

# **An Evaluative study of user needs with reference to e-journals**

**R.K.Shukla & Neeru Malik**

Delhi College of Engineering

During recent past, due to advancements in information communication technology (ICT), information format and methods of information retrieval have been rapidly changing and making its impact on information seekers especially research scholars, faculty and PG students. Online journals are fast becoming a major source for scholarly information. Now information seekers are required to change their methodology in accessing information. Present era is the era of transition from print media to electronic media. However it is not clear whether printed version will disappear altogether. To make optimum use of the features which are available only in the on-line version, scientists have been persuading the librarians to subscribe to both the print as well as electronic versions of the journals, in the libraries.

## ***1. Electronic journals:***

A journals or periodical is publication that comes out on a regular basis. Journals are identified by name volume and issue numbers and by date. Many journals are in paper form, but some are available in electronic form and these are called E-Journals. It can be accessed using computer and communication technologies. Often e-journals are called virtual journals, paperless journals, online journals, etc. Electronic journals are often referred to interchangeably as “electronic serials”, “online journals” and “electronic periodicals”. Lancaster (1995) defined it as “a journal created for the electronic medium and available only in this medium”. Electronic serials may be defined very broadly as any journal, magazine or newsletter which is available over the Internet. The titles can be electronically accessed using different technologies such as World Wide Web (WWW), gopher, ftp, telnet, e-mail, or listserv.

Mainly three types of electronic journals are available, these are:

**(a) Online Journals:** - These are basically the online versions of the print journals and accessible through server storing them

**(b) CD-ROM Journals:** - These journals are full text journals published and distributed on CD-ROM media periodically.

**(c) Networked Electronic Journals:** - these types of journals are published and distributed via the internet through email.

## ***Advantages of E-Journals:***

Electronic journals are thought to be more easily accessible and searchable than print journals. Much less time is required to browse through electronic journals than print journals. They are accessible wherever the users are and whenever they want.

Electronic journals are used for engineering and scientific presentation and for obtaining references. Keyword search ability is an advantage over print journal.

We can give comments to the authors at the time of reading itself. An author can evaluate his writing from the responses and this can improve his writing and the respondents can get any further information and clarification from the author.

Mailing option helps us to mail the journal page to other readers by clicking the link and thereby benefit people who have a common interest. We get the electronic journals at the time of publication itself.

We get print journals only after many days of publication depending on the airmail delivery system. We can see different links like related articles, references in electronic journals. We can get a number of references from such links.

Electronic journals are better for the environment, by reducing the space; dust and the air pollution. The hypertext available in the electronic journal will directly link to the areas of greatest interest and results in creative reading. Electronic publication provides online submission of manuscripts and also we can keep track of the submitted manuscripts with the reference number. This reduces the time of publication of manuscripts. Electronic publication eliminates the transit times during the evaluation and revision of submitted manuscripts. If the time taken for publishing a case report or a discovery is less, its impact on change in practice would also take less time. Further research may be done on the basis of it.

Electronic journals offer rapid access and the downloading facility of articles of interest, and thereby reduce the photocopying process.

Electronic free journals educate the common man. It lessens the strain on the scientists to educate them and user will be more aware about the best information available. Print journals are used for reading articles and scanning contents and print formats contain higher quality text and figures.

Electronic journals are used for performing reference checks, and many articles are printed out. In earlier years bound journal volumes were treasures in the library. Now users, even researchers do not waste time by going through these bundles. Searching back issues from the print collection is a great task. A journal archive of the electronic version solves this problem. More than one user can use electronic journals simultaneously. It does not require physical processing (e.g.: receiving and binding).

We can sum up the advantages in following points.

- E-journals are time and space saver.
- Users do not need to visit the library.
- No lost or damaged titles.
- E-journals have adjustable fonts for disabled users.
- E-journals save cost.
- The speed of publication and delivery of the journal issues is much faster than a print journal.
- E-journals solved the most problems of the libraries such as space, shelving, missing issues, missing pages, torn pages by the users etc.
- Many users can access the same journal at the same time.
- E-journals can be searched very quickly and easily.
- It can be access any time day or night.

### ***Disadvantages of E-Journals:***

Coming to the disadvantages, the main, as we all know is reading from screen and the eyestrain caused thereby. Though it is a major draw back; a few are not bothered about it at all. I think in future, this will not be a major draw back since availability of new computer accessories can overcome this. We can take the print out of any electronic journal articles that need careful study or by enlarging the image.

Unlike print journals, an electronic journal needs the availability of electricity, telephone system, computer, Internet, appropriate soft wares and hard wares. Though this is not a matter in the developed countries, access to these can be a problem in the developing countries.

Senior faculty members are often very resistant to change. Despite its obvious advantages, they have been reluctant to accept the electronic format of journals.

We can sum up these disadvantages in following points

- May be difficult to read and browse.
- May be problems with printing.
- May be need for some special equipment
- May be difficult to access several e-journals at the same time.
- Lack of awareness.
- Poor facility of internet.
- High cost.
- Technical problems for accessing the electronic version.
- Many e-versions are no longer available if subscription later cancelled.
- Some users want to use only print journals.

### ***2. Library, Delhi College of Engineering:***

Delhi College of Engineering (initially established with the name- Delhi Polytechnic) came into existence in the year 1940 to cater the needs of Indian Industries for trained manpower with practical experience and sound theoretical knowledge.

The DCE Library System consists of a Central Library and 10 departmental libraries which collectively support the teaching, research and extension programs of the Institute. All students, faculty members and employees of the Institute are entitled to make use of the Library facilities on taking library membership.

The Library, besides having a huge collection of books on engineering, science and humanities offers library services through its various divisions. Initially setup in 1941, the Central Library moved to its new building in May, 2004. To make the Delhi College of Engineering Library a 21st century Knowledge Centre and to facilitate the transition of today's engineering society to a knowledge base society of tomorrow, the knowledge generated by the faculty and students of DCE has been digitized and made accessible through Intranet or Internet. Along with the automation of library services, we have move towards the digitization of library resources, so that the services of Virtual Library and Knowledge Centre may be provided parallel with the Traditional Library.

Students can get the access to following e-journals and databases by reviewing the respective notice in college library notice board for username/password. Library has subscribed the 1412 e-journals from following publisher.

- IEE/IEEE
- ASME
- ASCE
- Science Direct
- Springer Link
- Wiley Science
- ASTM

### **3. OBJECTIVES OF THE STUDY**

Library of Delhi College of Engineering is providing e-journal services to its users by subscribing a large number of e-journals in all relevant fields of its user. The need was felt to know the current state of affairs in respect of various aspects related to e-journal services provided by the library.

The main objective of the present study is to find out the usage of e-journals by the M. E. and Doctoral students and faculty members of Delhi college of Engineering. In this study the main emphasis will be on to seek information on following aspects.

- 1). To know the awareness about E-Journals Consortium by M. E. and Doctoral Students and Faculty members;
- 2). To know the place where the M.E. and doctoral students accessing e-journals;
- 3). To know the purpose of using the e-journals;
- 4). To seek the need orientation /training program to search E-journals;
- 5). To asses /evaluate the degree of utilization of e-journals by M. E. and doctoral students and faculty members.
- 6). To asses what extend M. E. and doctoral students and faculty members were satisfied with the e-journals;
- 7). To know the satisfaction level with the existing internet facility;
- 8). To know the influence of e-journals on research efficiency;
- 9). To find the factors that promoted or hindered in the use of e-journals among M. E. and doctoral students and faculty members; and
- 10). To suggest measures for improvement of the use of the e-journals.
- 11). To know the problems faced by the students and faculty while using e-journals.
- 12). To understand various factors responsible for discouraging research scholars to use e-journals services.

#### **4. METHODOLOGY & SCOPE OF STUDY**

This study utilizes a structured, printed, and personally distributed set of **Questionnaire** for collection of data. A questionnaire was designed keeping in view of the stated objectives of the study.

Questionnaire are without any doubt the single most popular data collection tools in any research involving human subjects. It is a tool to collect data from the diverse large and widely scattered groups. A questionnaire consists of number of questions printed in a definite order.

A structured questionnaire was designed, printed, pre-tested and supplied personally to a sample population of randomly selected hundred (100) respondents (M. E. and doctoral students and faculty members of Knowledge Center & Library Online, Delhi College of Engineering) with a request to answer the questions and return to the questionnaire within two weeks.

##### ***Types of questions used:***

Questionnaire used for data collection contained both open ended and close ended questions.

**Open ended questions:** -In this type of questions no answer is given against question. Respondents are to supply the answer in their own words.

**Closed ended questions:**-In this type of questions possible answers are given against each question. The respondent has to select the alternative answer written against the question. So the work of the respondent is to indicate his/her choice.

Answered sets of questionnaire were collected from respondents after two weeks. A total number of sixty one completed questionnaires could be collected.

Data collected were arranged and analyzed using statistical and semantic analysis.

Statistical analysis has been done with the help of computer using statistical package Microsoft-Excel. Data has been presented in tabular form and in visual form as per requirement using the statistical package Microsoft-Excel.

#### **5. ANALYSIS AND FINDINGS**

The users can access of e-journals from anywhere at any time because these Login id and Password based through the library webpage which are protected by the User Id and password and that may be collected personally from the library. Students can get the access to following e-journals and databases by reviewing the respective notice in college library notice board for username/password.

Library has subscribed for a total of 1412 journals from various publishers which includes-

<b>NAME OF PUBLISHER</b>	<b>SUBJECT</b>	<b>NUMBER OF JOURNALS</b>
<b>IEE/IEEE</b>	Electrical and Electronics	<b>241</b>
<b>SPRINGER LINK JOURNALS</b>	Chemistry and Materials Science	<b>73</b>
	Computer Science	<b>131</b>
	Engineering	<b>122</b>
	Mathematics	<b>124</b>
	Physics and Astronomy	<b>70</b>
	Earth & Environmental Sciences	<b>137</b>
<b>ASTM JOURNALS</b>	Engineering	<b>6</b>
<b>EMERALD JOURNALS</b>	Management	<b>150</b>
<b>ASME JOURNALS</b>	Mechanical Engineering	<b>22</b>
<b>ASCE JOURNALS</b>	Civil Engineering	<b>30</b>
<b>WILEY JOURNALS</b>	Misc.	<b>109</b>
<b>ELSEVIER SCIENCE JOURNALS</b>	Computer Science	<b>118</b>
	Chemical Engineering	<b>79</b>
<b>TOTAL</b>		<b>1412</b>

**Table No.5.1 Details of e-journals**

### Data collection:

Data collected through questionnaire has been divided in two parts. One part of data deals with users profile whereas other part deals with their perception about e-resources and specifically e-journals.

In following subsections the data related to the respondents' profile are organized, analyzed and presented in tabular and graphical form. Interpretations of results obtained are described in detail. This is followed by the analysis of responses to close ended as well as open ended questions in relation to usage of e-journals.

### Respondents' Profile:

A total of sixty one respondents out of a sample population of hundred members responded to the questionnaire supplied to them have the following profile.

RESPONSE TO QUESTIONNAIRE		
Status of Respondent	Sample population	Number of Response
Faculty Members	20	12
PhD students	65	44
M.E. Students	15	5
Total	100	61

Table No.5.2: Response to questionnaire

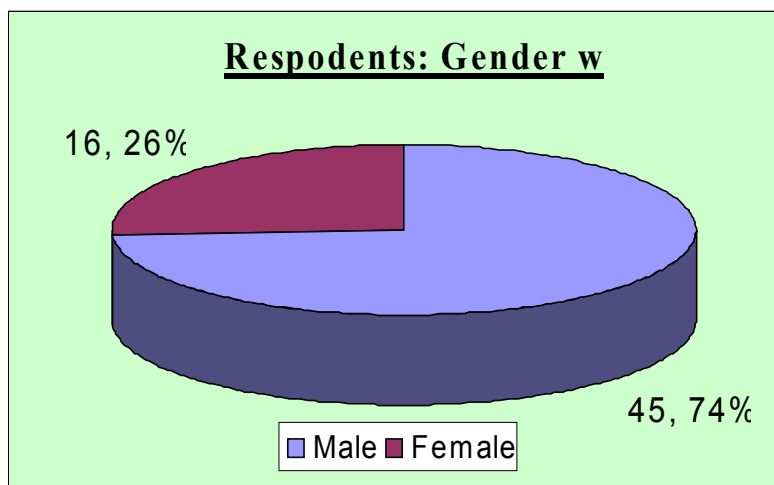
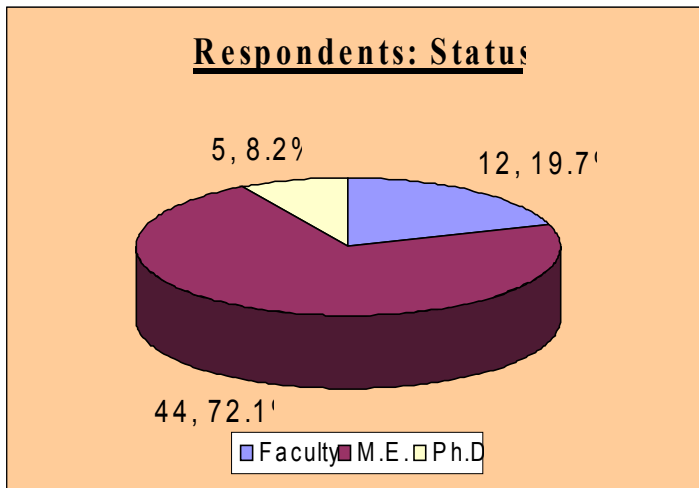
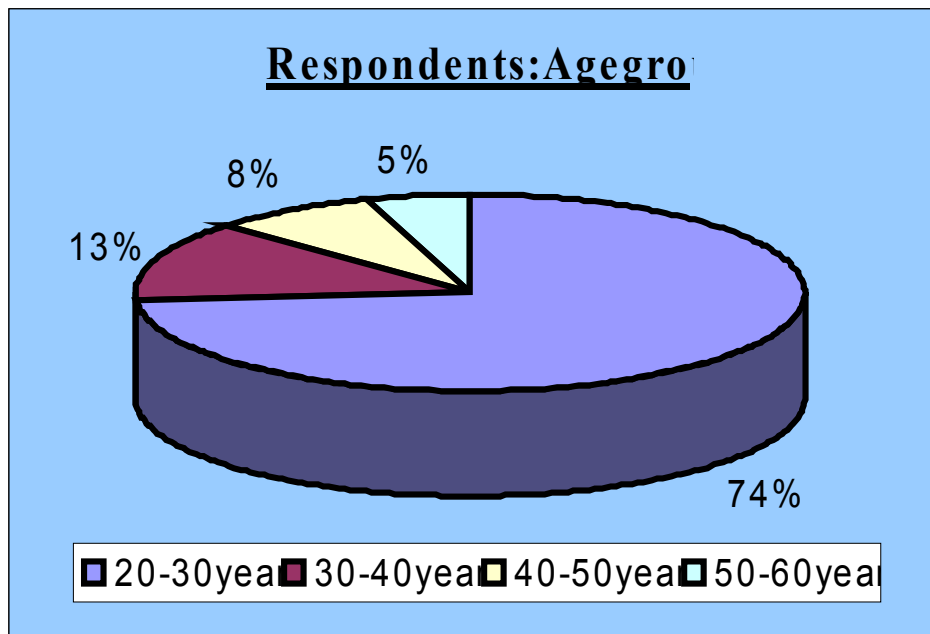


Figure No.5.1: Gender wise presentation respondents

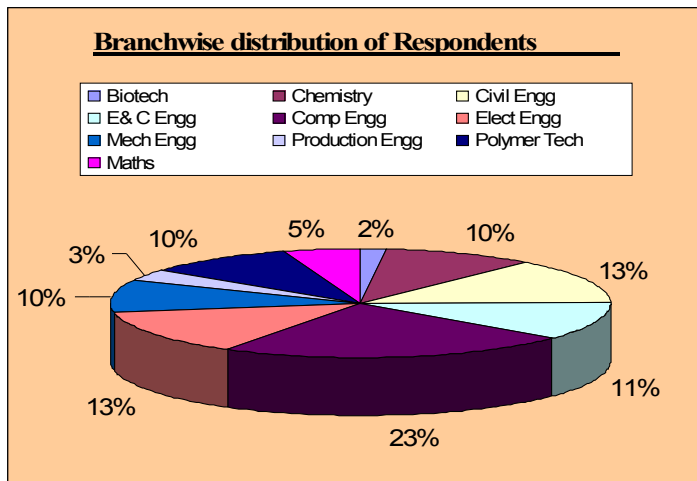


**Figure No.5.2: Status wise presentation respondents**



**Figure No.5.4: Age Group wise presentation respondents**





**Figure No.5.5: Branch wise presentation respondents**

The results so obtained are presented graphically in fig.5.5. A pie diagram provides a clear representation of branch wise respondents who have responded to the questionnaire.

**Analysis of response to close ended questions:**

***Frequency of library visit:***

A basic and encouraging question was asked in the starting of questionnaire to the members participated in survey about frequency of their library visit.

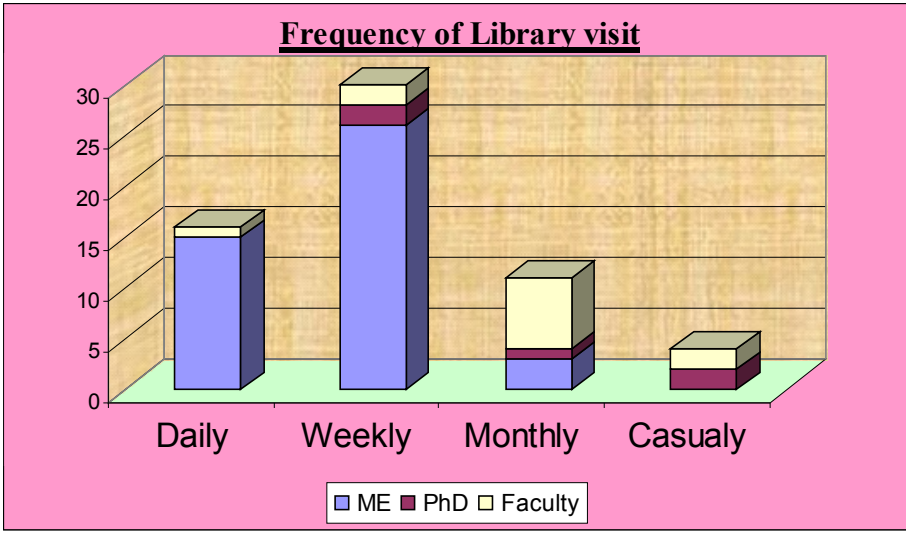
ME students: A 34% of ME students are found daily visitor to library, 59% are weekly visitor, and remaining 7% are visiting library once in a month.

PhD students: A 40% of PhD students are found visiting library weekly, 20% are monthly visitors and remaining 40% are casual visitors.

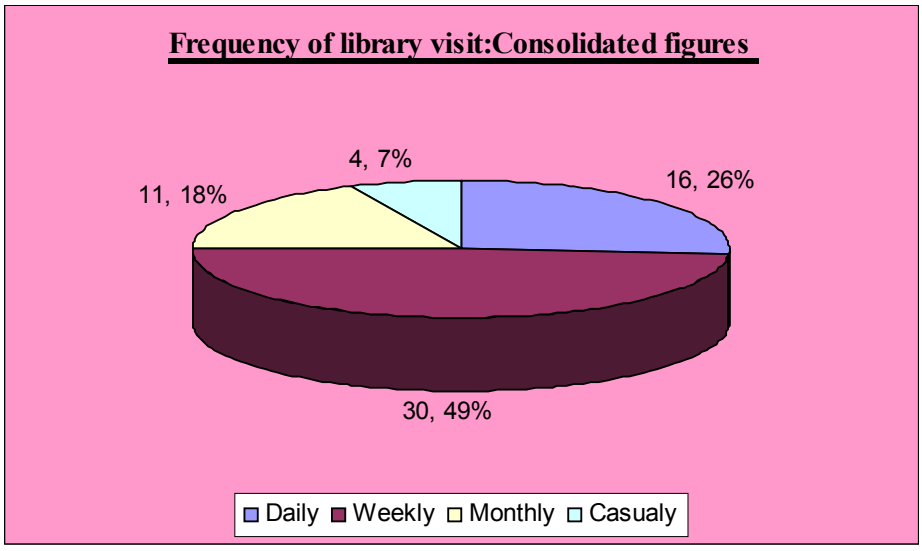
Faculty members: As far as the faculty members are concerned, 8% of them are daily visitors, 17% are weekly visitors, 57% monthly visitors and remaining 8% are casual visitors to the library.

Table below provides the data received through the questionnaire from a total of sixty one respondents from various branches. A very unusual looking data is about PhD students as no one of them is a daily visitor of library.

Overall scenario provides a 26% of respondents as daily library visitor, 49% weekly visitor, 18% monthly and remaining 7% are casual visitor to the library.



**Figure No.5.6: Presentation of frequency of library visit of respondents**



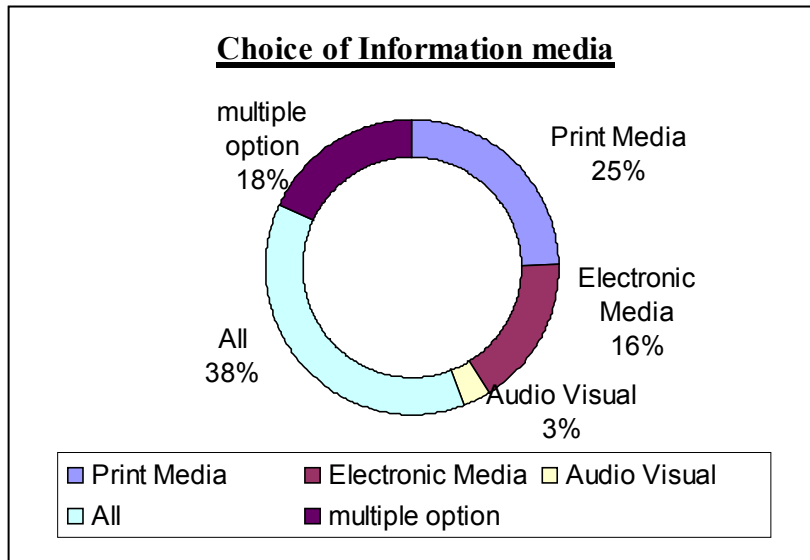
**Figure No.5.7: Presentation of frequency of library visit of respondents: consolidated**

**Choice of Information Media:**

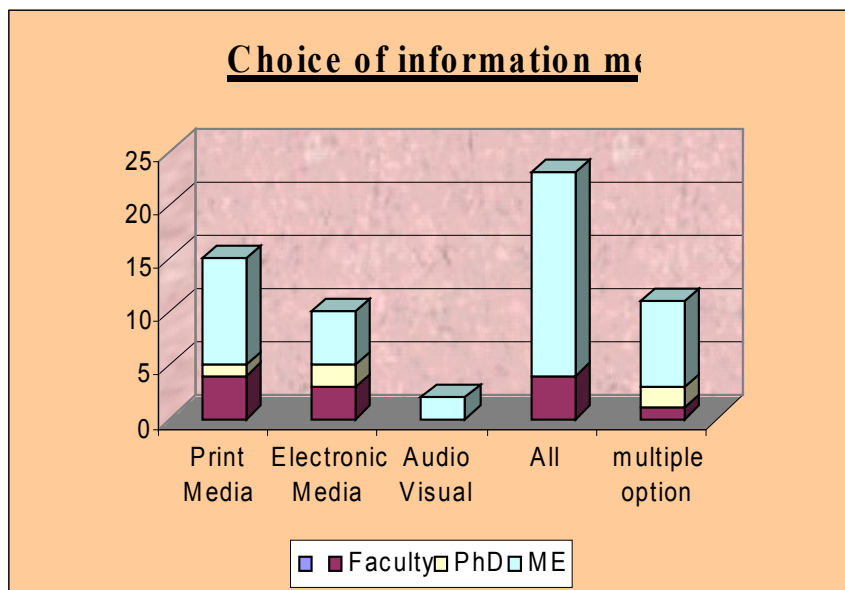
Respondents were asked to provide their choice for information media they prefer most. Majority of respondents (38%) were of the view that all types of information media should be available for acquiring information. 25% of total respondents opted for print media, 16% for electronic media, and 18% for multiple media and reaming 3% opted for audio visual media of information.

The results clearly indicate that users are of the view that all types of media of information should simultaneously exist in library.

Though respondents were asked to provide one preference in answer out of four options provided to them, some 18% respondents have opted for multiple Options of media of information.



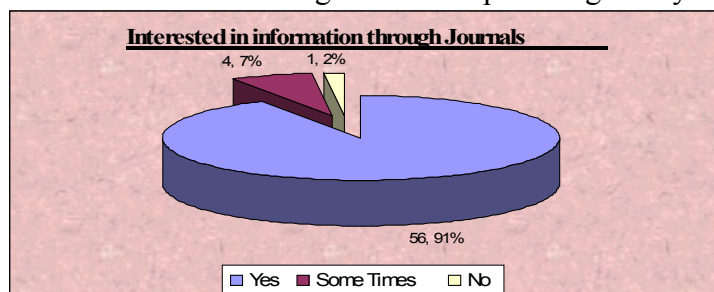
**Figure No.5.8: Choice of Information Media**



**Figure No.5.9: Choice of Information Media**

***Interest in information through journals:***

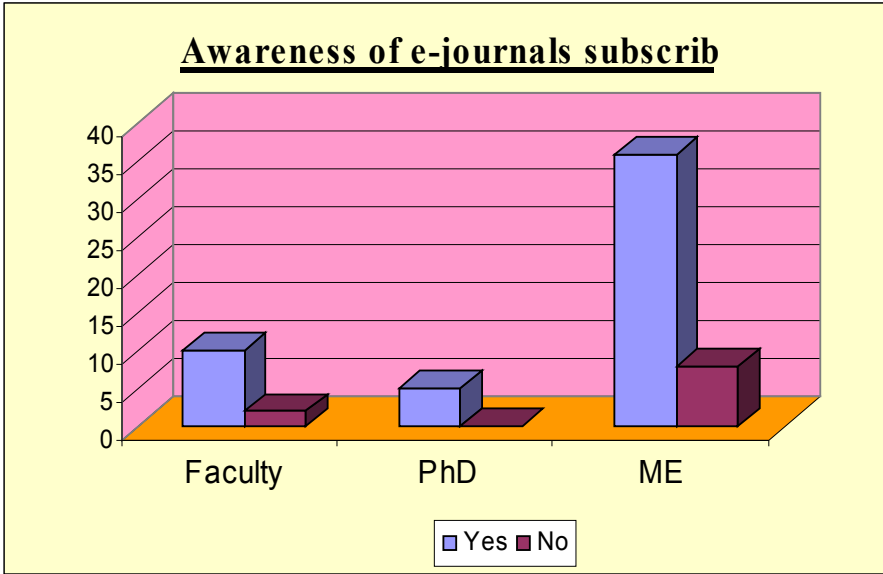
When asked about interest in acquiring information through journals majority of respondents (91%) responded positive, whereas 7% replied that they sometimes use journals for information. A remaining 2% have replied negatively.



**Figure No.5.10: Interest in information through journals**

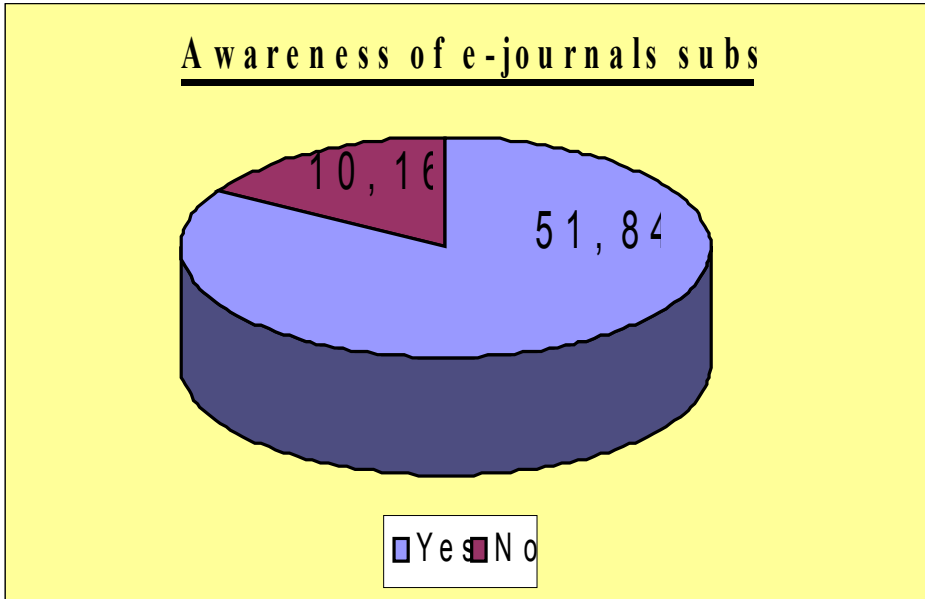
***Awareness of e-journals subscribed by the library:***

While seeking information about awareness of e-journals subscribed by the library through a question, 84% responded were aware of e-journals subscribed by the library whereas 16% responded were not aware.



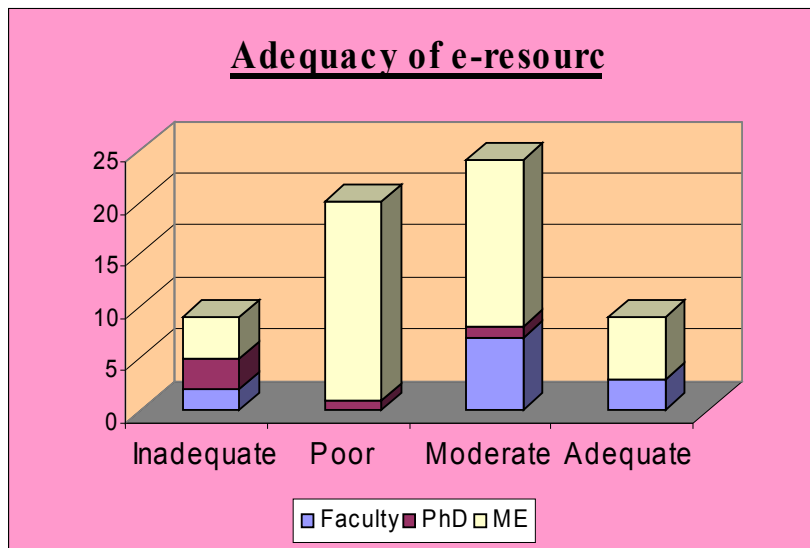
**Figure No.5.11: Awareness of e-journals subscribed**

100% doctoral students, 82% M.E. students and 83% of faculty members were found aware of journals subscribed.



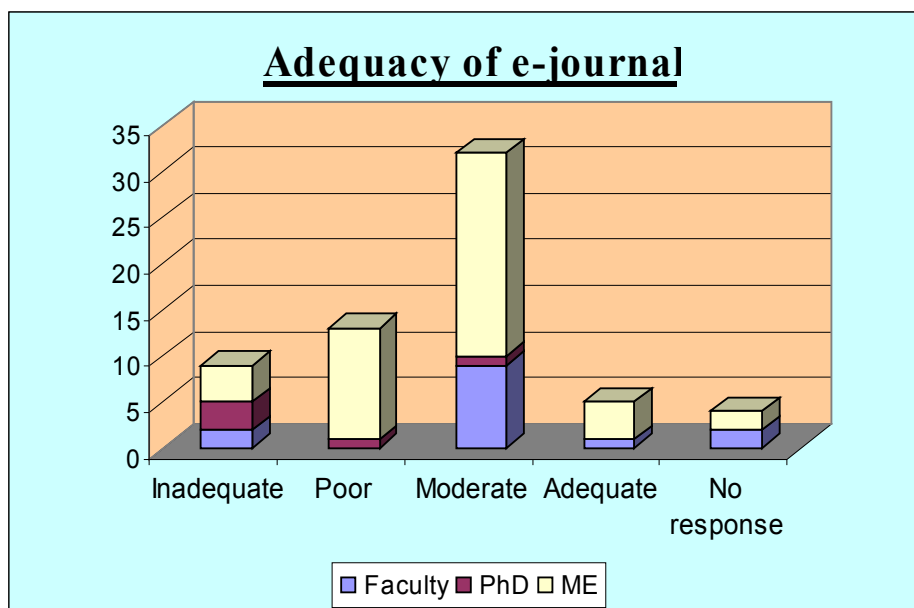
**Figure No.5.12: Awareness of e-journals subscribed**

***Adequacy of e-resources in library:***

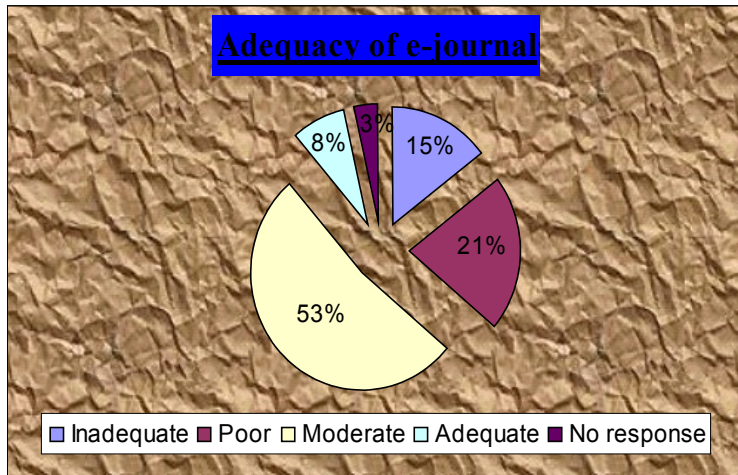


**Figure No.5.13: Adequacy of e-resources**

In respect of adequacy of e-resources in library 16% of respondents feel that e-resources are adequate. 39% responded moderate, 31% responded for poor and remaining 16% respondents feel that e-resources are inadequate.

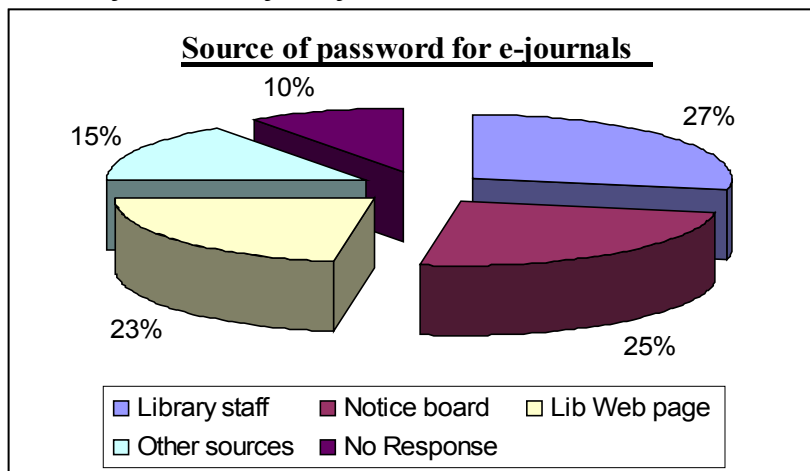


**Figure No.5.14: Adequacy of e-journals**



**Figure No.5.15: Adequacy of e-journals**

*Source of Password for e-journals:*

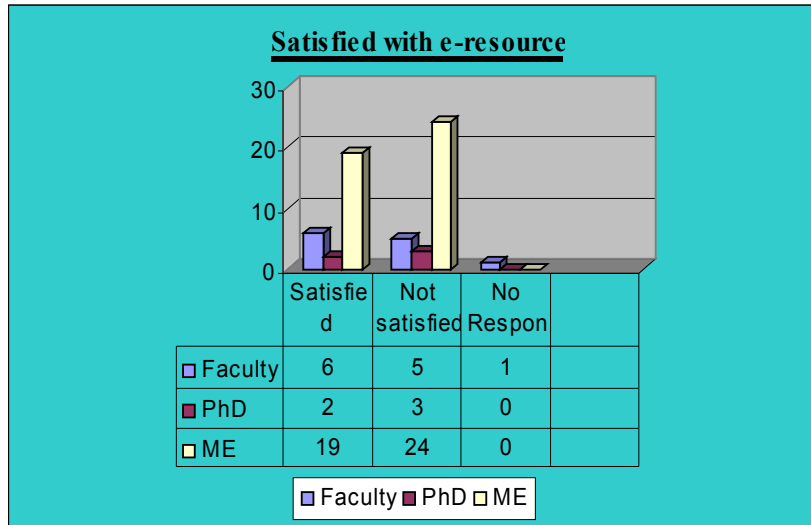


**Figure No.5.16: Source of password**

When asked about the source of password for e-journals 28% replied that they get passwords from library staff, 25% get the password from the library notice board, 23% from library web page, and 15% get passwords from other sources.9% of respondent did not respond to the question.

***Satisfaction with e-resources:***

When responses through questionnaire regarding satisfaction with e-resources were analyzed it was revealed that majority of respondents (53%) were not satisfied with the e-resources available in the library. 44% respondents were satisfied and 3% did not respond to the question.

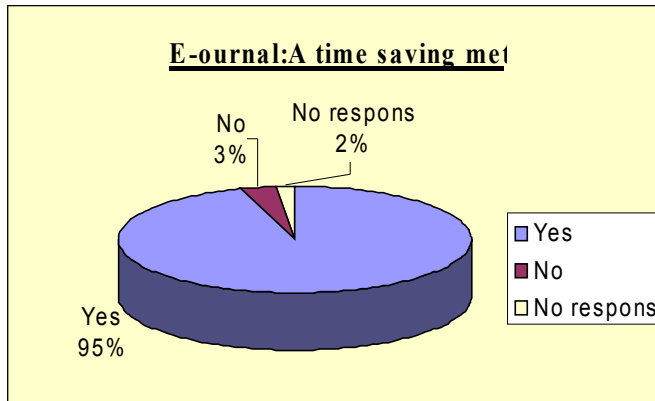


**Figure No.5.17: Satisfaction with e-resources**



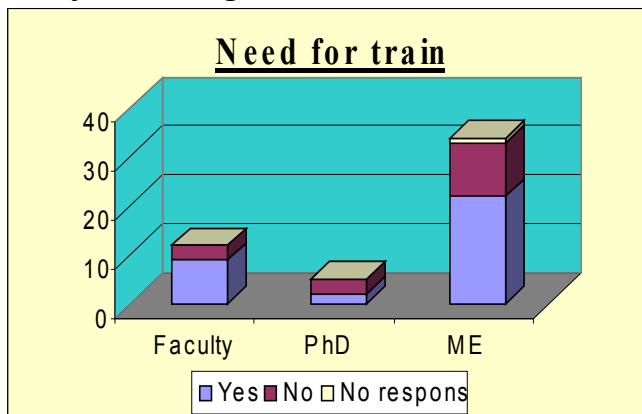
***E-Journal: A time saving method:***

Almost all respondents (95%) were of the view that e-journal provides a time saving method of acquiring scholarly information, however a negligible portion of respondents (3%) did not agree to that. Remaining 2% respondent did not reply to the question. This clearly indicate that e-journal provide a time saving method of information acquisition.



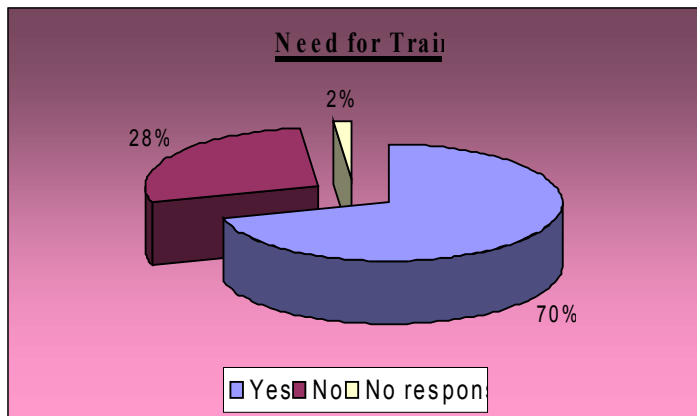
**Figure No.5.18: E-journals: A time saving method**

***Need for Training:***



**Figure No.5.19: Need for training**

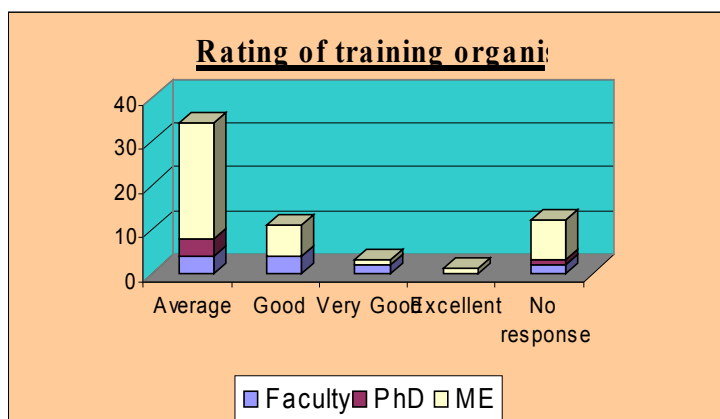
In response to a question whether users need training for using e-resources 70% of respondents answered positively, whereas 28% of respondents felt that training is not at all required for using e-resources. Remaining 2% did not provide any response. This indicates that the majority of members feel that users' training program is essential for better use of e-journals.



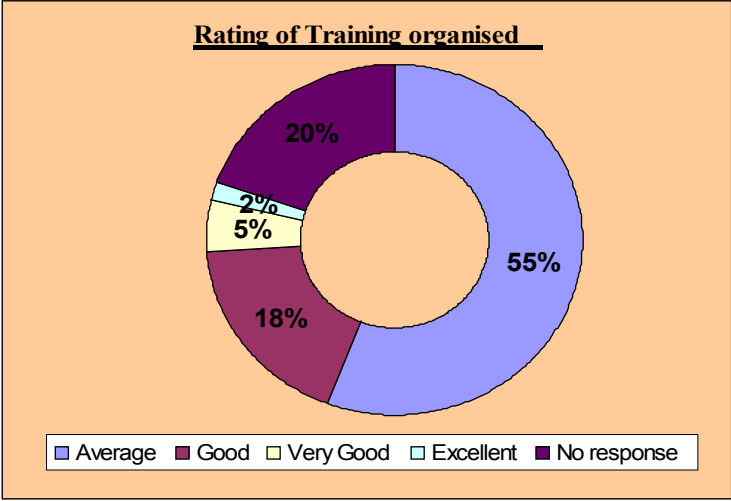
**Figure No.5.20: Need for training**

***Rating of Training Program Organized by Library:***

Respondent were asked to rate the training program organized by the library for use of e-resources, majority of respondent rated the program as “average” only 18% of respondent rated that training program as “good” 5% “very good” and 2% rated the program as “excellent”. 20% of respondent did not provide any answer.



**Figure No.5.21: Rating of training organized**



**Figure No.5.22: Rating of training organized**

***Frequency of Use of E-Resources:***

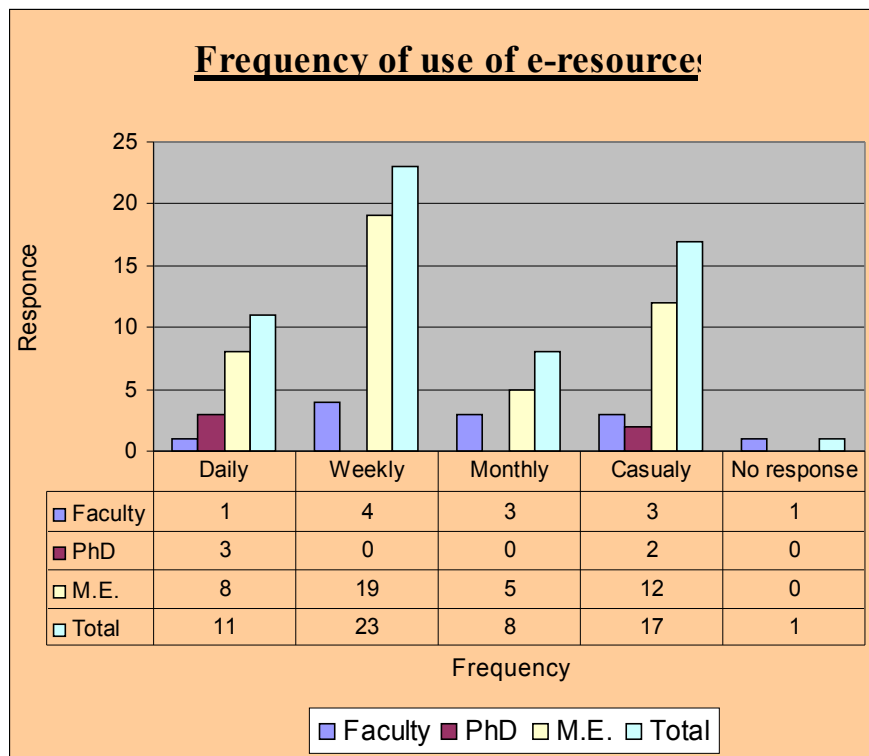
Respondent were ask that how often they use e-resources. 18% replied “daily” 38% replied “weekly” 13% “monthly” 29% “casually” remaining 2% did not respond to the question.

Responses when further analyzed as per status of respondent it was revealed that 60% of doctoral students, 8% of faculty members and 18% of M.E. students were daily using the e-resources.

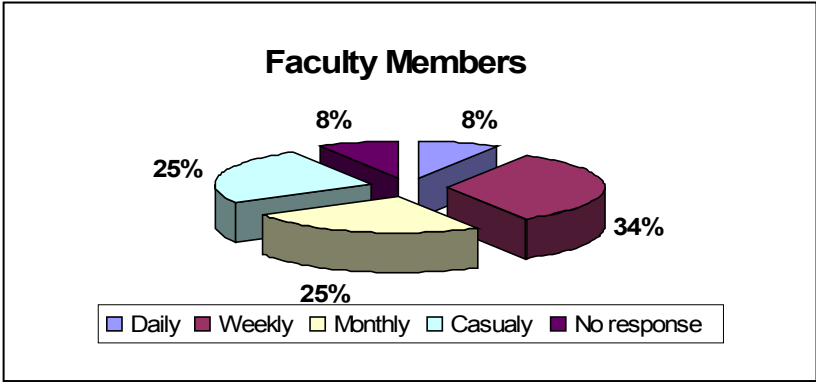
33% of faculty members and 43% of M.E. students and 0% PhD scholar were using e-resources once in a week.

25% faculty members and 11% M.E. students 0%Ph.D scholar were using e-resources once in a month.

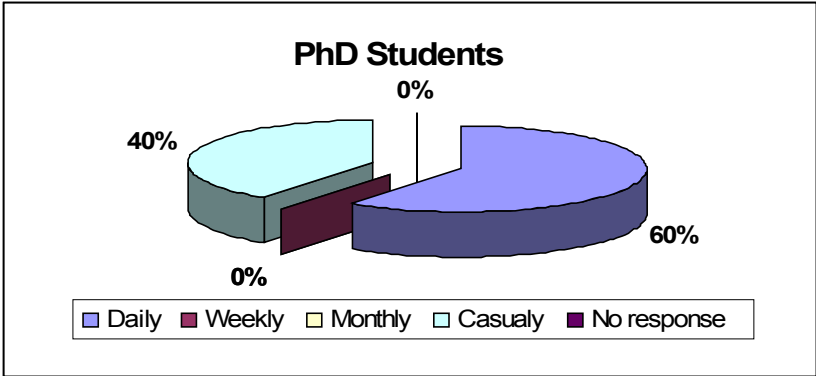
25% faculty members and 27% M.E. students, 40%Ph.D scholar were using e-resources casually.



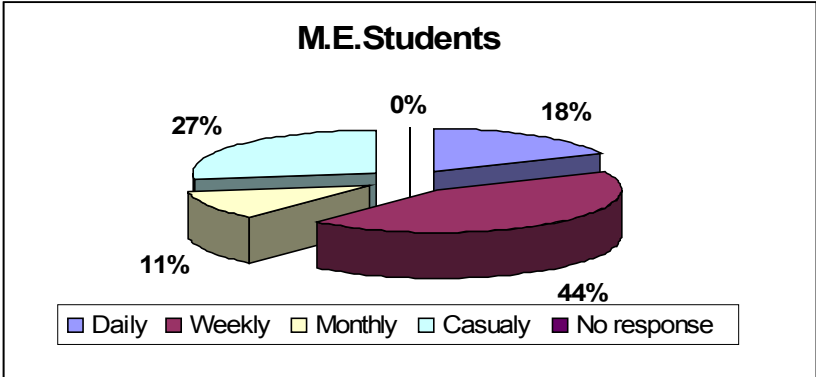
**Figure No.5.23: Frequency of Use of E-Resources**



**Figure No.5.24: Frequency of Use of E-Resources**



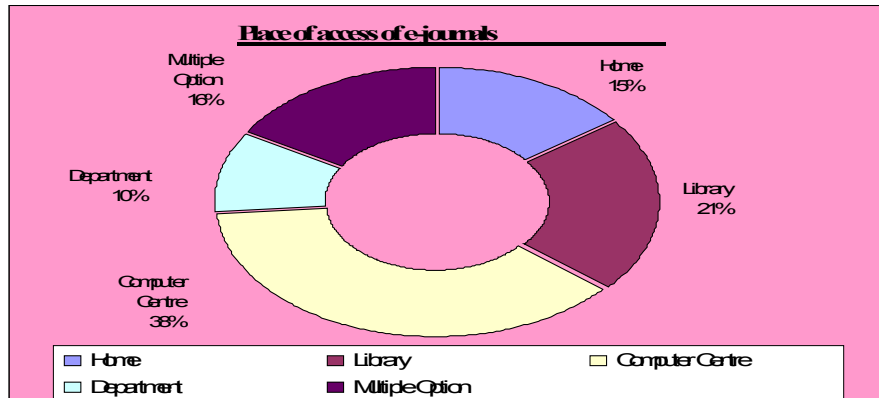
**Figure No.5.25: Frequency of Use of E-Resources**



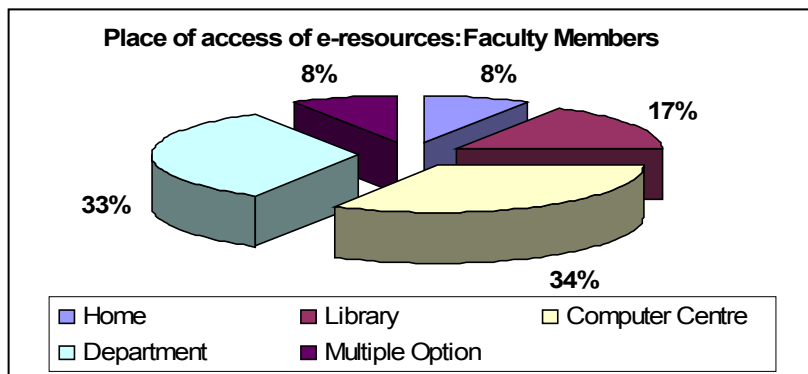
**Figure No.5.26: Frequency of Use of E-Resources**

**Place of Access of E-Journals:**

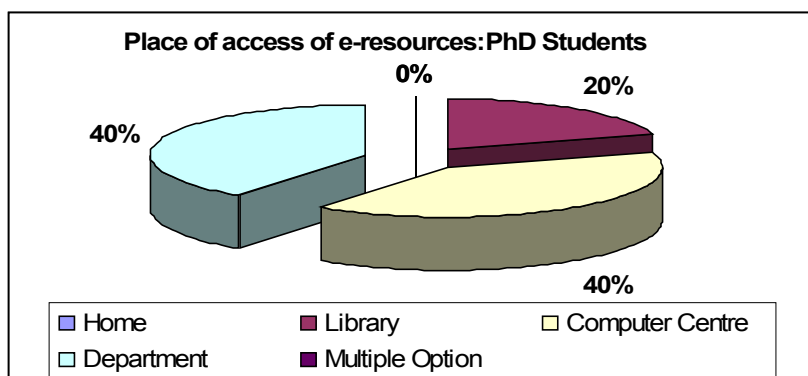
Respondent were ask to provide place of access of e-journals. Majority of respondent (38%) access e-journals from computer centre, followed by 21% from library, 15% from home and 10% from departments. 16% of respondent answered that they access e-journals from multiple places.



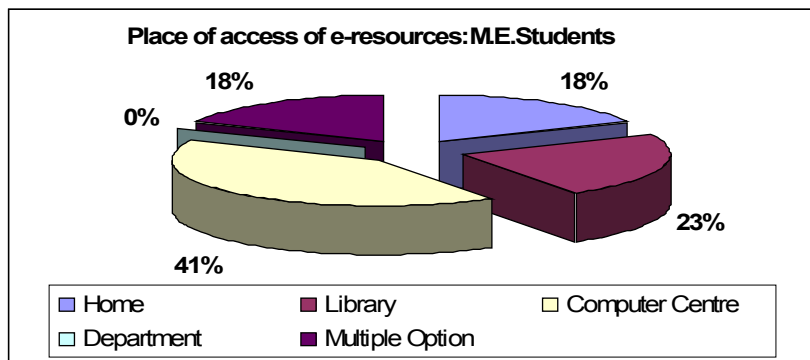
**Figure No.5.27: Place of Access of E-Journals**



**Figure No.5.28: Place of Access of E-Journals: Faculty members**



**Figure No.5.29: Place of Access of E-Journals: PhD students**



**Figure No.5.30: Place of Access of E-Journals: ME students**

When the responses were further analyzed on the bases of the status of the respondents it was revealed that 34% faculty members, 40% PhD students, and 41%ME students are accessing e-resources from the computer centre.

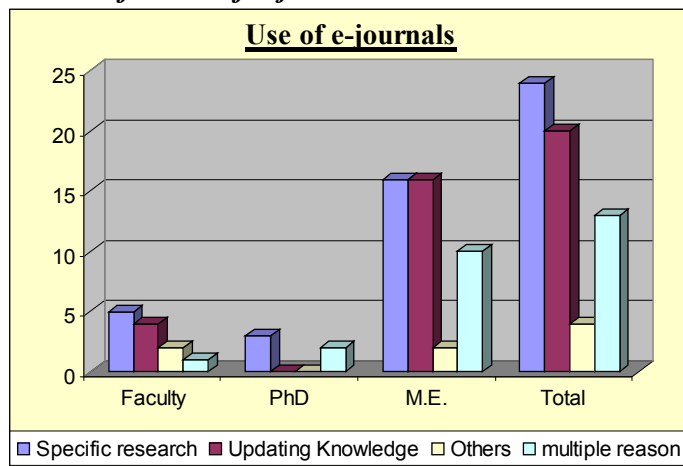
17% faculty members, 20% PhD students, and 23% ME students are accessing e-resources from the library.

8% faculty members and 18% ME students are accessing e-resources from their home.

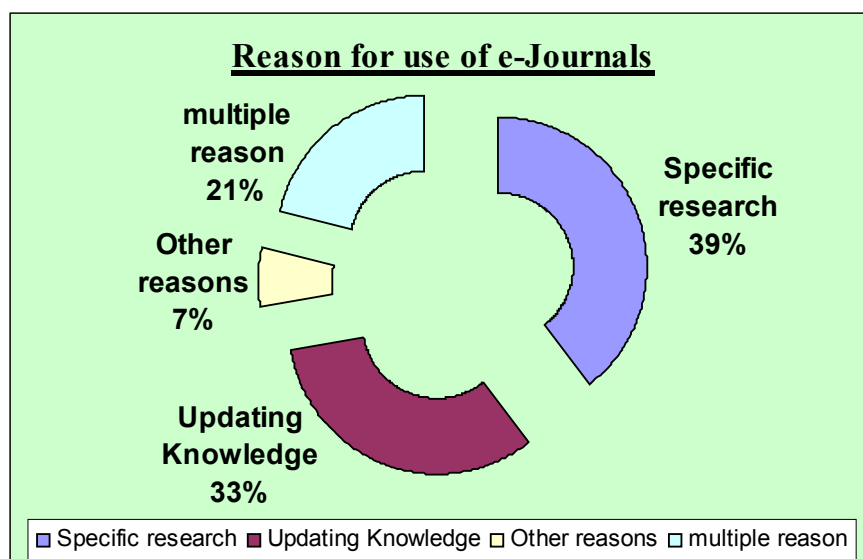
33% faculty members and 40% PhD students are accessing e-resources from their department.

8% faculty members and 18% ME students are accessing e-resources from multiple places.

***Reasons for use of e-journals:***



**Figure No.5.31: Reason for use of E-Journals**



**Figure No.5.32: Reason for use of E-Journals**

A question was asked, why do users use e-journals? 39% respondents were using e-journals for specific research work, 33% for updating their knowledge and 7% for other reasons. 20% respondent replied that they use e-journals for multiple reasons.

**Analysis of Open ended questions:**

Questionnaire used in this study for collection of data contained both close ended and open ended questions. Close ended questions are already analyzed in previous sections. Six open ended questions were included in the questionnaire to get the views of respondents on various aspects related to the study.

***Views in favour of print journals:***

Respondents were asked to explain reasons for their liking for print journals. Different respondents provided their view points in their answers where as a few did not write anything in response to the question posed.

All answers were analyzed and the important points mentioned in support of their liking of print journals are as follows:

- Convenient in reading.
- Can be stored and retrieved for further references.
- Do not require any computer, internet connection, or any electronic device to use the print versions.
- Can be used any where any time.
- Easy to handle.
- Easy to use.
- Back volumes can be accessed from archives.
- A conventional media with which a reader feel comfortable and relaxed.



### ***Respondents' views in favour of e-journals:***

In another question respondents were asked to explain the reasons for their liking for e-journals. The responses again contained various advantages of e-journals and a few blank answers.

Major points covered by most of the respondents are as follows:

- Easy to search and navigate.
- Can be accessed any time (Twenty four hours)
- Need not to visit library for accessing the information.
- We get updated information.
- Saves time of user.
- Cost saving.
- Information can be downloaded, printed, stored, shared, e-mailed.
- Can be used by any number of users simultaneously.
- Need not to type or photocopy the information.
- Easy to store and retrieve the information.

### ***Hindrances in using e-journals:***

Respondents were asked to express the hindrances that restrict them to use e-journals.

Respondents in their answer explained many hindrances, some of them are as follows:

- Internet connectivity.
- Poor quality of networking.
- At times computers are not functioning properly.
- All information are not free of cost.
- At times printers do not function properly to print an article.
- Limited library hours.
- PDF are blocked by by firewall by computer centre.
- Lack of knowledge about e-journals.
- Many sites are blocked.
- Issue of password is not organized properly.

### ***Satisfaction with existing internet facility:***

When asked about their satisfaction level with existing internet facility, only 15% respondents expressed their satisfaction with prevailing condition. 10% respondents rate the facility as "Average". Rest of the user described the facility of internet as "Poor" Many respondents have pointed out some problems related to internet as follows:

- Speed of internet is very slow.
- Some useful sites are not opening in library.
- At times computer mouse are not available
- No facility of direct download.

### ***Possible contribution of users in improving e-journal service:***

Respondents were asked to explain the contribution they can make to enhance the usage of e-journals. The main points respondents raised for contributing towards better use of e-journals are as followed:

- Can provide technical support.
- By making groups of students an conducting orientation program to enhance use of e-journals.
- Can help in downloading e-journals and store them on CD/DVD.
- By conducting workshops and seminars.
- By helping in distribution of passwords of e-journals in departments.

- By making a coordination committee consisting of students, faculty, and library staff.
- By encouraging new students making them aware of e-journals subscribed.

***Suggestions from respondents:***

At the last respondents were asked to provide suggestions to improve the use of e-journals subscribed. Various suggestions provided by different respondents are as follows:

- Users' training programs should be organized at regular intervals.
- Internet facility should be upgraded and services should be improved.
- An efficient campus wide WI FI network should be maintained.
- Awareness programs should be organized.
- Library should have sufficient and efficient staff.
- Notice board should provide all latest information about e-journals.

***Findings of the study:***

The study was an attempt to highlight the various aspects related to the usage of e-journals in Delhi College of Engineering. The study was carried out in order to know current state of affairs in respect of awareness about e-journals, need for user training, evaluation of e-journal services provided, users' interest in acquiring information from e-resources and various such related issues. The study was focused on target population consisting of Faculty members and PhD and ME students of college. Data for the study gathered with the help of a structured questionnaire distributed to a sample population of hundred respondents. A total of sixty one responses were received. Data collected for the purpose of this study have been organized, displayed, analyzed and interpreted in previous sections of this chapter. Both close ended and open ended responses have been discussed. Major findings of this study are as follows.

- *Library of Delhi College of Engineering is subscribing a large number of e-journals on various subjects from different publishers.*
- *Majority of users of library are students in the age group of 20-30 years.*
- *Only about one fourth of population is daily visitor to library.*
- *Most frequent visitor of library are ME students followed by PhD students.*
- *Majority of target population were of the view that all types of information media should be available in the library. 16% are in favour of electronic media and 25% in favour of print media.*
- *Awareness about e-journals subscribed is of very high order. 84% respondents are aware of e-journal subscribed by the library.*
- *Only 16% of target population feel that e-resources available in library are adequate. 39% feel it as moderate, 31% as poor and 16% find it inadequate.*
- *Majority of target population (53%) feel that there is a scope for improvement in e-journal services.*
- *Majority of users take the password either from library staff or from library notice board.*
- *Majority of population are not satisfied with e-resources available in the library.*
- *Almost entire population feels that e-journal provide a time saving method for acquiring scholarly information.*
- *About three fourth of users feel that there is a need for organizing more training programs for using e-resources.*
- *A considerable portion of users access e-journals on daily bases followed by on weekly bases.*
- *39% of target population use e-journals for specific research work and 33% use e-journals for updating their knowledge.*

- *Target population is divided over the issue of print vs. e-journals. They have reasons for their likings.*
- *Users at large are not satisfied with the existing internet services provided in library and computer centre.*
- *Users suggest for better internet service and an efficiently maintained WI FI campus wide network.*
- *Users also suggest organizing regular users training programs and orientation programs.*
- *Users at large are interested in contributing their bit in improving the e-journal service.*

These findings provide guidance for future course of action to be followed by the library i.e. library staff and its users in order to make better use of e-journals. Most important outcome of this study in nut and shell is that there is a need of coordinated efforts with participation of users to improve the situation in respect of usage of e-journals subscribed by the library. Internet infrastructure and related accessories needs revamping. Regular users training and orientation programs, workshops/seminars, is also an important area of concern.

## **BIBLIOGRAPHIC REFERENCES**

### **Books:**

Kishan Kumar (1999). *Research methods in library and information science*. 2<sup>nd</sup> ed. New Delhi: Har-Anand Publications.

Kothari, C.R. (1990) *Research Methodology: Methods and Techniques*. 2<sup>nd</sup> ed. New Delhi: Wishwa Publication.

**Paul D. Leedy. (et al). (2004) *Practical Research: Planning and Design*. New Jersey: Prentice Hall**

Young, P.V. (1988). *Scientific social surveys and research*. New Delhi: Prentice Hall

### **Journals:**

Breeding, M.(2002). Strategies for measuring and implementing e-use.

*Library Technology Reports*, 38(3), 1-70.

Sally Morris, 2001. "The Pros and Cons of Electronic Journals," *INASP*

*Newsletter*, Special Issue: Online Publishing, issue 18, at <http://www.inasp.org.uk/newslet/oct01.html>

Zhang, Xiaoyin and Haslam, Michaelyn. 'Movement toward a predominantly electronic journal collection.'" *Library Hi Tech* 23.1(2005):82:22 Feb.2008

### **Internet References:**

<<http://dce.ac.in/>>

<<http://library.dce.ac.in/index.php>>

<[http://en.wikipedia.org/wiki/Delhi\\_College\\_of\\_Engineering](http://en.wikipedia.org/wiki/Delhi_College_of_Engineering)>

< <https://drtc.isibang.ac.in/bitstream/handle/1849/298/rajesh-DCE.pdf?sequence=1>>

< <http://www.dlib.org/dlib/october99/rusch-feja/10rusch-feja-full-report.html>>

<<http://en.wikipedia.org/wiki/E-journal>>

<[http://www.dce.edu/about\\_dce/history.htm](http://www.dce.edu/about_dce/history.htm)>

### **Course Material:**

Rajan, T.N. (2005). *Presentation of research*. In: MLIE-102, Block 4, Unit 18, Course Material. New Delhi: Indira Gandhi National Open University.

Sharma, Jaideep (2005). *Research design*. In: MLIE-102, Block 3, Unit 15, Course Material. New Delhi: Indira Gandhi National Open University.

