ELECTRONIC RESOURCES USE BY FACULTY MEMBERS OF ENGINEERING COLLEGE LIBRARIES IN RTM NAGPUR UNIVERSITY AREA: A STUDY

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ABSTRACT

The engineering education is important for development of any country. The faculty members of engineering college are very much needed for the scientific advancement of the country. To make them accomplish and innovative in the workforce, information is vital to access and keeps abreast with the new developments. In this there is great need of electronic resources these days. In view of this importance is being given to user studies know about their use perception, satisfaction, motivation, expectations, etc. So for no survey/study has been undertaken to know the usefulness of these e-resources including this reference. In view of these considerations the researcher undertook an study on the use of e-resources by faculty members of engineering college libraries to know the e-resources usages pattern amongst faculty members of engineering colleges in RTM Nagpur University Area. The study also explores the satisfaction level of the user with the e-resources facility provided by engineering college libraries. The study has particularly been taken up to access the benefits of e-resources over conventional document.

Keywords: *: E-resources, Engineering College, Faculty Members, IT tools.*

INTRODUCTION

The innovation in information technology service today it has become a common place for computer application in information processing and retrieval. The technological innovations like networking, Internet, e-mail services, etc., have made information accessible to the user community in the world. The libraries are aggressively switching over to the digital libraries by adding more and more e-resources to their users. The web revolution has a tremendous impact on libraries in general and on the collection development in particular. With the success of full-text on-line journals and e-books, the users started demanding addition of more and more e-resources to the libraries. E-resources play an important role in libraries throughout the world. In the recent past, librarians as well as publishers thought e-resources can be managed very easily. Today, students in engineering have got access to computer and internet facilities and they search on the web. This has changed the way of thinking, their learning methods and visualization of the facts and theories.

Research Questions: Includes: Where the faculty members of engineering college access e-resources? What purpose they need information? What are the IT tools used by them, if provided by their libraries? How much times spend on accessing the E- Resources? Which features of electronics resources do consider to be the most important for the efficiency of their work? What extent they are satisfied with services provided by their college library? How they rate the quality of information acquire from e-resources? The research problem is further

addressed by looking at the research objectives; research questions and possible sources of data.

Objective of Study: The study has been undertaken to examine the following objectives relating to research topic. The main objectives of the study are:

i. To know the different types of e-resources and services available in the library covered under the survey.

ii. To study the purpose and frequency of using the e-resources use of the faculty members.

iii. To study the purpose and frequency of using the e-resources and services available in the library.

iv. To locate the problem faces by users while accessing and using the e-resources.

v. To study the impact of e-resources and services on the academic working the faculty members.

vi. To know the productivity and quality of information retrieval to e-resources.

Scope and Limitations of the Study: The study included only those engineering college which are engaged in imparting degree level courses (B.E.) in the field of engineering & technology. Conclusion and generalizations have been drawn on the basis of the information collected through questionnaire from limited number of 42 Government Aided and Non-aided Colleges of RTM Nagpur university area.

Research Methodology: At first the pilot study was conducted to test the feeling of the respondents and library observations. The study represents on exploratory-cum-descriptive research design. The basic purpose of the present study is on the use of e-resources by faculty members of engineering college libraries; an attempt is also made to reveal the key role of libraries.

Data Collections: The questionnaire method has been used for the collection of data for the present study. However, by keeping in the view the various advantages and disadvantages of the survey methodology, a combination of questionnaire, observation and sometime interview method has been adapted to survey. For the present study following two questionnaires were designed and distributed, questionnaire for faculties and questionnaire for librarians. The researcher has distributed first set questionnaire to all the librarians of engineering colleges under study and obtained feedback from them on the basis of their feedback received from the librarians the researcher modified the questions in the questionnaire whenever necessary. Then the set questionnaire prepared distributed personally to the library users faculty in engineering colleges of RTM Nagpur University. At the time of collecting the filled questionnaires, each respondent was requested to offer their comments and opinions on various concepts. The first part of the questionnaire was having general questions of personal details. The second part contained information about library collection, computation, services. The provided answers and opinions expressed by the librarians helped the researcher to analyses the data.

Review of Previous Studies: The researcher has taken an overview of the earlier studies conducted so for on the topic. The reviews suggested a method and technique of dealing with a problematic situation which also suggested avenues of approach to the solution of similar difficulties. The literature review starts with the selection of problem for research continuous through the various stages of the research process and ends with reports writing. As per methodology, the researcher is expected to know previous work done in the field and it is also expected that the work already done by various authors should not be repeated by researcher keeping in view conducted the literature search and concluded that no such research ever conducted in particularly in engineering college libraries in Nagpur region. This provided an impetus to researcher to under took the research.

Data Analysis: The data collected through questionnaire was classified under meaningful heads and necessary tabulation was made. The research problem was best characterized as being in the interpretive tradition, favoring qualitative methods of data collection and analysis. An interpretive, rather than a positivistic one, was considered appropriate due to the indeterminate nature of the research problem. The response rates to the questionnaires do not include the pilot study responses. The responses received to the all two questionnaire-I Librarian, total number of 43 responses has been received out of 49. For faculty member's questionnaire-II total responses have been received 365 out of 490 questionnaires. The received data in the questionnaires from 365 faculty members and 43 librarians, which the data was entered into Excel sheet of MS-Office application software with different files under each faculty members and librarians.

Distribution of Engineering Colleges: The district-wise distribution of engineering colleges with respective numbers has been shown in following table 5.1 the engineering colleges affiliated to RTM Nagpur University, Nagpur. Nagpur district have 35 colleges, 01 college in Gondia, Bhandra and Gadchroli while 04 colleges in Chandrapur and 06 colleges in Wardha District.

Response of Faculty Members: The data obtained through questionnaire received from 365 members were analyzed for finding the number of respondents from different colleges under study. The details of name and number of respondents with their percentages were shown in table 5.3.

Responses of faculty members by their Age: Distribution of faculties according to their age in years reveals that 51.51% of the faculties were in the age of 21-30 years, 43.56% in the age group of 31-40 years, 4.11% were in the age group of 41-50 years and only 0.82% of faculties were belonging to the age of 51-60 years. Mean age of the faculties was 31.09±5.50 years.

Gender-wise Responses of faculty member: In this study total number 365 respondents faculty members there are two type of respondent i.e. Male and Female table 5. Shows the distribution according to the both gender who responded. There were 247 Males respondents and 118 Female respondents. The ratio is 68:32 where male respondents are more than female respondents.

Responses with their qualifications: the technical qualifications as well as non-technical qualifications. There are 262 faculties who were B. E/ B. Tech. Qualification, 30 are M. E./M. Tech. There is M. E/M. Tech. with Ph. D. qualified 22 faculty members. 27 faculty members are M.Sc. these include on subject Applied Physics, Applied Chemistry & Applied Mathematics. There is 15 faculties M.Sc. with M. Phil/Ph. D. qualified. Also 03 faculty members are M. A. and 06 are M.A. with M. Phil/Ph. D. in Humanities and Social Science subject.

Responses on status held: 7.4% of them were contributory staff, 57.8% of them were full time staff, and 34.8% of them were on ad-hoc basic respectively. Distribution of frequency is found to be statistically significant.

Effectiveness of IT based in Teaching: 93.42% of the faculties opined positively that IT based teaching is very effective whereas 6.38% were opined negatively.

Importance of Computer Literacy in the usage of E-Resources: 79.7% were agreed, 13.2% were neutral and 7.1% of the faculties were disagreed about importance of computer literacy. **Need of latest Information on their Subject:** 95.9% of them opined positively regarding "Need of latest information" whereas 4.1% of them need not opined positively.

Purpose of need of such Information: 74% opined that information is used to deliver the lectures, 44.40% opined that information is used to cover topics given in the syllabus, 58.60% opined that information is used for presenting paper in conference, symposium, workshop and conferences, 47.70% opined that information is used to prepare a topic for speech, databases etc and 71.50% of them opined regarding to keep updated on the topic.

Fulfillment of their Informative Requirements: 54.50% of the faculties opined that their requirements will be fulfilled with discussion with colleague, 39.70% opined that requirement will be fulfilled by requesting the librarian for new arrivals, 82.70% opined regarding help from the internet, 50.70% opined regarding referring the journals of the respective subjects and 68.50% of them opined that their requirements will be fulfilled by searching e-sources.

Their access to Libraries E-Resources: 50.1% of them access the information from libraries, 28.8% from office, 18.6% from home and 2.5% from other sources.

Usefulness of electronic resources for research and study purpose: i. Online Database, ii. Electronic Journal, iii. Electronic Books, iv. on-line Catalogue, v. On-line reference work, vi. Internet Websites, vii. Fill online ILL from, viii. Electronic mails listserv, Discussion group. Maximum 39.5% of the faculties said online database was important source for research and study purposes(x^2-value=208.02,p-value= 0.00005), 38.6% said electronic journals are important (x^2-value=235.09, p-value=0.00009), 39.2% said electronic books are important (x^2-value=175.67,p-value=0.00006), 37.3% said on-line catalogue is important (x^2-value=208.98,p-value=0.00009), 35.9% said on-line reference work is important(x^2-value=199.26,p-value=0.00006), 45.8% said internet websites and very important (x^2-value=286,p-value=0.00004), 32.6% said that full online ILL form are important (x^2-value=106.74,p-value= 0.00008)and 37.5% of the faculties replied that electronic mails listserv.

Ffeatures of E-Resources considered being the most important for efficiency of work: 41.90% of them opined that it is used for quick irretrievability, 49% opined regarding up-to datedness quick publishing, 59.50% opined that it is available free of cost, 68.20% opined that it is used for full-text searching, 38.90% opined that it links to other resources and 49% of them opined that electronic resources is environmental friendliness.

Traditional resources considered being the most important for efficiency of work: 41.50% of them opined regarding "Seriousness-

publishers/journals prestige", 57.50% of them opined regarding "Reliability of published information", 47.10% of them opined regarding "Stability/durability of the document" and 34.20% of them opined regarding "Simple mode of use". **Features of access of relevant Information resources on Internet by faculty member:** 32.9% of them had resources of on-line library catalogue, 24.1% of them had through portals and 43% of them had via web search engines.

Electronic publishing and traditional publishing in equal value:

52.6% of the faculties opined that electronic publishing and traditional publishing is of equal value, 30.7% of them opined that electronic publishing a traditional publishing are not equal and 16.7% opined that they don't know the answer of this question.

Satisfaction with Electronic Resources with which library provides:

4.9% of them were very dissatisfied, 9.6% of them dissatisfied, 63.8% of them were somewhat satisfied, 17.3% of them were satisfied and 4.4% of them were very satisfied with the electronic resources of the libraries.

Satisfaction with Electronic Resources:

i. Full text database, ii. Electronic journal, iii. Electronic books, iv. Web sites, v. Online Catalogue, vi. Online Database, vii. Ask a Librarian, viii. Discussion group. Maximum 45.5% were satisfied about full test database ($x2$-value=232.7,p-value=0.00001), 57.5% were satisfied about electronic journals $x2$-value=371.69,p-value=0.00003), 51.4% were also satisfied about electronic books ($x2$-value=263.23,p-value=0.00002), 47.9% were satisfied about web site facilities ($x2$-value=286.93,p-value=0.00001), 40% each were somewhat satisfied and satisfied about online catalogue ($x2$-value=258.52,p-value=0.00001), 49.3% were satisfied about online databases ($x2$-value=289.09,p-value=0.00001), 49% were satisfied about help rendered by the librarians ($x2$-value=251.39,p-value=0.00001) and 45.8% of them were also satisfied about discussion group ($x2$-value= 271.697,p-value=0.00001) of the libraries.

Evaluation of search result of Electronic Resources Used:

5.8% of the faculties opined "Irrelevant", 50.1% opined "Somewhat Relevant" and 44.1% of them opined "Relevant "regarding evaluation of search results of electronic resources used.

Rating of quality information:

0.8% of them rated "Very Poor Quality", 4.1% rated "Poor Quality", 45.5% rated "Somewhat high quality", 40% rated "High Quality" and 9.6% of them rated "Very High Quality".

Rating of typical access time:

1.6% of the faculties rated "Very Slow", 15.1% rated "Slow", 49.6% rated "Somewhat Fast", 25.5% rated "Fast" and 8.2% of them rated "Very Fast".

Providing of adequate training on use of Electronic Resources:

4.1% of them rated "Strongly Disagree", 28.8% of them rated "Disagree", 19.7% of them rated "Neutral", 13.7% rated "Strongly Agree" and 33.7% of them rated for "Agree".

Rating of usability of library Website:

0.8% of them rated "Very Difficult", 7.4% rated "Difficult", 35.6% of them rated "Somewhat Easy", 49.6% rated "Easy" and 6.6% rated "Very Easy". Distribution of frequency among faculties regarding use of library web site is found to be statistically significant ($x2$-value=333.28,p-value=0.00023,df=4, S,p<0.05).

Response Rate of Librarians:

There are 49 questionnaires distributed to librarian of all engineering college under the study which are mentioned chapter 3. Out of which researcher received 43questionnaires completely and partially fulfilled from the 43(88%) colleges. The communication with librarian was personally, by e-mail, by postage correspondence and telephonic talks. A short interview with librarian was also followed for finding their opinions which are coded for collecting qualitative data under each question.

Library Reading Room Capacity:

4.7% of the libraries had reading capacity of 20-30, 11.6 % had 31-40, 14% had between 41-50 and 69.8% had 51 and more.

Services and facilities available:

Open access to internet was available in 95.35% of the libraries, catalogue card cabinet were available in 30.23% of the libraries, OPAC facilities were available in 72.09% of the libraries, CAS/SDI was available in 51.16% of the libraries, references services were available in 88.37% of the libraries, newspaper clippings were available in 95.35% of the libraries, display of new arrivals were available in 90.70% of the libraries, internet facilities were available in 93.02% of the libraries, reprography were available in 74.42% of the libraries, internet library loan facility were available in 55.81% of the libraries, NPTEL were available in 4.65% of the libraries respectively.

Library Computerization:

81.4% of the libraries up to data computerization was done and 18.6% were still under process of computerization.

Availability of internet access facility:

81.4% of the libraries internet facilities were available and in all (81.4%) of the libraries internet access facility were available free of cost.

Table Show Library member of any consortia of library network:

Library member of any consortia of library network	No of libraries	(%)
AICTE	2	4.65
DELNET	7	16.28
IEEE	3	6.98
IESTC	2	4.65
J-Gate	1	2.33
Total	15	34.88

4.65% of the libraries were members of AICTE, 16.28% were of DELNET, 6.98% were of IEEE, 4.65% were of IESTC and 2.33% were member of J-Gate respectively ($\aleph$2-value=7.33,p-value=0.11,df=4, NS,p>0.05).

Table Show Subscription of E-Journal in the library:

Subscription of E-journal	No of libraries	Percentage (%)
Yes	28	65.1
No	15	34.9
Total	**43**	**100**
Type of E-Journal		
ASME	12	42.86
IEEE	8	28.57
G-Gate	2	7.14
ASTM	2	7.14
Elsevier	2	7.14

65.1% of the libraries subscribe e-journals for their libraries and 34.9% they need not subscribe e-journals for their libraries.

Table Show Subscription of electronic database:

Subscription of electronic database	No of libraries	(%)
Yes	6	14.0
No	37	86.0
Total	**43**	**100**

Type of electronic database		
DELNET	5	83.33
IEEE	1	16.67

14% of the libraries subscribes electronic database for their libraries whereas 86% of them need not subscribe electronic database for their libraries.

Table show Membership of any national / international Library Network:

Member of national/international library network	No of libraries	(%)
Yes	26	60.47
No	17	39.53
Total	**43**	**100.00**

60.47% of the libraries are the members of national and international library network, whereas 39.53% of them still not a member of national and international library network.

Service availing from library network	No of libraries	(%)
e-journal	24	55.81
Not Availing	19	44.19
Total	**43**	**100.00**

55.81% of the libraries availing e-journal services from library network whereas 44.19% of them need not availed e-journal services from library network.

Table show Purchase of NTPEL Database for library:

Purchase NTPEL database for library	No of libraries	(%)
Yes	31	72.09
No	12	27.91
Total	**43**	**100.00**

72.09% of the libraries purchases NTPEL database software for their libraries whereas 27.91% of them need not purchase NTPEL database software for their libraries.

Guidance to user for use of e-resources	No of libraries	(%)
Yes	36	83.7
No	7	16.3
Total	**43**	**100.00**

Table Show Subscription of e-packages by AICTE:

Subscription of e-packages mandatory by AICTE	No of libraries	(%)
Yes	30	69.8
No	13	30.2
Total	43	100.00
Type		
ASIM	14	32.56
DELNET	1	2.33
e-journal	1	2.33
IEEE	10	23.25
J-Gate	4	9.30

69.8% of the libraries purchased e-packages for their libraries whereas 30.2% of them need not purchased any e-packages for their libraries. This frequency distribution is found to be statistically significant ($x2$-value=6.72, p-value=0.009, df=1, S,p<0.05). Regarding type of e-packages, 32.56% of them purchases ASIM, 2.33% each purchases DELNET and e-journals, 23.25% purchases IEEE and 9.30% purchases J-Gate for their libraries. ASIM e-packages are most preferred for the libraries.

Table Show Advantages of E-Resources than print format:

E-Resources more advantageous than print formal	No of libraries	(%)
Yes	36	83.7
No	7	16.3
Total	**43**	**100.00**

83.7% of the librarians opined positively regarding advantages of e-sources over print format and 16.3% opined negatively.

Table Show User satisfaction with resources and facilities available in the library:

Satisfaction with resources and facilities available in the library	No of libraries	(%)
Yes	38	88.4
No	5	11.6
Total	**43**	**100.00**

88.4% of them were satisfied and 11.6% of them not satisfied with the resources and facilities available in the library.

Table Show Guidance to user for use of e-resources:

83.7% of the libraries received correct guidance for use of e-resources for the libraries and 16.3% of them need not received for the use of e-resources.

Findings:

Major Findings of the study are given below: 74.48% respondents out of 100% questionnaires distributed among faculty members and 88% librarian out 100%, two types of questionnaires made by researcher. All the colleges were approved by AICTE and RTMNU Nagpur. Among which there were 68% male & 32% female faculty members. There were 7.4% Professors, Associate Professors & 73.7% Associate Professors which were in between age 24 to 51years with 1-15 years experience and having qualification from B.E., M. Tech, M.Sc., M. Phil., Ph. D. level. 57.8% faculty members are fulltime in service 34.8% Ad-hoc and 7.4% are contributory. 93.42% faculties say that IT based teaching is effective 79.7% faculties are understand that computer literacy is very important to usage of electronic resources where 13.4% is Neutral in this question. It was also noticed that out of 365 faculties there are 74% need the latest information to deliver the lectures. 58.60% for presenting paper in conference, symposium & workshop. 71.50% faculties information to keep updated on the topic & 47.70% faculty members need information to prepared a topic for speech debates etc. Majority 82.70% faculty members fulfilled these information requirements to take the help from the internet & 54.50% faculties discussed with their colleagues. 68.50% search e-sources. 50.70% consult the journal of the respective subjects. 50.1% faculties access e-resources from their college library, 18.6% from their home. 31% faculties spend their time to visit the library website, 35.3% of them spend the time for searching on-line catalog, and 30.4% faculties spend time

for searching on-line reference book. 26% spend time for browsing e-journals. 24% faculties spend their time for accessing full text articles.

45.8% said Internet websites are very important, 39.5% of the faculties said on-line database was important sources for research and study purpose, also 39.2% said electronic books are important resource. 38.6% faculties said electronic journal are important for their research and teaching. 35.9% said on-line reference work is important.37.5% of the faculties replied that electronic mail, listserv, discussion group are important sources for research, study and teaching purpose. 68.20% opined that e-resources is used for full text searching, 59.50% faculties opined that e-resources available free of cost, 49% of them opined that electronic resources is environmental friendliness & regarding up-to date quick publishing, 41.90% faculties said that it is used for quick irretrievability & 38.90% faculties opined that e-resources links to other resources.

57.50% faculties opined regarding reliability of published information, 47.10% of them opined regarding stability/durability of the document, 41.50% faculties opined regarding seriousness-publishers/journal prestige. & 34.20% of them opined regarding simple mode of use. 43% of faculty members access of relevant information resources via web search engines & 32.9% of faculties access via online library catalogue. 52.6% faculties said yes. The satisfactory value with electronic resources with which library provides, 63.3% faculties opined somewhat satisfied, 17.3% faculties opined satisfied. 47.5% faculties were satisfied about full text database, 57.5% faculties were satisfied about electronic journals. 51.4% were also satisfied about electronic books, 47.9% are satisfied about web site facility. 40% faculties were somewhat satisfied about online catalogue & 49% faculties satisfied about help rendered by the librarians, 45.8% of them were also satisfied about discussion group. 50.1% faculties opined somewhat relevant & 44.11% faculties' relevant regarding evaluation of search result of electronic resources used. 45.5% faculties said that quality of information acquire from electronic resources was somewhat high quality, where 40% faculties said quality of information high quality. 49.6% faculties rated that typical access time of e-resources somewhat fast & 25.5% faculties rated fast also 15.1% faculties rated slow typical access time of e-resources. 51.5% faculties said that somewhat fast, 23% faculties said it very fast 11.5% faculties said slow. 42.2% faculties rated Neutral, where 103(28.2%) faculties are agree of this & 55(15.1%) faculties strongly agree. 33.7% faculties agree to provide of adequate training on use of electronic resources where as 28.8% faculties disagree & 13.7% faculties rated strongly agree to provide training about use of electronic resources. 49.6% faculties said that

library website e of their college is easy and 35.6% faculties said that the website was somewhat easy. Whereas 7.4% said college library website was difficult.

Suggestions:

Base on the findings of the study the following suggestions are made to improve the use of electronic resources among the faculty members.

➢ The electronic resources which are being used by the libraries should be periodically evaluated on the basis of their usability (user, opinion be collected) and decision be taken either to continue or cancel the subscription to these resources.

➢ The library must conduct training programmers for faculty members regarding how the use the electronic resources effectively.

➢ Awareness of the use e-journals and e-books to obtain current information should be created;

➢ For improved accessibility of the e-resources, the libraries under survey should create appropriate plat forms. The CD net system may be developed for the local area network similarly; the libraries should have their website with pointer to the electronics resources to provide remote access to these library materials.

➢ More computers should be installed in the library for the benefit of the faculty members and more funds should be giving to acquire electronic resources.

➢ Proper information and communication technology infrastructure should be developed.

➢ The libraries should subscribe to consortia based resources as available with informatics India Pvt. Ltd. Or Govt. of India or they can from the own e-resources consortia for enhanced access to e-journal in their field of research.

Conclusions:

The engineering college libraries in India are facing challenges due to budget cut, reduced staff, devaluation of rupee, and escalation in cost of publication. Due to the factor mentioned above, engineering libraries are findings it difficult to buy required number of book and periodicals from AICTE norms. From the analysis and discussion it is evident that the fast growth of information and communication technology and particularly internet and electronic resources have change the traditional methods of research, storage, retrieval and communication of scholarly information. Now a day's internet has emerged as most powerful medium for storage and retrieval of information. In order to retrieve relevant information, users have to make use of different electronic and web resources. The study showed that the

use of the electronic resources have created great impact upon of engineering college faculty in RTM Nagpur, University area in their research and development work. The rapid developments in information technology have facilitated the convergence of new electronic devices and formats. Information has been embedded in a variety of ways and forms in various kinds of electronic resources. So far it is clear from the study that faculty member of engineering college has accepted the electronic resources but the volume of frequent usage of e-resources among the users has been found to be optimum level. Many of the respondents are unaware and have not used on-line thesis / dissertations, abstract, indexes, OPAC, online databases, which are very relevant for their teaching, study and research. So the library can take initiatives to organize orientation programmes and user awareness programme in this area. It is also obvious that libraries and information centers are gradually shifting from print to electronic resources particularly in tertiary institutions around the globe. If the electronic information resources are available in the tertiary institutions it will tremendously improved work quality and facilitate research more than using print media. The library environment has currently undergone drastic change in terms of collections and services. The proliferation of e-resources especially it has a significant impact on the way the academic community user, stores, and preserves the information. The advantages of e-resources have drawn of the library users to a great extent.

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