

Availability and Utilization of Electronic Resources by the Users of Engineering College Libraries in Guntur and Prakasam districts of AP: A study

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ABSTRACT

Analysis of data collected from a sample of 1300 users of engineering college libraries in Guntur and Prakasam districts of Andhra Pradesh, selected by stratified random method using a questionnaire reveals majority of the users expressed that floppies (78.9%), CDs (66%), CD-ROMs (69.2%) and DVDs (52.7%) are available in their respective libraries. Most of the users (90.8%) never utilized floppies. A high percentage of users (42.3%) are utilizing CDs mostly. Majority of them are utilizing CD-ROMs (54.5%) and DVDs (54.5%) mostly. Most of the users expressed the availability of computers (85.4%) and sound recorders in their libraries. Majority of them expressed that the fax machines (60.9%), printers (78.5%) and scanners (51.8%) are available in their libraries. Most of the users expressed the non-availability of handy cams (88.9%) and LCD projectors (84%). Majority of them (68.9%) expressed the non-availability of barcode scanners. Among the users, who replied that there is a provision for lending of e-resources, most of them (94.4%) are satisfied with lending procedure. Majority of users (59.2%) are also satisfied with the maintenance of e-sources. The suitable methods suggested by the users for giving orientation in using e-resources are 'library guides' (48.6%), 'library tour' (39.2%) and 'lectures' (35.1%). A few significant differences were found between the responses of students and faculty members of engineering colleges with regard to the availability and utilization of electronic sources and equipment. Finally, a few recommendations have been made to improve the electronic sources in engineering college libraries.

Keywords: *E-Sources, Engineering College Libraries, Electronic Equipment, User Studies, Andhra Pradesh.*

1 INTRODUCTION

To provide quality education to the students of engineering, the engineering colleges, institutions and universities should have well qualified and experienced faculty, adequate laboratories, ICT facilities, well established library, physical facilities and good management.

Among them, libraries play a key role in the provision of quality education in engineering and their contribution in this regard is intangible.

The supply of accurate and reliable information by engineering college libraries at the right time to the students and faculty members of engineering institutions helps to produce quality research and to obtain quality education and training. Due to the developments in Information and Communication Technology, the new type of documents came into existence in libraries in addition to the already existing print documents. The information in these types of documents is stored in digital form. They are known as electronic sources. The users of libraries require computer systems and Internet connection to use these sources.

The various categories of e-sources are e-books, e-journals, online full text databases, online bibliographical databases, e-theses and dissertation, web OPAC, e-magazines, e-news, etc. These are available either as CDs, DVDs, CD-ROMs, blue ray discs or online sources. These e-sources are facilitating information storage, processing and retrieval much faster than the traditional print documents. As a substantial amount of knowledge in various disciplines is published in these documents, libraries are forced to procure these sources by spending a substantial amount to provide exhaustive and up-to-date information to the users. Hence, e-sources became part and parcel of the total library collection. The users have to use these sources for getting exhaustive and up-to-date information on their subjects concerned. During this transition period, the libraries are facing problems in their acquisition, processing, maintenance, and retrieval, due to lack of adequate ICT skills among the library staff. At the same time, the users are also unable to utilize e-sources fully due to lack of awareness and inadequate skills to access them. It is the responsibility of the librarians to put these sources to maximum use so that they can justify the expenditure made on e-sources. It is also their responsibility to design a need-based acquisition policy and to develop a balanced collection in the prevailing environment of increasing demands from the user community, diminishing budgetary provisions and increasing costs of documents so that the information needs of users are met satisfactorily.

In this context, there is need to examine the availability and utilization of these sources by the users of engineering college libraries, so that necessary steps can be undertaken for the development and utilization of e-sources. Hence, the present study entitled 'Availability and utilization of electronic resources by the users of engineering college libraries in Guntur and Prakasam Districts of AP: A study', has been undertaken.

2. OBJECTIVES OF THE STUDY

The following are the specific objectives of the study:

1. To examine the availability of various categories of electronic sources;
2. To examine the utilization of electronic sources by the users of engineering college libraries;
3. To examine the availability of electronic equipment in engineering college libraries;
4. To know the satisfaction of users with regard to lending and maintenance of electronic sources;
5. To know the necessity of orientation programmes in the use of electronic sources and methods used for such programmes;
6. To make suggestions based on the finding of the study for effective usage of e-sources.

3. METHODOLOGY

Among the various research methods available in Library and Information Science, survey method of research has been used in the present study.

3.1. Selection of college libraries

The total number of engineering colleges in Guntur and Prakasam districts of Andhra Pradesh was 69 in 2015. Out of them, seven colleges which were established before 1999 were selected. All these colleges have good libraries. They are Library of Bapla Engineering College, Bapla (BECB), Library of RVR and JC College of Engineering (RVJC), Library of Narasaraopet Engineering College (NSPE), Library of Chundi Ranganayakulu Engineering College (CHND), Library of VRS and YNR College of Engineering (VYCC), Library of Saint Gorge Institute of Technology (SGIT) and Library of Quality Infrastructure and Sophisticated Institute (QIS). First four colleges among them are from Guntur district and the last three colleges are from Prakasam district.

3.2. Sample selection of users

The users of the engineering college libraries are students and faculty members. The total number of students and faculty members of selected engineering colleges are 11,560 and 480 respectively. In other words, the total number of users of these college libraries is 12,040. Due to constraints of time, money and efforts involved, a total of 1300 users were selected out of 12,040 using stratified random sampling method. Out of 1,300 users, 1,156 are students and 144 are faculty members. While selecting sample, the entire population is divided into various strata according to college and category of users. From each stratum, sample is selected by simple random method. Ten percent of students and 30% of faculty members were selected as sample.

3.3. Data collection

The required data for the present study was collected using a questionnaire tool. Copies of questionnaire were distributed to 1300 users and filled-in copies of questionnaire were collected from them.

3.4. Analysis and presentation of data

After collecting the data from the respondents, the data is analyzed according to the objectives stated. The data was analyzed manually, and percentages and other necessary calculations were done with the help of the calculator. Descriptive and inferential statistics are used in the analysis of data. Chi-square values were calculated using 'Statistical Package for Social Sciences' (SPSS). The data is presented in the form of tables.

4. REVIEW OF LITERATURE

The significant studies that were conducted on the topic of research were reviewed in the following paragraphs.

Praveena and others¹ surveyed the research scholars of Faculty of Sciences, Annamalai University, with regard to their use of e-resources using a questionnaire. Sankaranarayana

and Nagarajan² conducted a survey on 730 faculty members of Agriculture College of Tamil Nadu, using a questionnaire to examine the use of e-resources. Sarasvathy and Giddaiah³ examined the use of Internet in the library of University of Mysore, by collecting information from 88 users, using a questionnaire. Sharma and Sharma⁴ made a study to examine the perceptions and preferences of e-resources among the faculty members of National Institute of Technology, using a questionnaire. Kaur⁵ conducted a study on research scholars and faculty members of University of Punjab, Chandigarh, to examine the use of e-journals. Madhuri⁶ conducted a study on the use of Internet by collecting data from 100 UG students of University of Dhaka, using a questionnaire. Mina and Ramesh⁷ conducted a study on UG and PG medical students of JSS Medical College of Mysore to examine the utilization of e-information resources, using a questionnaire. Ravi and Isthari⁸ conducted a study on PG students and research scholars in IGM Library, University of Hyderabad, to assess the use of Internet services by using a questionnaire. Kinengyere's⁹ survey reveals that the available e-resources in selected academic and research institutions in Uganda have not been utilized at all. Shuling¹⁰ conducted a study on the current use of electronic resources in University Library at Shaanxi University of Science and Technology. Frankline and Plum¹¹ presented results from web-based surveys of more than 15,000 users of networked electronic services at four academic health science libraries and two large main campus libraries in USA. Idayat¹² conducted a study on 912 faculty members in three Nigerian Universities, to examine the use of print and electronic resources by agricultural science students in Nigerian Universities, using a questionnaire. Nafiz Zaman and Rowshon¹³ conducted a study on 480 students of Faculty of Arts, University of Dhaka, Bangladesh, to know the usage of Internet, using a questionnaire. The present study had been undertaken to examine the availability and utilization of e-resources by the users of engineering college libraries of Guntur and Prakasam districts.

5. ANALYSIS OF THE DATA

Information stored in the form of electrical signals usually accessed around the globe, through computer is called electronic sources. Floppies, CDs, CD-ROMs, DVDs are various categories of electronic sources.

5.1. Floppies

5.1.1. Availability

The faculty members in engineering colleges were preparing reading materials for important topics in their subjects concerned and keeping these materials in floppies. These floppies were kept in engineering college libraries for the use of the users of those libraries. Question papers pertaining to B.Tech courses, and project reports submitted by final year B.Tech students are also available in floppies in engineering college libraries. A question has been put to the engineering college users to know the availability of floppies in their respective libraries. The users' responses are shown in Table 1.

Table 1: Distribution of users according to the availability of floppies in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 20 (13.9) | 106 (9.2) | 126 (9.7) |
| Not available | 114 (79.2) | 906 (78.4) | 1020 (78.5) |
| No idea | 10 (6.9) | 144 (12.5) | 154 (11.8) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 6.237

df = 2

TV: 5.991

Significant at 0.05 level

It can be observed from Table 1 that nearly three-fourths of users (78.5%) have mentioned that the floppies are not available in their libraries. It is also evident from the table that 9.7% of them mentioned that the floppies are available in their libraries and the remaining 11.8% of them mentioned that they have no idea in this regard.

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to availability of floppies. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. More number of faculty members replied that the floppies are available in their libraries compared to the students. It can be concluded that the majority of users (78.5%) expressed that the floppies are available in their libraries.

5.2. Utilization

A question has been put to the engineering college users to examine their utilization of floppies. The users' responses are shown in Table 2.

Table 2: Distribution of users according to their utilization of floppies in their libraries

| Responses | Users | | Total |
|--------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Mostly | 7 (4.9) | 56 (4.8) | 63 (4.8) |
| Rarely | 7 (4.9) | 50 (4.3) | 57 (4.4) |
| Never | 130 (90.3) | 1050 (90.8) | 1180 (90.8) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 0.088

df = 2

TV: 5.991

Not significant at 0.05 level

It can be observed from Table 2 that the majority of users (90.8%) mentioned that the floppies are never utilized by them. This may be due to existence of CDs in the place of floppies and the obsolescence of the matter available in floppies. It is also evident from the table that 4.4% of the users mentioned that they rarely utilized and the remaining 4.8% of them mentioned that they mostly utilized floppies.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the utilization of floppies. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that the majority of users (90.8%) never utilized floppies.

5.2. Audio CDs

5.2.1. Availability

Audio CD is a digitally encoded recording on an optical disc that is smaller than a phonograph record, and it is played back by a laser. A question has been put to the engineering college library users to know the availability of audio CDs in their respective libraries. The users' responses are shown in Table 3.

Table 3: Distribution of users according to their responses with regard to the availability of audio CDs in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 91 (63.2) | 767 (66.3) | 858 (66.0) |
| Not available | 41 (28.5) | 309 (26.7) | 350 (26.9) |
| No idea | 12 (8.3) | 80 (6.9) | 92 (7.1) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 0.699 $df = 2$ $TV: 5.991$ Not significant at 0.05 level

It can be observed from Table 3 that the majority of users (66%) mentioned that the audio CDs are available in their libraries. It is also evident from the table that 26.9% of them replied audio CDs are not available in their libraries and the remaining 7.1% of them said that they have no idea in this regard.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of audio CDs in their libraries. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that the majority of users (66%) asserted that the audio CDs are available in their libraries.

5.2.2. Utilization

The users' responses to the question regarding the utilization of audio CDs, are shown in Table 4.

It can be observed from Table 4 that a high percentage of users (42.3%) mentioned that the audio CDs are mostly utilized by them. It is also evident from the table that 25.6% of them mentioned that they rarely utilize audio CDs and the remaining 32.1% of them replied that they never utilize audio CDs.

Table 4.: Distribution of users according to their utilization of audio CDs in their libraries

| Responses | Users | | Total |
|--------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Mostly | 69 (47.9) | 481 (41.6) | 550 (42.3) |
| Rarely | 47 (32.6) | 286 (24.7) | 333 (25.6) |
| Never | 28 (19.4) | 389 (33.7) | 417 (32.1) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 12.379 $df = 2$ $TV: 5.991$ Significant at 0.05 level

It is evident from the Chi-square test that there is a significant difference between the faculty members and students with regard to utilization of audio CDs. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means the faculty members are utilizing audio CDs more compared to the students. It can be concluded that a high percentage of respondents (42.3%) are mostly utilizing the audio CDs.

5.3. CD-ROMs

5.3.1. Availability

To the question regarding the availability of CD-ROMs in their respective libraries, the users' responses are shown in Table 5.

It can be observed from Table 5 that the majority of users (69.2%) asserted that the CD-ROMs are available in their libraries. It is also evident from the table that 19.6% of them replied that CD-ROMs are not available in their libraries and the remaining 11.2% of them have no idea in this regard.

Table 5: Distribution of users according to their responses with regard to the availability of CD-ROMs in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 79 (54.9) | 820 (70.9) | 899 (69.2) |
| Not available | 47 (32.6) | 208 (18) | 255 (19.6) |
| No idea | 18 (12.5) | 128 (11.1) | 146 (11.2) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 19.019 $df = 2$ $TV: 5.991$ Significant at 0.05 level

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to the availability of CD-ROMs. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of students asserted the availability of CD-ROMs compared to the faculty members. It can be concluded that the majority of users (69.2%) said that CD-ROMs are available in their libraries.

5.3.2. Utilization

A question has been put to the engineering college users to examine the utilization of CD-ROMs. The users' responses are shown in Table 6.

Table 6: Distribution of users according to their utilization of CD-ROMs in their libraries

| Responses | Users | | Total |
|--------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Mostly | 85 (59) | 623 (53.9) | 708 (54.5) |
| Rarely | 19 (13.2) | 167 (14.4) | 186 (14.3) |
| Never | 40 (27.8) | 366 (31.7) | 406 (31.2) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 1.378 $df = 2$ $TV: 5.991$ Not significant at 0.05 level

It can be observed from Table 6 that the majority of users (54.5%) mentioned that they are utilizing CD-ROMs. It is also evident from the table that 14.3% of the users mentioned that they are rarely utilizing CD-ROMs and the remaining 31.2% of them mentioned that they never utilized CD-ROMs.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to utilization of CD-ROMs. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that more than half of the users (54.5%) expressed that they are utilizing CD-ROMs.

5.4. DVDs

5.4.1 Availability

A question has been put to the engineering college users to know the availability of DVDs in their respective libraries. The user responses are shown in Table 7.

It can be observed from Table 7 that more than half of the users (52.7%) mentioned that the DVDs are available in their libraries. It is also evident from the table that 39.2% of them mentioned that DVDs are not available and the remaining 8.1% of them have no idea in this regard.

Table 7: Distribution of users according to their responses with regard to the availability of DVDs in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 80 (55.6) | 605 (52.3) | 685 (52.7) |
| Not available | 58 (40.3) | 452 (39.1) | 510 (39.2) |
| No idea | 6 (4.2) | 99 (8.6) | 105 (8.1) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 3.363 $df = 2$ TV: 5.991 Not significant at 0.05 level

It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to the availability of DVDs. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that the majority of users (52.7%) agree that DVDs are available in their libraries.

5.4.2. Utilization

A question has been put to the engineering college library users to examine the utilization of DVDs. The users responses are shown in Table 8.

Table 8: Distribution of users according to their utilization of DVDs in their libraries

| Responses | Users | | Total |
|--------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Mostly | 70 (48.6) | 651 (56.3) | 708 (54.5) |
| Rarely | 49 (34) | 376 (32.5) | 425 (32.7) |
| Never | 25 (17.4) | 129 (11.2) | 167 (12.8) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 5.616 $df = 2$ TV: 5.991 Not significant at 0.05 level

It can be observed from Table 8 that more than half of users (54.5%) mentioned that the DVDs are mostly being utilized by them. It is also evident from the table that 32.7% of them

mentioned that they are rarely utilizing DVDs and the remaining 12.8% of them replied that they never utilized DVDs.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to utilization of DVDs. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that more than half of the users (54.5%) expressed that they are utilizing DVDs mostly.

5.5. Availability of electronic equipment

The availability of various kinds of electronic equipment namely computers, sound recorders, fax machines, printers, handy cams, barcode printers, barcode scanners, LCD projectors and scanners in engineering college libraries is discussed in the following paragraphs.

5.5.1. Availability of sound recorders

A question has been put to the engineering college library users to know the availability of sound recorders in their respective libraries. The users' responses are shown in Table 9.

Table 9: Distribution of users according to their responses with regard to the availability of sound recorders in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 116 (80.6) | 1001 (86.6) | 1117 (85.9) |
| Not available | 15 (10.4) | 74 (6.4) | 89 (6.8) |
| No idea | 13 (9) | 81 (7) | 94 (7.2) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 4.282 $df = 2$ TV : 5.991 Not significant at 0.05 level

It can be observed from Table 9 that most of the users (85.9%) mentioned that the sound recorders are available in their libraries. It is also evident from the table that 6.8% of the users replied that the sound recorders are not available in their libraries and the remaining 7.2% of them replied that they have no idea in this regard.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of sound recorders in their libraries. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that most of the users (85.9%) confessed that the sound recorders are available in their libraries.

5.6.2. Availability of computers

A question has been put to the engineering college library users to examine the availability of computers. The users' responses are shown in Table 10.

It can be observed from Table 10 that most of the users (85.4%) mentioned that the computers are available in their libraries and the remaining 14.6% of them replied that computers are not available in their libraries.

Table 10: Distribution of users according to the availability of computers in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 124 (86.1) | 986 (85.3) | 1110 (85.4) |
| Not available | 20 (13.9) | 170 (14.7) | 170 (14.6) |
| No idea | 0 | 0 | 0 |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 0.068 $df = 1$ TV : 3.841 Not significant at 0.05 level

It is evident from the Chi-square test that there is no significant difference between the faculty and students in their responses with regard to the availability of computers. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that most of the users (85.4%) expressed the availability of computers in their libraries.

5.7. Availability of fax machines

A fax (short for facsimile and sometimes called telecopying), is the telephonic transmission of scanned-in printed materials (text or images), usually to a telephone number associated with a printer or other output device. The responses emanated from the users regarding the availability of fax machines in their respective libraries are shown in Table 11.

Table 11: Distribution of users according to the availability of fax machines in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 97 (67.4) | 695 (60.1) | 792 (60.9) |
| Not available | 47 (32.6) | 461 (39.9) | 508 (39.1) |
| No idea | 0 | 0 | 0 |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 2.819 $df = 1$ TV : 3.841 Not significant at 0.05 level

It can be observed from Table 11 that the majority of users (60.9%) mentioned that the fax machines are available in their libraries and the remaining 39.1% of them replied that fax machines are not available in their libraries. It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of fax machines in their libraries. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that the majority of users (60.9%) expressed that the fax machines are available in their libraries.

5.8. Availability of printers

A question has been put to the engineering college users to know the availability of printers in their respective libraries. The users' responses are shown in Table 12.

Table 12: Distribution of users according to the availability of printers in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 129 (89.6) | 891 (77.1) | 1020 (78.5) |
| Not available | 15 (10.4) | 265 (22.9) | 280 (21.5) |
| No idea | 0 | 0 | 0 |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 11.853 $df = 1$ TV : 3.841 Significant at 0.05 level

It can be observed from Table 12 that nearly three-fourths of users (78.5%) mentioned that the printers are available in their libraries and the remaining 21.5% of them replied that the printers are not available in their libraries.

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to the availability of printers. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of faculty members asserted the availability of printers compared to the students. It may be due to the unawareness of students with regard to the printers. It can be concluded that the majority of users (78.5%) admit that the printers are available in their libraries.

5.9. Availability of handy cams

A handy cam (formally a video camera recorder) is an electronic device that combines a photo flash, video camera and a video recorder into one unit. It is typically for out-of-studio consumer video recording.

A question has been put to the engineering college users to know the availability of handy cams in their respective libraries. The users' responses are shown in Table 13.

It can be observed from Table 13 that most of the users (88.9%) mentioned that the handy cams are not available in their libraries. It is also evident from the table that 5.3% of users mentioned that hand cams are available in their libraries and the remaining 5.8% of them mentioned that they have no idea in this regard.

Table 13: Distribution of users according to the availability of handy cams in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 7 (4.9) | 62 (5.4) | 69 (5.3) |
| Not available | 128 (88.9) | 1028 (88.9) | 1156 (88.9) |
| No idea | 9 (6.2) | 66 (5.7) | 75 (5.8) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 0.126 $df = 2$ TV : 5.991 Not significant at 0.05 level

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of handy cams.

The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that most of the users (88.9%) said that the handy cams are not available in their libraries.

5.10. Availability of LCD projectors

An LCD projector is a type of video projector for displaying video, images or computer data on a screen or flat surface. It is a modern equipment of the slide projector or overhead projector. A question has been put to the engineering college users to know the availability of LCD projectors in their libraries. The users' responses are shown in Table 14.

Table 14: Distribution of users according to the availability of LCD projectors in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 19 (13.2) | 68 (5.9) | 87 (6.7) |
| Not available | 103 (71.5) | 989 (85.6) | 1092 (84.0) |
| No idea | 22 (15.3) | 99 (8.6) | 121 (9.3) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 19.430 $df = 2$ TV : 5.991 Significant at 0.05 level

It can be observed from Table 14 that most of the users (84%) mentioned that the LCD projectors are not available in their libraries. It is also evident from the table that 6.7% of them mentioned that LCD projectors are available in their libraries and the remaining 9.3% of them have no idea in this regard.

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to the availability of LCD projectors. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of students held that LCD projectors are not available in their libraries compared to the faculty members. It may be due to the unawareness of students with regard to LCD projectors. It can be concluded that most of the users (84%) admit that the LCD projectors are not available in their libraries.

5.11. Availability of barcode printers

A barcode printer is a computer peripheral for printing barcode labels or tags that can be attached to physical objects. A question has been put to the engineering college users to know the availability of barcode printers in their respective libraries. The users' responses are shown in Table 15.

Table 15: Distribution of users according to the availability of barcode printers in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 39 (27.1) | 358 (30.9) | 397 (30.5) |
| Not available | 94 (65.3) | 750 (64.9) | 844 (64.9) |
| No idea | 11 (7.6) | 48 (4.2) | 59 (4.5) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 4.066 $df = 2$ TV : 5.991 Not significant at 0.05 level

It can be observed from Table 15 that nearly two-thirds of users (64.9%) mentioned that the bar code printers are not available in their libraries. It is also evident from the table that 30.5% of them mentioned that barcode printers are available in their libraries and the remaining 4.5% of them mentioned that they have no idea in this regard.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of bar code printers in their libraries. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that two-thirds of users (64.9%) said that the bar code printers are not available in their libraries.

5.12. Availability of barcode scanners

A barcode scanner is an electronic device for reading printed barcodes. Like a flatbed scanner, it consists of a light source, a lens and a light sensor translating optical impulses into electronic ones. Additionally, nearly all barcode readers contain decoder circuitry analyzing the bar codes image data provided by the sensor and sending the barcodes content to the scanners output port. To the question regarding the availability of barcode scanners in their respective libraries, the users' responses are as shown in Table 16.

Table 16: Distribution of users according to the availability of barcode scanners in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 29 (20.1) | 199 (17.2) | 228 (17.5) |
| Not available | 91 (63.2) | 804 (69.6) | 895 (68.9) |
| No idea | 24 (16.7) | 153 (13.2) | 177 (13.6) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

χ^2 : 2.483 $df = 2$ $TV: 5.991$ Not significant at 0.05 level

It can be observed from Table 16 that nearly two-thirds of users (68.9%) mentioned that the bar code scanners are not available in their libraries. It is also evident from the table that 17.5% of the users replied that the barcode scanners are available in their libraries and the remaining 13.6% of them mentioned that they have no idea in this regard.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to the availability of barcode scanners in their libraries. The Chi-square value is not significant at 0.05 level with 2 degrees of freedom. It can be concluded that nearly two-thirds of users (68.9%) expressed that the barcode scanners are not available in their libraries.

5.13. Availability of scanners

A scanner is a device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display. A question has been put to the engineering college users to know the availability of scanners in their respective libraries. The users' responses are shown in Table 17.

Table 17: Distribution of users according to the availability of scanners in their respective libraries

| Responses | Users | | Total |
|---------------|------------------|-------------------|-------------------|
| | Faculty | Students | |
| Available | 94 (65.3) | 579 (50.1) | 673 (51.8) |
| Not available | 43 (29.9) | 421 (36.4) | 464 (35.7) |
| No idea | 7 (4.9) | 156 (13.5) | 163 (12.5) |
| Total | 144 (100) | 1156 (100) | 1300 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 14.863 $df = 2$ TV : 5.991 Significant at 0.05 level

It can be observed from Table 17 that nearly half of the users (51.8%) mentioned that the scanners are available in their libraries. It is also evident from the table that 35.7% of the users mentioned that the scanners are not available in their libraries and the remaining 12.5% of them have no idea in this regard.

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to availability of scanners in their libraries. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of faculty members affirmed that the scanners are available in their libraries compared to the students. It may be due to the unawareness of students with regard to the scanners. It can be concluded that nearly half of the users (51.8%) said that the scanners are not available in their libraries.

5.14. Satisfaction with lending procedure

A question has been put to the engineering college library users to examine whether there is any provision of lending electronic sources. Majority of users (62.9%) mentioned that there is no provision for lending of electronic sources in their libraries and the remaining 37.1% of them replied positively. Again a question has been put to those engineering college users, who have replied that there is a provision for lending of electronic sources in their respective libraries, regarding their satisfaction with the lending procedure of electronic sources. The users' responses are shown in Table 18.

It is observed from Table 18 that most of the users (94.4%) are satisfied with lending procedure of electronic sources in their respective libraries and the remaining 5.6% of them replied negatively in this regard.

Table 18: Distribution of users according to their responses with regard to the satisfaction with lending procedure of electronic sources

| Responses | Users | | Total |
|--------------|-----------------|------------------|------------------|
| | Faculty | Students | |
| Yes | 48 (88.9) | 407 (95.1) | 455 (94.4) |
| No | 6 (11.1) | 21 (4.9) | 27 (5.6) |
| Total | 54 (100) | 428 (100) | 482 (100) |

Note: Figures in brackets indicate percentages.

X^2 : 3.491 $df = 1$ TV : 3.841 Not significant at 0.05 level

It is evident from the Chi-square test that there is no significant difference between the faculty members and students in their responses with regard to satisfaction of lending

procedure of electronic sources in their libraries. The Chi-square value is not significant at 0.05 level with one degree of freedom. It can be concluded that most of the users (94.4%) are satisfied with lending procedure of electronic sources in their respective libraries.

5.15. Orientation methods in use of electronic sources

A question has been put to the users to examine whether they require orientation in the use of electronic sources in their respective libraries. Most of the users (84.7%) replied that orientation programme is required in the use of electronic sources and the remaining 15.4% of them replied negatively.

Libraries use different methods for providing orientation towards the use of electronic sources. In this context, a question has been put to those engineering college library users, who replied that orientation programme is required in the use of electronic sources, to find out their opinion regarding suitable methods for giving orientation in using these sources. The users' responses are shown in Table 19.

Table 19: Distribution of users according to their responses with regard to suitable methods for orientation of electronic sources

| Methods | Users | | Total |
|----------------|-----------------|-----------------|------------------|
| | Faculty | Students | |
| Lecture | 38(34.9) | 348(35.1) | 386(35.1) |
| Library tour | 20(18.3) | 411(41.5) | 431(39.2) |
| Library guides | 51(46.8) | 232(23.4) | 283(25.7) |
| Total | 109(100) | 991(100) | 1100(100) |

Note: Figures in brackets indicate percentages.

X^2 : 9.900 $df = 2$ TV : 5.991 Significant at 0.05 level

It is obvious from Table 19 that a high percentage of users (39.2%) mentioned that library tour method is suitable for giving orientation in using electronic sources. It is also evident from the table that 35.1% of them mentioned that lecture method is a suitable method and the remaining 25.7% of them mentioned that provision of library guide is a suitable method in this regard.

It is evident from the Chi-square test that there is a significant difference between the faculty members and students in their responses with regard to suitable methods for orientation of electronic sources in their respective libraries. The Chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of students opined that library tour is a suitable method, where as more number of faculty members felt that provision of library guides is a suitable method for orientation of electronic sources. It can be concluded that a high percentage of the users (39.2%) said that library tour method is suitable for giving orientation in using electronic sources.

5.16. Satisfaction with the maintenance of electronic sources

A question has been put to the engineering college library users to examine the satisfaction with the maintenance of electronic sources in their libraries. The users' responses are shown in Table 20.

Table 20: Distribution of users according to their satisfaction with the maintenance of electronic sources

| Responses | Users | | Total |
|--------------|-----------------|------------------|------------------|
| | Faculty | Students | |
| Yes | 99(68.8) | 670(58.0) | 769(59.2) |
| No | 45(31.3) | 486(42.0) | 531(40.8) |
| Total | 144(100) | 1156(100) | 1300(100) |

Note: Figures in brackets indicate percentages.

X^2 : 6.172 $df = 1$ TV : 3.841 Significant at 0.05 level

It is clear from Table 20 that the majority of users (59.2%) replied that they are satisfied with maintenance of electronic sources and the remaining 40.8% of them replied negatively in this regard.

It is evident from the Chi-square test that there is a significant difference between the faculty and students in their responses with regard to their satisfaction with the maintenance of electronic sources. The Chi-square value is significant at 0.05 level with one degree of freedom. That means more number of faculty members are satisfied with maintenance of electronic sources compared to the students. It can be concluded that the majority of users (59.2%) are satisfied with maintenance of electronic sources.

6. FINDINGS

The following are the findings drawn from the analysis of the data collected from the users.

1. Majority of users (78.5%) expressed that the floppies are not available in their libraries.
2. Most of users (90.8%) never utilized floppies.
3. Majority of users (66%) asserted that the audio CDs are available in their libraries.
4. A high percentage of users (42.3%) are mostly utilizing the audio CDs.
5. Majority of users (69.2%) said that CD-ROMs are available in their libraries.
6. More than half of the users (54.5%) expressed that they are utilizing CD-ROMs mostly.
7. Majority of users (52.7%) agree that DVDs are available in their libraries.
8. More than half of the users (54.5%) expressed that they are utilizing DVDs mostly.
9. Most of the users expressed the availability of computers (85.4%), and sound recorders (85.9%) in their libraries.
10. Majority of users expressed that the fax machines (60.9%), printers (78.5%) and scanners (51.8%) are available in their libraries.
11. Most of the users expressed the non-availability of handy cams (88.9%) and LCD projectors (84%). Majority of them (68.9%) expressed the non-availability of barcode scanners in their libraries.
12. Majority of users (62.9%) opine that there is no lending provision of electronic sources in their libraries.
13. Most of the users (94.4%) are satisfied with lending procedure of electronic sources in their respective libraries.
14. Majority of users (59.2%) are satisfied with maintenance of electronic sources.
15. Majority of the users (84.7%) replied that orientation programme is required in the use of electronic sources.
16. A high percent of the users (39.2%) replied that 'library tour' is a suitable method for orientation in using electronic sources and 35.1% of them said that 'lecture' is a suitable method for giving orientation in using electronic sources.

17. There are significant differences between the faculty and students in their responses with regard to availability of floppies and CD-ROM's and utilization of CDs.
18. They are no significant differences between the faculty and students in their responses with regard to utilization of floppies CD-ROM's and DVDs, and availability of CDs and DVDs.
19. There are significant differences between the faculty and students in their responses with regard to availability of printers, LCD projectors, and scanners.
20. There are no significant differences between the faculty and students in their responses with regard to availability of sound recorders, computers, fax machines, handy cams, barcode scanners and barcode printers.
21. There are no significant differences between the faculty and students in their satisfaction with lending procedure of electronic sources.
22. There are no significant differences between the faculty and students in their responses with regard to suitable methods for orientation of electronic sources.

7. SUGGESTIONS

The following are the suggestions made by the investigators for development and utilization of electronic sources.

1. The study shows that a significant percentage of users informed that CDs (26.9%), CD-ROMs (19.6%) and DVDs are not available in their libraries. The engineering college library authorities should take necessary measures to procure these electronic sources adequately keeping in view the requirement of faculty and students of engineering colleges.
2. The study shows that audio CDs, CD-ROMs, and DVDs are either rarely used and never used by 57.7%, 45.5%, and 45.5% of users respectively. It may be due to their unawareness and insufficient skills to handle these e-sources. Hence, there is need to increase the utilization of e-sources. The library authorities concerned should take necessary steps to increase the utilization of these sources by conducting publicity programmes about e-sources to create awareness among the users and user education programmes to develop necessary skills among the users for obtaining the required information from e-sources.
3. The study also shows that computers, fax machine, printers, handy cams, LCD projectors, sound recorders, barcode scanners, barcode printers and scanners are not available according to 14.6%, 39.1%, 21.5%, 88.9%, 84%, 68%, 64.9%, 64.9% and 35.7% of users respectively in their respective libraries. Hence, the authorities concerned should take the necessary measures to procure adequate electronic equipment by assessing the requirements of their respective libraries and users.
4. The study shows that 40.8% of users are not satisfied with the maintenance of e-sources. Hence, the library authorities should take necessary steps to classify, catalogue and maintain these e-sources, so that they can be retrieved whenever the users required them.
5. The study shows that majority of the users (62.9%) informed that there is no provision for lending of electronic sources. It also shows that 37.1% of users replied positively in this regard. Among them, 5.6% of them are not satisfied with the lending procedure of e-sources. Hence, necessary steps are to be undertaken by library management authorities to make provision for lending of e-sources and to adopt a good procedure for lending of these e-resources.
6. As per study, most of the engineering users (84.7%) informed that they require orientation in the use of e-sources. The suitable methods expressed by the users for

orientation in using e-sources are library tour (39.2%), lecture (35.1%) and library guides (25.7%). Hence, library authorities should take necessary steps to provide user education or orientation programme in using e-sources by adopting suitable methods.

7. During the user education or orientation programme, the users are to be taught about the importance of information; the role of e-sources for providing exhaustive and up-to-date information in satisfying their information needs; the various types of e-sources available in their respective engineering college libraries; and search techniques used to retrieve information from them. The users should be made as information literates by imparting the necessary information skills among them.

REFERENCES

1. PRAVEENA (SM) and others (2009). E-resources usage among the research scholars in the faculty of science, Annamalai University: A study. *Library progress (International)*. 29 : 15-19. Print.
2. SANKARANARAYANA (D) and NAGARAJAN (M) (2010). Usage of digital resources by the faculty of agriculture colleges in Tamil Nadu: a study. *Library progress (International)*. 30 : 269-279. Print.
3. SARASVATHY (P) and GIDDAIAH (D) (2010). Internet and its use in university library, Mysore: a case study. *SRELS journals of information management*. 47: 321-324 Print.
4. SHARMA (CH) and SHARMA (R) (2010). Perception and preferences of e-resources among faculty members of National Institute of Technology (NIT) Kurukshetra. *SRELS journal of information management*. 47: 297-305. Print.
5. KAUR (A) (2011). Impact of e-journals on University Library of Punjab, Chandigarh: a study. *SRELS journal of information management*. 48 : 265-279. Print.
6. MADHURI (V) (2011). Gender differences in the usage and attitudes towards the Internet among students. *Pearl*. 5 : 54-57. Print.
7. MINA (T) and RAMESH (G) (2011). Utilization of e-information resources in medical colleges: a case study. *SRELS journal of information management*. 48: 281-288. Print.
8. RAVI (B) and ISTHARI (B) (2011). Use of Internet services in IGM Library, University of Hyderabad: A study. *SRELS journal of information management*. 48 : 181-188. Print.
9. KINENGYERE (AA) (2007). The effect of information literacy on the utilization of electronic information resources in selected academic and research institutes in Uganda. *The electronic library*. 25: 328-341. Print.
10. SHULING (W) (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library management*. 28 :72-88. Print.
11. FRANKLINE (B) and PLUM (T) (2008). Library usage patterns in the electronic information environment. *Information research*. 9 :187-191. Print.
12. IDAYAT (OA) (2009). Use of print and electronic resources by agricultural science students in Nigerian Universities. *Library and information science research*;62-65. Print.
13. NAFIZ ZAMAN (S) and ROWSHON (A) (2011). Internet usage by the students of faculty of arts, University Library of Dhaka (Bangladesh). *Pearl*. 5:14-22. Print.

