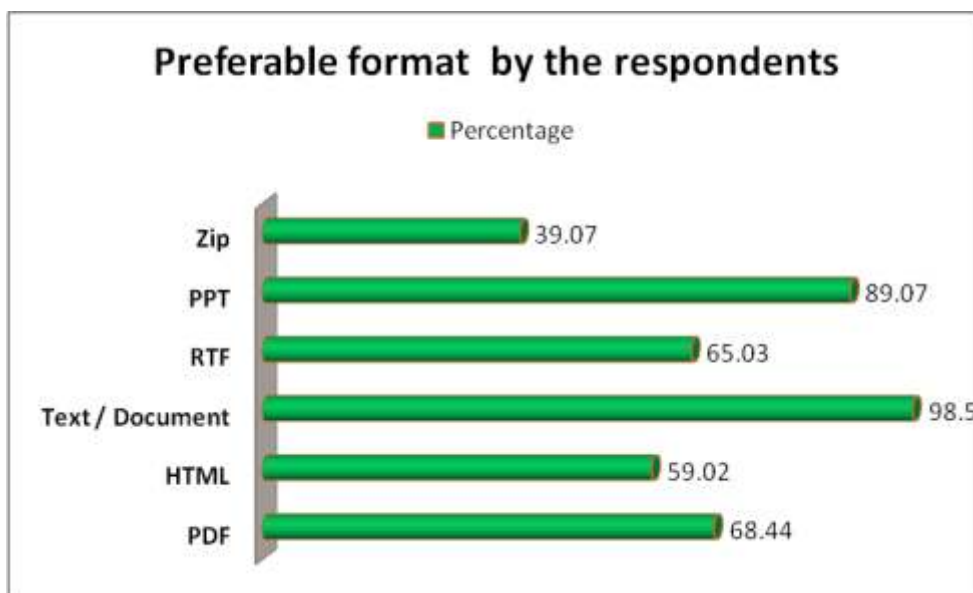
Preferable format

Figure 4. Preferable format by the respondents

Figure 4 shows the respondents preferable format of ICT based resources. It is evident from the table, out of 732 respondents 721 (98.50%) preferred to text or document. And 652 respondents prefer to PPT, 68.44% respondents preferred to PDF, 432 (59.02%) respondents preferred to HTML and 39.07% respondents preferred to zip file format.

The one way ANOVA model is applied for further discussion. The computed ANOVA value is 5.222, which is greater than its p value at 5 percent level of significance. Hence, there is significant status wise distribution of respondent's preferable format to use ICT based resources. Hence hypothesis is rejected.

Familiarity of Indian engineering consortium / repository

Table 10. Respondent's familiarity of Indian engineering consortium / repository

Consortium / Repository	Familiarity			
	Yes	Percentage	No	Percentage
AICTE – INDEST	728	99.45	4	0.55
DELNET	724	98.91	8	1.09
NPTEL	723	98.77	9	1.23
CSIR – E – Journal	698	95.35	34	4.64
UGC – INFONET	720	98.36	12	1.64
Soudhganga	703	96.04	29	3.96

Table 10 shows the distribution of respondent's familiarity about Indian engineering consortium / repository. It evident from the table 99.45% respondents familiar about AICTE – INDEST, 98.91% respondents familiar about DELNET, 98.77% respondents familiar about NPTEL, 95.35% respondents familiar about CSIR-e –journal, 98.36% respondents familiar UGC- Infonet, 96.04% respondents familiar about soudhganga repository.

Awareness level of engineering databases

Out of 732 respondents, 53.00 % were extremely aware about Google scholar, 34.29% moderately aware, 11.34% somewhat aware, and 1.37% slightly aware about Google scholar. About COMPENDEX, 41.53% respondents extremely aware, 29.92% moderately aware, 21.58% somewhat aware. About IEEE explore, 46.18% respondents were extremely aware, 27.18% respondents were moderately aware. About KNOVEL library 32.29% respondents were slightly aware and only 7.79% extremely aware. About ASTM Dig library, 41.67% respondents were extremely aware, 35.93% respondents moderately aware. 30.19% respondents somewhat aware about TECH street, 31.70%respondents slightly aware about ABI Inform, 36.20 respondents were extremely aware about McGraw Hill engineering, This study found about the engineering databases of Google scholar, IEEE xplore, ASTM Dig library, INSPEC, COMPENDEX, Engineering village and McGraw Hill engineering extremely aware and moderately aware by the respondents.

Findings and conclusion

This study found that frequency of visit to the institution library. It could be noted that out of the total 732 respondents, 345 (47.13%) respondents are visit daily, 227 (31.01%) respondents are visit weekly twice, 121 (16.53%) respondents are visit weekly once and 39 (5.33%) respondents are when required. Purpose of visit of institution library. It could be noted that out of the total 732 respondents, 634 (86.6%) respondents purpose of visit of institution library for circulation. Followed by browsing internet (82.5%), to prepare research paper (73.4%), updating subject knowledge (72.3%).This study clearly that purpose of visit of institution library, circulation takes the first order reporting among the engineering college libraries in Sivagangai and Ramanathapuram district, browsing internet the second, to prepare research paper the third, updating subject knowledge the fourth, consult periodical and journals the fifth, prepare for examination the sixth, for taking note the seventh, for complete assignments the eighth, reading news paper the ninth and recreation is the last position. Majority of the 56.3 PG students visit the library for the purpose of to complete the assignments, 51.1% of the UG students visit the library for the purpose of prepare the examination and 24.6% faculty members visit the library for the purpose of to prepare the research paper. This study found that 57.38% male respondents purpose were to use the e mail facility and 51.17% female respondents purpose were to browse the internet. With regard majority 262 (40.30%) UG student's purpose was to you OPAC, 303 (41.39%) PG students use the 202 (50.63%) and 128 (25.15%) faculty members are use the ICT based library services, Book reservation and circulation.

This study suggest to the institutions need to motivation and training to utilize the library, Update the library websites frequently with web 2.0 technology. Provide great ICT infrastructure, faster internet connection with Wi-Fi campus Need to conduct IL and CLP to develop the searching strategies and utilize the ICT based resources and services Provide e-learning materials and photography service to the users. Subscribe more foreign journals / databases.

REFERENCES
1.Awareness and Utilization of ICT Based Library Services: Case Study of a Nigerian Private University. Information and Knowledge Management , Vol.4 (8), p 80-85.
2.Isabella and Dhanavanthan (2015). Perception of Web-Based Tools and Services by College Library Professionals in South Tamil Nadu, India.. Chinese Librarianship: an International Electronic Journal, 39.p 70-80. URL: http://www.iclc.us/cliej/cl38AD.pdf.
3.JyotiBhatnagar (2013). Use of ICT Applications by Students, Faculty Members & Academic Staff in ITM

Group of Institutions' Gwalior, India: A Statistical Survey. International Journal of Computing, Communications and Networking. Vol 2(4), p 117-121.

4.Maranna (2015). Use of Internet Resources and Services by Marine Science Faculties in South India. A study. International journal of library and information studies,Vol.5 (1),p 49-59.

5.Stephen and Thanuskodi (2015). Effects of Information literacy skills in the use of ICT based resources and services among engineering faculties of Ramanathapuram district. Paper presented at the national seminar on Role of LIS professional in developing information literacy skills in the digital era (NSIL - 2015), Karaikudi. 141-144.

6.Stephen and Thanuskodi (2014). Use of ICT among Research scholars in Alagappa university, Karaikudi, Tamilnadu- India, International Journal of Library and Information Studies. Vol 4 (1), p 75-84.

7.Thanuskodi S (2012).The information needs and information seeking behaviour of the Tamil Nadu Dr. Ambedkar Law University faculty members. International Journal of Information Science,2(4), 42- 46.

8.Qutab, Saima; Bhatti, Rubina; and Ullah, FarasatShafi (2014). Adoption of ICT's For Library Operations and Services: A Comparison of Public and Private University Libraries of Pakistan. Library Philosophy and Practice (e-journal). http://digitalcommons.unl.edu/libphilprac/1106.

9.Zabed Ahmed S.M. , (2014). The use of IT-based information services: An investigation into the current status of public university libraries in Bangladesh, Program: electronic library and information systems, Vol. 48 (2) p. 167 – 184.