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A Survey of Engineering College Libraries in Sri Venkateswara University Area, Andhra Pradesh, India

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Introduction

Engineers have been important to every civilization, ancient and modern. They invent, design, build and produce most of the products that make up the present civilization. They find out the solutions to the practical problems faced by the society. Hence, they play a key role in socio-economic development of any nation.

Today, engineers require not only adequate technological ability and problem solving skills, but also skills like cooperation, communication, and presentation skills, business ethics and inter-personal relationship. They must have deep commitment to safety, reliability, quality and sustainability of all engineering operations in which they take part. Engineering colleges have now

a new responsibility to provide opportunities to every engineering student or professional to acquire these abilities in addition to their technological knowledge. Hence, excellent engineering colleges are essential to prepare engineers with good knowledge and skills. Teachers, laboratories and libraries are important components in imparting effective engineering education to them.

The objective of an engineering college library is to assist engineering professionals in enhancing and updating their knowledge and skills, and to provide them information regarding new innovations, views, theories, engineering education, and research. The primary role of engineering college library is to collect and organize recorded information in engineering and allied subjects to meet the needs of users. Information and Communication Technologies are increasingly used to collect, store, retrieve and disseminate a great amount of information to help engineering professionals. Library survey is “a systematic collection of data concerning libraries, their activities, operations, staff use and users, at a given time or over a given period”. Library surveys are conducted to study the existing library conditions, library facilities, library personnel, nature of users and non-users, library services, library resources; to compare the present conditions and desired standards; to make suggestions for their improvement; and to develop library standards.

Review of Literature

Mishra (1977) discussed fifteen year perspective plan for the development of engineering and technological libraries and information service in India. Janak Raj and Rama Verma(1992) conducted a survey on 34 engineering college libraries in India by using a mailed questionnaire method. Abbas Khan (1993) made a study on the growth of collection and users of library of Muffakham Jah College of Engineering and Technology (MJCET), for the year 1981-90, and compared with the growth of its budget. Singh (1994) conducted a study on collection development and readers' services at IIT Library, Kharagpur, by collecting data from a sample of 222 users of the library comprising faculty members and students using a questionnaire method. Singh (1994) evaluated the collection and services provided by IIT libraries in India from user's point of view. Rashid and Amin (1998) in their study found that there is no uniformity in the use of classification and cataloguing schemes in Regional Engineering College Libraries in India. Sharma (2001) in his study attempts to examine the status of engineering college libraries in Haryana, by surveying a sample of twenty engineering college libraries. Tadasad (2003) made a study on the use of Internet by collecting data from 193 undergraduates in engineering. Ali and Hasan (2003) examined the utilization and the satisfaction level of users about Internet, CD-ROM databases and other services provided by IIT Library, Delhi. Mandal and Panda (2005) examined the different dimensions of collection development with specific reference to engineering college libraries. Rajeev Kumar and Kaur (2007) conducted a user

survey to analyze the use of the Internet and related issues by collecting data from 960 teachers and students of engineering colleges of Punjab using questionnaire method. Kaur and Rama Verma (2008) conducted a survey on students and faculty members with regard awareness about electronic journals and their usage of Punjab Engineering College, Chandigarh, using questionnaire method. Majority of the users were not aware of the library e-resources (69.15%) and INDEST Consortium (77.63%). Doraswamy (2009) conducted a study on the utilization of digital resources in Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC) Library, Vijayawada, by collecting data from 95 faculty members through questionnaire.

As no comprehensive survey has been conducted to examine the present conditions of engineering college libraries in Sri Venkateswara University area of Andhra Pradesh in India, the present study has been undertaken to examine the present conditions of these libraries, to assess the extent of meeting the information requirements of users and to identify the drawbacks in the provision of services so that the suggestions can be made to improve these services. A brief report of the survey has been presented in the following paragraphs.

Objectives of the Study

The following are the specific objectives of the study:

- To examine the qualifications, experience and scale of pay of librarians of engineering college libraries;
- To examine the working hours of the library and to know the type of access system followed in the libraries;
- To study the acquisition procedure for books and periodicals, and technical processing in engineering college libraries;
- To know the procedures for lending documents in engineering college libraries;
- To examine the services and physical facilities of these libraries;
- To examine the use of information technology in engineering college libraries;
- To assess the engineering college libraries with regard to their working hours and collection;
- To know the users' opinion towards library services and facilities;
- To identify the differences, if any in their satisfaction with regard to library services and facilities;
- To assess the level of satisfaction of users with regard to the availability of latest editions of books and multiple copies for prescribed textbooks in their respective engineering college libraries;
- To suggest the measures for improving the quality of resources and services of engineering college libraries.

Methodology

To get the required data for the present study, the following methodology is used.

Sample selection

The entire area of Andhra Pradesh is divided into three subareas viz., Andhra University area, Sri Venkateswara University area and Osmania University area. The districts of Chittoor, Kadapa, Kurnool, Anantapur and Nellore come under Sri Venkateswara University area.

There are 36 engineering college libraries in Sri Venkateswara University area. The investigator selected 29 engineering college libraries out of 36 by simple random method to examine the present condition of these libraries.

The users of these engineering college libraries are undergraduate students, postgraduate students, research scholars and faculty members. There are 10,560 undergraduate students, 460 postgraduate students, 175 research scholars and 2,465 faculty members in these 29 engineering colleges. In total, there are 13,660 users in these libraries. As the population is large in terms of cost, time and labour involved, the investigator selected a sample of 1,853 users (7.4% of the population) using stratified random sampling.

Collection and presentation of data

Questionnaire method is used for collecting the required data for the present study. Two separate questionnaires were designed. One is intended for engineering college librarians and another for the users of engineering college libraries. The questionnaire intended for librarians consists of questions on engineering colleges, designation, qualification, age, gender, experience and pay scale of librarians, their satisfaction with the present job, library working hours, access system, library collection, sections, acquisition, classification and cataloguing, services, user education programmes, physical facilities, budget, stock verification, library automation, and library statistics. Copies of the questionnaire are distributed to 29 librarians and collected the filled in copies of the questionnaire personally from librarians.

The questionnaire intended for users consists of questions to elicit their views on use of the library, working hours, library collection, book collection, periodical collection, library services, circulation service, reference service, reprographic service, Internet facility, physical facilities, and library staff. This questionnaire is distributed to 1853 users of engineering college libraries and filled in copies of questionnaire were collected from users personally.

Data analysis

The data collected from the respondents were analyzed according to the objectives and hypotheses formulated using descriptive and inferential statistics.

Findings

Based on the analysis of the data collected, the following conclusions have been drawn with regard to engineering college libraries and their users.

Engineering college libraries

The following conclusions have been drawn on engineering college libraries:

Engineering colleges

- Nearly half of the colleges (48.3%) were established during the period 2000-2002.
- The majority of the colleges (86.2%) are affiliated to Jawaharlal Nehru Technological University.
- All engineering colleges are offering undergraduate courses.
- All engineering colleges are offering undergraduate courses in Computer Science and Engineering, Electrical and Electronics Engineering, and Electronics and Communication Engineering.
- A high percentage of the colleges (41.4%) have undergraduates between 1201-1600.

Librarians

- The majority of the libraries (89.7%) have librarians.
- About three-quarters of the librarians (75.9%) have PG with the M.L.I.Sc., degree.
- A high percentage of them (41.4%) have the age of above 35 years.
- The majority of them (82.8%) are men librarians.
- A high percentage of them (41.4%) have 5 or less than 5 years of experience.
- A high percentage of them (41.4%) are getting their scales of pay according to UGC.
- The majority of them (86.2%) are satisfied with the present job.

Library working hours

A high percentage of the engineering college librarians (41.4%) informed that their libraries are working from 9.00 a.m. to 7.00

p.m. on working days and 9.00 a.m. to 12.30 p.m. on holidays.

Access System

The majority of the librarians (86.2%) informed that their libraries are following open access system.

Library collection

- More than one-third of the engineering college libraries (34.4%) have 10,000 or below 10,000.
- More than one-third of the libraries (34.5%) are subscribing to periodicals from 101 to 150.
- More than one-third of the libraries (37.9%) have back volumes of periodicals 1000 or below 1000.
- More than one-third of the libraries (34.5%) have more than 3000 book bank books.
- All the libraries have CD-ROMs.

Sections

All the libraries have periodical section, circulation section, reference section, textbook section and SC/ST book bank.

Acquisition

- The majority of the libraries (55.2%) are acquiring books from local distributors/agents.
- The majority of the librarians (89.7%) replied that their libraries are procuring periodicals directly from publishers.
- The majority of the libraries (51.7%) are fulfilling the norms of AICTE with regard to the subscription of periodicals.
- Classification and Cataloguing
- Most of the librarians (93.1%) replied that they are classifying books and their libraries are using Dewey Decimal Classification scheme for classification of documents.
- All the librarians opined that Dewey Decimal Classification scheme is more suitable to classify the engineering documents.
- Most of the librarians (96.6%) informed that the books are catalogued in their libraries, and the majority of them (16 out of 28 librarians) informed that their libraries are using AACR-II for cataloguing of books.
- A high percentage of the librarians (44.8%) informed that their libraries are using computerized catalogue.

Circulation

- A high percentage of librarians (41.4%) informed that their libraries are issuing 2 books at a time to undergraduates for a period of 10 days.
- The majority of them (60.0 %) informed that their libraries are issuing 3 books at a time to postgraduates for a period of 10 days.
- The majority of them (50.0%) informed that their libraries are issuing 5 books at a time to research scholars for a period of 15 days.
- The majority of them (51.7%) informed that their libraries are issuing 2 books at a time to teaching staff for a period of 7 days.
- The majority of them (75.9%) informed that their libraries are issuing 1 periodical at a time to teaching staff for a period of 7 days.
- The majority of them (86.2%) informed that the books are lent on all the working days in a week.
- The majority of them (89.7%) informed, that their libraries are collecting over due charges from the users for not returning of books within the due date.

Services

- All the libraries are providing circulation, reference and reprographic services.
- The majority of them are providing Internet facility (86.2%), referral service (75.9%) and newspaper clipping service (68.9%).
- A high percentage of them (41.4%) are providing document reservation facility.
- More than one-third of them (34.5%) are providing Abstracting/Indexing service.
- More than one-third of them (34.5%) are offering CAS/SDI service.

User education programmes

The majority of the librarians (58.6%) informed that their libraries are conducting user education programmes.

Physical facilities

- The majority of the librarians (79.3%) replied that their colleges have no separate buildings for their libraries concerned.
- All the libraries have display racks, water cooler and reprographic and electronic equipment, and computers.

Budget

- About two-thirds of the engineering college libraries (65.5%) have spent more than 3 lakhs of rupees on books during the academic year 2005-2006.
- A high percentage of the libraries (41.4%) have spent more than one lakh rupees on periodicals during the same academic year.
- A high percentage of the libraries (41.4%) have spent more than 30,000 rupees on back volumes during the same academic year.
- Nearly half of the libraries (48.3%) have spent between 10,001-20,000 rupees on non-book materials during the same academic year.

Stock verification

- The majority of the librarians (82.8%) informed that their libraries are carrying out stock verification annually.
- The majority of the librarians (82.8%) replied that their libraries are following accession register for stock verification of books.
- Library automation
- All the librarians replied that their libraries have been automated.
- A high percentage of the libraries (41.4%) are using SOUL software package.
- The majority of the libraries (79.3%) are using commercial software.
- All the librarians informed that their circulation sections are automated.

Library statistics

Most of the librarians (93.1%) replied that their libraries are maintaining up-to-date statistics.

Users of Engineering College Libraries:

The following conclusions have been drawn from the data collected from the users of engineering college libraries.

Use of the library

- The majority of the users (66.7%) informed that they are visiting the library regularly.
- There is significant difference in the frequency of visiting the library among various groups of users namely faculty members and research scholars, faculty members and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are

more frequently visiting the library compared to the faculty members. Research scholars are more frequently visiting the library compared to the postgraduates, and postgraduates are more frequently visiting the library compared to the faculty members.

- There is no significant difference in the frequency of visiting the library between the users of research scholars and postgraduates.
- The majority of the users (59.2%) visit the library to borrow books.
- There is significant difference in the purpose of visiting the library among various groups of users namely faculty members and postgraduates, faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. More number of postgraduates are visiting the library to borrow books compared to the faculty members, and more number of undergraduates are visiting the library to borrow books compared to the research scholars and postgraduates.
- There is no significant difference in the purpose of visiting the library between the users of faculty members and research scholars.
- Nearly half of the users (48.6%) are spending 1 hour in the library.
- There is significant difference in the time spent in the library among various groups of users. In other words, research scholars and postgraduates are spending more time in the library compared to the faculty members. Undergraduates are spending more time in the library compared to the faculty members.

Working hours

- Most of the users (96.9%) are satisfied with the working hours of the library on working days.
- There is significant difference in the satisfaction with the working hours of the library on working days among various groups of users namely faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied with the working hours of the library on working days compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the satisfaction with the working hours on working days among various groups of users namely faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- Most of the users (98.2%) are satisfied with the working hours of the library on Sundays and public holidays.
- There is significant difference in the satisfaction with the working hours of the library on Sundays and public

holidays among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied with the working hours of the library on Sundays and public holidays compared to the faculty members, research scholars, and postgraduates.

- There is no significant difference in the satisfaction with the working hours of the library on Sundays and public holidays among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.

Library collection

- Nearly three-quarters of the users (74.7%) are satisfied with the book collection.
- There is significant difference in the satisfaction with the book collection among various groups of users namely faculty members and postgraduates, and faculty members and undergraduates, which means postgraduates are more satisfied compared to the faculty members, and undergraduates are more satisfied in this regard compared to the faculty members.
- There is no significant difference in the satisfaction with the book collection among various groups of users namely faculty members and research scholars, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates.
- The majority of the users (82.1%) are satisfied with the periodical collection.
- There is significant difference in the satisfaction with the periodical collection among various groups of users namely faculty members and undergraduates, and postgraduates and undergraduates, which means undergraduates are more satisfied with the periodical collection compared to the faculty members and postgraduates.
- There is no significant difference in the satisfaction with the periodical collection among various groups of users namely faculty members and research scholars, faculty members and postgraduates, research scholars and postgraduates, and research scholars and undergraduates.
- The majority of the users (83.3%) are satisfied with the abstracting and indexing periodicals.
- There is significant difference in the satisfaction with the abstracting and indexing periodicals among various groups of users namely faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates, which means undergraduates are more satisfied with the abstracting and indexing periodicals compared to the faculty members, research scholars, and postgraduates.

- There is no significant difference in the satisfaction with the abstracting and indexing periodicals among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (85.2%) are satisfied with the seminar/conference proceedings.
- There is significant difference in the satisfaction with the seminar/conference proceedings among various groups of users namely faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the satisfaction with the seminar/conference proceedings among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- Nearly three quarters of the users (74.2%) are satisfied with the research reports/theses/dissertations.
- There is significant difference in the satisfaction with the research reports/theses/dissertations among various groups of users namely faculty members and undergraduates, and research scholars and undergraduates, which means undergraduates are more satisfied in this regard compared to the faculty members and research scholars.
- There is no significant difference in the satisfaction with the research reports/theses/dissertations among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, research scholars and postgraduates, and postgraduates and undergraduates
- The majority of the users (86.1%) are satisfied with the maps/charts collection.
- There is significant difference in the satisfaction with the maps/charts collection among various groups of users namely faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates, which means undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the satisfaction with the maps/charts collection among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (83.7%) are satisfied with the audio-visual materials.
- There is significant difference in the satisfaction with the audio-visual materials among various groups of users viz., faculty members and postgraduates, faculty members and undergraduates, research scholars and undergraduates,

and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars and postgraduates. Postgraduates are more satisfied in this regard compared to the faculty members.

- There is no significant difference in the satisfaction with the audio-visual materials among various groups of users namely faculty members and research scholars, and research scholars and postgraduates.

Book collection

- The majority of the users (82.5%) came to know about the new books procured by the library independently.
- There is significant difference in the sources used to know about the new books procured by the library among various groups of users namely faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates, which means more number of undergraduates came to know about the new books procured by the library independently compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the sources used to know about the new books procured by the library among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (89.9%) informed that the latest editions of books are available in the library.
- There is significant difference among various groups of users viz., faculty members and postgraduates, faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates in their replies with regard to the availability of latest editions of books in their libraries concerned. In other words, more numbers of undergraduates replied that the latest editions of books are available in their libraries concerned, compared to the faculty members, research scholars and postgraduates, and more number of postgraduates replied that the latest editions of books are available in their libraries concerned, compared to the faculty members and research scholars.
- There is no significant difference between the users of faculty members and research scholars in their replies with regard to the availability of latest editions of books in their libraries concerned.
- The majority of the users (88.2%) replied that their libraries have multiple copies for prescribed textbooks.
- There is significant difference in the replies regarding the availability of multiple copies for prescribed textbooks among various groups of users namely faculty members

and research scholars, faculty members and postgraduates, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, more number of faculty members replied the availability of multiple copies for prescribed textbooks compared to research scholars and postgraduates, and more number of undergraduates replied that their libraries have multiple copies for prescribed textbooks compared to the faculty members, research scholars, and postgraduates.

- There is no significant difference in the replies regarding the availability of multiple copies for prescribed textbooks between the users of research scholars and postgraduates.

Periodical collection

- The majority of the users (86.9%) replied that they are satisfied with the number of periodicals subscribed by the library on their subject concerned.
- There is significant difference in the satisfaction with the number of periodicals subscribed by the library on their subject concerned among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, faculty members are more satisfied in this regard compared to the research scholars and postgraduates. Undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates. There is no significant difference in the satisfaction with the number of periodicals subscribed by the library on their subject concerned between the users of research scholars and postgraduates.
- Most of the users (93.5%) replied that the latest issues of periodicals are available in their libraries concerned.
- There is significant difference in the replies regarding availability of latest issues of periodicals in their libraries among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, faculty members and undergraduates, research scholars and postgraduates, and postgraduates and undergraduates. More number of faculty members replied that their libraries have latest issues of periodicals compared to the research scholars and postgraduates. More number of undergraduates replied that their libraries have the latest issues of periodicals compared the faculty members, research scholars and postgraduates.
- There is no significant difference in the replies regarding availability of latest issues of periodicals in their libraries between the users of research scholars and undergraduates.
- The majority of the users (80.1%) are satisfied with the

- newspapers subscribed.
- There is significant difference in the satisfaction with the newspapers subscribed among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
 - There is no significant difference in the satisfaction with the newspapers subscribed among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
 - The majority of the users (85.8%) are satisfied with the library catalogue.
 - There is significant difference in the satisfaction with the library catalogue among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
 - There is no significant difference in the satisfaction with the library catalogue among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.

Library services

- The majority of the users (83.1%) are satisfied with the reference service.
- There is significant difference in the satisfaction with the reference service among various groups of users namely faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates. More number of postgraduates are satisfied with the reference service compared to the research scholars.
- There is no significant difference in the satisfaction with the reference service among various groups of users viz., faculty members and research scholars, and faculty members and postgraduates.
- The majority of the users (79.3%) are satisfied with the CAS/SDI service.
- There is significant difference in the satisfaction with the CAS/SDI service among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more

satisfied in this regard compared to the faculty members, research scholars, and postgraduates.

- There is no significant difference in the satisfaction with the CAS/SDI service among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (85.5%) are satisfied with the newspaper clipping service.
- There is significant difference in the satisfaction with the newspaper clipping service among various groups of users viz., faculty members and postgraduates, faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied with the newspaper clipping service compared to the faculty members, research scholars and postgraduates. Faculty members are more satisfied with the newspapers clipping service compared to the postgraduates. Research scholars are more satisfied in this regard compared to the faculty members.
- There is no significant difference in the satisfaction with the newspaper clipping service between the users of faculty members and research scholars.
- The majority of the users (82.5%) are satisfied with the circulation service.
- There is significant difference in the satisfaction with the circulation service among various groups of users viz., faculty members and research scholars, faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars and postgraduates. Postgraduates are more satisfied in this regard compared to the faculty members and research scholars.
- There is no significant difference in the satisfaction with the circulation service between the users of faculty members and postgraduates.
- The majority of the users (88.9%) are satisfied with the loan period
- There is significant difference in the satisfaction with the loan period among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the satisfaction with the loan period among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (68.6%) are satisfied with the

document reservation facility.

- There is significant difference in the satisfaction with the document reservation facility between the users of faculty members and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members.
- There is no significant difference in the satisfaction with the document reservation facility among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates.
- The majority of the users (82.9%) are satisfied with the Inter-library loan (ILL) service.
- There is significant difference in the satisfaction with the Inter-library loan (ILL) service among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied in this regard compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the satisfaction with the Inter-library loan (ILL) service among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.

Circulation service

- The majority of the users (78%) are borrowing from 1 to 5 books on an average.
- There is significant difference in the number of borrowed books per month from the library among various groups of users namely faculty members and research scholars, faculty members and postgraduates, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, faculty members are borrowing more number of books compared to the research scholars and postgraduates, and undergraduates are borrowing more number of books compared to the faculty members, research scholars, and postgraduates.
- There is no significant difference in the number of borrowed books per month from the library between the users of research scholars and postgraduates.
- The majority of the users (73.4%) replied that their libraries are issuing 1 to 2 books at a time.

Reference service

- Most of the users (94.3%) replied that they sought the assistance of reference librarian or any library staff for getting the required information by them.

- There is significant difference in their replies with regard to seeking of assistance from reference librarians or any library staff for getting the required information among various groups of users viz., faculty members and research scholars, faculty members and undergraduates, research scholars and postgraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, more number of undergraduates replied that they sought the assistance from reference librarian or any library staff for getting the required information compared to the faculty members and research scholars. More number of undergraduates replied that they sought the assistance from reference librarian or any library staff for getting the required information compared to the research scholars and postgraduates, and more number of postgraduates replied that they sought the assistance from reference librarian or any library staff for getting the required information compared to the research scholars.
- There is no significant difference in seeking the assistance from the reference librarian or any library staff for getting the required information between the users of faculty members and postgraduates.

Photocopying service

- Most of the users (92.3%) replied that their libraries are providing photocopying service.
- There is significant difference among various groups of users viz., faculty members and research scholars, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates in their replies regarding the provision of photocopying service. In other words, more numbers of undergraduates replied that their libraries are providing photocopying service compared to the faculty members, research scholars, and postgraduates. In other words, more number of faculty members replied that their libraries are providing photocopying service compared to the research scholars.
- There is no significant difference in the replies with regard to the provision of photocopying service among the various groups of users viz., faculty members and postgraduates, and research scholars and postgraduates.
- The majority of the users (87.6%) replied that they are charging Rs.0.50 paise per exposure.

Internet facility

- Most of the users (97.8%) replied that their libraries are providing Internet facility.
- There is significant difference in their replies with regard to the provision of Internet facility in their libraries among various groups of users viz., faculty members and

research scholars, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, more numbers of undergraduates replied that their libraries are providing Internet facility compared to the faculty members and research scholars, and more number of undergraduates replied that their libraries are providing Internet facility compared to the research scholars and postgraduates.

- There is no significant difference in their replies with regard to the provision of Internet facility in their libraries among various groups of users viz., faculty members and postgraduates, and research scholars and postgraduates.

Physical facilities

The majority of the users (81.4%) are satisfied with the reading space and furniture.

There is significant difference in the satisfaction with the reading space and furniture among various groups of users viz., faculty members and postgraduates, faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates and postgraduates are more satisfied with the reading space and furniture compared to the faculty members. Undergraduates are more satisfied in this regard compared to the research scholars and postgraduates

There is no significant difference in the satisfaction with the reading space and furniture among various groups of users namely faculty members and research scholars, and research scholars and postgraduates.

Library staff

The majority of the users (86.5%) are satisfied with efficiency and behaviour of the library staff.

2. There is significant difference in the satisfaction with efficiency and behaviour of library staff among various groups of users viz., faculty members and undergraduates, research scholars and undergraduates, and postgraduates and undergraduates. In other words, undergraduates are more satisfied with efficiency and behaviour of library staff members compared to the faculty members, research scholars, and postgraduates.

3. There is no significant difference in the satisfaction with efficiency and behaviour of library staff among various groups of users viz., faculty members and research scholars, faculty members and postgraduates, and research scholars and postgraduates.

Recommendations

The following are the recommendations made by the investigator on the basis of analysis of the data, and suggestions from both the engineering college librarians and users of engineering college libraries.

Library working hours

The study revealed that 3.1% of the users are not satisfied with the working hours of the library. Hence the authorities concerned should take necessary steps to extend the working hours of the library beyond the normal college hours if feasible.

Library collection

Book collection

According to AICTE norm, each college should have 250 titles with 4 multiple copies in each branch of engineering. In subjects like mathematics, humanities, physics, chemistry etc., there should be a total of 1000 volumes. Every year one title is to be added for each student admitted in each branch of engineering. In addition to it, 0.2 title is to be added in mathematics, applied physics, applied chemistry, humanities, social science and management science for each student admitted.

The study revealed that the majority of engineering college libraries (51.7%) do not fulfil the AICTE norms with regard to book collection (Table 4.18(a)).

The study also revealed that a few users are dissatisfied with the book collection (8%). More than one-tenth of the users (10.1%) replied that their libraries do not have the latest editions of books and multiple copies for prescribed textbooks (11.8%). Hence the authorities concerned should insist the engineering college libraries on the provision of prescribed number of titles (latest editions) with sufficient number of multiple copies as per the norms of AICTE.

The majority of the users (82.5%) know about the latest books procured by the library independently. Only a few users (5.7%) know about through the library staff. Hence the library authorities should prepare a booklet containing the list of latest books procured by the library every month and distribute the same to the users.

Periodical collection

As per the norms of AICTE, the number of journals in each library should be a minimum of 12 technological journals - 6 Indian and 6

International for each branch of engineering.

The study revealed that 41.4% of libraries did not fulfil the norms of AICTE with regard to the subscription of periodicals. The study also revealed that a considerable percentage of users (17.9%) are dissatisfied with periodical collection. A few of the users (6.2%) are also dissatisfied with abstracting and indexing periodicals. Hence, the authorities concerned should insist the engineering college libraries on subscription to periodicals as per the norms of AICTE, so that the users can obtain latest information in their subjects concerned.

Newspapers subscribed

The study revealed that a few users (7.3%) are dissatisfied with the number of newspapers subscribed. Hence, the authorities concerned should take necessary steps to subscribe more number of newspapers as required by the users of engineering college libraries.

Other types of reading materials

The study revealed that a few users are dissatisfied with the seminar/conference proceedings (4.6%), research reports/theses/dissertations (8.2%), maps/charts (13.9%), and audio-visual materials (6%). Hence, the authorities concerned should take necessary steps to develop the collection of difference types of reading materials as mentioned above with which the users are dissatisfied.

Library Classification and Cataloguing

A few engineering college libraries are not classifying books (6.9%). A few of them (3.4%) are not cataloguing books. The authorities concerned of these libraries should take necessary steps to classify books according DDC and to catalogue books according to AACR 2 as the majority of engineering college libraries have been using DDC and AACR 2. For providing subject headings, all engineering college libraries can use Library of Congress Subject Headings (LCSH). LCSH is used by the Library of Congress (LC) for assigning subject headings to books and journal articles.

Library catalogue

A few users (4.6%) are dissatisfied with the library catalogue. Hence, the authorities concerned should take necessary steps to improve their library catalogues after assessing the reasons for the dissatisfaction with the library catalogue.

Library services

The majority of engineering college libraries are not offering Inter-library loan (ILL) service (93.1%), document reservation facility (58.6%), bibliographical service (82.8%), CAS/SDI service (65.5%), and abstracting and indexing service (65.5%). The study also revealed that a few of the engineering college libraries are also not offering referral service (24.1%) and newspaper clipping (31.3%). The libraries, which are not offering the above services, should introduce these services after ascertaining their feasibility.

The study also revealed that a few users are dissatisfied with reference service (5.8%), CAS/SDI service (7.6%), newspaper clipping service (4.2%), circulation service (6.2%), loan period (3.8%), document reservation facility (13.3%), and Inter-library loan service (5.7%). Hence, the library authorities concerned should take necessary measures to improve these services.

Issue and return of books

In the majority of engineering college libraries (62.1%), users can issue and borrow books on all the working days in a week. Hence, the authorities concerned can make necessary provision for issue and return of books on all the working days in a week.

Overdue charges

A few engineering college libraries (10.3%) are not collecting overdue charges from their users for not returning the books within the due date. Hence, the authorities should take necessary steps to collect overdue charges from the users or suspend their membership for a few days for not returning the books within the due date.

Photocopying service

A few users (7.7%) replied that their libraries are not providing photocopying service. Hence, the authorities should take necessary steps to provide photocopying service to the users.

Internet facility

A few libraries (13.8%) are not providing Internet facilities. A few users (2.2%) replied that their libraries are not providing Internet facility. Hence, the authorities of these engineering colleges should take necessary measures to provide this facility to the users.

Assistance from library staff

The study revealed that a few users (5.7%) are not seeking the assistance of reference librarian or any other library staff member for the required information. Hence the library authorities should motivate the users to seek the assistance of library staff in case

their require any information while conducting user education programmes.

Physical facilities

As per AICTE guidelines “The central library for an admission of 240 students per year will have a carpet area of 400 sq.m. But 17.2% of libraries do not have plinth area of 400 sq.m. as per AICTE norm. The study also revealed that 79.3% of libraries do not have independent buildings. Hence, it is suggested that the library authorities concerned should take necessary steps to provide a minimum plinth area of 400 sq.m. and also construct independent buildings for their libraries if possible.

The majority of libraries do not have binding equipment (65.5%), book trolleys (89.6%), vacuum cleaners (89.6%), catalogue cabinet (24.1%), and microform readers cum printers (24.1%). Hence, the authorities of these engineering colleges should make necessary provision for adequate equipment in their libraries concerned.

A few users suggested for good lighting, ventilation and comfortable furniture in the library. They also suggested to have canteen and drinking water facility in the library. The authorities concerned can take necessary steps to provide these facilities to them if feasible.

User education programmes

A considerable percentage of libraries (41.4%) are not conducting user education programmes. Hence, the authorities should take necessary steps to conduct user education programmes to fresh students and research scholars at the beginning of the academic year.

Library budget

A few libraries are spending Rs.1-2 lakh on books (13.8%), less than Rs.50,000 on periodicals (10.3%), less than Rs.10, 000 on back volumes of periodicals and less than Rs. 10,000 on non-book materials. Hence the authorities concerned should take necessary steps to enhance the budget for the procuring more number of the above mentioned items.

Stock verification

A considerable percentage of libraries (17.2%) are not carrying out stock verification annually. Hence the authorities can take necessary measures to carry out stock verification annually in engineering college libraries.

Library statistics

A few of libraries (6.9%) are not maintaining library statistics up-to-date. Hence the authorities of these engineering colleges should take necessary measures for the maintenance of library statistics up-to-date.

Library automation

In the majority of engineering college libraries (58.6%), periodical section is not automated. In 48.3% of the libraries, acquisition section is not automated. Hence the college authorities concerned should take initiative to computerize the acquisition section, periodical section, and other sections. AICTE also should insist the college authorities on the computerization of their libraries fully as a basic requirement for recognition.

Institutional repositories

Engineering college libraries should develop institutional repositories pertaining to all books and research articles of their respective college staff, and project reports/theses/dissertations submitted by their undergraduates, postgraduates and research scholars.

Scale of pay of librarians

More than one fourth of librarians (27.6%) are not getting either the UGC scale of pay or State Government scale of pay. They are getting only consolidated pay. Hence the AICTE should take necessary steps for providing UGC/State Government scale of pay to librarians working in engineering college libraries so that they can serve the users with more devotion.

Hence, the Government of India, State Government and AICTE should raise the quality of education in engineering by taking appropriate measures to improve the facilities and services in engineering college libraries.

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