Chapter – 5

SUMMARY, CONCLUSIONS AND SUGGESTIONS

Change is inevitable and the need for progressive changes is essential for Library and Information Science (LIS) professionals, a change is often linked with modern information technologies and management issues. Over the past few decades, the nature of library environment and mode of service has changed drastically.

The modern libraries are increasingly being redefined as places to get unrestricted access to information in many formats and from many sources. They are understood as extending beyond the physical walls of a building, by including material accessible by electronic means, and by providing the assistance of librarians in navigating and analyzing tremendous amounts of knowledge with a variety of digital tools.

There is a scarcity of resources, putting lot of pressure on library services. Today, we need sustainable librarianship. Sustainability means to be able to sustain with reduced resources, by adopting innovative practices leading to economies of different kinds. Students need to be ascertained and motivated for better reading. This is possible only when there is a well-knit library attached to the college libraries and continues to perform traditional functions.
The objective of college libraries should be emphasized on the provision of latest information to users, support to user studies, etc. In order to cope with these activities, the professionals should be given an opportunity to learn the skills in IT from time to time.

Engineering education, unlike other types of professional education, has not had a long history. The state of Andhra Pradesh is imparting engineering/technical education to over 2,50,000 students through 711 engineering colleges per year, Except, Indian Institute of Technology (IIT), all other institutions mentioned in the structure of technical education have been existing in Andhra Pradesh.

Libraries function as an essential integral component in higher education system. The library environment is currently undergoing a rapid and dynamic revolution leading to new generation of libraries with the emphasis on e-resources. With the proliferation of engineering colleges in recent year there is an indication that the future of India is bright. But it has its own disadvantage in the sense that quality may be causality.

It is physically and financially impossible for any single library to acquire all published material needed. It is more so with technical education. The rising cost of books, increase in the number of journals and specializations in each subject, inflation, budgetary constraints are the resultant threats for information and publication explosion. Against this, the libraries have a greater role to play in
upholding the highest academic standards by offering the best services to their clientele through resource sharing and net-working.

The future libraries are going to be digital libraries and e-libraries. Today, we have new technologies to meet this challenge and we call it more fashionably “network”. INFIBNET is one which is aiming at networking all the University libraries. The existing library staff should be motivated to adapt to modern technologies and learn computer techniques and be partners in this great yagna. The colleges insist internet connections in the Libraries. Internet connectivity facilitates students to browse any number of sites and download the required material for helping readers.

Library automation which started in late 70s in few special libraries has now reached most of the university libraries. Automation is used to reduce the amount of staff time devoted to repetitive (and often less challenging) activities that must be done in any properly functioning library. Library automation is the application of computers to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, reference and serials control.

Information and Communication Technology (ICT) has enormously increased the capabilities of library services, creating options for networking to provide access to vast stores of electronic information, for more sophisticated library housekeeping systems and for greater bibliographic access through services. However, technology can also create further pressures and drains on a library’s resources simultaneous for delivering a vastly advanced service.
Problems of obsolescence and compatibility of hardware and software can be costly and the demands for training, both of staff and library users are great.

Information technology presents both new opportunities and challenges before the library profession as it creates new possibilities for the development of new products and delivery of services. The new information environment requires that librarian’s role should be characterized by increased visibility and vitality. Librarians need to be well integrated into the activities of their institutions and the community they serve.

Technological innovations are introduced to the library with the intention of providing better library service and increasing efficiency of library work. Implementing Information Communication Technology (ICT) in the library depends largely on library professionals’ attitudes toward it. It is desirable that all library staff would need to have a positive attitude towards IT in the current changing environment. It should be noted at this point that there are many variables which seem to have relations with or influences on the attitude of the librarians towards the use of ICT.

Academic libraries need more attention and support than ever, to be more efficient and resources providing for the students and staff. Studying the attitude of librarians in these libraries toward marketing library services will be helpful in determining the best marketing plan and strategies to follow according to the study results.
The development of Engineering College situation in Andhra Pradesh creates lot of interest among the young students in this region with the emergence of large number of corporate colleges. The strength and standards of the Engineering colleges and services provided by the libraries attached to these colleges are the area of interest at present.

So far, the focus of research in library and information science has been on user-centeredness, yet the focus has traditionally been on the library patron and on information-seeking skills and behaviors. Unfortunately, librarians have not been actively acknowledged as users, and therefore research that focuses on librarians as adopters of ICTs is scarce. This study is taken up recognizing the key role librarians’ play in the diffusion of innovation in the library, and also recognizing the increased need to understand their behavior towards new ICTs in their professional life as a precursor to their role as adopters and disseminators within the library setting.

In this background, the present study has been taken up with the main objective of studying the professional attitudes of librarians towards Information and Communication Technology in Engineering College Libraries located in the three north coastal districts of Andhra Pradesh.

Accordingly, the present study is proposed with the following objectives:

8. To understand the IC technology and network infrastructure available in the engineering colleges located in the north coastal districts of Andhra Pradesh
9. To understand the levels of knowledge and use of the library professionals on various aspects of IT like computer technology, network infrastructure, communication media technology, audio-video technology, printing and publication technology and electronic resources

10. To identify the training needs of these library professionals in the area of Information Communication Technology

11. To understand the opinion and attitude of library professionals towards IT and related aspects

12. To examine the differentials in the opinions and attitudes of the library professionals with regard to some selected aspects of IT, by selected background variables

13. To find out the difference in the opinion and attitude of professionals working in NBA accredited and non-accredited engineering college libraries

14. To find out the difference in the knowledge, use, opinion and attitude of professionals working in engineering college libraries located in the three districts.

**STUDY DESIGN & METHODOLOGY:**

The present study is designed to be narrative with a clear comparison of the different aspects of study in the light of location, accreditation of the college, age and sex of the library professionals, etc. The most popular ‘survey method’ is employed with complete coverage of library professionals.
As per the official list of engineering colleges in Andhra Pradesh (2011-2012), there were 711 colleges spread over the 23 districts of the state. For the present study, the three north coastal districts have been selected and there are 58 engineering colleges in these three districts – Srikakulam (10), Vizianagaram (16) and Visakhapatnam (32). Out of the 32 colleges in Visakhapatnam district, one college (AU College of Engineering for Women) is not having a library and this college is excluded. The remaining 31 colleges from Visakhapatnam are covered. The total college libraries covered in the present study comes to 57. There are 116 library professionals currently working in these 57 engineering college libraries and all of them have been covered.

The most popular and widely used ‘Questionnaire method’ is employed for eliciting the needed information. The researcher has personally visited all the 57 college libraries selected for the study and recorded the needed information. Data thus obtained were entered into a personal computer and were analysed using SPSS 15.0 v software. The study is designed to be mainly narrative or descriptive and this does not require elaborate statistical treatment of the data.

**SALIENT OBSERVATIONS**

Before the year 2001, the number of engineering colleges in this part of the state is 8 and growth of private engineering colleges attained pace after 2000 and 49 more colleges were added during the decade 2001-2010. Though the trend is similar, the number of colleges established in Visakhapatnam district is
more compared to the other two districts because of obvious reasons. Out of the total 57 colleges, only 11 (19.3 percent) have been accredited by the NBA.

**Technology Available At Work Place**

**Computer Technology:**

In all, 33 out of the 57 (58 percent) libraries covered reported complete automation and 24 (42 percent) reported partial automation. As expected, all the 11 accredited college libraries were automated – 8 (73 percent) completely and 3 (27 percent) partially.

48 out of the 57 (84 percent) libraries are using Commercial Software, 7 are using Developed Software (12 percent) and 2 are using Free Software (4 percent). Ten out of the 11 accredited college libraries (91 percent) are using Commercial Software and the remaining 9 percent are using Developed Software.

Out of the 57 libraries, 19 libraries (33 percent) are having SQL database and this is followed by ORACLE in 14 (25 percent) and DOTNET in 9 (16 percent) libraries. Other types are reported by relatively few libraries. In 9 libraries, no database is reported. Out of the 11 accredited college libraries, 4 each (36 percent each) reported SQL and ORACLE, 2 reported DOTNET and one reported ASP/SQL.

Out of the 57 libraries covered in the study, 55 librarians (97 percent) reported that LAN facility is available in their college campuses. All the NBA accredited colleges are having LAN facility in their college campuses.
Nature of Infrastructure:

In network infrastructure, the following items are covered: LAN facility, type of network, type of internet connectivity, and facilities for use of e-resources. There is no difference among libraries district wise on LAN facility and facilities for use of e-resources. But in the type of network and type of internet connectivity, the difference is found statistically significant. The first hypothesis is proved on two aspects: LAN facility and facility for use of e-resources and regarding other two areas, type of network connectivity and internet facility are not proved.

29 out of the 57 libraries (51 percent), the type of network reported is Optical Fibre Cables (OFC) and 21 (37 percent) it is Data Cables while the remaining 7 libraries have reported Wi-Fi network. Among the 11 NBA accredited college libraries, 6 (55 percent) are having OFC, 3 (27 percent) are having Data Cable and 2 (18 percent) are having Wi-Fi network.

Twenty-nine out of the total 57 colleges (51 percent) have reported availability of Dial Up type of internet connection in their libraries. Broad Band (DSL) connection is reported in 17 (30 percent) and Leased Line is reported in 11 (19 percent) college libraries. Six out of the 11 NBA accredited colleges (55 percent) have reported Dial Up connection, another 3 (27 percent) reported Broad Band and 2 (18 percent) reported Leased Line internet connections in their libraries.
On the whole, 44 out of the 57 libraries (77 percent) reported that they are having enough internet speed, 53 libraries (93 percent) reported availability of a server for organizing e-resources and 52 libraries (91 percent) reported adequate number of PCs for the students. Among the NBA accredited college libraries, in 8 libraries, the internet speed and number of PCs are reported to be enough and all 11 libraries have reported availability of a server for organizing e-resources.

**Communication Media Technology:**

It is evident that the level of information in the studied libraries is to be improved and it is necessary to make use the information available in electronic formats. Most of the studied libraries are using commercial library software to attend the library routines. All the libraries preferred to use software commercially developed. Some of studied engineering college libraries are not using any database to maintain various library activities.

**Verification of Hypotheses 1**

There are differences in the availability of information and communication technology and network infrastructure in the engineering colleges in 3 districts.

In Information Communication Technology, the status of library automation, library software used and DBMS used are covered. There is no difference among the three district all aspects expect DBMS. So the hypothesis is null expect DBMS. (Table 4.5)
Verification of Hypotheses-2

It is evident from the respective tables that there is no difference on status on library automation, library software package used, facility for use of e-resources, type of network, type of network connectivity between NBA Accredited and non NBA Accredited engineering college libraries. But there is difference on the aspect of facility for use of e-resources.(Table 4.9).

All the 57 librarians have reported that their libraries are having the required facilities related to communication media technology. All the 57 libraries are having Internet and E-mail facilities.

Fax facility is reported in 48 out of the 57 libraries (84 percent). This facility is available in 8 out of the 11 NBA accredited college libraries. Telex facility is reported in 39 of the total 57 libraries (68 percent). This facility is available in 5 out of the 11 NBA accredited college libraries.

Intranet facility is reported in 50 out of the total 57 libraries (88 percent). This facility is available in 7 out of the 11 NBA accredited college libraries. Extranet facility is reported in 32 out of the total 57 libraries (56 percent). This facility is available in 10 out of the 11 NBA accredited college libraries.

Twenty three out of the total 57 libraries (56 percent) reported availability of Voice mail facility. This facility is available in 4 out of the 11 NBA accredited college libraries. Twenty three out of the total 57 libraries (56 percent) reported
availability of Tele-conference facility. This facility is available in 4 out of the 11 NBA accredited college libraries.

Fifty-four out of the 57 libraries (95 percent) have reported membership in one or more educational networks. Most of the libraries (93 percent) have membership in AICTE network. All the 11 NBA accredited college libraries have membership in such network.

AICTE is the network where most of the libraries obtained membership. Next, 37 percent are members of DELNET, 20 percent are members of INDEST, & 7 percent reported membership in SONET and 6 percent INFONET, 4 percent in INFLIBNET and 2 percent each have membership in NISCAIR and NPTEL networks.

**Audio Video Technology:**

Audio Video Technology facilities are available in 53 out of the total 57 libraries (93 percent) and not reported in 4 libraries. Ten out of the 11 NBA accredited colleges have reported facilities for using A V Technology in their libraries.

In 52 college libraries (91 percent), LCD is reported to be available. Ten of the 11 accredited college libraries are having LCD.
**Knowledge and Use of ICT**

**Brief Profile of the Library Respondents:**

Out of the studied 116 library professionals, 57 are librarians, 47 are assistant librarians and the remaining 12 belongs to library assistant category. Most of the professionals have post-graduation in library science besides post-graduations in other disciplines, and have some of them research degrees, many of them pursuing their research degrees. Therefore, the qualifications of library professionals of studied engineering colleges are suitable to introduce any kind of electronic services in libraries.

**Knowledge & Use of Computer Technology:**

All the 116 respondents reported knowledge of computers and 97 are aware of different types of computers. About 98 percent have reported use of computers. Knowledge of writing computer programmes is reported by 78 percent while 70 percent have reported using this ability. About 89 percent are aware of Library Software Packages and 87 percent of them have reported that they have used library software packages.

Knowledge about OPACs is reported by 96 percent and MARC by 91 percent while 84 percent have used OPACs and 71 percent MARC. About 87 percent know about Database Management and 83 percent of them used the same. Eighty-six percent know about CD-ROMs & DVDs while 79 percent of them reported use of them. Nearly 83 percent know about online databases while 81 percent of them used them.
Knowledge of CD-ROM databases is reported by 73 percent, knowledge of Image databases by 52 percent and knowledge of personal reference databases by 46 percent. Use of CD-ROM databases is reported by about 72 percent while those who reported use of image databases and personal reference databases is less than 50 percent (47 and 42 percent respectively).

The percentage reporting knowledge of different components relating to computer technology is found to be relatively less in Srikakulam district compared to Vizianagaram and Visakhapatnam districts. The difference between Vizianagaram and Visakhapatnam is not much with regard to these reported percentages. However, the difference among the three districts in these percentage responses is found statistically significant with regard to knowledge of different types of computers, writing programmes, knowledge of library software packages, OPACs, Database management and knowledge of CD-ROMs & DVDs.

The percentage reporting knowledge of the different aspects listed is more in case of the NBA accredited colleges than in the non-accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically significant with regard to writing programmes, knowledge of library software packages, MARC, online databases, CD-ROMs & DVDs, CD-ROM databases and image databases.

Regarding the use of these listed components also, the reported percentages are found to be relatively less in Srikakulam district compared to
Vizianagaram and Visakhapatnam districts. The difference between Vizianagaram and Visakhapatnam is not much. With regard to use also the percentages reported are more in accredited college libraries than in non-accredited college libraries.

The difference among the three districts in these percentages reporting use is found statistically significant with regard to 8 of the 11 items listed with the exception of three items - use of online databases, CD-ROMs & DVDs and personal reference databases. On the other hand, between the accredited and non-accredited college libraries, the difference in the percentage reporting use is found to be statistically significant with regard to only three items - use of MARC, online databases and CD-ROMs & DVDs.

In general, it appears that there is not much difference between males and females, but, the percentage reporting knowledge of different types of computers, writing programmes, database management, online databases and CD-ROMs & DVDs is more among females while knowledge of the remaining items is reported more by the males. However, the difference between males and females in these percentage responses is found statistically significant with regard to knowledge of writing programmes and MARC.

By age group, knowledge of the listed components of computer technology appears more in the elder age group i.e. those who are aged above 35 years. However, the percentage reporting knowledge about types of computers, writing programmes, OPACs, image databases and personal
reference databases is more among the younger group i.e. those who are aged 35 years or below. The difference between the two age groups is found significant with regard to knowledge of writing programmes and personal reference databases.

The percentage reporting use of the different items listed is more among the males with the exception of two items – writing programmes and use of database management system, which were reported more by the females. In the same way, writing programmes, use of image and personal reference databases are reported more by the younger group while the use of remaining items is reported more by the elder group. The difference between males and females in the percentage reporting use is found statistically significant with regard to the use of MARC while the difference between the two age groups is significant in case of writing programmes.

There is no marked difference in the percentage reporting knowledge of different components listed for computer technology by designation. However, the percentages are slightly better in Assistant Librarian category. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Knowledge of these listed items is more among the senior group i.e. those having more than 10 years of work experience with the exception of items like writing programmes and knowledge of personal reference databases which were reported more by the junior group i.e. those with 10 or less years of work
experience. However, significant difference between the two work experience groups is found for – knowledge of writing programmes, MARC, online and CD-ROM databases.

With regard to use of the different items also, there are no marked differences by designation. Here also, the percentages are slightly better in Assistant Librarian category with regard to the use of most of the listed items. The chi-square values do not reveal any significant difference in the responses among the three categories.

Use of the listed items is reported more among the senior group i.e. those having more than 10 years of work experience with the exception of items like use of computers, writing programmes and knowledge of personal reference databases which were reported more by the junior group i.e. those with 10 or less years of work experience. However, significant difference between the two work experience groups is found for with regard to the use of CD-ROMs & DVDs.

The knowledge and use of computer technology by respondents is promising in all studied variables except image database and reference database. Similar trend reported while analyzing the respondents-district wise and status wise on knowledge on communication and computer technology.

However, the response rate of computer technology is not promising, except live databases, CD-ROMs, DVDs and computers.
Knowledge & Use of Communication Media Technology:

Most of the respondents (97 percent) are aware of the concept of communication and 89 percent know about the different means of communication. Knowledge of ‘Browsers’ is reported by 92 percent, knowledge of ‘Search Engines’ by 88 percent, ‘Bar Code’ by 84 percent and knowledge of ‘Digital / Virtual Library’ by 75 percent.

Coming to the use of different means of communication, 94 percent reported use of ‘Internet’, 87 percent used ‘Search Engines’ and 86 percent used – Browsers, Fax and Intranet. Use of E-mail, Telex and Bar Code are reported by 78 percent each and 70 percent have used multimedia and 60 percent reported use of Extranet. Voice mail and Tele conference have been reported to be used by relatively fewer respondents 40 and 41 percent respectively.

The percentage reporting knowledge of different components relating to communication media technology is found to be relatively less in Srikakulam district compared to Vizianagaram and Visakhapatnam districts. The difference between Vizianagaram and Visakhapatnam is not much with regard to these reported percentages, but appear slightly better in Visakhapatnam district. However, the difference among the three districts in these percentage responses is found statistically significant with regard to knowledge of the concept of communication, different means of communication and search engines.

The percentage reporting knowledge of the different aspects listed is more in case of the NBA accredited colleges than in the non-accredited colleges with
the exception of two items – concept of communication and means of communication that are reported known more by those from non-accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically significant with regard to knowledge of the concept of communication, search engines and bar code.

Regarding the use of these listed components also, the reported percentages are found to be relatively less in Srikakulam district compared to Vizianagaram and Visakhapatnam districts with the exception of two items – fax and telex which were reported to be used more from Srikakulam district. The difference between Vizianagaram and Visakhapatnam is not much. With regard to use also the percentages reported are more in accredited college libraries than in non-accredited college libraries.

The difference among the three districts in these percentages reporting use is found statistically significant with regard to 8 of the 12 items listed with the exception of four items - use of browsers, bar code, fax and telex. On the other hand, between the accredited and non-accredited college libraries, the difference in the percentage reporting use is found to be statistically significant with regard to use of telex only.

In general, it appears that there is not much difference between males and females, but, the percentage reporting knowledge of the concept of communication and means of communication is reported more by the females
and knowledge of other items like browsers, search engines, barcode and digital library are reported more by the males. However, the difference between males and females in these percentage responses is found statistically significant with regard to knowledge of bar codes only.

By age group, knowledge of most of the listed components of communication media technology appears more in the elder age group i.e. those who are aged above 35 years. However, the percentage reporting knowledge about concept of communication and digital library are reported more among the younger group i.e. those who are aged 35 years or below. The difference between the two age groups is found significant with regard to knowledge of the concept of communication only.

The percentage reporting use of the different items listed is more among the males with the exception of three items – multimedia, fax and telex, which were reported more by the females. In the same way, use of different means of communication is reported more by the younger group while the elder group reported more – use of browsers, search engines, fax, intranet and extranet. The difference between males and females in the percentage reporting use is found statistically significant with regard to the use of Telex, while the difference between the two age groups is not significant with regard to the use of the listed items.

No marked difference in the percentage reporting knowledge of different components listed for communication media technology by designation. The
computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Knowledge of these listed items is more among the senior group i.e. those having more than 10 years of work experience with the exception of one item – knowledge about the concept of communication, which was reported more by the junior group i.e. those with 10 or less years of work experience. The computed chi-square values do not reveal any significant difference in the responses among the two groups of work experience.

With regard to use of the different items also, there are no marked differences by designation. However, the percentages are slightly better in Assistant Librarian category with regard to the use of most of the listed items. The chi-square values do not reveal any significant difference in the responses among the three categories.

Use of the listed items is reported more among the senior group i.e. those having more than 10 years of work experience with the exception of two items - use of telex and voice mail which were reported more by the junior group i.e. those with 10 or less years of work experience. However, significant difference between the two work experience groups is found with regard to the use of bar code and e-mail.

Most of the respondents have reported their knowledge and use of communication media technology aspects in all the variables, i.e., district, status,
gender, age, designation and work experience. But the response rate on voice mail and teleconference is far from satisfaction.

**Knowledge & Use of Audio Video Technology:**

About 92 percent of the respondents reported the knowledge of audio video technology while 87 percent of them have reported use of the same. Knowledge about the different means of audio video technology is reported by 81 percent and 78 percent have used them. Knowledge about LCD is reported by 87 percent while 84 percent of them have reported use of LCD. Seventy-three percent are aware of Overhead Projector (OHP) while 70 percent have used the OHP earlier.

The percentage reporting knowledge of different components relating to audio video technology is found to be relatively less in Srikakulam district compared to Vizianagaram and Visakhapatnam districts. The difference between Vizianagaram and Visakhapatnam is not much with regard to these reported percentages, but appear slightly better in Vizianagaram district. However, the difference among the three districts in these percentage responses is found statistically not significant with regard to knowledge of the different items listed.

The percentage reporting knowledge of the different aspects listed is more in case of the NBA accredited colleges than in the non-accredited colleges with the exception of knowledge about LCD, which is reported more by those from non-accredited colleges. The difference between the NBA accredited and non-
accredited college libraries in these percentage responses is found statistically not significant with regard to knowledge of the four items listed.

Regarding the use of these listed components also, the reported percentages are found to be relatively less in Srikakulam district compared to Vizianagaram and Visakhapatnam districts and the levels of knowledge is slightly more in Vizianagaram district. With regard to use also the percentages reported are more in non-accredited college libraries than in accredited college libraries, the exception being the use of AV technology. The chi-square values did not reveal any statistical significance among the three districts and also between the accredited and non-accredited college libraries.

Although there is not much difference in the percentage values, the percentage reporting knowledge of the listed components of AV technology is more among the females except in the case of knowledge of OHP, which is reported more by the males. The difference between males and females in these percentage responses is found statistically not significant with regard to the four items listed.

By age group, knowledge of AV technology and means of AV technology appears more in the elder age group i.e. those who are aged above 35 years, while the percentage reporting knowledge about LCD and OHP are more in the younger group i.e. those who are aged 35 years or below. There is no significant difference between the two age groups with regard to knowledge of the four items listed.
The percentage reporting use of the different items listed is more among the females than males and in younger group than in the elder group. There is no significant difference between the males and females and also between the two age groups with regard to use of the four items listed.

It can be said that, over all, there is no marked difference in the percentage reporting knowledge of different components listed for communication media technology by designation. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Knowledge of these four listed items is more among the senior group i.e. those having more than 10 years of work experience. The computed chi-square values indicate significant difference in the responses among the two groups of work experience in case of knowledge about AV technology.

With regard to use of the different items listed here, the percentages are a low in the Library Assistant category while the values are better in Assistant Librarian category. The chi-square values do not reveal any significant difference in the responses among the three categories.

Use of different means of AV technology is reported more among the senior group i.e. those having more than 10 years of work experience while use of the other three items is reported more by the junior group i.e. those with 10 or
less years of work experience. The chi-square values do not reveal any significant difference in the responses among the two groups.

It shows, the respondents gave positive response to the aspects asked on knowledge and use of Audio-Video technology. The response rate is promising in the selected variables.

**Knowledge & Use of Electronic Resources:**

It is welcoming to note that all the 116 respondents covered in the present study are aware of the Electronic Publishing and all of them are having knowledge of e-books, e-journals and e-magazines and 95 to 98 percent of them have used them also. Knowledge about e-audio/video lectures is reported by 92 percent and use of the same by 85 percent. Eighty percent know about e-databases while 79 percent of them have used them. About 72 percent know about the institutional repositories while 66 percent of them reported use of the same. Knowledge of open sources is reported by 72 percent while use of open sources is reported by 70 percent.

It is already mentioned that all the 166 respondents know about e-publishing, e-books, e-journals and e-magazines and also used them. The percentage reporting knowledge of other sources listed is found to be relatively less in Srikakulam district and appear better in Visakhapatnam district. However, the difference among the three districts in the percentage reporting knowledge of e-audio/video lectures, e-databases, institutional repositories and open sources is found statistically significant.
The percentage reporting knowledge of e-audio/video lectures, e-databases, institutional repositories and open sources is more in case of the NBA accredited colleges than in the non-accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically not significant with regard to knowledge of the four items.

Regarding the use of these listed components, use of e-books is reported more in Srikakulam district, use of e-journals and e-magazines is reported more in Vizianagaram district while the percentage reporting use of other items is more in Visakhapatnam district. With regard to use of the listed electronic resources, the percentages reported are more in accredited college libraries than in non-accredited college libraries.

The difference among the three districts in the percentages reporting use is found statistically significant with regard to two items listed – use of e-databases and institutional repositories. On the other hand, between the accredited and non-accredited college libraries, the difference in the percentage reporting use is not found significant with regard to any of the four items listed.

The percentage reporting knowledge of e-audio video lectures and e-databases is more among the males and knowledge of institutional repositories and open sources is more among the females. However, the difference between males and females in these percentage responses is found statistically not significant.
By age group, knowledge of e-audio-video lectures is reported more by the elder age group i.e. those who are aged above 35 years. The percentage reporting knowledge about e-databases, institutional repositories and open sources is more among the younger group i.e. those who are aged 35 years or below. No significant difference is found between the two age groups with regard to knowledge of the listed e-resources.

The percentage reporting use of e-books, e-journals, e-magazines and e-databases is more among the males and use of e-audio-video lectures, institutional repositories and open sources is reported more by the females. The difference between males and females in the percentage reporting use is found statistically significant with regard to the use of e-journals.

Use of e-books, e-audio - video lectures and e-databases is reported more by the elder group i.e. those with more than 35 years of age and use of e-journals, e-magazines institutional repositories and open sources is reported more by the junior group i.e. those aged 35 years or less. The difference between the two age groups is not significant with regard to the use of the listed items.

Not much difference is seen in the percentage reporting knowledge of different electronic resources by designation. However the reported knowledge levels are slightly better among the Assistant Librarian category. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.
Knowledge of these listed items is more among the senior group i.e. those having more than 10 years of work experience than the junior group i.e. those with 10 or less years of work experience. The computed chi-square values do not reveal any significant difference in the responses among the two groups of work experience.

With regard to use of the different resources, use of e-books is reported more by the Library Assistants while all other sources are reported to be used more by the Assistant Librarian category. In general, there are no marked differences by designation. The chi-square values do not reveal any significant difference in the responses among the three categories.

Use of the e-journals and e-magazines is reported more by the junior group i.e. those having 10 or less years of work experience while use of all other resources is reported more by the senior group i.e. those with more than 10 years of work experience. The difference in the percentage values is not much between the two groups. However, no significant difference between the two work experience groups is found for with regard to the use of different electronic resources.

The studied users responded positively to the aspects asked on knowledge and use of e-resources. The knowledge on e-publishing is promising, but no library is going for e-publications. In all these variables applicable, i.e. district and status, gender and age, designation and work experience – the respondents reported well.
Knowledge & Use of Computer Printing Technology:

In all, 96 percent of the respondents covered in the present study are aware of the Computer Printing Technology. Almost all (99 percent) of them know about computer printers and used them. Knowledge of Desk Top Printing (DTP) is reported by 88 percent while 85 percent of them reported use of the same. Seventy two percent know about Page Maker while 71 percent of them have used it. Knowledge of Photocopying Machine is reported by about 85 percent while 81 percent have used the machine.

The percentage reporting knowledge of different components listed under computer printing technology is found to be relatively less in Srikakulam district. Knowledge of computer printing technology and photocopying machine were reported more from Vizianagaram district while knowledge of computer printers, DTP and Page Maker are reported more in Visakhapatnam district. However, the difference among the three districts in the percentage reporting knowledge of DTP, Page Maker and Photocopying machine is found statistically significant.

The percentage reporting knowledge of computer printing technology and computer printers is more in case of the NBA accredited colleges than in the non-accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically not significant with regard to knowledge of the five items.
Regarding the use of these listed components, use of all four listed items is reported less in Srikakulam district, while use of these items is reported more in Vizianagaram district. The difference in the percentage values is not much between Vizianagaram and Visakhapatnam districts. On the other hand, use of computer printers and DTP is reported more in accredited college libraries and use of page maker and photocopying machine are reported more in non-accredited college libraries.

The difference among the three districts in the percentages reporting use is found statistically significant with regard to use of DTP, Page Maker and Photocopying machine. On the other hand, between the accredited and non-accredited college libraries, the difference in the percentage reporting use is not found significant with regard to any of the four items listed.

The percentage reporting knowledge of all five items listed is more among the females and the difference between males and females in these percentage responses is found statistically not significant.

By age group, knowledge of computer printing technology, different computer printers and DTP are reported more by the elder age group i.e. those who are aged above 35 years. The percentage reporting knowledge about page maker and photocopying machine is more among the younger group i.e. those who are aged 35 years or below. Significant difference is found between the two age groups with regard to knowledge of photocopying machine.
The percentage reporting use of computer printers is more among the males and use of DTP, page maker and photocopying machine is reported more by the females. The difference between males and females in the percentage reporting use is not found statistically significant with regard to the use of any of the five items listed.

Use of all four components listed is reported more by the younger group i.e. those aged 35 years or less. The difference between the two age groups is not significant with regard to the use of the listed items.

Not much difference is seen in the percentage values, but, knowledge of computer printing technology and photocopying machine is more among the Librarians. Knowledge of different computer printers, DTP and Page maker are more among the Assistant Librarians and knowledge of photocopying machine is reported more by the library assistants. However the computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Except DTP, knowledge of the other four listed items is more among the senior group i.e. those having more than 10 years of work experience than the junior group i.e. those with 10 or less years of work experience. The computed chi-square values do not reveal any significant difference in the responses among the two groups of work experience.
With regard to use of the different resources, use of the four listed components of computer printing technology is reported more by the Library Assistants followed by the librarians and library assistants. The chi-square values do not reveal any significant difference in the responses among the three categories.

Use of photocopying machine is reported more by the senior group i.e. those with more than 10 years of work experience, while use of all other resources is reported more by the junior group i.e. those having 10 or less years of work experience. The difference in the percentage values is not much between the two groups. However, no significant difference between the two work experience groups is found for with regard to the use of the listed items.

All the respondents are expressed their knowledge on printing technology. The response rate on knowledge and use of the remaining aspects of printing technology is promising, so the professionals can attend printing services.

**Skills Acquired & ICT Training Needs**

**Skills acquired related to the use of ICT:**

It is quite welcoming to note that a majority of the respondents have received training in use of different technologies under ICT. The earlier training is obtained during their pursuit of professional degree or in a special training programme.

All the respondents (100 percent) have reported that they were trained in using the e-mail. Almost all (99 percent) reported that they received training in
use of electronic resources, 97 percent were trained in use of computer technology, 94 percent in computer printing technology, 92 percent in use of AV technology and 88 percent received training in use of communication technology.

The percentage reporting earlier training in different components under ICT ranged between 80 and 100. The percentage reporting earlier training in the five listed areas is found to be relatively less in Srikakulam district and slightly better in Vizianagaram district. However, the difference among the three districts in the percentage reporting earlier training in use of communication technology is found statistically significant.

The percentage reporting earlier training in use of computer technology and use of electronic resources is more in case of the NBA accredited colleges while the percentage reporting earlier training in the use of communication technology, AV technology and computer printing technology is more among the non-accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically not significant with regard to all the listed five items.

The percentage reporting earlier training on the use of computer technology is more among the females and earlier training in communication technology, AV technology, electronic resources and computer printing technology have been reported more by the males. The difference between males and females in these percentage responses is found statistically not significant.
By age group, earlier training on the use of communication and AV technologies are reported more by the elder age group i.e. those who are aged above 35 years. The percentage reporting earlier training on the use of computer technology, electronic resources and computer printing technology is more among the younger group i.e. those who are aged 35 years or below. No significant difference is found between the two age groups with regard to earlier training in any of the five listed areas.

Not much difference is seen in the percentage values, but, earlier training in use of different IC Technologies is relatively less among the Librarians and better among the Assistant Librarians followed by Library Assistants. However, the computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Earlier training on use of computer technology, computer printing technology and AV technology is more among the senior group i.e. those having more than 10 years of work experience while the junior group i.e. those with 10 or less years of work experience have reported earlier training on the use of communication technology and electronic resources. The computed chi-square values do not reveal any significant difference in the responses among the two groups of work experience.
It is understood that most of the staff acquired computer skills on various aspects through earlier training. Similar trend appeared in all the three background variables.

**Areas where Further Training is required:**

Although majority of the respondents have reported earlier training on the use of different IC Technologies, interestingly, most of them (more than 90 percent) expressed the need for further training.

About 98 percent of the respondents are interested in learning more about the use of electronic resources, while 97 percent felt the need for knowing more about the use of bar code system. Those who wanted to know about computer applications and AV technology is 94 percent. Further training on use of library software packages is felt necessary by 95 percent, further training on use of communication technology by 93 percent, printing technology by 91 percent and database management by 79 percent.

The percentage reporting need for further training in different components under ICT ranged between 95 and 100 while 55 percent wanted to know more about database management. The percentage reporting need for further training in Vizianagaram district ranged between 86 and 100 while this range is 81 to 100 in Visakhapatnam district. The difference among the three districts in the percentage reporting need for further training is found statistically significant for database management only.
The percentage reporting need for further training in database management, bar code system and AV technology is more in case of the non-accredited colleges while the percentage reporting need for further training in the remaining five areas is more among the accredited colleges. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically significant with regard to the use of database management only.

The percentage reporting need for further training in use of communication technology is more among the females and need for further training in use of ICT in the remaining seven areas has been reported more by the males. The difference between males and females in these percentage responses is found statistically not significant.

By age group, need for further training on the use of computer applications, database management, library software package and communication technology are reported more by the elder age group i.e. those who are aged above 35 years. The percentage reporting need for further training on the use of bar codes, AV technology, e-resources and printing technology is more among the younger group i.e. those who are aged 35 years or below. No significant difference is found between the two age groups with regard to earlier training in any of the listed areas.

Most of the Library assistants reported the need for further training on the use of different IC Technologies. Among the librarians and Assistant librarians,
the difference is not much and the training need is also more or less similar. However the computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

Need for further training on use of database management, bar code system and e-resources is reported more by the junior group i.e. those with 10 or less years of work experience while the senior group i.e. those having more than 10 years of work experience have reported need for further training on the use of ICT in the remaining five areas listed. The computed chi-square values do not reveal any significant difference in the responses among the two groups of work experience.

Though the respondents reported their knowledge on various aspects of communications technology skills, they preferred to have training further on all aspects of communication technology. It is clear from the above discussion, a good majority of respondents have opted further training on all aspects.

**Preferred Type and Location for future training:**

All the 116 respondents have unanimously opted for short term training and more than half (59 percent) of them preferred to have the training at their work place. About 33 percent preferred to have the training outside their work place while the remaining 8 percent did not mention any choice but are ready to have it anywhere.
As already mentioned the preferred type of training is a short term training programme. The percentage that preferred to have the training at their work place is more (67 percent) in Visakhapatnam district followed by 52 percent from Vizianagaram and 40 percent from Srikakulam districts. The percentage preferring the training outside the work place is more in Srikakulam district (45 percent) than in Vizianagaram (35 percent) and Visakhapatnam districts (28 percent). The difference among the three districts in these percentage responses is not found statistically significant.

The work place is preferred more for future training by the respondents from the non-accredited colleges (65 percent) while 50 percent of the respondents from the accredited colleges preferred to have the training outside the work place. The difference between the NBA accredited and non-accredited college libraries in these percentage responses is found statistically significant with regard to the preferred location for future training.

As expected, the percentage preferring work place for the future training is more among the females (68 percent) than among the males (55 percent). More males (35 percent) preferred the training outside the work place than the females (27 percent) while 10 percent of males and 6 percent of females did not report any choice. The difference between males and females in these percentage responses is found statistically not significant.

By age group, work place for further training is preferred more (64 percent) by the younger group i.e. those who are aged 35 years or below than
the elder age group i.e. those who are aged above 35 years (52 percent). The percentage reporting preference for training outside the work place is more among the elder group (37 percent) than the younger group (30 percent). No significant difference is found between the two age groups with regard to earlier training in any of the listed areas.

The location preferred for further training is work place by librarians and Assistant librarians (60 percent each) while 50 percent of the library assistants preferred work place for further training. Preference for training outside the workplace is expressed by 50 percent of the library assistants, 34 percent of the assistant librarians and 28 percent of the librarians. Twelve percent of the librarians and 6 percent of the assistant librarians did not report any choice of location. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

About 63 percent of the respondents belonging to the junior group i.e. those with 10 or less years of work experience and 50 percent of the senior group i.e. those having more than 10 years of work experience have stated their preference for further training at work place. On the other hand, 59 percent from junior group and 42 percent from senior group have preferred outside work place for further training. About 9 percent of the juniors and 8 percent of the seniors did not mention any choice of location for future training. The computed chi-square
values do not reveal any significant difference in the responses among the two
groups of work experience.

All the respondents preferred short term training methods to acquire skills
further. Nearly 60% of the respondents preferred training at place of work.
Similar trend has reported on the variables of district and status, gender and age
group and designation and work experience.

Attitude Towards & Opinion on ICT

Attitude towards and Opinion on Computer Technology:

It is quite interesting to observe that only 40 out of the 116 respondents
(34 percent) are in favour of complete automation of the library and the remaining
76 (66 percent) did not prefer complete automation of the library. Before
considering the observations below, the small numbers in certain categories
considered in cross tabulation should be kept in mind.

Those who expressed their preference for complete automation of the
library are more from the Srikakulam district (40 percent) followed by
Visakhapatnam district (37 percent) and Vizianagaram district (21 percent).

About 63 percent of the respondents from NBA accredited colleges
reported that they prefer complete automation of the library while 24 percent from
non-accredited colleges reported the same.
By gender, 35 percent of the males and 33 percent of the females expressed that they prefer complete automation. By age group, 46 percent of the elder group, i.e. those aged above 35 years and 25 percent of the younger group, those aged 35 years or below have reported their preference for complete automation.

Preference for complete automation has been reported more by the library assistants (50 percent) than the assistant librarians (34 percent) and librarians (32 percent). The percentage reporting preference for complete automation is more among the senior group i.e. those with more than 10 years of work experience than in the junior group, i.e. those with 10 or less years of experience. The difference in the responses relating to preference for complete automation of the library is found statistically significant by status of accreditation and age group of the respondents.

Most of the respondents (46 percent) reported that, in their opinion, the Acquisition section needs to be computerized first. This is followed by preference for computerization of Text Book section (16 percent), Periodicals section (15 percent), Reference section (13 percent), Circulation section (9 percent) and Technical section (1 percent).

Majority of respondents gave preference to partial automation rather than full automation of their libraries. But majority preferred automation in acquisition section. Some of the professionals expressed, they need proper training in library automation software.
Opinion / Agreement with selected statements related to Computer Technology:

It is to be mentioned here that more than 80 percent of the respondents have reported their agreement with the listed statements relating to computer technology.

About 84 percent of the respondents agreed that the library software packages developed exclusively for their requirements are better than the available commercial packages. Nearly 90 percent reported their satisfaction with the customization of software packages. Nearly 89 percent reported that the CD-ROMs and DVDs are important in library collection.

Almost all the respondents (99 percent) have felt that computers will enhance the quality of library services. On the other hand, about 95 percent opined that computers shadow the library profession. Eighty five percent are of the opinion that Information Technology helps in developing the professional career.

Ninety-five percent of the respondents are reading some computer related magazines for updating their knowledge and skills in computer / IT field.

The percentage of respondents who agreed with the listed statement ranged between 90 and 100 in Srikakulam, 86 and 100 in Vizianagaram and 73 and 99 in Visakhapatnam districts. The difference in the responses among the three districts is found statistically significant in the case of agreement with the
statement ‘the developed software packages are better than the commercial ones’.

The percentage reporting agreement with the selected statements is more among the respondents from NBA accredited college libraries than among the non-accredited college libraries. No statistically significant differences are found between the accredited and non-accredited college libraries with regard to any of the listed statements.

About 83 to 100 percent of the males and 85 to 97 percent of the females have reported their agreement with the listed statements. In general the percentage reporting agreement is more among the males than among the females with regard to each of the statements. However, the gender difference with regard to the responses related to any of the statement is not found significant.

In the same way, 77 to 98 percent of the younger group (aged 35 years or below) and 90 to 100 percent of the elder group (aged above 35 years) have reported agreement with the selected statements. The percentage reporting agreement is more from the elder group than from the younger group in case of each of the statements and the chi-square value revealed significant difference in the responses between the two age groups with regard to the statement “Information Technology helps in developing professional career”.
About 86 to 100 percent of the librarians, 77 to 100 percent of the assistant librarians and 83 to 100 percent of the library assistants have reported their agreement with the listed statements. In general the percentage reporting agreement is more among the assistant librarians than among the librarians. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant, the exception being for the statement “Computers enhance the quality of library services”.

In the same way, 83 to 99 percent of the junior group (with an experience of 10 years or below) and 86 to 100 percent of the senior group (with an experience of more than 10 years) have reported agreement with the selected statements. The chi-square values do not reveal any significant difference in the responses between the two age groups.

Almost all the respondents agreed with the aspects asked in computer technology. This situation remains same in the background variables i.e. district and status, gender and age, designation and work experience. All the respondents agreed with the statement that computerization enhance the quality of library profession.
Opinion / Agreement with selected statements related to Communication Media Technology:

It is to be mentioned here that more than 84 percent of the respondents have reported their agreement with the listed statements relating to communication media technology.

About 91 percent of the respondents agreed that E-mail is more useful for information transfer over other methods. About 98 percent reported that multimedia is important in library collection. Nearly 84 percent reported that Multimedia supplements the print media and the remaining 16 percent opined that multimedia supersedes the print media. About 98 percent expressed their satisfaction with Internet facility as a tool for their information search.

The percentage of respondents who agreed with the listed statement ranged between 60 and 100 in Srikakulam, 90 and 100 in Vizianagaram and 87 and 99 in Visakhapatnam districts. The difference in the responses among the three districts is found statistically significant in the case of agreement with the statement related to the impact of multimedia on print media.

The percentage reporting agreement with the selected statements is more or less similar among the respondents from NBA accredited college libraries and the non-accredited college libraries. No statistically significant differences are found between the accredited and non-accredited college libraries with regard to any of the listed statements.
About 87 to 98 percent of the males and 76 to 100 percent of the females have reported their agreement with the listed statements. In general the percentage reporting agreement is more among the males than among the females with regard to each of the statements. However, the gender difference with regard to the responses related to any of the statement is not found significant.

In the same way, 84 to 98 percent of the younger group (aged 35 years or below) and 79 to 100 percent of the elder group (aged above 35 years) have reported agreement with the selected statements. The percentage reporting agreement is more from the elder group than from the younger group and the chi-square value revealed significant difference in the responses between the two age groups with regard to the statement related to usefulness of e-mail for information search over other methods.

About 86 to 100 percent of the librarians, 81 to 98 percent of the assistant librarians and 83 to 100 percent of the library assistants have reported their agreement with the listed statements. In general the percentage reporting agreement is more among the librarians than among the assistant librarians. The computed chi-square values do not reveal any significant difference in the responses among the three categories – librarian, assistant librarian and library assistant.

In the same way, 84 to 99 percent of the junior group (with an experience of 10 years or below) and 83 to 100 percent of the senior group (with an
experience of more than 10 years) have reported agreement with the selected statements. The chi-square values do not reveal any significant difference in the responses between the two age groups.

Except the statement, multimedia supersedes the print media, the remaining are accepted by a good majority of respondents. Therefore, the professionals may make use the communication media technology to satisfy the user.

Opinion / Agreement with selected statements related to Audio Video Technology:

In all, about 83 percent of the respondents reported that knowledge of audio video technology is useful for the library professionals, while 14 percent felt that it is not useful. The remaining 3 percent could not say either way.

The percentage who feels that AV technology is useful for library professionals is 85 in Visakhapatnam, 83 in Vizianagaram and 75 in Srikakulam districts. The difference in these responses among the three districts is statistically significant.

Ninety percent from NBA accredited college libraries and 80 percent from non-accredited college libraries reported the usefulness of AV technology to library professionals.

By gender, 85 percent of females and 82 percent of males are of the opinion that AV technology is useful to the library professionals. The same view
is expressed by 87 percent of the respondents from older age group (above 35 years of age) and 80 percent from younger group (35 years or below).

All the library assistants, 83 percent of the librarians and 79 percent of the assistant librarians expressed that knowledge of AV technology is useful for library professionals. The same view is reported by 89 percent of the senior group (more than 10 year of work experience) and 80 percent of the junior group (10 years or less work experience).

About 83% of the respondents agreed with them usefulness of knowledge on audio-video technology. It shows that professionals have reasonable knowledge in audio-video technology and they com forward to make use this technology in libraries.

Opinion / Agreement with selected statements related to Use of electronic resources:

It is to be mentioned here that almost all the respondents have reported their agreement with the listed statements relating to use of electronic resources.

About 99 percent of the respondents agreed that E- Resources are time saving in getting needed information. An equal proportion also stated that use of e-resources is not easy and it requires different skills. All the 116 respondents have agreed that more information is available through electronic resources.
As the percentage responses showing agreement with the listed statements is high (more than 99 percent), cross tabulations by background variables is not necessary.

Almost all the respondents have reported agreement with use of e-resources. This status is more or less same in all the three variables. It indicates that professionals are reasonably trained to make use of the e-resources.

**Opinion / Agreement with selected statements related to Computer Printing Technology:**

It is observed that about 87 percent of the total respondents agree that the knowledge of computer printing technology is necessary for the library professionals while the remaining 13 percent felt that it is not necessary.

The proportion of respondents who agree that the knowledge is necessary is 100 percent in Srikakulam, 93 percent in Vizianagaram and 81 in Visakhapatnam districts. The chi-square value indicates significant difference among the three districts with regard to these responses.

Ninety percent from NBA accredited and 86 percent from non-accredited college libraries also reported that the knowledge of computer printing technology is necessary for library professionals.

About 94 percent of the females and 84 percent of the males also felt the need for knowledge on computer technology. This is expressed by 92 percent of
the elder group (above 35 years of age) and 83 percent of the younger group (aged 35 years or below).

The need for knowledge of computer printing technology is reported by all the library assistants, 86 percent of the librarians and 85 percent of the assistant librarians.

The same view is recorded from 89 percent of the junior group (with 10 or less tears of work experience) and 83 percent of the senior group (with more than 10 years of work experience).

A good majority of respondents have opined the necessity of knowledge on computer printing technology. The same view is expressed in almost all the background variables to use and analyze this concept. It is a noteworthy feature that professionals can offer all kinds of computer printing services in their services.

**Opinion on the Need for Printing Technology in library housekeeping activities by Background Variables:**

In all, 94 percent of the respondents agree that printing technology is necessary for the library housekeeping activities while the remaining 6 percent felt that it is not necessary.

The proportion of respondents who agree that printing technology is necessary in library housekeeping activities is 100 percent in Srikakulam, 97 percent in Vizianagaram and 91 in Visakhapatnam districts.
Ninety-seven percent from NBA accredited and 93 percent from non-accredited college libraries also reported that the printing technology is necessary for library housekeeping activities.

All the female respondents and 92 percent of the males also felt the need for computer technology in housekeeping. This is expressed by 94 percent of the elder group (above 35 years of age) and by an equal percent of the younger group (aged 35 years or below).

The need for printing technology in library housekeeping activities is reported by all the library assistants, 97 percent of the librarians and 89 percent of the assistant librarians.

The same view is recorded from 94 percent each of the junior group (with 10 or less years of work experience) and of the senior group (with more than 10 years of work experience).

All most all the respondents studied, expressed the necessity of printing technology in library housekeeping activities. Most of the professionals use this facility to print the reports in a way the administration ask for.

**Verification of Hypotheses-3:**

Hypothesis-3: The attitude and opinion of library professionals vary among the males and females.
The attitudes of professional on preference for complete automation (Table-4.46), opinion/agreement with selected statements related to computer technology (Table-4.48), opinion/agreement with selected statements related to communication media technology (Table-4.54), opinion/agreement with selected statements related to audio video technology (Table-4.56), opinion/agreement with selected statements related to use of electronic resources (Table-4.59) and opinion/agreement with selected statements related to computer printing technology (Table-4.61) shows that there is no significant difference by gender wise. So the hypothesis is null.

Verification of Hypotheses-4:

Hypothesis-4: The attitude and opinion of library professionals vary with the age groups.

The attitudes of professional on opinion/agreement with selected statements related to computer technology (Table-4.48), opinion/agreement with selected statements related to communication media technology (Table-4.54), opinion/agreement with selected statements related to audio video technology (Table-4.56), opinion/agreement with selected statements related to use of electronic resources (Table-4.59) and opinion/agreement with selected statements related to computer printing technology (Table-4.61) shows that there is no significant difference with the age groups. So the hypothesis is null.
SUGGESTIONS FOR IMPROVEMENT

1. It is suggested to automate the Engineering college Libraries in priority basis.

2. Data Base Management is an essential Item in Library Automation. It is suggested that the Libraries which do not have any DBMS, they should go for data base keeping in mind the services that they are going to offer to users.

3. Since all libraries have excellent communication facilities to make use E-resources. It is suggested that the management may go for E-Packages particularly E- Journals.

4. It is suggested that the library should be a member of educational networks and the membership should be renewed in-order to have continuous flow of information from educational networks.

5. Since academic and Professional qualifications of the library professionals are promising, they should be encouraged to attend in-service training programs particularly on computers and related areas.

6. Most of the respondents expressed their knowledge and use of different components of computer technology. It is suggested that they should be encouraged to improve they skills and knowledge on computers and related areas further by attending short term and long term training programmes.
7. The knowledge and use of different components of communication media technology is promising except on voice mail and teleconference. It is suggested to have E-Resources to make them available to users.

8. The knowledge on E-Resources of the respondents is promising and encourages to go for E-Resources to meet the information requirements of users. It is suggested that the library should give importance to E-Resources in the collection development.

9. It is suggested that the professionals in engineering college libraries be encouraged to participate in in-service training program on library networks to update their knowledge and skills in order to offer information services to the expectations of users.

10. It is suggested that staff should be asked to undergo training on library software packages on OPAC’s and MARC’s on priority basis.

11. Most of the respondents expressed their knowledge and use of communication media technology. It would be right to suggest to go far any kind of E-resources which may come in future.

12. It is suggested to encourage further to learn audio-video technology which may help them in turn to use of E-learning resources like NPTEL, SONET., ect.

13. It is suggested to give further training on E-Journals, E-Books ect., and computer printing technology. It would help to serve the users better.

14. It is suggested that the professionals be encouraged for advanced training in the areas of communication technology further.
15. It is suggested to encourage the library professionals by giving reasonable priority for long term training programs.

16. It is suggested that professionals be encouraged to train themselves in library automation.

17. Communication media technology plays a crucial role in access to E-Resources. It is suggested that staff be given opportunity to learn latest communication media technology from time to time.

18. It is suggested that professionals be asked to improve their skills in audio-video technology from time to time.

19. It is suggested that staff be asked to learn the latest computer and printing technology as and when they appear in the scene.

**Suggestions for future study:**

The following are some suggestions for further research in the area related to the present investigation.

- The study may be taken up by increasing the sample.

- The study may be extended to the other areas of user services by framing a questionnaire with modifications.

- The study may be selected and conducted on District and status wise, gender and age, designation and work experience etc.

- A comparative study may be conducted on the different variables of user services.
- A comparative study may be conducted between the colleges of different managements like Government vs. Private; NBA accredited vs Non-accredited.

- A study may be extended to the other regions/areas (Geographical areas, like A.U. region, O.U. region, S.V.U. region or study on A.P. state or country.)
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