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# A STUDY ON EVALUATION OF LIBRARIES OF ENGINEERING COLLEGES AFFILIATED TO JNTU – ANATAPUR AS PER AICTE NORMS

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## Abstract

*Analysis of data collected from the librarians of 37 selected engineering colleges by simple random method out of 119 colleges affiliated to JNTU- Anantapur using a questionnaire reveals that majority of the engineering college libraries are fulfilling AICTE norms with regard to number of titles (75.68%) and volumes of books (83.78%) Majority of them are fulfilling AICTE norms with regard to subscription of national journals (56.75%) and international journals (75.68%), and are not fulfilling with regard to subscription of e-journals (97.30%). Majority of the libraries (91.90%) are fulfilling the norm with regard to number of computer systems. Majority of them (67.57%) have the provision for computerized circulation of books with barcode. Almost all the libraries (97.30%) do not have RFID system to detect to the book theft. Majority of them are fulfilling the norms with regard to digital library (94.59%), Photocopying service (75.68 %), printing facility (59.46 %), scanning facility (54.05.%), and NPTEL courseware (86.49%) . AICTE norm regarding classification of books according to a standard scheme is fulfilled by all the libraries. Finally it is recommended that AICTE, Government of Andhra Pradesh and JNTU - Anantapur, should take necessary measures to pressurise the authorities of college libraries to adhere to the norms at the time of permission, affiliation and inspection of their respective colleges.*

**Key words:** Library surveys, Engineering college libraries, Evaluation of book collection, Evaluation of journals, Evaluation of technical services, Evaluation of library facilities, Evaluation of library services.

## 1.INTRODUCTION

Engineering college libraries play an important role in imparting quality education to the undergraduate and postgraduate students of engineering. In the context of globalization, quality education to the students of engineering is essential to compete with the students of other nations of the world. Qualified and experienced faculty, well established laboratories, good physical facilities, good ICT infrastructure, and well established libraries are needed to provide quality education to the engineering students. Among these factors, engineering college libraries play an important role in the provision of quality education to engineering students.

Libraries should provide quality service to their users viz., students and faculty members. It is necessary to evaluate the library facilities and services so that necessary steps can be undertaken to improve these facilities and services.

Library evaluation is the objective judgment assessment of the various aspects of the library viz., book collection, periodical collection, processing of books, library services, physical facilities, library staff, ICT infrastructure, finance, user education etc., based on certain norms standards or guidelines.

All India Council of Technical Education (AICTE) which was established in November 1945 first as an advisory body and later on it was given statutory status by an Act of Parliament Government of India, in 1987 to regulate technical education in India. AICTE is vested with as a statutory authority for planning, formulation and maintenance of norms and standards, for quality assurance through accreditation, funding in priority areas, monitoring and evaluation, maintaining parity of certification and awards and ensuring coordinated and integrated development and management of technological education in the country. The purview of AICTE (the Council) covers programmes of technological education including training and research in Engineering, Technology, Architecture, Town Planning, Management, Pharmacy, Applied Arts and Crafts, Hotel Management and Catering Technology etc., at different levels.

AICTE prescribed norms and standards for engineering college libraries in India. Hence, to evaluate engineering college libraries, the present study entitled 'A study on evaluation of libraries of engineering colleges affiliated to Jawaharlal Nehru Technological University Anantapur (JNTU – Anantapur) as per AICTE norms' has been undertaken.

## 2. LITERATURE REVIEW

The following are the studies that were conducted on engineering college libraries pertaining to their evaluation and other aspects. **Adebayo**<sup>2</sup> conducted a study to examine the implementation of library service standards in the colleges of education in Nigeria. Data was collected through a structured questionnaire. Results of the study revealed that libraries were rendering basic services as recommended by National Commissions for Colleges of Education. These were not providing indexing and abstracting services. **Bhaskar Rao**<sup>3</sup> conducted a study on the resources and services of libraries of IITs. The survey revealed that facilities and resources available in the libraries are satisfactory. Library staff and users felt the necessity of networking of the six IIT libraries. The users expressed for better xerox facilities and availability of latest issues of periodicals. **Biradar and Sampath Kumar**<sup>4</sup> evaluated the services and facilities offered by DVS Polytechnic college library, Shimoga, Karnataka, by collecting data from a sample of 80 students and 30 teachers using questionnaire method.

**Chinna Balu and Pulla Reddy**<sup>5</sup> conducted a survey on the present status of Engineering college libraries in Sri Venkateswara University area, Andhra Pradesh. Majority of the libraries offer Internet facility (86.2%), referral service (75.9%) and newspaper clipping service (68.9%). A few of them offer document reservation facility (41.4%), and abstracting and indexing service (34.5%). A majority of engineering college libraries (79.3%) have no separate buildings. All the libraries have display racks, water cooler, reprographic equipment, and computers. A majority of them have catalogue cabinets (75.9%), and microfilm readers cum printers (68.9%). A few recommendations are

made based on the findings of the study. **David's**<sup>6</sup> study on government polytechnic libraries in the State of Andhra Pradesh, revealed that the teachers and students are dissatisfied with library collection, physical facilities, number of books issued, availability of periodicals, services offered as they are inadequate. All the librarians are dissatisfied for not recognizing them as teaching faculty, for not having adequate channels of promotions and for not having pay scales on par with the librarians of other colleges/departments. **Gaur and Jeevan**<sup>7</sup> made a survey on Engineering college libraries of Jaipur using a questionnaire. The results generated by the study throw light on the present status of libraries of engineering colleges in the state of Rajasthan with regard to their collection, staff, etc.

**Janak Raj and Rama Verma**<sup>8</sup> conducted a survey on engineering college libraries in India by using a mailed questionnaire, and out of sent 272 questionnaires, responses received are 34. **Malhan and Singh**<sup>9</sup> trace the historical development of polytechnic libraries in Haryana. An evaluation of collection and services in these polytechnic libraries exposes the various drawbacks of these libraries and suggests suitable measures for their better functioning. **Mandal and Panda**<sup>10</sup> conducted a study on the different dimensions of collection development with specific reference to 17 engineering college libraries of West Bengal. They enumerated the activities of seven major Library consortia of the world engaged in sharing resources among Engineering College libraries. **Mary and Sankar**<sup>11</sup> made a study on collection evaluation of PSN College of Engineering and Technology Library and PET Engineering College Library in Tirunelveli District. Authors described the various techniques of evaluating the document collection in academic libraries and evaluated the collection development practices of two engineering college libraries. **Misra**<sup>12</sup> discussed about engineering and technology libraries in India. He also discussed fifteen year perspective plan for the development of engineering and technological libraries and information services in India. **Mulla and Chandrashekara**<sup>13</sup> conducted a study on e-resources and services in Engineering College Libraries in Karnataka. Results of the study revealed that collection and service infrastructure of the libraries in sampled regions were not up to the mark; and libraries were struggling to build digital collection and in disseminating digital information due to lack of ICT infrastructure, IT trained manpower, and paucity of funds, etc., **Narasimha Raju**<sup>14</sup> in his study made attempts to provide information regarding the existing conditions of 18 degree colleges affiliated to Andhra University, Waltair. He discussed the existing conditions of degree college libraries with regard to library building, book collection, book bank books, budget, processing of books, circulation of books, working hours, access system followed, and stock verification. **Rashid and Amin**<sup>16</sup> made a study on the regional engineering college libraries in India. **Sharma et al.**,<sup>17</sup> made a study on collection management of 38 Engineering College Libraries of Orissa using questionnaire tool. Study concluded that growing dissatisfaction of the users arising from non-availability of needed documents and lack of provision of services could be reduced down to some extent, by rendering at least CAS or current contents or information about latest additions to users.

**Sharma**<sup>18</sup> in his study attempts to examine the status of engineering college libraries in Haryana, by surveying a sample of twenty engineering college libraries. The results show that only three libraries out of twenty responding libraries have their own independent buildings. Most of the

libraries have very little room for the readers. Out of twenty libraries, only four have more than one hundred seats for their readers while the remaining sixteen libraries have fifty or fewer seats for the readers. Ninety per cent of the libraries are kept open for eight hours a day to suit the colleges working hours. Only two libraries remain open for twelve hours a day. Four out of sixteen librarians are on the regular basis and getting proper pay scale and status as well. The remaining twelve are working on ad hoc/temporary basis and majority of them are very poorly paid. Majority of the librarians (75%) are postgraduate degree holders in Library and Information Science. Forty five per cent of libraries have book selection policy and 70% of libraries have book selection committee. The other aspects which were discussed in the study are book collection, periodical collection, and processing of books. **Singh<sup>19</sup>** conducted a study on the evaluation of collection and services provided by IIT libraries.

The above review of literature indicates that no study has been conducted on evaluation of engineering college libraries. Hence, the present study entitled ‘A Study on Evaluation of Libraries of Engineering Colleges affiliated to Jawaharlal Nehru Technological University – Anantapur as per AICTE norms’ has been undertaken.

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

The main aim of the present study is to evaluate engineering college libraries as per AICTE norms. The following are the specific objectives of the study:

1. To examine the adherence of engineering college libraries to AICTE norms with regard to number of titles and volumes of books;
2. To evaluate the number of journals (Print) and e-journal packages subscribed by the engineering college libraries as per norms;
3. To make an evaluation of carpet area and seating accommodation of these libraries as per norms;
4. To assess the provision of digital library, NPTEL courseware, printing, photocopying and scanning facilities in these college libraries as per AICTE norms;
5. To evaluate the number of computer systems as per norms;
6. To assess the qualifications, scale of pay of librarians and strength of staff as per norms;
7. To examine the classification and cataloguing of books in these libraries as per norms; and
8. To examine the provision for computerized circulation of books with barcode and RFID system for detection of book theft.

### **4. METHODOLOGY**

Survey method of research has been adopted in the present study. Among the various methods of collecting primary data, questionnaire method is used for collecting the required data for the present study. The questionnaire consists of questions on number of volumes, number of titles,

number of journals, digital library, number of computers, Photocopying service, NPTEL courseware, printing facility, scanning facility, carpet area, seating accommodation, qualifications, and scale of pay librarians, number of staff in the library, etc. A pilot study was conducted on 5 librarians and the defects identified in the questionnaire were rectified.

#### **4.1 Selection of sample**

The population of the study consists of engineering colleges affiliated to Jawaharlal Nehru Technological University–Anantapur located at Anantapur, Andhra Pradesh, India. There are 119 engineering colleges affiliated to JNTU - Anantapur as on 1-3-2015. These colleges are located in the districts of Anantapur, YSR, Kurnool, Chittoor and Nellore. Each college has its own library. The investigator selected 37 engineering college libraries out of 119 by simple random sampling to evaluate them.

#### **4.2 Data collection**

Copies of questionnaire were distributed personally to the librarians of these engineering college libraries and the filled in copies were collected from them. The investigator clarified the doubts raised by the librarians at the time of filling up the questionnaire. The required data was collected from the librarians during the period from March 2015 to June 2015.

### **5. ANALYSIS AND INTERPRETATION OF DATA**

The data collected from the librarians was analyzed and interpreted as per the objectives stated in the following paragraphs.

#### **5.1 Book collection as per AICTE norms**

As per AICTE norms, every engineering college library should have adequate number of books to meet the requirements of students and faculty members. The engineering college library shall have 100 titles and 500 volumes of books for every division in first year or direct division in second year of B.Tech in each branch of engineering. Every year a minimum of 50 titles and 250 volumes shall be added to the library for every course. Requirements of book titles and volumes in institutions started before 1950 shall be calculated considering starting year 1950. Librarians of engineering college library were asked to inform the year of establishment, number of titles of books and the number of volumes of books in their libraries. The information regarding the years in which sanction is accorded from AICTE to start a division in each branch of engineering is collected from the websites of engineering colleges. Based on the information obtained from the librarians and websites, the AICTE requirement with regard to number of titles and volumes of books for each college library is calculated. The details are shown in Table 1.

**Table 1**

**Number of titles and volume of books in each engineering college library and fulfillment of AICTE requirement**

S. No.	Name of the College	Total no. of titles	Total no. of books	Total no. of titles as per AICTE requirement	Total no. of books as per AICTE requirement	The fulfillment of AICTE requirement	
						Titles	volumes
1	2	3	4	5	6	7	8
1	Sri Vidyanikethan Engineering College	15648	101420	9450	49250	F	F
2	Sri Kalahasteswara Institute of Technology	5029	25581	4700	21500	F	F
3	Sri Venkateswara College of Engineering and Technology	7577	43575	5700	28500	F	F
4	Madanapalle Institute of Technology and Management Studies	7409	49430	5050	25250	F	F
5	Srinivasa Institute of Technology and Management Studies	5480	52668	5700	28500	N F	F
6	Kuppam Engineering College	6098	30000	2050	16250	F	F
7	Siddhartha Institute of Engineering and Technology	4250	26000	4450	22000	N F	F
8	Sri Venkatesa Perumal College of Engineering and Technology	4550	25000	3800	19000	F	F
9	Visveswaraiah Institute of Science & Technology	2200	27000	2600	13000	N F	F
10	Chadalawada Ramanamma Engineering College	2867	33458	2400	12000	F	F
11	K S R M College of Engineering	9542	52142	6800	34000	F	F
12	K O R M College of Engineering	2600	16128	2400	12000	F	F
13	Annamacharya Institute of Technology & Science	9600	43900	5350	27250	F	F
14	JNTU College of Engineering (Pulivendula)	2600	19284	2400	15000	N F	F
15	Vaagdevi Institute of Technology and Science	6700	26000	3200	16000	F	F
16	Sri Sai Institute of Science & Technology	3750	21000	3650	19250	F	F
17	N B K R Institute of Technology and Science	13684	40093	8600	43000	F	N F
18	Narayana Engineering College (Nellore)	6739	33597	5450	27250	F	F
19	Narayana Engineering college (Gudur)	4150	22450	3950	19750	F	F
20	P B R Visvodaya Institute of Technology and Science	7700	40500	3200	16000	F	F
21	Audisankara College of Engineering and Technology	7090	45474	3000	15000	F	F

(Contd...)

1	2	3	4	5	6	7	8
22	Gokula Krishna College of Engineering	6400	28666	4150	19250	F	F
23	Priyadarshini College of Engineering (Sullurpet)	5220	14440	3050	15250	F	N F
24	Priyadarshini College of Engineering (Nellore)	1750	16000	3900	19500	NF	NF
25	Mekapati Rajamohan Reddy Institute of Technology and Science	5805	24575	3250	18250	F	F
26	Quba College of Engineering and	3645	18175	3150	15000	F	F
27	AVS College of Engineering and	3407	8669	2600	11500	NF	NF
28	J N T U College of Engineering (Anantapur)	22704	80500	14800	74000	F	F
29	INTELL Engineering College	5800	33304	4550	25000	F	F
30	B I T Institute of Technology	3947	20715	3200	16000	F	F
31	GATES Institute of Technology	5116	37078	3200	16000	F	F
32	Sri Krishnadevaraya Engineering College	5022	24769	3850	19250	F	F
33	G.Pulla Reddy Engineering College	5305	50305	8700	43000	N F	F
34	Alfa College of Engineering and Technology	2000	10760	2750	13750	N F	N F
35	St. Johns College of Engineering and Tech	4250	26000	3550	17750	F	F
36	Rajiv Gandhi Memorial College of Engg.	12000	64000	7550	37750	F	F
37	Safa College of Engineering and Technology	2301	9128	2350	10250	NF	NF
Total	37	2,29,935 (Average = 6214)	12,41,784 (Average = 33,561)			F=28 (75.68%) NF = 9 (24.32%)	F=31 (83.78%) NF = 6 (16.22%)

Note: F = fulfilled N F = Not fulfilled

It is evident from Table 1 that most of the engineering college libraries (75.68%) are fulfilling the AICTE requirement with regard to number of titles of books and the remaining colleges (24.32%) are not fulfilling in this regard. It is also evident from the table that most of the engineering college libraries (83.78%) are fulfilling AICTE requirement with regard to the number of volumes of books. However, only a few libraries (16.22%) are not fulfilling to the requirement in this regard. It is obvious from the table that on an average each library has 6214 titles of books and 33,561 volumes of books.

## 5.2 Periodicals (national and International) subscribed

Periodicals provide latest information. Adequate number of periodicals are to be subscribed to meet the requirements of students and faculty members. There should be a minimum of 6 national journals (Print) for every division (section) in first year or direct division for second year of B.Tech in each branch of engineering, and the subscription of international journals (Print) is desirable. The



number of divisions, the number of national and international journals (Print) available, AICTE requirement and fulfilment of AICTE requirement are shown in Table 2.

**Table 2**

**Number of journals in each engineering college library and fulfilment of AICTE requirement**

S.NO.	Name of the college	No. of divisions	No. of national journals	No. of international journals	No. of national journals as per AICTE	Fulfilment of AICTE requirement	
						National journals	International journals
1	2	3	4	5	6	7	8
1	Sri Vidyanikethan Engineering College	23	184	10	138	F	F
2	Sri Kalahasteswara Institute of Technology	06	44	52	36	F	F
3	Sri Venkateswara College of Engineering and Technology	14	10	33	84	N F	F
4	Madanapalle Institute of Technology and Management Studies	12	103	09	72	F	F
5	Srinivasa Institute of Technology and Management Studies	08	76	18	48	F	F
6	Kuppam Engineering College	06	20	0	36	N F	N F
7	Siddhartha Institute of Engineering and Technology	14	70	45	84	N F	F
8	Sri Venkatesa Perumal College of Engineering and Technology	10	55	37	60	N F	F
9	Visveswaraiah Institute of Science & Technology	09	36	0	54	N F	N F
10	Chadalawada Ramanamma Engineering College	13	60	30	78	NF	NF
11	K S R M College of Engineering	19	99	100	114	N F	F
12	K O R M College of Engineering	11	70	34	66	F	F
13	Annamacharya Institute of Technology & Science	12	70	33	72	F	F
14	JNTU College of Engineering (Pulivendula)	06	71	11	36	F	F
15	Vaagdevi Institute of Technology and Science	07	79	06	42	F	F
16	Sri Sai Institute of Science & Technology	10	20	0	60	N F	N F
17	N B K R Institute of Technology and Science	10	50	65	60	N F	F
18	Narayana Engineering College (Nellore)	10	85	0	60	F	N F
19	Narayana Engineering college (Gudur)	08	120	0	48	F	N F
20	P B R Visvodaya Institute of Technology and Science	10	76	20	60	F	F
21	Audisankara College of Engineering and Technology	08	125	44	48	F	F
22	Gokula Krishna College of Engineering	08	72	10	48	F	F
23	Priyadarshini College of Engineering (Sullurpet)	08	23	16	48	N F	F
24	Priyadarshini College of Engineering (Nellore)	15	65	30	90	NF	NF
25	Mekapati Rajamohan Reddy Institute of Technology and Science	05	40	24	30	F	F
26	Quba College of Engineering and Technology	09	78	07	54	F	F
27	AVS College of Engineering and Technology	07	52	38	36	F	F
28	J N T U College of Engineering (Anantapur)	06	142	295	36	N F	F
29	INTELL Engineering College	08	31	39	48	N F	F
30	B I T Institute of Technology	06	52	32	36	F	F
31	GATES Institute of Technology	11	53	52	66	N F	F

(Contd...)

1	2	3	4	5	6	7	8
32	Sri Krishnadevaraya Engineering College	10	89	79	60	F	F
33	G. Pulla Reddy Engineering College	14	105	0	84	F	N F
34	Alfa College of Engineering and Technology	06	25	10	36	N F	F
35	St. Johns College of Engineering and Technology	09	48	12	54	N F	F
36	Rajiv Gandhi Memorial College of Engineering	16	164	56	96	F	F
37	Safa College of Engineering and Technology	03	31	9	30	F	NF
Total	37	367 (Average = 9.92)	2593 (Average = 70.08)	1256 (Average = 33.95)		F = 21 (56.75%) NF = 16 (43.24%)	F = 28 (75.68%) NF = 9 (24.32%)

Note: F = fulfilled N F = Not fulfilled

It is evident from Table 2 that majority of the engineering college libraries (56.75%) are fulfilling AICTE requirement with regard to number of national journals subscribed and the remaining college libraries (43.24%) are not fulfilling in this regard. It is also evident from the table that most of the engineering college libraries (75.68%) are fulfilling the desirable requirement of AICTE with regard to international journals subscribed. However, only a few libraries (24.32%) are not fulfilling the desirable requirement in this regard. It is also obvious from the table that on an average, each college has 10 divisions (sections). Each college library on an average is subscribing to 70 national journals, and 34 international journals.

### 5.3. E-Journals

The journal packages that are to be subscribed by engineering college libraries as per AICTE norms are given in Table 3.

According to AICTE norms, institutions having 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate students and institutions being established need to subscribe to the e-journal packages IEEE, J-GATE and ASTM digital library which are shown in Table 3. Institution having 4 year B.Tech course shall have to subscribe to e-journal packages of IEEE, Springer, Wiley-Blackwell, ASME, ASCE, McGraw Hill, J-GATE, Elsevier and ASTM Digital Library. Institutions having Civil Engineering course need to subscribe ASCE package. Institutions having Mechanical Engineering course need to subscribe ASME package.

**Table 3**  
**E-journal packages of publishers/aggregators**

S.No.		Publisher	Subject Areas
1	2	3	4
1.	a	IEEE	Computer Engineering + Computer Science + Electrical and Electronics Engineering + Telecommunications and related disciplines
2.	a	Springer	Electrical and Electronics and Computer Science Engineering
			OR
	a	Wiley-Blackwell	Computer Science + Data System+ Telecommunication and related Discipline
3.	a	ASME	Mechanical Engineering
			OR
	a	Springer	Mechanical Engineering
			OR

(Contd...)

1	2	3	4
4.	a	Wiley-Blackwell	Mechanical, Electrical and Electronics Engineering
	a	ASCE	Civil Engineering
			OR
	a	Wiley-Blackwell	Civil Engineering
5.	a	McGraw Hill	General Engineering and Reference
6.	a	J-GATE	J-GATE Engineering and Technology (JET)
7.	a	ELSEVIER	Engineering + Computer Science (Electrical + Electronics + Mechanical + Civil and Structural + Aerospace + Biomedical + Industrial and Manufacturing + Ocean Engineering + Computational Mechanics and Safety Risk, Reliability and Quality + Computer Network and Communications, Artificial Intelligence, Computer Science, Computational Theory and Mathematics, Computer Graphics and Computer – Aided Design, Information Systems, Control and System Engineering and Software
8.	a	ASTM DIGITAL LIBRARY (DL) ONLINE VERSION	Online dictionary of Engineering Science and Technology Electrical & Electronics Engineering Mechanical Engineering, Civil, Metallurgical, Petroleum, Instrumentation

### 5.3.1 Fulfilment of AICTE norms with regard to e-journals

The number of branches, the number of e-journal packages subscribed, number of packages as per AICTE requirement and fulfilment are shown in Table 4.

**Table 4**  
**Fulfilment of AICTE norms with regard to e-journals**

S.No.	Name of the college	No. of branches	Available no of packages	No. of packages as per AICTE	Fulfilment of AICTE requirement	% of fulfilment
1	2	3	5	4	6	7
1	Sri Vidyanikethan Engineering College	9	4	8	NF	50.0
2	Sri Kalahasteswara Institute of Technology	5	1	8	NF	12.5
3	Sri Venkateswara College of Engineering and Technology	6	3	8	NF	37.5
4	Madanapalle Institute of Technology and Management Studies	6	5	8	NF	62.5
5	Srinivasa Institute of Technology and Management Studies	6	5	8	NF	62.5
6	Kuppam Engineering College	5	4	7	NF	50.0
7	Siddhartha Institute of Engineering & Technology	5	2	7	NF	25.0
8	Sri Venkatesa Perumal College of Engineering and Technology	6	2	8	NF	25.0
9	Visveswararajah Institute of Science & Technology	5	0	7	NF	0
10	Chadalawada Ramanamma Engineering College	6	0	8	NF	0
11	K S R M College of Engineering	6	4	8	NF	50.0
12	K O R M College of Engineering	5	0	7	NF	75.0
13	Annamacharya Institute of Technology & Science	6	4	8	NF	50.0
14	JNTU College of Engineering (Pulivendula)	6	4	8	NF	50.0
15	Vaagdevi Institute of Technology and Science	4	0	6	NF	0
16	Sri Sai Institute of Science & Technology	6	0	8	NF	0
17	N B K R Institute of Technology and Science	5	2	8	NF	25.0
18	Narayana Engineering College (Nellore)	6	1	8	NF	12.5
19	Narayana Engineering college (Gudur)	6	1	8	NF	12.5

(Contd...)

1	2	3	4	5	6	7
20	P B R Visvodaya Institute of Technology and Science	4	0	7	NF	0
21	Audisankara College of Engineering and Technology	5	1	7	NF	12.5
22	Gokula Krishna College of Engineering	6	0	8	NF	0
23	Priyadarshini College of Engineering (Sullurpet)	5	0	8	NF	0
24	Priyadarshini College of Engineering (Nellore)	6	1	8	NF	12.5
25	Mekapati Rajamohan Reddy Institute of Technology and Science	5	0	8	NF	0
26	Quba College of Engineering and Technology	5	1	7	NF	12.5
27	AVS College of Engineering and Technology	4	0	7	NF	0
28	J N T U College of Engineering (Anantapur)	6.	8	8	F	100
29	INTELL Engineering College	5	0	8	NF	0
30	B I T Institute of Technology	4	2	7	NF	25.0
31	GATES Institute of Technology	6	3	8	NF	37.5
32	Sri Krishnadevaraya Engineering College	5	0	7	NF	0
33	G.Pulla Reddy Engineering College	6	4	8	NF	50.0
34	Alfa College of Engineering and Technology	5	0	8	NF	0
35	St. Johns College of Engineering & Technology	5	1	8	NF	12.5
36	Rajiv Gandhi Memorial College of Engineering	7	4	8	NF	50.0
37	Safa College of Engineering and Technology	3	0	4	NF	0
Total	37	(Average = 05.43)	67 (Average = 1.81)		F = 1 (2.70%) NF = 36 (97.30%)	

Note: F = fulfilled N F = Not fulfilled

It is evident from Table 4 that most of the engineering college libraries (97.30%) are not fulfilling the AICTE requirement with regard to e-journal packages. Only one college library (2.70%) i.e. JNTU College of Engineering Library is fulfilling this norm. One engineering college library (2.70%) i.e., KORM College of Engineering Library is subscribing to 75.% of journal packages, and 7 libraries (18.92%) viz., libraries of Sri Vidyanikethan Engineering College, Kuppam Engineering College, KSRRM College of Engineering, Annamacharya Institute of Technology & Science, JNTU College of Engineering, G.Pulla Reddy Engineering College and Rajiv Gandhi Memorial College of Engineering are subscribing to 50.% of journal packages required by AICTE norms. It is also evident from the table that 11 engineering college libraries (29.73%) are not at all subscribing to even a single e-journal package. The remaining engineering college libraries (45.95%) are fulfilling in the range of 12.5% to 37.5% of journal packages required by the norms. It is also obvious from the table that each college on an average has nearly 5 branches. On an average, each college is subscribing to 1.81 e-journal packages.

#### 5.4 Digital library

Librarians of engineering college libraries were asked to know the availability of digital library in their libraries. Their responses are shown in Table 5.

**Table 5****Distribution of librarians according their responses with regard to the availability of digital library**

S. No.	Response	Librarians	
		No.	%
1	Yes	35	94.59
2	No	2	05.41
3	Total	37	100.00

It is evident from Table 5.4 that most of the librarians (94.59%) replied that their libraries have digital libraries and the remaining 5.41% of them replied negatively. According to AICTE norms, there shall be a digital library with multimedia facility in each engineering college library. Hence, it can be concluded that most of the libraries (94.59%) are fulfilling the AICTE norms with regard to having digital library, and the remaining 5.41% of them are not fulfilling this norm.

### 5.5 Photocopying service

Librarians of engineering college libraries were asked to know the availability of Photocopying service in their libraries. Their responses are shown in Table 6.

**Table 6****Distribution of librarians according their responses with regard to the availability of photocopying service**

S. No.	Response	Librarians	
		No.	%
1	Yes	28	75.68
2	No	9	24.32
3	Total	37	100.00

It is evident from Table 6 that most of the librarians (75.68%) replied that their libraries are providing Photocopying service and the remaining 24.32% of them replied negatively. According to AICTE norms, there shall be Photocopying service in each engineering college library. Hence, it can be concluded from the data shown in the table that most of the libraries (75.68%) are fulfilling the norm with regard to having Photocopying service.

### 5.6 Printing facility

A question has been posed to librarians of engineering college libraries to know the provision of printing facility in their libraries. Their responses are shown in Table 7.

**Table 7****Distribution of librarians according their responses with regard to the provision of printing facility**

S. No.	Response	Librarians	
		No.	%
1	Yes	22	59.46
2	No	15	40.54
3	Total	37	100.00

Table 5.6 shows, majority of librarians (59.46%) replied that their libraries have printing facility and the remaining 40.54% of them replied negatively. According to AICTE norms, there shall

be printing facility. Hence, it can be concluded from the table that the majority of libraries (59.46%) are fulfilling the norms with regard to having Printing facility.

### 5.7 Scanning facility

Librarians of engineering college libraries were asked to know the provision of scanning facility in their libraries. Their responses are shown in Table 8.

**Table 8**

**Distribution of librarians according their responses with regard to the provision of scanning facility**

S. No.	Response	Librarians	
		No.	%
1	Yes	20	54.05
2	No	17	45.95
3	Total	37	100.00

Table 8 shows, the majority of librarians (54.05%) replied that their libraries have scanning facility and the remaining 45.95% of them replied negatively. According to AICTE norms, there shall be scanning facility in each engineering college library. Hence, it can be concluded from the table that majority of the libraries (54.05%) are fulfilling the norm regarding scanning facility.

### 5.8 NPTEL Courseware

Librarians of engineering college libraries were asked to know the availability of NPTEL Courseware in their libraries. Their responses are shown in Table 9.

**Table 9**

**Distribution of librarians according their responses with regard to the availability of NPTEL Courseware**

S. No.	Response	Librarians	
		No.	%
1	Yes	32	86.49
2	No	5	13.51
3	Total	37	100.00

Table 9 shows, most of the librarians (86.49%) replied that their libraries have NPTEL Courseware and the remaining 13.51% of them replied negatively. According to AICTE norms, there shall be NPTEL courseware facility in each engineering college library. Hence, it can be concluded that from the table that most of the libraries (86.49%) are fulfilling the AICTE norm with regard to having NPTEL Courseware facility and 13.51% of them are not fulfilling this norm.

### 5.9 Classification of books

Librarians of engineering college libraries were asked to know whether they are classifying books in their libraries. All the librarians replied that they are classifying books. Again they are asked to know the classification scheme used to classify the books. All the librarians replied that they are using Dewey Decimal classification for classifying books. According to AICTE norms, classification of books as per standard classification scheme is essential. Hence, it can be concluded all the libraries are fulfilling the AICTE norm with regard to classification of books.

### 5.10 Barcode

A question was posed to the librarians to know whether they have a system of computerized circulation of books with barcode. Their responses are shown in Table 10.

**Table 10**

**Distribution of librarians according their responses with regard to a system of computerized circulation of books with barcode**

S. No.	Response	Librarians	
		No.	%
1	Yes	25	67.57
2	No	12	32.43
3	Total	37	100.00

It is evident from Table 10 that most of the librarians (67.57%) replied that they have a system of computerized circulation of books with barcode in their libraries and the remaining 32.43% of them replied negatively. According to AICTE norms, a system of computerized circulation of books with barcode is desirable. Hence, it can be concluded from the table that most of the libraries (67.57%) are fulfilling this norm.

### 5.11 RFID system

Librarians of engineering college libraries were questioned to know whether their libraries have RFID system to detect book theft. Their responses are shown in Table 11.

**Table 11**

**Distribution of librarians according their responses with regard to RFID system to detect book theft**

S. No.	Response	Librarians	
		No.	%
1	Yes	1	02.70
2	No	36	97.30
3	Total	37	100.00

It is evident from Table 11 that most of the librarians (97.18%) replied that they do not have RFID system to detect book theft in their libraries and the remaining 2.70% of them replied positively. According to AICTE norms, RFID system to detect book theft is desirable. Hence, it can be concluded from the table that most of the librarians (97.18%) are not fulfilling this desirable requirement of AICTE.

### 5.12 Computerized catalogue

Librarians of engineering college libraries were asked to know the availability of computerized catalogue in their libraries. Their responses are shown in Table 12.

**Table 12****Distribution of librarians according their responses with regard to the availability of computerized catalogue**

S. No.	Response	Librarians	
		No.	%
1	Yes	30	81.08
2	No	7	18.92
3	Total	37	100.00

It is evident from Table 12 that most of the librarians (81.08%) replied that their libraries have computerized catalogue and the remaining 18.92% of them replied negatively. According to AICTE norms, computerized catalogue is desirable. Hence, it can be concluded from table that most of the libraries (81.08%) are fulfilling this desirable requirement and the remaining 18.92% of them are not fulfilling this norm.

### 5.13 Carpet area and reading accommodation

As per AICTE norms, The library for an admission of 420 students per year shall have a carpet area of 400 sq.m. Additional area of 50 sq.m. is required for every 60 students. As per AICTE norm, the engineering college library shall provide seating accommodation for reading to 15 per cent of total students or maximum of 150 students. Available carpet area in square meters, AICTE requirement for carpet area, available seating accommodation, seating accommodation as per AICTE, AICTE fulfilment of carpet area and seating accommodation, are shown in Table 13.

**Table 13**  
**Fulfilment AICTE requirement with regard to carpet area and reading accommodation**

S. No.	Name of the college	No. of Students admitted per year	Available carpet area In sq.m	Carpet area according to as per AICTE requirement	Total No. of Students	Seating accommodation available	Seating accommodation as per AICTE	Fulfilment of AICTE requirement	
								Carpet Area	Seating Accommodation
1	2	3	4	5	6	7	8	9	10
1	Sri Vidyanikethan Engineering College	1380	1150	1200	4800	270	150	N F	F
2	Sri Kalahasteswara Institute of Technology	360	480	400	1940	150	70	F	F
3	Sri Venkateswara College of Engineering and Technology	840	930	750	4120	100	150	F	N F
4	Madanapalle Institute of Technology and Management Studies	720	750	650	3900	150	135	F	F
5	Srinivasa Institute of Technology and Management Studies	640	1100	600	3400	250	128	F	F
6	Kuppam Engineering College	360	711	400	840	250	90	F	F
7	Siddhartha Institute of Engineering and Technology	840	888	750	1900	250	150	F	F
8	Sri Venkatesa Perumal College of Engineering and Technology	600	795	650	2040	150	126	F	F
9	Visveswaraiiah Institute of Science & Technology	540	598	500	1620	200	127	F	F
10	Chadalawada Ramanamma Engineering College	660	752	600	2090	150	99	F	F

(Contd...)



1	2	3	4	5	6	7	8	9	10
11	K S R M College of Engineering	1140	1060	1000	4060	500	150	F	F
12	K O R M College of Engineering	660	620	600	1830	200	122	F	F
13	Annamacharya Institute of Technology & Science	720	1000	650	4600	265	150	F	F
14	JNTU College of Engineering (Pulivendula)	360	2147	400	1850	200	70	F	F
15	Vaagdevi Institute of Technology and Science	420	689	400	700	150	77	F	F
16	Sri Sai Institute of Science & Technology	600	580	550	800	150	117	F	F
17	N B K R Institute of Technology and Science	600	1348	550	3600	500	106	F	F
18	Narayana Engineering College (Nellore)	600	650	550	3940	250	126	F	F
19	Narayana Engineering College (Gudur)	480	700	450	3810	300	107	F	F
20	P B R Visvodaya Institute of Technology and Science	600	1020	650	1865	200	150	F	F
21	Audisankara College of Engineering and Technology	480	1200	450	3750	400	106	F	F
22	Gokula Krishna College of Engineering	480	569	450	1836	150	90	F	F
23	Priyadarshini College of Engineering (Sullurpet)	420	400	500	1210	110	85	N F	F
24	Priyadarshini College of Engineering (Nellore)	900	500	800	1950	250	135	NF	F
25	Mekapati Rajamohan Reddy Institute of Technology and Science	300	650	400	1150	110	45	F	F
26	Quba College of Engineering and Technology	540	420	500	1882	150	104	N F	F
27	AVS College of Engineering and Technology	330	410	400	660	120	50	F	F
28	J N T U College of Engineering (Anantapur)	360	3345	400	3600	150	108	F	F
29	INTELL Engineering College	480	750	450	1962	150	98	F	F
30	B I T Institute of Technology	360	580	400	1258	120	71	F	F
31	GATES Institute of Technology	660	610	600	1684	230	112	F	F
32	Sri Krishnadevaraya Engineering College	600	512	550	1725	80	123	N F	N F
33	G.Pulla Reddy Engineering College	840	1208	750	4200	265	147	F	F
34	Alfa College of Engineering and Technology	360	300	400	640	200	59	N F	F
35	St. Johns College of Engineering and Technology	540	550	500	2260	200	126	F	F
36	Rajiv Gandhi Memorial College of Engineering	960	1011	850	4620	200	150	F	F
37	Safa College of Engineering and Technology	300	330	400	690	70	45	NF	F
Total	37	22030 (Average= 595)	31313 (Average= 846)		88582 (Average = 2394)	7480 (Average = 202)		F = 30 (81.08%) NF = 7 (18.92%)	F = 35 (94.60%) NF = 2 (5.40%)

Note: F = fulfilled N F = Not fulfilled

It is evident from Table 13 that most of the engineering college libraries (81.08%) are fulfilling AICTE norms with regard to carpet area and the remaining 18.92% of them are not fulfilling this norm. It is also evident from the table that most of the engineering college libraries (94.60%) are fulfilling AICTE requirement with regard to the seating accommodation. However, only a few

libraries (5.40%) are not fulfilling this requirement. It is obvious from the table that on an average each library has carpet area of 846 sq. m. Each library on an average has seating accomodation 202 students at a time.

#### 5.14 Computer systems

According to AICTE norms, the library should have multimedia PCs to the extent of 1% of total students or a maximum of 10 PCs surfing located in reading room. The number of students, number of computer systems, AICTE requirement for computer systems, and fulfilment of AICTE requirement are shown in Table 14.

**Table 14**  
**Fulfilment of AICTE requirement with regard to number of computer systems**

S. No.	Name of the college	No. of students	Availability of computer systems	No. of computers as per AICTE requirement	Fulfilment of AICTE requirement
1	2	3	4	5	6
1	Sri Vidyanikethan Engineering College	4800	30	10	F
2	Sri Kalahasteswara Institute of Technology	1940	10	10	F
3	Sri Venkateswara College of Engineering and Technology	4120	15	10	F
4	Madanapalle Institute of Technology and Management Studies	3900	15	10	F
5	Srinivasa Institute of Technology and Management Studies	3400	20	10	F
6	Kuppam Engineering College	840	20	08	F
7	Siddhartha Institute of Engineering and Technology	1900	30	10	F
8	Sri Venkatesa Perumal College of Engineering and Technology	2040	20	10	F
9	Visveswaraiah Institute of Science & Technology	1620	10	10	F
10	Chadalawada Ramanamma Engineering College	2090	13	10	F
11	K S R M College of Engineering	4060	11	10	F
12	K O R M College of Engineering	1830	10	10	F
13	Annamacharya Institute of Technology & Science	4600	25	10	F
14	JNTU College of Engineering (Pulivendula)	1850	30	10	F
15	Vaagdevi Institute of Technology and Science	700	26	07	F
16	Sri Sai Institute of Science & Technology	800	10	08	F
17	N B K R Institute of Technology and Science	3600	30	10	F
18	Narayana Engineering College (Nellore)	3940	40	10	F
19	Narayana Engineering College (Gudur)	3810	25	10	F
20	P B R Visvodaya Institute of Technology and Science	1865	15	10	F
21	Audisankara College of Engineering and Technology	3750	40	10	F
22	Gokula Krishna College of Engineering	1836	10	10	F
23	Priyadarshini College of Engineering (Sullurpet)	1210	12	10	F
24	Priyadarshini College of Engineering (Nellore)	1950	20	10	F
25	Mekapati Rajamohan Reddy Institute of Technology and Science	1150	15	10	F
26	Quba college of Engineering and Technology	1882	10	10	F
27	AVS College of Engineering and Technology	660	10	07	F

(Contd...)

1	2	3	4	5	6
28	J N T U College of Engineering (Anantapur)	3600	23	10	F
29	INTELL Engineering College	1962	NIL	10	N F
30	B I T Institute of Technology	1258	20	10	F
31	GATES Institute of Technology	1684	30	10	F
32	Sri Krishnadevaraya Engineering College	1725	20	10	F
33	G.Pulla Reddy Engineering College	4200	38	10	F
34	Alfa College of Engineering and Technology	640	NIL	06	N F
35	St. Johns College of Engineering and Technology	2260	12	10	F
36	Rajiv Gandhi Memorial College of Engineering	4620	08	10	N F
37	Safa College of Engineering and Technology	690	10	07	F
Total	37	88582 (Average = 2394)	683 (Average = 18.46)		F = 34 (91.90%) N.F = 3 (8.10%)

Note: F = fulfilled N F = Not fulfilled

It is evident from Table 14 that most of the engineering college libraries (91.90%) are fulfilling the requirement with regard to number of computer systems in their digital libraries and the remaining 8.10% of them are not fulfilling in this regard. On an average, each college has nearly 18 computer systems and 2,394 students.

### 5.15 Qualifications of librarians

According to AICTE norms, the librarian shall possess Master Degree in Library science/ information science/Documentation science and consistently good academic record with knowledge of computerization of library. Librarians were asked to mention their qualifications. Their responses are shown in Table 15.

**Table 15**  
**Distribution of librarians according to their qualifications**

S. No.	Qualifications	Librarians	
		No.	%
1	M.A.,M.L.I.Sc., Ph.D.	5	13.51
2	M.A.,M.L.I.Sc., M.Phil.	7	18.92
3	M.A.,M.L.I.Sc.	16	43.24
4	M.L.I.Sc.	9	24.32
	Total	37	100.00

It is evident from Table 15 that a high percentage librarians (43.24%) have M.A., and M.L.I.Sc., degrees, 24.32% of them have M.L.I.Sc., degree, 18.92% of them have M.A., M.L.I.Sc., and M.Phil degrees, and the remaining 13.51% of them have M.A., M.L.I.Sc., and Ph.D., degrees. Hence, it can be concluded that all the librarians have M.L.I.Sc., degree as required by AICTE.

### 5.16 Scale of pay of Librarians

According to AICTE norms, the librarian shall be given scale of pay of Rs. 15600- 39100 with AGP of Rs.6000. Librarians were asked to know their scale of pay. Their responses are shown in Table 16.

**Table 16**  
**Distribution of librarians according to their scale of pay**

S. No.	Scale of Pay	Librarians	
		No.	%
1	U.G.C.	10	27.03
2	State government	2	05.40
3	Consolidated	25	67.57
	Total	37	100.00

It is obvious from Table 16 that majority of the librarians (67.57%) are getting only consolidated pay, 27.03 per cent of them are getting UGC scale of Pay, and the remaining 5.40 per cent of them are getting scale of pay of A.P. State Government. Hence, it can be concluded that the majority of engineering college libraries (67.57%) are not fulfilling AICTE norms with regard to scale of pay given to the librarians.

### 5.17 Strength of library staff

As per norms of Government of Andhra Pradesh, degree college libraries having a student strength of 1000 or more than 1000 shall have six library staff members, and the libraries having a student strength from 500 – 1000 shall have five library staff members. Librarians were asked to provide the information with regard to number of library staff working under each category. The student strength of each engineering college, the number of staff members under various categories and the fulfilment of norm of Government of Andhra Pradesh with regard to strength of staff members are shown in Table 17.

**Table 5.17**  
**Strength of library staff in various cadres in engineering college libraries**

S.No.	Name of the college	Student strength	Librarian	Asst Librarian	Library Asst.	Library attender	Total	Fullfilment of norms of Govt. of A.P
1	2	3	4	5	6	7	8	9
1	Sri Vidyanikethan Engineering College	4800	1	1	5	2	9	F
2	Sri Kalahasteswara Institute of Technology	1940	1	1	1	1	4	N.F
3	Sri Venkateswara College of Engineering and Technology	4120	1	2	1	2	6	F
4	Madanapalle Institute of Technology and Management Studies	3900	2	2	2	2	8	F
5	Srinivasa Institute of Technology and Management Studies	3400	1	1	2	2	6	F
6	Kuppam Engineering College	840	1	1	2	2	6	F
7	Siddartha Institute of Engineering and Technology	1900	1	2	NIL	2	5	N.F
8	Sri Venkatesa Perumal College of Engineering and Technology	2040	1	1	1	1	4	N.F

(Contd...)

1	2	3	4	5	6	7	8	9
9	Visveswaraiiah Institute of Science & Technology	1620	NIL	1	2	1	4	N.F
10	Chadalawada Ramanamma Engineering College	2090	1	1	1	1	4	N.F
11	K S R M College of Engineering	4060	1	2	4	2	7	F
12	K O R M College of Engineering	1830	1	2	NIL	2	5	N.F
13	Annamacharya Institute of Technology & Science	4600	1	1	1	2	5	N.F
14	JNTU College of Engineering (Pulivendula)	1850	1	NIL	3	2	6	F
15	Vaagdevi Institute of Technology and Science	700	1	1	1	1	4	N.F
16	Sri Sai Institute of Science & Technology	800	1	NIL	2	1	4	N.F
17	N B K R Institute of Technology and Science	3600	1	1	2	2	6	F
18	Narayana Engineering College (Nellore)	3940	1	2	2	1	6	F
19	Narayana Engineering college (Gudur)	3810	1	1	1	1	4	N.F
20	P B R Visvodaya Institute of Technology and Science	1865	1	2	3	2	8	F
21	Audisankara College of Engineering and Technology	3750	1	1	4	1	7	F
22	Gokula Krishna College of Engineering	1836	1	2	1	2	6	F
23	Priyadarshini College of Engineering (Sullurpet)	1210	NIL	1	NIL	1	2	N.F
24	Priyadarshini College of Engineering (Nellore)	1950	1	1	1	1	4	N.F
25	Mekapati Rajamohan Reddy Institute of Technology and Science	1150	1	NIL	2	1	4	N.F
26	Quba College of Engineering and Technology	1882	1	1	2	1	5	N.F
27	AVS College of Engineering and Technology	660	1	1	NIL	1	3	N.F
28	J N T U College of Engineering (Anantapur)	3600	NIL	NIL	4	2	6	F
29	INTELL Engineering College	1962	1	2	2	1	6	F
30	B I T Institute of Technology	1258	1	2	1	1	5	N.F
31	GATES Institute of Technology	1684	1	2	1	1	5	N.F
32	Sri Krishnadevaraya Engineering College	1725	1	1	2	1	5	N.F
33	G.Pulla Reddy Engineering College	4200	1	2	4	1	8	F
34	Alfa College of Engineering and Technology	640	1	1	NIL	2	4	N.F
35	St. Johns College of Engineering and Technology	2260	1	1	2	1	5	N.F
36	Rajiv Gandhi Memorial College of Engineering	4620	1	2	4	2	9	F
37	Safa College of Engineering and Technology	690	NIL	1	NIL	1	2	N.F
Total	37	88582 (Average = 2394)	NIL =4	NIL =4	NIL =6		197 (Average= 5)	F = 16 (43.24%) N.F. = 21 (56.76%)

Note: F = fulfilled N F = Not fulfilled

On an average, each library has five staff members. It is evident from Table 4 that most of the engineering college libraries (89.19%) have librarians and the remaining of them (10.81%) do not have librarians. It is also evident from Table that most of the engineering college libraries (89.19%) have Assistant librarians and the remaining (10.81%) of them do not have Assistant librarians. It is also evident from Table that most of the engineering college libraries (83.78%) have library assistants and the remaining (16.22%) of them do not have library assistants. It is observed from table there are 88,582 students in all engineering colleges. On an average, each college has 2,394 students.

It is evident from Table 4 that the majority of the engineering college libraries (56.76%) are not fulfilling the norm of Government of Andhra Pradesh with regard to strength of library staff members and the remaining 43.24% of them are fulfilling this norm.

## 6. FINDINGS

The following are the findings of the study:

1. Most of the engineering college libraries are fulfilling AICTE norms with regard to number of titles (75.68%) and volumes of books (83.78%).
2. Majority of them (56.75%) are fulfilling AICTE requirement with regard to number of national journals (print) to be subscribed.
3. Most of them (75.68%) are fulfilling the desirable requirement of AICTE with regard to subscription of international journals (print).
4. Most of them (97.30%) are not fulfilling the AICTE requirement with regard to number of e-journal packages to be subscribed.
5. Most of the engineering college libraries have digital libraries (94.59%), NPTEL courseware (86.49%), and are providing photocopying service (75.68%).
6. Majority of them have printing facility (59.46%) and scanning facility (54.05%).
7. All engineering college libraries are classifying their books according to Dewey Decimal Classification.
8. Majority of the libraries (67.57%) have computerized system of circulation of books with barcode.
9. Most of the libraries (97.30%) do not have RFID system to detect book theft.
10. Most of the libraries (81.08%) have computerized catalogue.
11. Most of the engineering college libraries (80.00%) are fulfilling AICTE norms with regard to carpet area (81.08%) and seating accommodation (94.60%).
12. Most of them (91.90%) are fulfilling the AICTE requirement with regard to number of computer systems in their digital libraries.
13. All the librarians have M.L.I.Sc., degree as required by AICTE.
14. Majority of the engineering colleges (67.57%) are not giving UGC pay scales to their librarians as required by AICTE.

15. Majority of the engineering college libraries (56.76%) are not fulfilling the norm of Government of Andhra Pradesh with regard to strength of library staff members and the remaining 43.24% of them are fulfilling this norm.

## **7. RECOMMENDATIONS**

The following recommendations have been made on the findings of the study.

### **7.1 Books**

A few engineering college libraries are not fulfilling AICTE requirements with regard to number of books (24.32%) and the number of volumes of books (16.22%). Hence, the engineering college authorities should take necessary steps to acquire adequate number of titles and volumes of books. Latest editions of books with adequate multiple copies should be made available in engineering college libraries to meet the study and teaching requirements of students and faculty members respectively.

### **7.2 Journals**

As journals provide latest information, it is necessary to subscribe adequate number of print and electronic journals by engineering college libraries to meet the requirements of students and faculty members. A high percentage of engineering college libraries (43.24%) are not fulfilling AICTE requirement with regard to number of national journals (Print) to be subscribed. A considerable percentage of libraries (24.32%) are not fulfilling the desirable requirement with regard to subscription of international journals (print). Most of the libraries (97.30%) are not fulfilling AICTE requirement with regard to e-journal packages to be subscribed. Hence, the college authorities should take necessary steps to subscribe adequate number of print and electronic journals to meet the requirements of students and faculty members.

### **7.3 Digital libraries and NPTEL Courseware**

A very few libraries do not have (5.41%) digital libraries. Hence, the engineering college libraries which do not have digital libraries are suggested to establish these libraries for the benefit of their users and to satisfy the requirement of AICTE.

NPTEL provides e-learning through online web and video courses in engineering science and humanities stream. The mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware. As per AICTE norms, every library shall have NPTEL courseware. But the study reveals that only a few libraries (13.51%) do not have NPTEL courseware. Hence, the engineering college library authorities are suggested to provide access to NPTEL courseware if they are not already providing this facility.

### **7.4 Photocopying, printing and scanning facilities**

A considerable percentage of engineering college libraries (24.32%) are not providing photocopying service. A considerable percentage of them also do not have printing facility (40.54 %),

and scanning facility (45.95%). Hence, the authorities of college libraries should take necessary steps to provide photocopying service, printing facility, and scanning facility if they are not providing these facilities already.

### **7.7 Computerised system of circulation of books with barcode**

Nearly one-third of engineering college libraries (32.43%) do not have computerized system of circulation of books with barcode. Hence, necessary steps are to be taken by the college authorities concerned to provide computerized system of circulation of books with barcode not only to save the time of students and faculty members but also to provide necessary information to the users about the books required by them when they are not available on shelf.

### **7.8 RFID System**

Most of the libraries (97.30%) do not have RFID system to detect book theft. The college authorities should take necessary steps to introduce RFID system to detect book theft in their libraries to reduce the loss of books.

### **7.9 Computerized catalogue**

A considerable percentage of libraries (18.92%) do not have computerized catalogue. Hence, the college authorities are suggested to take necessary steps to provide computerized catalogue incase their libraries are not providing computerized catalogue to their users already.

### **7.10 Carpet area and seating accommodation**

A considerable percentage of libraries (18.92%) are not fulfilling AICTE requirement with regard to carpet area. A very few libraries (5.40%) are not fulfilling AICTE requirement with regard to seating accommodation. It is necessary to have adequate space and seating accommodation in engineering college libraries for the users. Hence, college authorities should take necessary steps to provide adequate space and seating accommodation for the users in their libraries.

### **7.11 Computer systems**

A few libraries (8.10%) are not fulfilling AICTE requirement with regard to number of computer systems in their libraries. Hence, college authorities are suggested to provide adequate number of computer systems incase their libraries are not providing computer systems as per norms.

### **7.12 Pay scales**

Majority of the college librarians (67.57%) are not getting UGC scale of pay. Hence, the college authorities should take necessary steps for providing UGC/State Government scales of pay to librarians working in engineering college libraries so that they can serve the users with more devotion and dedication.

### **7.13 Library staff**

Majority of the engineering college libraries (56.76%) are not fulfilling the norm of Government of Andhra Pradesh with regard to number of library staff members. Hence, the college



library authorities should take necessary steps to appoint adequate library staff members to provide quality service to the users of the library.

## 8. CONCLUSION

AICTE and JNTU - Anantapur should insist the engineering college authorities to adhere to AICTE norms with regard to books, journals, seating accommodation, photocopying, printing and scanning facilities, NPTEL courseware, computer systems, classification and cataloguing, Automated circulation system, RFID system, and library staff at the time of permission, affiliation and inspection so that quality library service can be provided to the students and faculty members of engineering colleges.

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