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

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Abstract

Engineering college libraries are expected to serve the students, faculty members and other users of the academic community. Information Communication Technology (ICT) 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. Engineering college libraries provide various services such as user education, inter-library loan/connection services, abstracting and indexing services, referral services and circulation services. The application of ICT has drastically transformed the way of collection, storage and retrieval of information in libraries. Particularly, the internet has completely transformed the traditional libraries into digital libraries. Using the internet information may be accessed from anywhere of the universe.

Keywords: Engineering College Library, Higher Education, Library Consortia, UGC

1. Introduction

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. 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). In this fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is available electronic resources, mainly CD-ROM, OPACs and Internet, which are replacing the print media.

2. Nature of ICT

Having learnt that ICT has penetrated every walk of our life, it is important to understand why ICT has such a penetration? Some features of ICT have facilitated this widespread use. These are speed, precision, versatile, cost, digital divide, hacking, unauthorized content use, trolls and abuses, pornography, viruses, privacy concerns, health.

3. 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.

4. 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.

5. Network Services in Engineering College Libraries

National Networks like ERNET, I-NET, NICNET, INDONET etc., 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. International Networks 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.

6. Objectives of the study

1. 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.
2. 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.
3. 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.
4. To evaluate the role played by the library information professionals for effective utilisation of ICT Based Library Resources by the faculty and Students of engineering colleges of North Coastal districts, Andhra Pradesh.

7. Hypothesis of the study

The null hypothesis in ANOVA is always that there is no difference in means. The research or alternative hypothesis is always that the means are not all equal and is usually written in words rather than in mathematical symbols. The research hypothesis captures any difference in means and includes, for example, the situation where all four means are unequal, where one is different from the other three, where two are different, and so on. The alternative hypothesis, as shown capture all possible situations other than equality of all means specified in the null hypothesis.

8. 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 questionnaire has been prepared in such a way that the respondents could easily understand the items. They are personally requested to fill up the questionnaire at their earliest convenience in order to help the investigator to collect data. 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.

9. 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.

Rajendra Kumar (2018) discussed the ICT has transformed library services globally. During the last 50 years, the world has witnessed important changes because of ICT has brought a revolution in every sphere of life. In this technological era, everything began to change. Modern libraries had been creating and setting themselves highly multifaceted and also effectively stable in professional world. Telecommunication services and computers had begun to come into extensive use. Using ICT, libraries have not only observed remarkable changes in their daily operations and services but also identified a new and active role for librarians.

Patel (2019) users are adopting electronic habits, making increasing use of the new ICT including computers, the Internet, the Web, Intranet, Extranet, and other technologies. As a result, library users are placing new demands on their libraries. They require access to the latest information, updated information resources and access to ICT facilities that they could use in their work. Using ICTs librarians are creating digital libraries, that is libraries where some or all of the holdings are available in electronic form, and the services of the library are also made available electronically — frequently over the Internet so that users can access them remotely.

Jagadish and Devaraju (2020) studied Awareness and Use of E-resources by College Students. Information communication Technology (ICT) plays a major role in sharing & dissemination of knowledge. E-resources such as online Journals, e-books, E-databases E-reports etc. have also become an essential resource in learning process. This paper discusses about awareness and use of e resources by College Students on basis of survey method using questionnaires. This paper mainly focuses awareness and use of e-resources, frequency, purpose, reason and problem facing in using e-resources for their information needs.

10. Data Analysis

The analysis of data collected from library users. Data investigation based on study of students covers their academic status, types of libraries approached, frequency of visits made to libraries, purpose of library visits, awareness about the use of printed reference sources, frequently used sources, ways of finding information, opinions on the usefulness of library tools and user education programmes etc, use of library resources and services, use of library & information services use of information and communication technologies.

10.1. 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	B. Tech	M. Tech	Faculty	Total (%)
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)	985 (44.85)	163 (7.42)	2196 (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

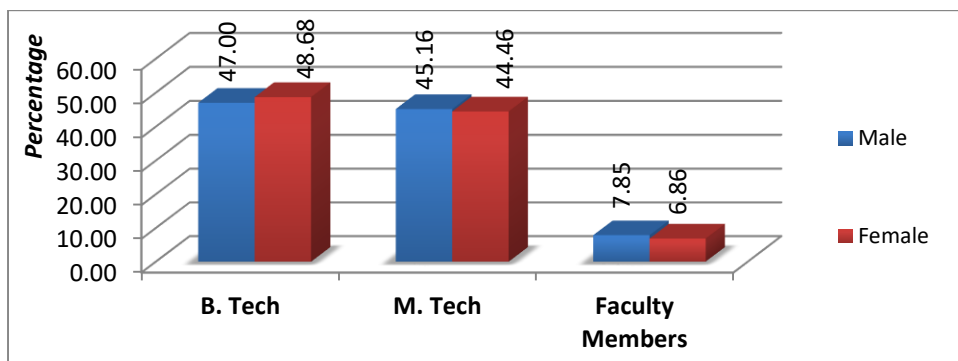


Figure-1: Category wise respondents of the users

10.2. District wise respondents category wise analysis

The following table will explain about the status of the users in various selected engineering college and data was gathered and presented the tabulated results of the respondents.

Table No-2: District wise respondents category wise analysis

S. No	Districts	B. Tech	M. Tech	Faculty	Total (%)
	Srikakulam (N=723)	350 (48.41)	327 (45.23)	46 (6.36)	723 (100.00)
		(33.40)	(33.20)	(28.22)	(32.92)
2	Vizianagaram (N=730)	342 (46.85)	332 (45.48)	56 (7.67)	730 (100.00)
		(32.63)	(33.71)	(34.36)	(33.24)
3	Visakhapatnam (N=743)	356 (47.91)	326 (43.88)	61 (8.21)	743 (100.00)
		(33.97)	(33.10)	(37.42)	(33.83)
	Total	1048 (47.72)	985 (44.85)	163 (7.42)	2196 (100.00)
		(100.00)	(100.00)	(100.00)	(100.00)

Status wise responses are reveals that highest percent of the B.Tech students (48.41) represent from Srikakulam, followed by the Visakhapatnam (nearly 48) and Vizianagaram (nearly 47%) respectively.

District wise comparison of the M.Tech. students shows that, slight variation may found among the districts. It is shows that the percent (45.48) of M.Tech students belongs to Vizianagaram, followed by Srikakulam (45.23) and Visakhapatnam (nearly 44%).

When it comes to faculty members of various districts, Visakhapatnam stood first (8.21%) followed by Vizianagaram (7.76) and Srikakulam (6.36) respectively

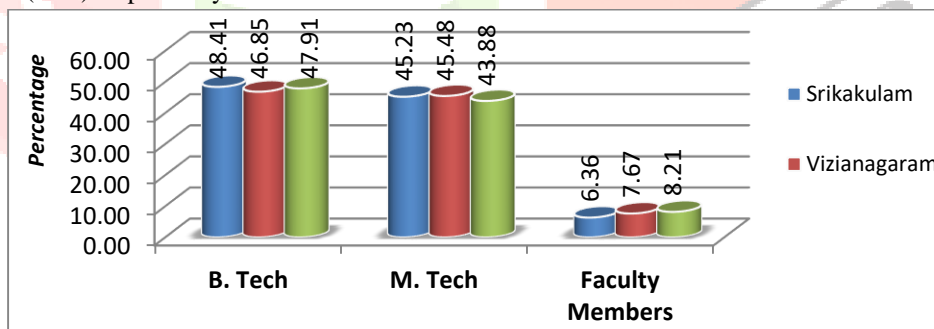


Figure-2: District wise Respondents category wise analysis

10.3. Types of gadgets mostly used by the users category wise analysis

The present table will explain about types of gadgets using by the users in category wise. Data gathered and presented.

Table No-3: Types of gadgets mostly used by the users category wise analysis

S. No	Types of Gadgets	B. Tech	M. Tech	Faculties	Total
1	Desktop (N=1634)	872 (53.37)	602 (36.84)	160 (9.79)	1634 (100.00)
		(74.40)			(74.40)
2	Laptop (N=1936)	881 (45.51)	901 (46.54)	154 (7.95)	1936 (100.00)
		(88.16)			(88.16)
3	Palmtop (N=612)	245 (40.03)	305 (49.83)	62 (10.13)	612 (100.00)
		(27.87)			(27.87)
4	Mobile (N=2196)	1048 (47.72)	985 (44.85)	163 (7.42)	2196 (100.00)
		(100.00)			(100.00)

The data analysis of responses regarding this category wise types of gadgets mostly used by the users. Highest percent of the B. Tech users (above 53) are using desktops followed by the percent of the same category (47.72) using mobile phones and above 45 percent of them using mobile phones above 40 percent of the users access palmtops for their various purposes.

When it comes to M. Tech students, highest percent (nearly 50) of them are using palmtops and above 46 percent of them are using laptops, mobiles (nearly 45%) desktops (nearly 37) respectively.

Regarding the faculty wise analysis highest percent of them using (10.13) palmtops, desktops (9.79) laptops (nearly 8) and mobiles (7.42) respectively

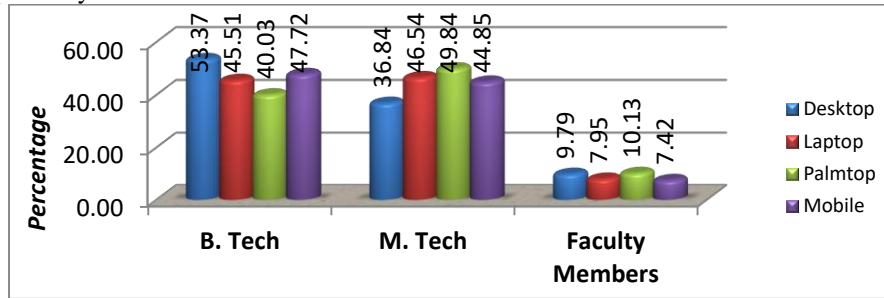


Figure-3: Types of gadgets mostly used by the users category wise analysis

10.4. Preferable Format to use of ICT based E-Resources

The study also sought to gather the information relating to preferable format use of ICT based e-resources by category wise users. The following table will present the results.

Table No-4. Category wise preferable format use of ICT based E- Resources

S. No	Format	B. Tech	M. Tech	Faculty	Total (%)
1	RTF (N=1635)	970 (59.33)	530 (32.42)	135 (8.26)	1635 (100.00) (74.45)
2	HTML (N=1920)	968 (50.42)	796 (41.46)	156 (8.13)	1920 (100.00) (87.43)
3	Text / Document (N=2186)	1210 (55.35)	829 (37.92)	147 (6.72)	2186 (100.00) (99.54)
4	PDF (N=2100)	1015 (48.33)	925 (44.05)	160 (7.62)	2100 (100.00) (95.63)
6	Zip (N=1267)	650 (51.30)	522 (41.20)	95 (7.50)	1267 (100.00) (57.70)

Above table explore the opinions about preferable format to use to use of ICT based e-resources. Among the listed opinion, highest percent (59.33) of the B. Tech users opted for 'PDF' which is convenience format to save their retrieved information from ICT based resources. Second highest percent of them (55.35) preference had given to text / documents followed by ZIP (51.30), HTML (50.42), RTF (48.33) respectively for their preferable choices to save their information.

Comparatively M. Tech users highest percent of them chosen to 'RTF' (44.05) as their preferable format to save their retrieved information followed by HTML (41.46) ZIP (41.20) text / document (nearly 38%), PDF (32.42) respectively.

Analysis reveals faculty members opinion for preferable formats, highest percent of the (8.26) chosen PDF format followed by HTML (8.13) PDF (7.62) ZIP (7.50) text / document (6.72) as their preferable formats respectively.

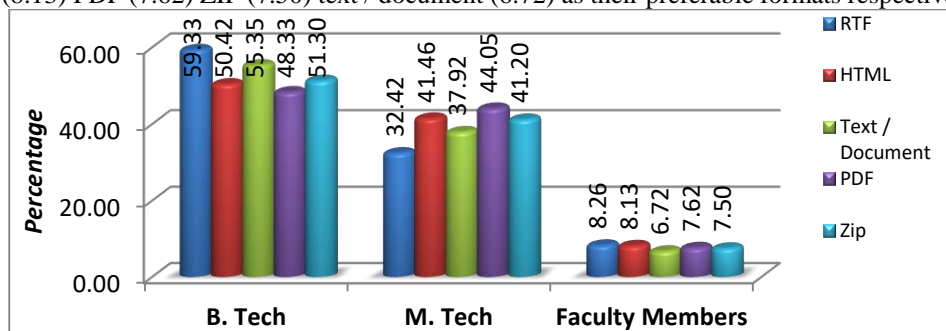


Figure-4: category wise preferable format use of ICT based E- Resources

10.5. Purpose of using Information and Communication Technology (ICT) category wise analysis

The study also will intricate the purpose of using Information and Communication technology for category wise and data gathered and will be present in the following table.

Table No-5: Purpose of using Information and Communication Technology (ICT) category wise analysis

S. No	Types of ICT sources used	B. Tech	M. Tech	Faculties	Total (%)
1	Social Networks (N=2100)	1047 (49.86)	893 (42.52)	160 (7.62)	2100 (100.00) (95.63)
2	Searching (Subject) databases (N=1990)	1005 (50.50)	826 (41.51)	159 (7.99)	1990 (100.00) (90.62)
3	E-Mail (N=2190)	1046 (47.76)	982 (44.84)	162 (7.40)	2190 (100.00) (99.73)
4	Chatting (N=1755)	1035 (58.97)	586 (33.39)	134 (7.64)	1755 (100.00) (79.92)
5	Games/Entertainment (N=1430)	986 (68.95)	319 (22.31)	125 (8.74)	1430 (100.00) (65.12)
6	Further studies (N=1836)	893 (48.64)	834 (45.42)	109 (5.94)	1836 (100.00) (83.61)
7	Work related information (N=2145)	1048 (48.86)	934 (43.54)	163 (7.60)	2145 (100.00) (97.68)
8	Job opportunities (N=2190)	1045 (47.72)	985 (44.98)	160 (7.31)	2190 (100.00) (99.73)

Above table specify the category wise respondents of using Information and Communication Technology (ICT). It is evident from the table that the majority of B. Tech respondents (nearly 69) are using ICT for 'games/entertainment' followed by (nearly 59) chatting, and above 50 percent of them are using this facility for searching (subject) databases, followed by the percent of users (49.86) using ICT for 'social networks', 'work related information' (48.86), further studies, (48.64) E-mail, (47.76) Job opportunities (47.72) purpose of using ICT correspondingly.

The analysis shows opinion about M. Tech respondents in this regard, majority of them are using this facility for 'Job opportunities' (nearly 45), social networks, (48.82) further studies (45.42), E-mail, (nearly 45) 'work related information' (43.54) Social Networks 42.52), Searching (Subject) databases(41.51), and finally the percent of users (above 33) are using this technology for 'chatting'.

When it comes to faculty members, the analysis exposed the results majority of the faculty members are being use this feature for 'games/entertainment (8.74) Searching (Subject) databases (nearly 8), chatting (7.64), Social Networks (7.62), work related information (7.60), E-mail (7.40), 'Job opportunities' (7.31) social networks and followed by them for 'further studies' (nearly 6) respectively.

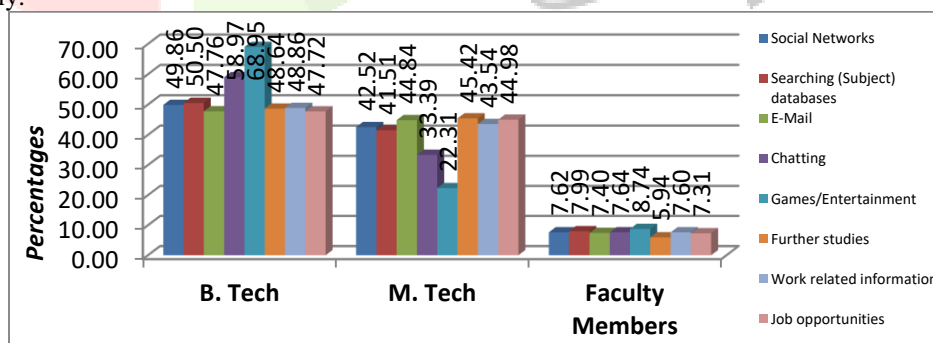


Figure-5: Purpose of using Information and Communication Technology category wise analysis

10.6. 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-6: Use of ICT based library Services ICT based library Services category wise analysis

S. No	Library Services	B. Tech	M. Tech	Faculties	Total (%)
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 searching (N=1251)	410 (39.05)	491 (46.76)	149 (14.19)	1050 (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 students (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 students (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.

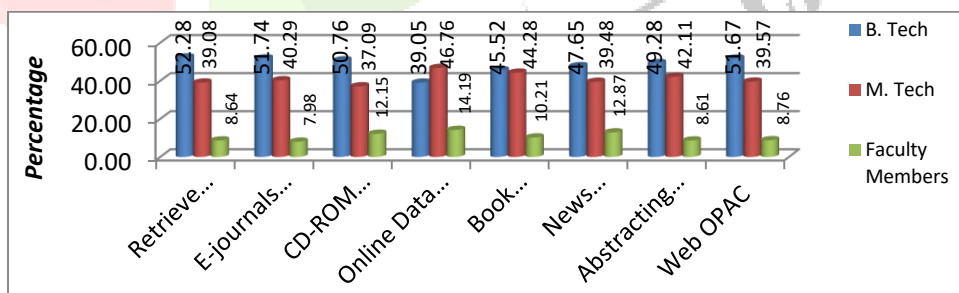


Figure-6: Use of ICT based library Services category wise analysis

10.7. Category wise Store and organize Information retrieved from the web

The information on the store and organize retrieved from the web use of ICT e-resources to get information has been elicited and details are presented in the table.

Table No-7: Category wise Store and organize Information retrieved from the web

S. No	Store and Organize	B. Tech	M. Tech	Faculty	Total (%)
1	Save it to hard disk (N=1834)	872 (47.55)	802 (43.73)	160 (8.72)	1834 (100.00) (83.52)
2	Save it in separate folder (N=2100)	980 (46.67)	962 (45.81)	158 (7.52)	2100 (100.00) (95.63)
3	Add the URL to favorites (N=1297)	646 (49.81)	506 (39.01)	145 (11.18)	1297 (100.00) (59.06)
4	E-mail the link (N=2190)	1058 (48.31)	970 (44.29)	162 (7.40)	2190 (100.00) (99.73)
5	Save the CD/DVD/Pen drive (N=2192)	1049 (47.86)	982 (44.80)	161 (7.34)	2192 (100.00) (99.82)
6	Taking the prints of relevant information (N=1530)	597 (39.02)	813 (53.14)	120 (7.84)	1530 (100.00) (69.67)
7	Any other (N=1025)	563 (54.93)	350 (34.15)	112 (10.93)	1025 (100.00) (46.68)

Above table analysed preferable store and organize information retrieved from the web resources and services by category wise students. It is found that the highest percent (54.93) of B. Tech students have store and organize other users, followed by the second highest percent of the same category users also store and organize 'add the URL to favourites (49.81) respectively.

Compared to M. Tech students highest percent (53.14) of them store and organize taking the prints of relevant information followed by percent (45.81) save it in separate folder, save the CD/DVD/Pen drive (44.80), email the link (44.29), save it to hard disk (43.73), add the URL to favourites (39.01), and other users (34.15) respectively.

Faculty member's analysis showed the reveals highest percent of them (11.18) store and organize retrieved from the web use of ICT e-resources add the URL to favourites, followed by store and organize retrieved from the web use of ICT e-resources percent of other users (10.93), save in hard disk (8.72), save it in separate folder, e-mail the link, taking the prints of relevant information above 7 percent respectively.

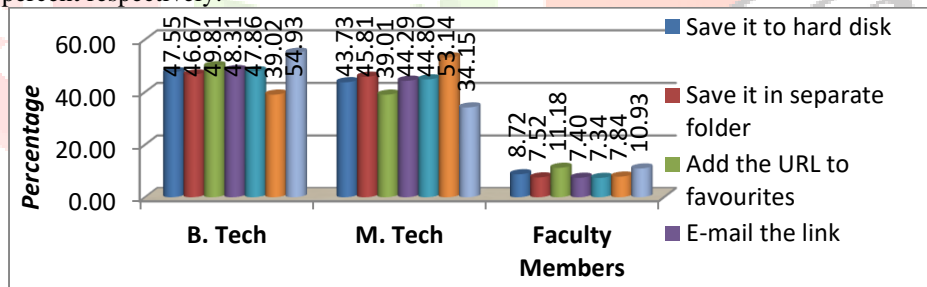


Figure-7:Category wise Store and organize Information retrieved from the web

10.8. Category wise opinion about factors to influence the use of ICT based Resources and Services

The present survey also tried to access the opinion of factors to influence the usage of ICT based library resources. The following table analysed their responses in the regard.

Table No-8: Category wise factors of influence the usage of ICT based resources and services

S. No	Factor	B. Tech	M. Tech	Faculty	Total (%)
1	Easier access to Information (N=465)	198 (42.58) (18.58)	210 (45.16) (21.32)	57 (12.26) (34.97)	465 (100.00) (21.17)
2	Improve Professional Competence (N=524)	208 (39.69) (19.85)	275 (52.48) (27.92)	41 (7.82) (25.15)	524 (100.00) (23.86)
3	Access to a Wide Range of Information (N=642)	317 (49.38) (30.25)	297 (46.26) (30.15)	28 (4.36) (17.18)	642 (100.00) (29.23)
4	Provides instance access to Current up-to- date Information (N=380)	229 (60.26) (21.85)	128 (33.68) (12.99)	23 (6.05) (14.11)	380 (100.00) (17.30)
5	Any other (N=185)	96 (51.89) (9.16)	75 (40.54) (7.61)	14 (7.57) (8.59)	185 (100.00) (8.42)
	Total	1048 (47.72) (100.00)	985 (44.85) (100.00)	163 (7.42) (100.00)	2196 (100.00)

Above table explains users opinion about the factors to be influence while using the ICT based library resources and services. It is found that majority of (above 60) B. Tech students 'provides instance access to current up-to-date information' as their main influence factor for utilization the ICT based library resources and services. Second highest percent of them (nearly 52) choose 'any other' factor followed by above 49 percent of them 'factor to be influence' access to a wide range of information.

When it comes to M. Tech students majority of (52.48%) users found them 'improve professional competence' as a main influence factor while use of ICT based resources followed by the percent of them (46.26%) 'Access to a wide range of information' as influence and easier access to information (45.16) provides instance access to current up-to-date information (33.68) respectively.

Among those who considered the faculty members responses in this issue, majority of them (12.26) opinion 'earlier access to information' as their main influence factor followed by them (nearly 7%) 'Improve professional competence' as other region for clammy ICT based environment.

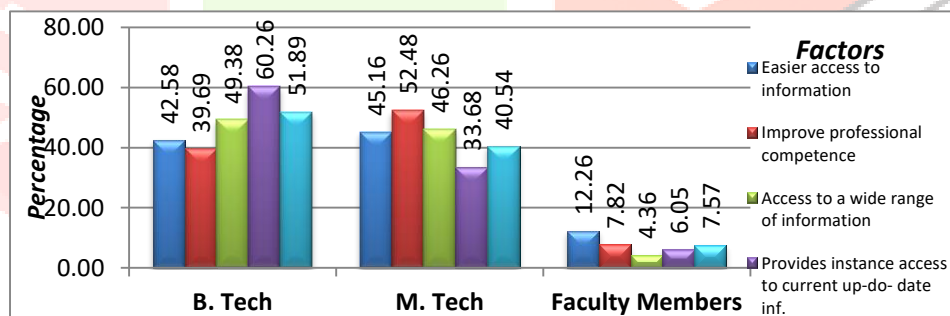


Figure-8: Category wise factors of influence the usage of ICT based resources and services

References

1. ICT in Education - An online course available at ICT in Education accessed on 4th Jan, 2016.
2. Meera, B.M and RehanaUmmer (2010). Open Access journals: Development of a web portal at the Indian Stastical Institute. The electronic library, vol 28 (4), p 540-554.
3. Pusapati, Ramireddy. (2011). Digital library initiatives inIndia: An overview. Paper presented at the ICLAM, NewDelhi.
4. Sridevi, J, Satyanarayana, N R, & Murthy, T A V, (2005), E-Journals for Academic Community in Indian Scenario. Paper presented at the Planner, 2005 Assam University.
5. J. Feather and P. Struges, 2003 (Eds.), International in Encyclopedia of Information and Library Science (2nd ed., pp. 1- 27). New York.
6. Rajendra Kumar (2018), mobile application: a new engineering technology in academic library services, journal of library and information technology Vol. 14(2), July 2018.
7. K.M. Patel (2019), ICT based library services, LIS BD Networks, Library and information Science Academic Blog.
8. Jagadish, M.V., &Devaraju, D. (2020). Awareness and Use of E-resources by College Students. International Journal of Library and Information Studies Vol.10(3) , 2020, 175-181..