



USE OF ELECTRONIC SOURCES BY THE USERS OF ENGINEERING COLLEGE LIBRARIES IN ACHARYA NAGARJUNA UNIVERSITY AREA: A SURVEY

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ABSTRACT

Analysis of data collected from a stratified random sample of 1300 users belonging to seven selected engineering college libraries in Acharya Nagarjuna University area, Andhra Pradesh, using a questionnaire reveals that electronic sources are useful for the curriculum needs of the majority of users (77.7%). Majority of the users informed that e-journals (73.5%) e-abstracting and indexing periodicals (51.3%) e-reference sources (58.3%) e-theses and dissertations (75.8%) and e-books (54.5%) are adequate for their needs. Majority of them (97.3%) are interested in using e-sources and three-fourths of them (75.9%) are consulting e-sources frequently. Most of the users expressed that their libraries prepare catalogue for e-sources. Majority of the users (62.9%) expressed that there is no provision



for lending of e-sources. Majority of them (61.3%) replied that their libraries are publicising about e-sources. Most of them (97.4%) are utilising Internet facility. Most of them (84.7%) expressed that orientation programme is required in the use of e-sources. Most of them (92%) are facing problems in using e-sources. A few significant differences were found between the responses of students and faculty members of engineering colleges in their replies with regard to the various aspects of electronic sources. Finally, a number of suggestions have been made for the improvement of electronic sources and

their utilization in engineering college libraries.

KEYWORDS: Electronic sources' usage, Engineering College libraries, users' survey, Internet.

INTRODUCTION :

Engineers invent most of the things that make up the present modern civilization. They play a key role in socio-economic development of any nation including India. Engineers find out the solutions to the practical problems of the society. In India, Engineering education is imparted at various levels namely craftsman ship, diploma, degree, post-graduate and research in specialized

fields. Engineering graduates today require not only adequate technological ability and problem solving skills, but also soft skills. Engineering institutions have now a new responsibility to provide opportunities to every student to acquire these abilities and skills. Quality education in engineering enables to acquire the above abilities and skills by engineering graduates. In the absence of quality education, many of the engineering graduates are unable to get suitable jobs for their qualifications, to get success in the competitive examinations, and to obtain high positions in their professional career in India.

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 at the right time to the students and faculty members of engineering institutions helps to produce quality research and to get quality teaching, education and training.

Libraries earlier with their various kinds of print information sources such as books, journals, conference proceedings, pamphlets, standards, patents, etc, were providing information services to their users. But 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 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 and 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 present status of e-sources in libraries by conducting a survey on these newly emerged sources with regard to their adequacy, utilization, publicity, and the problems faced by users in handling these sources, so that necessary remedies can be found out for efficient and effective management and utilization of e-sources. Hence, the present study has been undertaken.

2. OBJECTIVES OF THE STUDY

The following are the specific objectives of the study:

1. To assess the usefulness and extent of using electronic sources by the users of engineering college libraries;
2. To examine the interest of users in using the electronic sources;
3. To know the frequency of consulting electronic sources by the users;
4. To examine the preparation of library catalogue, lending provision and publicity for electronic sources;
5. To know the views of users with regard to the adequacy of various categories of electronic sources for their curriculum needs;
6. To assess the use of Internet, and the problems faced by the users in using electronic sources;
7. To examine the requirement of orientation in the use of electronic sources; and
8. To make suggestions based on the findings of the study for effective usage of electronic sources in engineering college libraries.

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 sample

The total number of engineering colleges in the jurisdiction of Acharya Nagarjuna University area i.e., Guntur and Prakasam districts of Andhra Pradesh was 62 in the year 2013. Out of them, seven colleges, which are old and having good infrastructure, were selected. They are Bapthla Engineering College, Bapthla, RVR and JC

College of Engineering, Narasaraopet Engineering College, Chundi Ranganayakulu Engineering College, VRS and YNR College of Engineering, Saint Gorge Institute of Technology and Quality Infrastructure and Sophisticated Institute. The libraries attached to these colleges were studied.

The total number of students and faculty members of selected engineering colleges were 11,560 and 480 respectively. In other words, the total number of users of these college libraries was 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 selected, 1,156 were students and 144 were faculty members.

3.2. Data collection

The required data for the study was collected from the students and faculty members by using a questionnaire tool. Copies of questionnaire were distributed to 1156 students and 144 faculty members of selected engineering college libraries personally and filed-in questionnaires were collected from them. The doubts raised by the respondents were clarified by the investigators. The data was analysed keeping in view the objectives of the study.

4. REVIEW OF LITERATURE

The significant studies that were conducted on the topic of study were enumerated.

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, Kurkshetra, 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. Franklin and Pulm¹¹ 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. As no comprehensive study has been conducted on the use of electronic sources by engineering users in Acharya Nagarjuna University area, the present study has been undertaken.

5. ANALYSIS AND INTERPRETATION OF DATA

The collected data from the users has been analysed and interpreted in the following paragraphs.

5.1. Usefulness of electronic sources

A question has been put to the users of engineering college libraries to specify the usefulness of electronic sources. The users' responses are shown in Table-1.

Table-1: Distribution of users according to the usefulness of electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	114 (79.2)	896 (77.5)	1010 (77.7)
No	30 (20.8)	260 (22.5)	290 (22.3)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 0.203 df = 1 TV: 3.841 Not significant at 0.05 level

It can be observed from Table-1 that the majority of users (77.7%) replied that the electronic sources are useful for their curriculum needs and the remaining 22.3% of them replied negatively in this regard. It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to the usefulness of electronic sources. The chi-square value is not significant at 0.05 level with one degree of freedom.

5.2. Extent of using electronic sources

A question has been put to the engineering college users to examine the extent of using electronic sources. The users' responses are shown in Table-2.

It can be observed from Table-2 that a high percentage of users (38 %) are using electronic sources from 61- 80%, 35.5% of them are using from 41- 60%, 12.8% of them are using from 21- 40%, 4.8% of them are using from 1- 20% and 8.9% of them are using from 81-100%. It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to extent of using electronic sources. The chi-square value is not significant at 0.05 level with 4 degrees of freedom.

Table-2: Distribution of users according to their extent of using electronic sources

Extent of use (in percentage)	Users		Total
	Faculty	Students	
1-20	10 (6.9)	52 (4.5)	62 (4.8)
21-40	22 (15.3)	145 (12.5)	167 (12.8)
41-60	50 (34.7)	441 (35.6)	461 (35.5)
61-80	48 (33.3)	446 (38.6)	494 (38.0)
81-100	14 (9.7)	102 (8.8)	116 (8.9)
Total	144 (100)	1156 (100)	1300 (100)

Note: Figures in brackets indicate percentages.

χ^2 : 3.421 df = 4 TV: 9.488 Not significant at 0.05 level

5.3. Adequacy of electronic journals (Primary journals)

The engineering college users, who replied that the electronic sources are useful for their curriculum needs, are again questioned to specify the adequacy of electronic journals. The users' responses are shown in Table-3.

Table-3: Distribution of users according to their replies with regard to adequacy of e-journals

Reply	Users		Total
	Faculty	Students	
Adequate	81 (71.1)	661 (73.8)	742 (73.5)
Neither adequate nor inadequate	6 (5.3)	35 (3.9)	41 (4.1)
Inadequate	27 (23.7)	200 (22.3)	227 (22.5)
Total	114 (100)	896 (100)	1010 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 0.644 df = 2 TV: 5.991 Not significant at 0.05 level

It is evident from Table-3 that the majority of users (73.5%) mentioned that the e-journals are adequate for their needs. It is also evident from the table that 22.5% of users replied that the electronic journals are inadequate and the remaining 4.1% of them replied that e-journals are neither adequate nor inadequate.

It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to the adequacy of electronic journals. The chi-square value is not significant at 0.05 level with 2 degrees of freedom.

5.4. Adequacy of e-abstracting and indexing periodicals

A question has been put to the engineering college users, who replied that the electronic sources are useful for their curriculum needs, regarding the extent of adequacy of e-abstracting and indexing periodicals. The users' responses are shown in Table-4.

Table-4: Distribution of users according to their replies with regard to adequacy of e-abstracting and indexing periodicals

Reply	Users		Total
	Faculty	Students	
Adequate	30 (26.3)	488 (54.5)	518 (51.3)
Neither adequate nor inadequate	7 (6.1)	124 (13.8)	131 (13.0)
Inadequate	77 (67.5)	284 (31.7)	361 (35.7)
Total	114 (100)	896 (100)	1010 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 56.606 df = 2 TV: 5.991 Significant at 0.05 level

Table-4 shows, nearly half of users (51.3%) replied that the e-abstracting and indexing periodicals are adequate for their needs. It is also evident from the table that 35.7% of users replied that the e-abstracting and indexing periodicals are inadequate and the remaining 13% of them replied that the e-abstracting and indexing periodicals are neither adequate nor inadequate. There is a significant difference between the faculty members and students with regard to the adequacy of e-abstracting and indexing periodicals as evidenced by the chi-square value which is significant at 0.05 level with 2 degrees of freedom. That means more number of students expressed that e-abstracting and indexing periodicals are adequate for their needs compared to the faculty members. The students generally do not require these periodicals much compared to the faculty members.

5.5. Adequacy of e-reference sources

A question has been put to the engineering college users, who replied that the electronic sources are useful for their curriculum needs, regarding the extent of adequacy of e-reference sources. The users' responses are shown in Table-5.

Table-5: Distribution of users according to their replies with regard to adequacy of e-reference sources

Reply	Users		Total
	Faculty	Students	
Adequate	70 (61.4)	519 (57.9)	589 (58.3)
Neither adequate nor inadequate	7 (6.1)	131 (14.6)	138 (13.7)
Inadequate	37 (32.5)	246 (27.5)	283 (28.0)
Total	114 (100)	896 (100)	1010 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 6.435 df = 2 TV: 5.991 Significant at 0.05 level

Table-5 shows, the majority of users (58.3%) mentioned that the e-reference sources are adequate for their needs. The table also shows that 13.7% of the users replied that e-references sources are neither adequate/nor inadequate and the remaining 28% of them replied that the reference sources are inadequate for their needs. It is evident from the Chi-square test that there is a significant difference between the faculty members and students with regard to the adequacy of e-reference sources. The chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number faculty members expressed that the e-reference sources are more adequate for their needs compared to the students.

5.6. Adequacy of e-theses and dissertations

Again a question has been put to the engineering college users, who replied that the electronic sources are useful for their curriculum needs, to specify the extent of adequacy of e-theses and dissertations. The users' responses are shown in Table-6.

Table-6: Distribution of users according to their replies with regard to adequacy of e-theses and dissertations

Reply	Users		Total
	Faculty	Students	
Adequate	64 (56.1)	701 (78.2)	765 (75.8)
Neither adequate nor inadequate	8 (7.0)	38 (4.2)	46 (4.6)
Inadequate	42 (36.8)	157 (17.5)	199 (19.7)
Total	114 (100)	896 (100)	1010 (100)

Note: Figures in brackets indicate percentages.

χ^2 : 27.389 df = 2 TV: 5.991 Significant at 0.05 level

It is evident from Table-6 that the majority of users (75.8%) mentioned that the e-theses and dissertations are adequate for their needs. It is evident from the table that 19.7% of users replied that the e-theses and e-dissertations are inadequate and the remaining 4.6% of them replied that e-theses and dissertations are neither adequate nor inadequate. It is evident from the Chi-square test that there is a

significant difference between the faculty members and students with regard to the adequacy of e-theses and dissertations. The chi-square value is significant at 0.05 level with 2 degrees of freedom. That means the students expressed that e-theses and dissertations are more adequate for their needs compared to the faculty members. The faculty members require e-theses / dissertations for their research work, writing research articles and seminar papers. As the available e-theses/dissertations in their respective libraries are not meeting the requirements of faculty members, a high percentage of them replied that these electronic sources are inadequate for their needs compared to the students.

5.7. Adequacy of e-books

Again a question has been put to the engineering college users, who replied that the electronic sources are useful for their curriculum needs, regarding the adequacy of e-books. The users’ responses are shown in Table-7.

Table-7: Distribution of users according to their replies with regard to adequacy of e-books

Reply	Users		Total
	Faculty	Students	
Adequate	51 (44.7)	500 (55.8)	551 (54.5)
Neither adequate nor inadequate	20 (1.8)	138 (15.4)	158 (16.6)
Inadequate	43 (37.7)	258 (28.8)	301 (29.8)
Total	114 (100)	896 (100)	1010 (100)

Note: Figures in brackets indicate percentages.

X²: 5.270 df = 2 TV: 5.991 Not significant at 0.05 level

It is evident from Table-7 that the majority of users (54.5%) mentioned that the e-books are adequate for their needs. It is evident from the table that 29.8% of users replied that the e-books are inadequate and the remaining 16.6% of them replied that e-books are neither adequate nor inadequate. It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to the adequacy of e-books. The chi-square value is not significant at 0.05 level with 2 degrees of freedom.

5.8. Interest in the use of electronic sources

A question has been put to the engineering college users to find out whether they are interested in using the e-resources. The users’ responses are shown in Table-8.

Table-8: Distribution of users according to their interest in using electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	138 (95.8)	1127 (97.5)	1265 (97.3)
No	6 (4.2)	29 (2.5)	35 (2.7)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

X²: 1.344 df = 1 TV: 3.841 Not significant at 0.05 level

It is evident from Table-8 that most of users (97.3%) mentioned that they are interested in using of electronic sources and the remaining 2.7% of them replied negatively in this regard. It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to their interest in using electronic sources. The chi-square value is not significant at 0.05 level with one degree of freedom.

5.9. Reasons for the disinterest of users in using electronic resources

Again a question has been put to those engineering college users, who replied that they are not interested in using electronic resources, to know the reasons for their lack of interest. The users’ responses are shown in Table-9.

Table-9: Distribution of users according to their reasons for not using electronic resources

Reasons	Users		Total
	Faculty	Students	
Non-availability of required electronic sources	1 (50)	14 (42.4)	15 (42.9)
Not knowing the operations of electronic resources	0	3 (9.0)	3 (8.6)
Unavailability of electronic resources on open access	0	4 (12.1)	4 (11.4)
Difficult to locate	0	5 (15.2)	5 (14.3)
Unaware of the relevant electronic sources	1 (50)	7 (21.2)	8 (22.9)
Total	02 (100)	33 (100)	35 (100)

Note: Figures in brackets indicate percentages.

It is evident from Table-9 that a high percentage of respondents (42.9%) mentioned that non-availability of required electronic sources is the reason for their lack of interest in using electronic resources. The other reasons for their not being interested in using electronic resources are, not knowing the operations of electronic resources, unavailability of electronic resources in open access, difficulty to locate, and unawareness of the relevant electronic sources.

5.10. Frequency of consulting electronic sources

Again a question has been put to those engineering college users, who replied that they are interested in using electronic resources, to know the frequency of consulting e-resource materials. The users’ responses are shown in Table-10 and diagrammatically in Figure-1.

Table-10: Distribution of users according to their frequency of consulting electronic sources

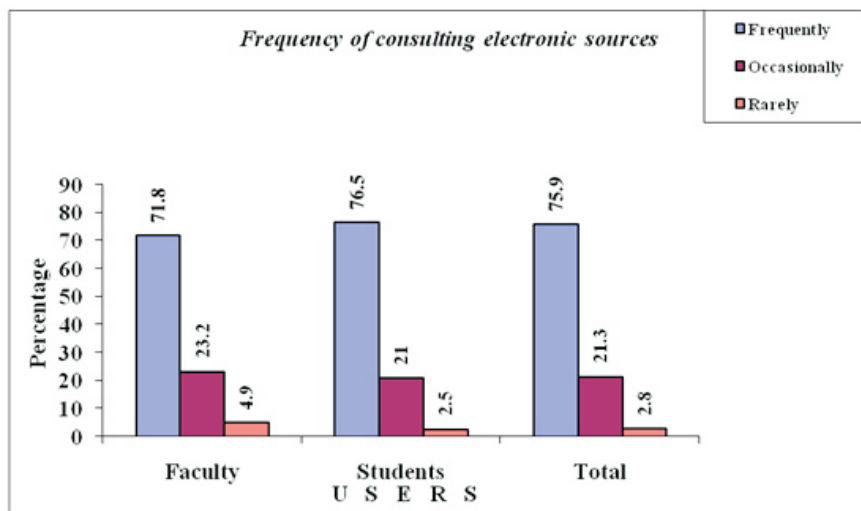
Reply	Users		Total
	Faculty	Students	
Frequently	102 (71.8)	859 (76.5)	961 (75.9)
Occasionally	33 (23.2)	236 (21.0)	269 (21.3)
Rarely	7 (4.9)	28 (2.5)	35 (2.8)
Total	142 (100)	1123 (100)	1265 (100)

Note: Figures in brackets indicate percentages.

χ^2 : 3.358 df = 2 TV: 5.991 Not significant at 0.05 level

It is evident from Table-10 that the three-fourths of users (75.9%) are consulting electronic resources frequently, 21.3% of them are consulting occasionally and the remaining 2.8% of them are consulting rarely. It is evident from the Chi-square test that there is no significant difference between the faculty members and students with regard to their frequency of consulting electronic sources. The chi-square value is not significant at 0.05 level with 2 degrees of freedom.

Figure-1



5.11. Catalogue for electronic sources

A library catalogue is a list of reading materials of a particular library arranged in a systematic order. It is necessary to have a catalogue for the e-sources available in the library. Hence, a question has been put to the engineering college users to know whether their libraries are preparing catalogue for e-sources. The users' responses are shown in Table-11.

Table-11: Distribution of users according to their responses with regard to preparation of catalogue for electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	104 (72.2)	984 (85.1)	1088 (83.7)
No	40 (27.8)	172 (14.8)	212 (16.3)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

X²: 15.610 df = 1 TV: 3.841 Significant at 0.05 level

It is evident from Table-11 that the majority of users (83.7%) replied that their libraries are preparing catalogue for electronic sources and the remaining 16.3% of them replied negatively 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 replies with regard to the preparation of catalogue by their libraries. The chi-square value is significant at 0.05 level with 2 degrees of freedom. That means more number of students opined that their libraries are preparing catalogue for electronic sources compared to the faculty members.

5.12. Lending provision for electronic sources

A question has been put to the engineering college users to examine whether there is any provision of lending electronic sources. The users' responses are shown in Table-12.

Table-12: Distribution of users according to their responses with regard to the lending of electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	54 (37.5)	428 (37.0)	482 (37.1)
No	90 (62.5)	728 (63.0)	818 (62.9)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 0.012 df = 1 TV: 3.841 Not significant at 0.05 level

It is observed from Table-12 that the 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 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 lending of electronic sources in their libraries. The chi-square value is not significant at 0.05 level with one degree of freedom.

13. Publicity for electronic sources

The libraries should create awareness among their users with regard to electronic sources available in order to maximize the use of these sources. Hence, a question has been put to the engineering college users to examine whether their libraries publicise about the electronic sources. The users' responses are shown in Table-13.

Table-13: Distribution of users according to their responses with regard to publicity of electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	82 (56.9)	714 (61.9)	796 (61.3)
No	62 (43.1)	442 (38.2)	504 (38.7)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 1.253 df = 1 TV: 3.841 Not significant at 0.05 level

It is observed from Table-13 that the majority of users (61.3%) mentioned that their libraries publicise about electronic sources and the remaining 38.7% of them replied negatively 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 publicity of electronic sources. The chi-square value is not significant at 0.05 level with one degree of freedom.

5.14. Internet facility in library

A question has been put to the engineering college users to examine whether their respective libraries have Internet facility. The users' responses are shown in Table-14.

Table-14: Distribution of users according to their responses with regard to having of Internet facility in their libraries

Responses	Users		Total
	Faculty	Students	
Yes	138 (95.8)	1129 (97.7)	1267 (97.5)
No	6 (4.2)	27 (2.3)	33 (2.5)
Total	144 (100)	1156 (100)	1300 (100)

Note: Figures in brackets indicate percentages.

X^2 : 1.735 $df = 1$ TV: 3.841 Not significant at 0.05 level

It is observed from Table-14 that most of the users (97.5%) replied that their libraries have Internet facility. The remaining 2.5% of them replied negatively in this regard. 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 having of Internet facility in their libraries. The chi-square value is not significant at 0.05 level with one degree of freedom.

5.15. Utilization of Internet facility

Again a question has been put to the users, who replied that their libraries have Internet facility, to find out whether they are utilizing Internet facility available in their libraries. The users' responses are shown in Table-15.

It is observed from Table-15 that most of the users (97.4%) replied that they are utilizing Internet facility in their libraries and the remaining 2.6% of them replied negatively in this regard. These 2.6% of the users may be using Internet at their own home. 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 utilizing Internet facility in their libraries. The chi-square value is not significant at 0.05 level with one degree of freedom.

Table-15: Distribution of users according to their responses with regard to utilizing of Internet facility in their libraries

Responses	Users		Total
	Faculty	Students	
Yes	134 (97.1)	1100 (97.4)	1234 (97.4)
No	4 (2.9)	29 (2.6)	33 (2.6)
Total	138 (100)	1129 (100)	1267 (100)

Note: Figures in brackets indicate percentages.

X^2 : 0.053 $df = 1$ TV: 3.841 Not significant at 0.05 level

5.16. Orientation in the use of electronic sources

Users of engineering college libraries require training in the use of electronic sources. Hence, a question has been put to them to examine whether they require orientation in the use of electronic sources in their respective libraries. The users' responses are shown in Table-16.

Table-16: Distribution of users according to their responses with regard to requirement of orientation programme in the use of electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	109 (75.7)	991 (85.9)	1100 (84.7)
No	35 (24.3)	165 (14.2)	200 (15.4)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 9.900 df = 1 TV: 3.841 Significant at 0.05 level

It is evident from Table-16 that 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 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 requirement of orientation programme in the use of electronic sources in their respective libraries. The chi-square value is significant at 0.05 level with one degree of freedom. That means more number of students are of the opinion that orientation programme is required in their libraries with regard to the use of electronic sources compared to the faculty members.

5.17. Facing of problems in using of electronic sources

A question has been put to the engineering college users to examine whether they faced any problem in using electronic sources. The users' responses are shown in Table-17.

Table-17: Distribution of users according to their responses with regard to facing of problems in using electronic sources

Responses	Users		Total
	Faculty	Students	
Yes	121 (84)	1076 (93.1)	1197 (92.1)
No	23 (16)	80 (6.9)	103 (7.9)
Total	144 (100)	1156 (100)	1300 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 14.381 df = 1 TV: 3.841 Significant at 0.05 level

It is observed from Table-17 that most of the users (92.1%) replied that they faced problems in using electronic sources and the remaining 7.9% 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 facing of problems in using electronic sources in their libraries. The chi-square value is significant at 0.05 level with one degree of freedom. That means more number of students admitted that they faced problems in using electronic sources in their libraries compared to the faculty members.

5.18. Types of problems facing in using electronic sources

A question has been put to the engineering college users, who replied that they have faced problems in using electronic sources, to examine the different types of problems faced by them in using electronic sources in their libraries. The users' responses are shown in Table-18.

It is observed from Table-18 that a high percentage of respondents (40.8%) faced the problem of electrical power cuts and unairconditioning of the library. It is evident from the table that 18% of the users mentioned that equipment of electronic sources is not in good condition, 9.9% of them mentioned that they lack

skills in using electronic sources, 14.1% of them mentioned that they faced difficulty in consulting the catalogue of electronic sources, 11.9 % of them mentioned that they faced the problem due to improper arrangement of electronic sources and the remaining 5.3% of them faced the problem due to unawareness of electronic sources. 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 type of problems they are facing in using electronic sources. The chi-square value is not significant at 0.05 level with one degree of freedom.

Table-18: Distribution of users according to their responses with regard to the types of problems faced in using electronic sources

Problems	Users		Total
	Faculty	Students	
Improper arrangement of electronic sources	14 (11.6)	129 (12)	143 (11.9)
Difficulty in consulting the catalogue of electronic sources	23 (19)	146 (13.6)	169 (14.1)
Lack of skills in using electronic sources	13 (10.7)	106 (9.9)	119 (9.9)
Equipment of electronic sources is not in good condition	26 (21.5)	189 (17.6)	215 (18.0)
Electrical power cuts and unairconditioning of the library	38 (31.4)	450 (41.8)	488 (40.8)
Lack of awareness about electronic sources	7 (5.8)	56 (5.2)	63 (5.3)
Total	121 (100)	1076 (100)	1197 (100.00)

Note: Figures in brackets indicate percentages.

χ^2 : 6.279 df = 5 TV: 11.070 Not significant at 0.05 level

6. FINDINGS

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

1. Majority of the users (77.7%) expressed that electronic sources are useful for their curriculum needs.
2. A high percentage of users (38 %) are using electronic sources from 61-80 per cent.
3. Majority of the users mentioned that e-journals (primary journals) (73.5%), e-abstracting and indexing periodicals (51.3%), e-reference sources (58.3%), e-theses and dissertations (75.8%), e-books (54.5%) are adequate for their curriculum needs.
4. Most of them (97.3%) mentioned that they are interested in using electronic sources. A high percentage of respondents (42.9%) mentioned that non-availability of required electronic sources is the reason for their disinterest in using electronic resources.
5. Three-fourths of them (75.9%) are consulting electronic sources frequently.
6. Most of them (83.7%) mentioned that their libraries prepare catalogue for electronic sources.
7. Majority of them (62.9%) informed that there is no provision for lending of electronic sources in their libraries.
8. Majority of them (61.3%) replied that their libraries publicise about electronic sources.
9. Most of them (97.5%) admitted that their libraries have Internet facility.
10. Most of them (97.4%) are utilizing Internet facility in their libraries.
11. Most of them (84.7%) asserted that orientation programme is required in the use of electronic sources.
12. Most of them (92.1%) faced problems in using electronic sources. A high percentage of users (40.8 %) said that they faced the problem of 'electrical power cuts and unairconditioning' of the library.
13. There are significant differences between students and faculty members in their responses with regard to adequacy of e-abstracting and indexing periodicals, e-reference sources, and e-theses and dissertations; preparation of catalogue for electronic sources; requirement of orientation in the use of e-resources; and facing

of problems in the use of e-sources.

14. There are no significant difference between student and faculty members in their responses with regard to usefulness of e-sources; extent of using e-sources; adequacy of e-journals (primary journals) and e-books; interest in using e-sources; frequency of consulting e-sources; lending of e-sources; publicity of e-sources; having Internet facility and its utilization; and type of problems faced in using e-sources.

7. SUGGESTIONS

The following are the suggestions made by the investigators for effective usage of electronic sources in engineering college libraries.

1. Over a fifth of users (22.3%) expressed that electronic sources are not useful for their curriculum needs. It is due to their unawareness about e-sources. Hence, awareness is to be created among them about e-sources in user education programmes. users should be given training in handling of the e-sources.

2. The study shows that a significant percentage of users replied that e-journals (22.5%), e-abstracting and indexing periodicals (35.7%), e-references sources (28%), e-theses and dissertations (19.7%) and e-books (29.8%), are inadequate for their needs. Hence, the library authorities should take necessary steps to select procure and make the required electronic sources available in their respective libraries.

3. A considerable percentage of users (24.1%) are consulting e-sources either occasionally or rarely. Hence, the library authorities should take necessary steps to motivate the users in using e-sources especially while conducting user education programmes.

4. It is found that 16.3% of engineering college librarians are not preparing catalogue for the e-sources of their libraries. Hence, the electronic sources should be catalogued according to a standard catalogue code with sufficient information in catalogue entries. The catalogue enables the users to know the availability of electronic sources and their location easily.

5. The majority of the users (62.9%) stated that there is no provision for lending of e-sources in their libraries. Hence, the library authorities can take necessary measures to make a provision for lending of e-sources if feasible.

6. A significant percentage of users (38.7%) replied that their libraries are not publicising e-sources. The methods used for publicity of e-sources are, arranging exhibitions, arranging guided tours in library, displaying periodic list of new arrivals and circulating the lists of new arrivals. Hence, the library authorities should take necessary steps to publicise the e-sources by adopting suitable methods to create awareness among the users about e-sources.

7. A very few users (2.5%) replied that Internet facility is not available in their libraries though it is available. It may be due to their unawareness. A few users (2.6%) are not utilizing Internet facility. Hence, it is suggested that library authorities should take necessary steps to create awareness about Internet facility and to provide training in the use of Internet.

8. A high percentage of users (40.8%) reported that they are facing the problem of electrical power cuts. Hence, the authorities concerned should take necessary steps for continuous power supply either by installing power generators or power recharge systems in their respective libraries. A high percentage of users (40.8%) reported that they are facing the problem due to 'unairconditioning of their libraries'. It is necessary to aircondition the libraries for functioning of computer systems properly and for their longer duration. The users also can use the resources of the library for longer hours if the library is airconditioned. Hence, the authorities concerned should take necessary steps to aircondition their libraries if feasible.

9. Most of the users (84.7%) informed that orientation programme is required in the use of e-sources. Hence, steps are to be undertaken to conduct orientation programme both for students and teachers in the use of e-sources.

10. The library authorities should take necessary steps to appoint skilled persons to look after the e-sources so that they can provide better assistance in handling of e-sources whenever the users require. The persons, who are at present looking after the e-sources and are lacking skills to handle the e-sources properly, should be given training in the handling of e-sources in their respective libraries or they should be deputed to the other institutions where they can get such kind of training. They should also be deputed for attending seminars /

conferences / workshops on the topics pertaining to e-sources. The trained persons can impart information skills to the users in the utilization of e-sources or assist the users in a better way in the handling of e-sources. They can take necessary measures for proper care and maintenance of e-sources and e-equipment.

11. They are a number of e-books and e-journals freely available on Internet. The engineering college librarians should download all the relevant e-books and e-journals useful to the users of their respective libraries in consultation with the faculty members and make them available for viewing offline. The librarians should prepare a bibliographical database of these sources for locating them easily by users.

12. The engineering college libraries are subscribing to print and online journals. But the investigators feel that these journals are not utilized to full extent by the users of these libraries. Hence, the library authorities can take necessary measures to create awareness about these journals among them and motivate the users to use these journals.

13. AICTE Government of India, Government of Andhra Pradesh, Engineering Universities, UGC, and Industries should take initiative to promote ICT infrastructure and services in engineering college libraries so that the libraries can provide exhaustive and accurate information to the users of engineering so that the students can compete well with others in the competitive examinations and in securing good positions in their professional career.

REFERENCES

1. Praveena, SM and others. "E-resources usage among the research scholars in the faculty of science, Annamalai University: A study". *Library progress (International)*, 29 (2009): 15-19. Print.
2. Sankaranarayana, D and M Nagarajan. "Usage of digital resources by the faculty of agriculture colleges in Tamil Nadu: a study". *Library progress (International)*, 30 (2010): 269-279. Print.
3. Sarasvathy, P and D Giddaiah. "Internet and its use in university library Mysore: a case study. *SRELS journals of information management*, 47(2010): 321-324. Print.
4. Sharma, CH and R Sharma. "Perception and preferences of e-resources among faculty members of National Institute of Technology (NIT) Kurukshetra". *SRELS journal of information management*, 47(2010): 297-305. Print.
5. Kaur, A. "Impact of e-journals on university library of Punjab, Chandigarh: a study". *SRELS journal of information management*, 48(2011): 265-279. Print.
6. Madhuri, V. "Gender differences in the usage and attitudes towards the Internet among students". *Pearl*, 5 (2011): 54-57. Print.
7. Mina, T and G Ramesh. "Utilization of e-information resources in medical colleges: a case study". *SRELS journal of information management*, 48 (2011): 281-288. Print.
8. Ravi, B and B Isthari. "Use of Internet services in IGM Library, University of Hyderabad: A study". *SRELS journal of information management*, 48(2011): 181-188. Print.
9. Kinengyere, AA. "The effect of information literacy on the utilization of electronic information resources in selected academic and research institutes in Uganda". *The electronic library*, 25 (2007): 328-341. Print.
10. Shuling, W. "Investigation and analysis of current use of electronic resources in university libraries". *Library management*, 28(2007): 72-88. Print.
11. Franklin, B and T Plum. "Library usage patterns in the electronic information environment". *Information research*, 9 (2008): 187-191. Print.
12. Idayat, OA. "Use of print and electronic resources by agricultural science students in Nigerian Universities". *Library and information science research*, 32(2009): 62-65. Print.
13. Nafiz zaman, S and A Rowshon. "Internet usage by the students of faculty of arts, university library of Dhaka (Bangladesh)". *Pearl*, 5 (2011): 14-22. Print.



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