“NECESSITY OF TRAINING IN ICT TO LIBRARY PROFESSIONALS WORKING IN COLLEGE LIBRARIES AFFILIATED TO SOLAPUR UNIVERSITY, SOLAPUR: AN ANALYTICAL STUDY”

MINOR RESEARCH PROJECT REPORT

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## CONTENT

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chapter No. I : Introduction</td>
<td>01</td>
</tr>
<tr>
<td>2.</td>
<td>Chapter No. II : Review of Literature</td>
<td>12</td>
</tr>
<tr>
<td>3.</td>
<td>Chapter No. III : Research Methodology</td>
<td>27</td>
</tr>
<tr>
<td>4.</td>
<td>Chapter No. IV : Analysis and Interpretation of the Data</td>
<td>52</td>
</tr>
<tr>
<td>5.</td>
<td>Chapter V : Findings, Conclusion and Recommendations</td>
<td>74</td>
</tr>
<tr>
<td>6.</td>
<td>References</td>
<td>84</td>
</tr>
<tr>
<td>7.</td>
<td>Appendix I : Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Sr.No.</td>
<td>Title</td>
<td>Page No.</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>1.</td>
<td>List of colleges affiliated to Solapur University, Solapur in 2014-15</td>
<td>33</td>
</tr>
<tr>
<td>2.</td>
<td>Flow chart showing number of colleges affiliated to Solapur University, Solapur along with no. of aided and unaided colleges</td>
<td>42</td>
</tr>
<tr>
<td>3.</td>
<td>Collection Development</td>
<td>53</td>
</tr>
<tr>
<td>4.</td>
<td>Library services</td>
<td>54</td>
</tr>
<tr>
<td>5.</td>
<td>Other facilities</td>
<td>54</td>
</tr>
<tr>
<td>6.</td>
<td>Statistical data</td>
<td>55</td>
</tr>
<tr>
<td>7.</td>
<td>Availability of ICT Hardware</td>
<td>55</td>
</tr>
<tr>
<td>8.</td>
<td>Library automation</td>
<td>56</td>
</tr>
<tr>
<td>9.</td>
<td>Customer support</td>
<td>57</td>
</tr>
<tr>
<td>10.</td>
<td>Staff development</td>
<td>57</td>
</tr>
<tr>
<td>11.</td>
<td>ICT skills . awareness</td>
<td>59</td>
</tr>
<tr>
<td>12.</td>
<td>Bar chart : Use of library software</td>
<td>60</td>
</tr>
<tr>
<td>13.</td>
<td>Pie chart : Internet connectivity availability in the library</td>
<td>61</td>
</tr>
<tr>
<td>14.</td>
<td>Line Graph : Qualifications of librarian</td>
<td>62</td>
</tr>
<tr>
<td>15.</td>
<td>Line Graph : Number of in-service training programmes attended during last five years by the college librarians</td>
<td>63</td>
</tr>
<tr>
<td>16.</td>
<td>Areas of training need</td>
<td>64</td>
</tr>
<tr>
<td>17.</td>
<td>Reasons for attending CEP programme</td>
<td>65</td>
</tr>
<tr>
<td>18.</td>
<td>Attitude of college librarians regarding application of ICT in the library</td>
<td>66</td>
</tr>
<tr>
<td>19.</td>
<td>Self awareness skills rating for the use of technology</td>
<td>69</td>
</tr>
<tr>
<td>20.</td>
<td>Pie Chart : Frequent problem faced by library professional while doing effective use of ICT application</td>
<td>71</td>
</tr>
<tr>
<td>21.</td>
<td>Core suggestion from the librarians updating knowledge skill of library professions</td>
<td>72</td>
</tr>
</tbody>
</table>
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Place: Pandharpur

Date : Research Student
“Necessity of Training In ICT To Library Professionals Working In College Libraries Affiliated To Solapur University, Solapur: An Analytical Study”

By – Pro. Ms. Patil Vinaya Ashok

CHAPTER – I
INTRODUCTION

1.1 INTRODUCTION:

The current rapid developments in the field of information and communication technology (ICT) have changed. Significantly the nature of work in academic libraries and other type of libraries as well. These rapid changes have brought about new types of library services and facilities. New concepts such as the hybrid library and the digital library have emerged. The changes in library work have occurred all over the world and developing countries are not expectation to this. Never the less academic libraries are lagging behind the fast changes which have been brought about by advances in ICT. There are a number of reasons for this situation. An important reason is the poor performance may be attributed to a number of factors. An important one of which is the lack of appropriate in-service training and continuous educational programmes for the information professionals and library staff in academic libraries. This project highlights the current ICT situation at the college libraries affiliated to Solapur University, Solapur with special reference to ICT training necessities and opportunities available for library professionals.

1.2 ORIGIN OF RESEARCH PROBLEM:

Training is the acquisition of knowledge, skills and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies.

Technology has drastically changed the way librarians define themselves and the way they think about their profession. The platform of internet www has helped to change the ways of accessing and locating information and to change the functions of the academic librarian and academic library in the modern information society. Library profession is facing the biggest problem of
preparing the professionals to use technology effectively. As technology has encroached all levels of library operations and services, the library professional in an academic institution has to anticipate the changing expectations of users and be flexible in adapting new skills and levels of awareness. Training of library professionals in IT skill will enhance library management.

1.3 INTERDISCIPLINARY RELEVANCE:

Knowledge management is an emerging area. For tremendously growth of knowledge, Library professionals has to stress on collection, storage, retrieval and dissemination key words of the library management. Librarian and his assistants are expected to be updated and ready to provide study materials related to any subject, the stake holder demands.

'Human Resource' is regarded as the most important resource for the advancement of the nation. If it is not properly developed, it cannot be put to proper use. Human resource is the basic resource for the development of an 'advanced nation'. According to Peter Drucker "The most valuable asset of a 21st century institution will be its knowledge workers and their productivity"\(^1\). In an organization staff developments and staff training are parts of the bigger concepts of human resource development (HRD)

Technology has drastically changed the way librarians define themselves and the way think about their profession and the institutions they serve. The librarian in digital world now acts as guardian of information, as a consultant to the users, as information broker and also a continuous learner (Balakrishnan 1996)\(^2\). The platform of internet and www has helped to change the ways of accessing and locating information and thereby change the functions of an academic librarian and academic library in the modern information society. The role of librarians and the importance of libraries in this digital era are even now based on the basic principles of library science.

1.4 SIGNIFICANCE OF THE STUDY:

The shift from print to digital information has a high impact on all components of the academic library system in India especially the users, the services and the staff. Though information is considered as an important
resource, the use of ICT tools to collect and disseminate information has been in slow pace in majority of college libraries in rural areas like colleges in Solapur University. This may be due to various factors like insufficient funds, inadequate staff trained in handling computers and software packages and administrative concern etc.

Most of the college libraries are not full fledge in terms of implementing ICT based applications in their services. There has been an obvious change in the attitudes of library professionals towards ICT application. To meet the demands for individual and collective information of the academic community, the constant improvement in professional performance of information providers is very important. To develop in this direction there is a need for library professionals to gain a comprehensive perception of the role of computers and information communication technology in catering needs of stake holders.

Hence this study is considered relevant to professional development, their skills and expertise handling with proper training and the implication on the educational needs of library professionals. It is the responsibility of administrators to provide opportunities to library and information professionals to update their skills, knowledge and competencies to keep pace with the rapidly changing environment of academic libraries with the help of training and providing the resources.

1.5 OBJECTIVES:

The aim of the study is to assess whether the development in information communication technology have any influence on the library professionals, professional development and the need of further education and training in the profession and evaluate their skills in handling development in ICT. Briefly the objectives of the study are summarized as follow:

1. To understand the present status of the library professionals and their ICT knowledge in college libraries in Solapur District.
2. To find out the problems faced by library professionals working in college libraries in Solapur District.
3. To know the need for ICT literacy among the library professionals
4. To find out ICT training programmes available for library professionals.
5. To come up with appropriate recommendations.
1.6 SCOPE OF THE STUDY:

The topic proposed for research work clearly reflects its scope that is development of human resource in ICT environment an analytical study of college libraries affiliated to Solapur University, Solapur. The scope is to determine and analyse various aspects of development of human resource, ICT applications in college libraries etc. The scope of study is divided into three major parameters like geographical scope, topical scope and analytical scope

1.6.1 Geographical Scope:

Solapur is one of the important district of Maharashtra state of India. It is located in the southern part of Maharashtra. The district consists 11 talukas. The headquarters of North Solapur and South Solapur Taluka is the Solapur city itself.

The famous religious places like Pandharpur and Akkalkot are in Solapur district only. The Bhagwant Mandir of Barshi is well known. Sant Damaji of Mangalwedha is also one of the important personalities of the district. Solapur has its own history. Once it was known as Textile capital. It was also known as the labour city in olden days. Solapur is transport hub connecting Maharashtra and Andhra Pradesh. It is well connected by Road and Rail to major district and cities. The National Highway No.9,13 and 211 pass through Solapur City.

One can get down at Solapur to proceed to famous religious place Tuljapur which is just 48 kms away from Solapur city. The holy place is Osmanabad district and even if one wants to proceed towards Bijapur, a famous historical place is 98 kms away from Solapur.

Solapur is believed to be derived from two words 'SOLA' meaning sixteen and 'PUR' means villages. The present city of Solapur was considered to be spread over sixteen villages viz. Aadilpur, Ahmedpur, Chapaldev, Patehpur, Jamdarwadi, kalajpur, Khadarpur, Khandervkiwadi, Muhammadpur, Ranapur, Sandalpur, Solapur.

1.6.2 Topical scope:
The challenges for libraries in recent years has been managing the shift from being internally focused, production driven towards becoming value-driven organizations. A well prepared and motivated workforce is possibly the most important of the three intangible assets to support an organizations value creating processes. The other two are information technology capitals and organisational capital. According to Peter Drucker 'The most valuable asset of the 20th century company was its production equipment. The most valuable asset of 21st century institution will it's knowledge workers and their productivity (Drucker 1999 p79). The human resource capital along with the other three intangible assets underpins all activities, ranging from management of internal processes and operations, funding, budgets and customer services.

Human Resource Development (HRD) encompasses the broad set of activities that improve the performance of the individual and team, hence the organization, staff development and staff training are parts of bigger concept of human resource development (HRD). The issues of workforce demographics, desirable characteristics of the workforce which is well prepared, motivated and strategically ready in today's libraries, are key elements to consider when discussing human resource development.

With the rapid use in information technology and electronic information resources, the demand for skilled library professionals is on the increase. Thus from above discussion the topical scope of present study work limits to the study of Human Resource Development in general and in particular. It limits to HRD in ICT environment in college libraries. So it covers the entire means and measures to be undertaken for HRD in college libraries.

1.6.3 Analytical Scope:

The population of the present study includes the library professionals employed in college libraries affiliating to Solapur University, Solapur. The analytical scope of the study confines to the data collected from 97 college libraries existing in the jurisdiction of Solapur University, Solapur. The data will be related to the various components / aspects and ways and means adopted by these libraries for HRD in ICT environment. Data will be collected from the respondent through questionnaires and interview evaluated and analysed to find
the results. The data will be processed using Microsoft Excel. The comparative details of college libraries to study infrastructure, budget, membership, staff strength etc will be analysed using simple percentage method.

1.7 RESEARCH METHODOLOGY:
Research Methodology implies the methods used by the researcher to study a particular problem and the logic behind the methods in the context of the particular research study. The population of the present study includes librarians employed in the college libraries affiliated to Solapur University, Solapur. The questionnaire method will have adopted for collection of data for this study supplemented by interviews of librarians to gather additional information. The questionnaire meant for librarian will be divide into four sections i) General information ii) professional development iii) Training Needs iv) ICT skills & Awareness. Data collected from the respondent through questionnaires & interviews will be evaluated and analyzed to find the result

1.8 NEED OF TRAINING TO LIBRARY PROFESSIONAL IN ICT ENVIRONMENT:
1.8.1 Human Resource Development Definition:

In simple words Human Resource Development is ensuring all the organization members have the skills competencies to meet current and future job demands to achieve organization goals.

Many people think that Human Resource Development is nothing but improving human resources through training. But in reality HRD functions include – Performance appraisal, potential appraisal, training and development, career development and organizational development, worker’s participation in management and finally employee empowerment.

Human Resource Development is the medium that drives the process between training and learning. Human Resource Development is not a defined object, but a series of organized processes “with a specific learning objective” (Nadler,1984). Human Resource Development is the structure that allows for individual development, potentially satisfying the organization’s goals.
development of the individual will benefit both the individual and the organization.

1.8.2 Training:

Training can be interpreted as transfer of information from expert to the learner to enhance his SKAs (Knowledge, Skills and Attitudes) so that the learner can better perform a particular task or job. Many experts feel that training tends to be more narrowly focused and oriented toward short-term performance concerns.

1.8.3 Training and Development:

Training is an organized activity aimed at imparting information and instructions giving people new skills and knowledge maintain existing to help him/her to perform well and achieve organizational as well as individual goals.

Merriam – Webster Dictionary defines training as an act, process or method of one that trains. Some training specialists opinion that transfer of information from trainer to trainee helps to develop the trainee’s knowledge, attitude or skills so they can perform work tasks better.

One definition of training is ‘the process of bringing a person to an agreed standard of skill by practice and instruction’. Another definition is ‘a trainer and participant working together to transfer information from the trainer to the participant, to develop the participant’s knowledge, attitude or skills so they can perform work tasks better’. Taken together these definitions say two things:

1. Training is directed towards agreed standards or objectives. These are sometimes called learning outcomes – what you want people to learn from training.

2. The person being trained participates with the trainer in the training activity, rather than simply receiving instruction.
Training usually involves participation. This means that a person being trained has an active role in the training process, rather than a passive role. Also it often takes place in the workplace or community where the skills and knowledge being communicated will be used.

1.8.3 Importance of Training :

Training is an efficient tool to

- Increase people’s confidence
- Enable people to learn and pass on new skills to co-workers.
- Raise general awareness
- Change people’s attitude
- Improve morale

Training can play an important role in improving employee’s effectiveness. Whether training is part of an ongoing process of professional development or simply about learning a specific skill, it can improve people’s skills and knowledge and help them carry out their job more effectively.

1.8.4 Training and Development Objectives :

The prime objective of training and development department is to make sure the availability of a skilled and willing workforce to the organisation. Besides, there are four other objectives: Individual, Organisational, Functional and Societal.

**Individual Objectives** : help employees in achieving their personal goals, which in turn, enhances the individual contribution to an organisation.

**Organisational Objectives** : assist the organisation with its primary objective by bringing individual effectiveness.

**Functional Objectives** : maintain the department’s contribution at a level suitable to the organisation needs.

**Societal Objectives** : ensure that an organisation is ethically and socially responsible to the needs and challenges of the society.

1.8.5 Training and Development – Benefits :
Organisation are experiencing great challenges caused by new technologies and rapid changes in it, globalization of business, development of innovative knowledge and e-commerce. Training has become necessary to meet these challenges and changes, and has many benefits. It is a two-edged knife. It benefits both the employees and the organisation. K. Aswathappa in his Human Resource Management stresses that training and development offer competitive advantage to a firm by improving performance deficiencies; making employees stay long; minimizing accidents, scrap and damage and meeting future employee needs.

The advantages include:

- Increased job satisfaction
- Increased morale among employees
- Increased employee motivation
- Enhanced efficiencies for the job protection
- Increased competence to adopt new technologies and methods
- Increased innovation in strategies and products
- Reduced employee turnover
- Improved company image, and
- Risk management
- Increased productivity
- Reduced supervision
- Reduced accidents
- Increased organizational stability

1.8.6 Needs Assessment:

Training Need:

The Training Need is the gap between the knowledge, skills, and attitudes that the job demands, and the knowledge, skills, and attitudes already possessed by a trainee.

Any effective training programme starts with training needs assessment. The purpose of training need analysis is to determine whether there is a gap
between what is required for effective performance and present level of performance. Needs assessment refers to the process used to determine whether training is necessary to fill up the gap.

The training needs assessment is best conducted up front, before training solutions are budgeted, designed and delivered.

Needs assessment typically involves organizational analysis, person analysis and task analysis.

**Training Needs Analysis Purpose:**

A Training Needs Analysis (TNA) is used to assess an organisation’s training needs. The root of the TNA is the gap analysis. This is an assessment of the gap between the knowledge, skills and attitudes that the people in the organisation currently possess and the knowledge, skills and attitudes that they require to meet the organisation’s objectives.

The output of the needs analysis will be a document that specifies why, what, who, when, where and how. More specifically, the document will need to answer these questions:

- Why do people need the training?
- What skills need imparting?
- Who needs the training?
- When will they need the new skills?
- Where the training may be conducted?
- How may the new skills be imparted?

**Need for Manpower Training**:

The needs for manpower training is an organisation may be categorized as follows:

- Updating knowledge
- Avoiding obsolescence
• Improving performance
• Developing human skills
• Imparting trade specific skills
• Stabilizing work force

Classification of Training Methods:

1.9 CONCLUSION:

The quality of professional in terms of professional knowledge, skill and potential to manage the activities and programmes is an important aspect. The higher level professional are to work at predominantly intellectual, managerial and non routine tasks, those requiring a) a special background and education on the basis of which the needs of libraries/information centres are identified,
problems analysed, goals set, and original and creative solutions formulated for them; b) integrate theory and practice; c) ability to plan, organize, communicate, and administer successful programmes of service to different levels of users.
CHAPTER - II
REVIEW OF LITERATURE

2.1 INTRODUCTION:

Review of related literature is conducted to enable the researcher to get a clear understanding about the specific field of study. It also helps the researcher to have an insight into the tested methods, procedure and interpretation of similar studies conducted elsewhere. The process of reading, analyzing, evaluating and summarizing materials about a specific topic means reviews of literature. There is also one definition of Review of literature is a next written by someone to consider the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic.

Considerable amount of literature is available regarding application of Information Communication Technology (ICT) in libraries, professional development and continuing education needs of library professionals. But studies are relatively few regarding impact of ICT on library professionals i.e. development of library professionals in ICT environment. A survey of the literature found that most of the studies are reported from foreign countries and that such studies are not given due importance by researchers in library and information science. An attempt is made in this chapter to present survey of the literature available in India and abroad about ICT in libraries professionals and professional development and educational need of library professional in changed environment. Present chapter includes information about related books, national studies, international studies, Thesis & Reviews arranged in chronological order.

2.2 NEED OF REVIEW OF RELATED STUDIES:

Review of related studies helps the researcher to avoid repetition of the previous research and thereby unnecessary with respective time, work and money. It also helps to know tools and research methodology. It helps the researcher to know how far present problem is different from the previous researches thereby to confirm the need of the research.

Lokesh Kaul has said research takes the advantage of the knowledge, which has accumulated in the past as a result of constant human endeavour. Research can
never be undertaken in isolation of the work that has already been done on the problems, which are directly or indirectly related to study proposed by a researcher. There is need of a careful review of research journals, books, dissertations, theses and other sources including e-sources of informations on the problem to be investigated. Therefore, a review of the related literature must precede by well planned research study.

The process of reviewing literature gives an opportunity to the researcher to get acquainted with the current knowledge in the field or an area in which he is going to do research. The process of review of literature serves following objectives

1) A review enables researcher to define the specific problem in which he is going to do research and it helps to the researcher to draw inference from the parallel cases wherein research has been done. This enables researcher to go beyond the findings of the past research.

2) The researcher gets an opportunity to do research wherein positive results are likely to come and endeavors of researcher are likely to add something new to the knowledge meaningful way, it enables researcher to filter the unfruitful and useless problem areas.

3) To save time and energy by avoiding unwanted duplication wherein the findings are well established, the stability and validity of results have been clearly established. Review helps the researcher to achieve this objective.

4) A review is best opportunity to go through the details of the past experience wherein similar subject, problem studied and where study has been stopped. It gives an opportunity to get knowledge of the way the study to be conducted, the tools and methods used by the predecessors used while doing research. It develops insight into statistical and other methods too.

5) To know about the recommendations of previous researcher for further research which they have listed in their studies. It gives clear idea, directions for further positive research areas.
2.3 IDENTIFICATION OF THE RELATED LITERATURE:

Through the search procedure researcher makes decision as to whether or not this literature, this source or this bit of information is relevant or not. The identification of related literature enables to this from a thorough, professional knowledge of needs, a mastery of information and, as all researcher admit a sixth sense or intuition about what is likely to be right or wrong in the twisting path towards a successful literature search conclusion.

1) **Primary Sources:** The author reports his findings in the form of research article, book, monographs, dissertation or theses in the primary source of information. This directs to go elsewhere for more details of relevant information. It enables researcher to confirm his problems of study. A thorough discussion and guidance from subject experts provides a valuable information in research method to use, though it consumes lot of time and need deep patients.

2) **Secondary Sources:** Secondary sources of information is a summarization of primary research articles. While converting an information from primary source of information to secondary source of information it is reorganized also to facilitate faster search of required information. It saves a valuable time. It overcomes the obstacles of language too. Secondary documents are prepared to have bibliographic control of primary documents. Therefore, secondary documents are generally called bibliographic control tools. The creation of secondary documents is a time consuming and needs a special skilled intelligentsia. Therefore, for a researcher review of secondary sources is more logical. A comprehensive survey of related literature enables researcher to organize related literature, recording essential material and arrange according to the requirement of the proposed outline of study. The researcher must develop the expertise to trace out the sources of faster speed for intended study. This skill saves a lot of valuable time and energy of scholar.

3) **Tertiary Sources:** Tertiary sources are produced by reorganizing secondary sources of information. By using tertiary sources one can
search secondary supporting document. Bibliographic, union catalogue of periodicals, directories, periodicals list of abstracts, list of undergoing research projects, guidebooks and annuals etc. help to search relevant documents.

The researcher has tried to trace out maximum possible relevant literature related to this research and taken cognizance thereof. The researcher has reviewed conventional documents, neo conventional or ultra micro-documents, non-conventional documents, meta documents, text-books, treatises, monographs, reference books, dictionaries, encyclopedias, and year books etc. while developing this research. Research in progress, research reports, theses, conference proceedings, past newspaper clippings, govt. publications are found to be of much use while writing this thesis. Wherever possible the research scholar has taken cognizance of audio-visual documents too.

2.4 CLASSIFICATION OF REVIEWS AND STUDIES:

The research scholar has classified relevant literature search documents on the basis of the following criterias -

2.4.1 Ph.D. Thesis
2.4.2 National Studies
2.4.3 International Studies
2.4.4 Reviews
2.4.5 Books
2.4.6 Websites.,

2.4.1 Ph.D. Thesis:

Mohamed Haneefa (2004) in a study of special libraries assesses in detail the application of information and communication technologies in special libraries in Kerala. The survey using structured questionnaires, semi-structured interviews and observations, provides a state-of--art application of ICT in automated special libraries of premier research institutions in Kerala. The study identify the factors that promote or hinder application of ICT , user’s sat isfaction , ICT skills of
library professionals and the facilities for training in ICT in special libraries. It also assesses the attitude of users and librarians towards the application of ICT. Survey results show that majority of the libraries have basic hardware and software facilities. Majority provide training for their library staff in ICT based services. The librarians and users have a highly positive attitude towards ICT application and the main barrier to ICT application is inadequately trained library professionals

Mohana Kumar (2007) in his study of college librarians in Kerala evaluates their professional manpower in the IT environment. He studies the present position of library manpower in college libraries and develop a professional library manpower measurement scale PLMM. The study found limited use of IT in college libraries and inadequate staff to provide relevant services. Majority have attended conferences, continuing education programmes, computer training etc. But only a very few have publications and he recommends more IT related training programmes for college librarians to provide effective services for users in their respective institutions.

2.4.2 National Studies:

Temjen and Saraf (2003) studies the attitudes of academic and research library professionals towards information technology and its relationship with library and information science courses in India. The study identifies the attitudes of library professionals working in the seven states of North eastern part of India, based on already developed and tested scales of attitudes towards computer and information technology. A total of 163 library professionals working in these libraries were given a questionnaire having 81 items and 122 responded. Statistical analyses performed on the data using SPSS 7.5 version are factor analysis and analysis of variance (ANOVA). The five variables identified through factor analysis are anxiety, efficiency, work performance, use confidence and acceptance. He reports that anxiety ranks highest among the different variables of attitude towards information technology and suggests various information technology infrastructural facilities and training and education in Information technology to library professionals working in North east to be at par with the main stream.
Jeevan and Saji (2004) present the results of a survey conducted among the premier libraries in Thiruvananthapuram, Kerala to assess the Information Technology adoption in these libraries. A survey using questionnaire and interview was used for getting information about the different IT components useful for better library organization and comprehensive as well as swift information services. Eighteen scientific, technical and research libraries both under Central and State Governments based in Thiruvananthapuram participated in the survey. All eighteen libraries were of the opinion that IT had a positive impact on the day-to-day work of the library and that IT played a positive role in enhancing services, user satisfaction, meeting users' demands, and overall library image. Problems faced in IT adoption included inadequacy of funds, shortage of IT skilled manpower, difficulties in periodic upgradation of infrastructural facilities, frequent change and advancement of technology, high hardware and software costs, insufficient training of professionals and absence of hands-on training.

Nyamboga (2004) details the results of a study of training opportunities for library and information professionals in India and how a selection of Indian university libraries are providing information skills and information literacy programmes for their users. The author stresses the need for training students, researchers and staff to make appropriate use of resources made available in libraries. Library and information professionals need continuing professional development courses as new ways of providing information resources are developed. The study reveals that librarians conducted library orientation programmes (including information on specific aspects such as computer laboratory facilities within the library, library automation and networking activities), although sometimes systems librarians or information technologists undertook this task.

Kannappanavar and Praveen Kumar (2005) evaluates the training programmes pertaining to Library and Information science and their effectiveness as stated by library professionals in selected Agricultural Science Libraries in India. Most of the library professionals in agricultural university libraries have attended these training programmes and they stress the need for
more specialized training programmes based on skills and competencies. All agricultural science libraries have been partially computerized and the information stored in digital format. It is found that the workshops organized are generally designed to provide practical training on IT applications, but they are not assessing the training needs of library professionals.

Watane, Vinchurkar and Chaukande (2005) reports a study of the computer literacy of library professionals and the use of information technology related services in the college libraries of Amaravati city. The main objectives of the study were to find the awareness of IT application among the professionals and the proportion of application of IT in libraries. A questionnaire survey of selected 38 college libraries was conducted and the results using simple statistical analysis reveals that majority of library professionals are computer literate and are not reluctant to make use of IT applications in their libraries. Automation is progressing in all the college libraries under study and they are providing library services of which 50% are IT oriented.

Cholin (2005) provides an overview of information technology implementation in different university libraries in India that provides effective access to resources available within universities and elsewhere. This study was an attempt to understand the use of information technology in university libraries by studying the status of information technology applications in Indian university libraries at various levels. The survey method was used to study the application of information technology in the Indian Universities. The study was conducted among 66 university libraries which is approximately 25% of the total number of universities during the period of the study and the responses were received from 54 (81.8%) of the total libraries covered. The factors studied include manpower in the universities, user population, budget, IT infrastructure-hardware, software, network tools, database development, etc. The author predicts that the universities across the country can overcome distance and time with the use of ICT tools in universities and UGC Infonet to provide scholarly access to resources. The study reveals that the university libraries in India are at various stages of development in the application of information technology tools in their day-to-day activities.
Nath, Bahl and Kumar (2007) reports a survey of librarians of Chandigarh city to assess the ways in which librarians use ICT’s, their level of knowledge and skills, problems faced in the use of ICT’s and their training needs. The study also investigates the extent of adoption of ICT in Chandigarh city libraries as modern tools of providing library service to users. A questionnaire was used to survey the ICT skills and knowledge of librarians with 9 sections on respondent’s background, file management, word processing, spreadsheets, databases, presentations, E-mail and Internet. Survey of 21 academic and public libraries reveal a low level of ICT knowledge among librarians and a general lack of formal training among the academic librarians. The study recommends library education with a balanced curriculum including both traditional as well as ICT knowledge and skills.

Sinha (2008) tries to conclude that the importance of skilled library and information professional workforce with the knowledge of computer has been rising in our country for extending ICT based computerized and digital library services. The rapid progress in the educational technologies, pattern of imparting education and in ICT posed major challenges before the professionals to enhance ICT skills and capability of LIS professionals to serve the library users effectively. Therefore proper HRD / Manpower policies should be framed for continuing education and for in-house training and hands on experience for the LIS professionals to use modern technologies and electronic gadgets and give ICT based computerized and digital library services to the end users in networked and digital library environment.

Choudhury and Sethi (2009) study the information literacy skills of library professionals working in three major Universities of Orissa. Survey using structured questionnaire and interviews points to the fact that most of the library professionals are computer literate, having undergone computer courses like PGDCA, DCA and other short-term courses. They are also aware of the use of E-resources, evaluation of web resources, IPR, webopac, search engines etc. The authors recommend that library professionals are to be encouraged to attend various training programmes on different advanced concepts of information technology.
Sampath Kumar and Biradar (2010) observe the use of information communication technology (ICT) in 31 college libraries in Karnataka, India by analyzing the ICT infrastructure, status of library automation, barriers to implementation of library automation and librarians' attitudes towards the use of ICT. The survey carried out using questionnaire, observation and informal interview with selected college librarians show that lack of budget, lack of manpower, lack of skilled staff and lack of training are the main constraints for not automating library activities. Even though library professionals have shown a positive attitude towards the use of ICT applications and library automation, majority expressed the need for appropriate training to make use of ICT tools.

Mondal, Bandyopadhyay (2010) results study entitled application of ICT in academic institutions in West Bengal has increased in the recent years. But the computerization work of general degree college libraries of Burdwan sadar (North and south) is very slow due to certain problems. Trained manpower is one of the major problems. This study examines the situation of IT application and related manpower problems in government aided general degree college libraries of Burdwan sadar, West Bengal. The college libraries of Burdwan Sadar face several hindrances in full-fledged IT application. The primary factor was inadequate funds, insufficient manpower, lack of IT skill among the library professionals and lack of right attitude of the authorities towards library development were some of the other problems. The authority should consider the need of improvement of the library condition with priority and make provision of adequate fund for IT applications. The government should take steps to recruit the full time library professionals, considering the manpower need in ICT environment.

2.4.3 International Studies:

Ondari-Okemwa (2000) reports a study undertaken to examine the specific training needs of practicing professional librarians in the Kenyan public university libraries. Two methods were used for the study. One was observing library staff in the Kenyan public university libraries at their places of work over a period of two years; the second was the use of personal interviews with the librarians. The author examines the need for continuous training of library staff
in Kenya because of the rapid changes in information technology (IT). Library staff must be equipped with new techniques of handling and managing information. The training needs as evaluated from the study are Information and telecommunication technologies, evaluating and using computer hardware and software, understanding computer and information concepts, understanding systems analysis, and accessing information via the Internet., self-management skills, teamwork skills, verbal, non-verbal, and interpersonal communication skills, marketing skills, training in virtual librarianship and total quality management training.

Bii and Wanyama (2001) analyze the impact of automation on the job satisfaction among the staff of Margaret Thatcher library, MOI University Kenya. Using interviews and questionnaire to all the library staff researchers find that there are problems within the library regarding training and access to automated systems. The main objective of the study is to find the problems staff members face because of automation of the library, and how the library management has tried to resolve them and/or how can they be solved for sustained job satisfaction among the staff. Eighty eight percent of the MTL staff members had received in-house training on various aspects of computerized library applications, albeit some to a basic level. The staff views automation as an enrichment and a source of satisfaction for their jobs. The study recommends structured in-house training, free access to the available software, additional systems staff, and centralized databases, among others, to be implemented. Regular in-house training is a necessity to gain maximum benefit from the available hardware and software.

Smith (2001) examines the pattern of staff development activity in Australian University libraries, State Libraries, the National Library etc. The study reveals various factors influencing staff development. Most of the responses show that increased information technology applications have led to a greater need to train staff in IT applications. There is a good balance between training in specific knowledge and job skills and broader professional developmental programs and activities. In many instances the libraries report that they have a preference for staff development that can be undertaken in-house and the growing role of
libraries in teaching literacy, knowledge management skills etc has resulted in a need to develop these skill in their staff.

Baruchson-Arbib and Bronstein (2004) reports a Delphi study conducted in Israel during 1998-2000 to examine the views of library science experts regarding the future of library science profession and the skills of library science professionals due to developments in information technology. 40 experts participated in the study through e-mail. The questionnaire includes three main issues: traditional versus virtual library model, user-centered approach, and library professional's skills and roles. A highly optimistic picture of the library science profession is drawn from the study. Library and information centers will survive, and both traditional and virtual model will co-exist in a symbiotic relationship. The most salient skill the library professional is to acquire is the training role and act as guides in information technology related issues. The LIS professionals need to promote and market their skills and thereby acquire necessary social and communication skills.

Zhang (2004) uses a questionnaire to assess and identify areas of training and development of library support staff in selected academic libraries in Oklahoma and Kansas. Questions include opinions on the importance of training topics on computer skills, interpersonal skills, and supervision/management skills that they perceive as important to their job and the importance of library/organizational supports that encourage them to participate in training and development. It is seen that support staff highly rated computer skills like web browsers, MS Office Suites (e.g., word processing, spreadsheet, etc.), e-mail management etc. that help their job and oral/written communication, working with difficult people, managing priorities etc. as important training topics on interpersonal skills.

Bawden, Vilar, and Zabukovec (2005) study the approaches to the education and training of librarians for work in digital libraries and identify the important competencies required by information professionals in creating and managing digital libraries. The method used is literature analysis of the skill sets required by librarians working with digital materials and evaluation of formal education and professional development programmes in the UK and in Slovenia. The study
assesses how the educational needs are met; the means by which competencies are treated in LIS education and training, and the methods of developing the information professions. Their findings show that formal education and continuing development training cover aspects of the digital library environment, both in the UK and in Slovenia. Curriculum development includes redesign of degree programmes, training courses and Digital library skills.

**Ademodi and Adepoju (2009)** report a study of academic librarians in Nigeria. The aim of the study was to determine whether academic librarians in selected Nigerian states possess computer skills and competencies in the use of computer. Thirty questionnaires were administered to respondents in the academic libraries under study. The study finds that the academic libraries in these states have very few computers and these computers are used more for administrative duties and Internet browsing than library routines. Most of the librarians are computer literate, but have no computers to use. The rate of computer skill and competence is low. The study recommends that librarians must be properly trained to acquire computer skill and more attention and funds should be committed to training and procurement of ICT infrastructure in Nigerian university libraries.

**2.4.4 Reviews :**

In addition to various research studies in areas related to professional development and ICT applications, a lot of literature is published on the theoretical aspects of professional development, ICT applications and skills. A few are reviewed in this section.

**Vijayakumar and Vijayakumar (2003)** discusses the changing nature of academic libraries and librarianship. Authors stress the need of librarians to be involved in teaching and education through information management and information access, building collections and making them accessible, creating electronic libraries, cooperation and resource sharing, support for research and reference, etc. They also point out that future academic librarian should be skilled in communication/training, IT, management, and subject knowledge/profiling.
Rajyalakshmi (2007) discusses the knowledge and skills required for information professionals with respect to the changing concept of Information management. Briefly describes the areas to be included in the curriculum for training of information personnel such as Artificial Intelligence, Economics of Information, Manpower skills, Information systems etc. The author also discusses the impact of information technology, resources in information management, the changes in work environment of libraries, and the current trends in information management.

2.4.5 Books Related to Research Study:

1. Human Resource Development by Deepak Sharma(2011) - It is hoped that this book would be highly useful for HR professionals in developing conceptual clarity as well as in catering to the needs of corporate houses more effectively. It also explain the role of HRD in Changing times, the way HRD practices can be structured in Business houses. The extent to which implementation of HRD practices can be lead to development of competencies in people.

2. Human Resource Development: Learning and training for individual and organizations by John P. Wilson (1999) - A guide to HRD which reflects the changing role of training and learning this text is intended as handbook for all professional trainers. It offers international case studies, data questions and point for reflection.

3. Employee Training and Development by Raymond A. Noe (2002) - The second edition of book continues to define the research and real company practices. The text continues to give students a solid background in the fundamentals of training and development needs assessments, transfer of training, designing a learning environment, methods and evaluation. In addition the role of training is broadening due to it’s strategic nature, the changing nature of workplace and availability of technology. Current topics such as corporate universities, Knowledge management web based training, e-learning, competency models and the role of training in virtual organizations and discussed.
4. Information Technology and remaking of the University library: New direction for higher education by Lynch (1995)- In this book author identifies some of trends being confronted as information technology becomes more pervasive in university libraries and campus agencies. The seven papers in this volume address issues and concerns that the transformation will raise while campus administrators, faculty members and other work to find ways to move effectively to new electronic environment

5. An Introduction to Staff Development In Academic Libraries by Elizabeth Conner (2009)- An Indispensable resource for librarians of all rules of integrating the library mission statement and strategic plan with bold approaches to staff orientation, training mentoring and development.

6. Research Methodology : Methods and Techniques by Kothari C. R. (2008) – In this edition a new chapter on the computer its role in research have been added in view of that electronic computers by now for students of economics, management and social sciences constituents an indispensable part of research equipment. The other highlights of this revised edition are the subject contents has been developed, refined and restructured at several points several new problems have also been added added at end of various chapters for the benefits of students every page of this book has been read very carefully so as to improve its activity. The present book has been written with two clear objectives i.e. one is to enable researchers, irrespective of their in developing the most appropriate methodology for their research studies and second is to make them familiar with the arts of using different research methods and techniques. It is hoped that the humble efforts made in the form this book will assists in the accomplishment of exploratory as well as oriented research studies. Book consists of fourteen chapter which are well arranged in coherent manner.

7. Basic Research Methods for Librarians by Ronald R. Powell and Greenwich, C. T. (1997) – This text is addressed to the practicing librarian who needs to conduct research and publish. It is intended to provide guidance for any librarian who must be able to read and evaluate research reports critically and assists other with their research. It also is designed to be benefit to the
graduate library and information science student. This book almost exclusively considers basic research methods as opposed to applied research methods. This book first discusses the role of research in librarianship and then considers the major steps in the development of a research study.

2.4.6 Websites:

http://www.hrmguide.net/bookstore/human_resource_development books.html


http://books.google.co.in/books

http://routledge.com/books/details

2.5 CONCLUSION:

The research scholar has reviewed 02 Ph.D. thesis, 18 research articles 07 books 02 reviews relevant to the research topic undertaken by the researcher. The review of all these sources has been crystallized the topic under research and has got concrete directives for the study. Still, there are some sources relevant to the research topic but taking into consideration the constraints of time and research topic, the study related to review of literature is found to be sufficient.

The survey of literature has given an insight into the research carried out in the related field of study. Further it has helped to know the tools and relevant for the study. Majority of studies are conducted with the help of questionnaire survey and personal interview. The literature survey has also revealed that most of the ICT related studies conducted abroad. In India there are comparatively few studies related to ICT applications and professional development of library professionals. The pace of developments in ICT in the field of library and information science is rather slow when compared to other sectors. It is clear that technological change clearly affects library staff and there is a need to develop guidelines and policies to train the professionals in providing frontline services in academic libraries.

After reviewing the literature available it is found that studies have been made in other areas and on different aspects of the libraries. But there is no
specific study conducted to investigate development of human resource in ICT environment in the college libraries of Solapur University, Solapur. Therefore the present study has been proposed as a pioneering study in this sphere.
CHAPTER III
RESEARCH METHODOLOGY

3.1 INTRODUCTION:

Research is defined as the systematic and objective analysis and recording of controlled observations that may lead to development of generalizations, principles, or theories, resulting in prediction and possibly ultimate control of events. According to R. Rusk, research is a point of view, an attitude of inquiry or a frame of mind. Research addresses questions, which have hitherto not been addressed. It is not a mere theorizing facts and predicting results. It is an attempt to elicit facts and address the problem in scientific and systematic way by specifying solution to the problem on the basis of logical reasoning and analysis of the data collected. Methodology of research is the element, which maintains trustworthiness of research and directs the process and output of research. Methodology of a research is decided with respect to type of research and objectives of research. It involves systematic procedures starting from the initial identification of the problem to its final conclusion. Its role is to carry on the research work in a scientific and valid manner. It provides the tools and techniques by which the research problem is tackled. It consists of procedures and techniques for conducting a research. Research methodology comprises of activities as identifying problems, review of literature, formulating hypotheses, measurement, data collection and analysis of data, interpreting results and drawing conclusions. Thus, research methodology consists of all general and specific activities of research. The methodology for any research study is drawn in a careful examination of the available literature and depends to a large extent on the imagination, long-term vision and understanding of the researcher. Methodology also depends on the problem undertaken for the study & objectives of the study.

Research is a point of view, an attitude of inquiry or frame of mind. Research is a studious inquiry or examination; esp. critical and exhaustive investigation of or experimentation having for its aim the discovery of new facts and their correct interpretation, the revision of expected conclusions, theories, or laws in the light of newly discovered facts, or practical applications of new or revised conclusions, theories or laws. Research is defined as the systematic and
objective analysis and recording of controlled observations that may lead to
development of generalizations, principles, or theories, resulting in prediction
and possible ultimate control of events.

Now-a-days, higher education centres are much serious about imparting
quality education along with research in all fields for the development of society
at large. Many research scholars are engaged in research activities along with
their academic activities. The society as well as higher education controlling
authorities like U.G.C. and Quality Control authorities like NAAC are insisting
for research and development as well as quality education. In research activities,
in social sciences, quantitative techniques are prevalent, current and popular too.

The society is transforming fast and changing according to the need of
time in dynamic globalization process and progress. The society is not expecting
only modernization but it is asking for quality with proof. Information has
become a saleable commodity of modern society. Society is dependent on
perfect information based on research. The search of information through books,
periodicals, journals and databases is a need of time, it is pre-requisite for
dynamic social order. Constant research and investigation has become the usual
feature of modern society. The inquisition is a natural instinct of human being
and research is the only answer to the endlessquisitions ofhuman beings. The
search for betterment and happiness of human beings is a constant and endless
process. The age of computer has made revolution in the society at large because
of its fantastic speed and accuracy. The process of advancement is not going to
stop, on the contrary man is using his best talents for best achievements. The
society is transforming from mere society to knowledge with micro
specialization. The search of knowledge, therefore has become a major feature
of modern society.

Research addresses questions, which have hitherto not been addressed. It
is not a mere theorizing facts and predicting results. It is an attempt to elicit facts
and address the problem in scientific and systematic way by specifying solution to
the problem on the basis of logical reasoning and analysis of the data collected.
Methodology of research is the element, which maintains trustworthiness of
research and directs the process and output of research. Methodology of research
is decided with respect to type of research and objectives of research. It involves
systematic procedures starting from the initial identification of the problem to its final conclusion.

Its role to carry on the research work in a scientific and valid manner. It provides the tools and techniques by which the research problems is tackled. It consists of procedures and techniques for conducting a research. Research methodology comprises of activities as identifying problems, review of literature, formulating hypotheses, measurement, data, collection and analysis of data, interpreting results and drawing conclusions. Thus, research methodology consists of all general and specific activities of research.

3.2 SELECTION OF THE METHOD OF RESEARCH:

Research methods are utmost important in a research process as they describe the various steps of the plan for tackling the problem of research. Research method suggests the manner in which the problem is formulated, the terms are defined, and the variables and subjects are chosen. It also suggests the validation of data gathering tools, the collection, analysis and interpretation of data, and the processes of inference and generalizations. Despite the lack of clear cut distinction among the methods of research, most authors agree on three basic categories as Historical method, Descriptive method and Experimental method. The descriptive studies are further classified as survey studies, interrelationship studies and developmental studies. The investigator has chosen Descriptive-Survey as the method of research.

3.3 DESCRIPTIVE SURVEY METHOD OF RESEARCH:

Descriptive research method has undoubtedly been the most popular and most widely used research method in education. At times, descriptive survey is the only means through which opinions, attitudes, suggestions for improvement of educational practices and instruction, and other data can be obtained. The descriptive investigations are of immense value in solving problems of children, school organization, supervision and administration, curriculum and teaching methods and evaluation. Descriptive investigations provide such information that is useful to the teachers and administrators for understanding the educational problems and suggesting means to overcome these problems. Descriptive research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and, wherever possible, to draw
valid general conclusions from the facts discovered. They are restricted not only to fact finding but may often result in the formulation of important principles of knowledge and solution of significant problems concerning local, state, national and international issues. Descriptive studies are more than just a collection of data, as they involve measurement, classification, analysis, comparison, and interpretation. They collect and provide three types of information:

1) of what exists with respect to variable or conditions in a situation;
2) of what we want by identifying standards or norms with which to compare the present conditions or what experts consider to be desirable, and
3) of how to achieve goals by exploring possible ways and means on the basis of the experience of the others or the opinions of the experts.

As a descriptive study, this research describes and studies the situation that prevailed, and attempts to investigate phenomena in their natural settings. The purpose of this type of study is both immediate and long range. These studies constitute a primitive type of research and do not aspire to develop an organized body of scientific laws; however they provide information useful to the solution of problems and at times provide data to form a basis of research more fundamental in nature. Descriptive studies involve events that have already taken place or happening at present, and are related to present and future occurrences. Descriptive studies on one hand vary greatly in complexity; constitute nothing more than frequency counts; and on other hand attempt to ascertain significant interrelationships among phenomena. Though descriptive studies bear so many good qualities they are less scientifically sophisticated as compared to experimental studies.

As stated earlier, survey studies, interrelationship studies and developmental studies are three categories under the descriptive studies. Thus, survey studies form a subset of descriptive studies. As such, almost all the qualities and adjectives of descriptive study about the process, purpose, findings relate to the survey studies. Survey data may be collected from every unit of population or from a representative sample. The information gathered may be concerning a large number of related factors or may be confined to a few selected items. The objective is not only to analyze, interpret and report the status of an institution, a group or an area in order to guide practice in the immediate future, but also to determine adequacy of status by comparing it with established
standards. Some surveys, like the present study, gather all three types of information: 1) data concerning existing status, 2) comparison of existing status with the established status and standards, and 3) means of improving the existing status. Survey studies may take different forms depending upon the scope, nature and purpose of the problem under investigation. They may be broad or narrow in terms of their scope and coverage.

3.4 POPULATION & SAMPLE:

The group of individuals under study is called population or universe. In statistics, a population is an aggregate of objects, animate or inanimate under study. A population may be defined as the set of data that consist of all conceivably (or hypothetically) possible observations of a certain phenomenon. It is obvious that for any statistical investigation complete enumeration of population is rather impracticable and very often undesirable and we choose a finite subset of a population for investigation, called sample. The cost and time considerations usually delimit the scope of population enumeration. Further, sampling methods based on statistical principles of randomness provide appropriate accuracy level and enable estimates of population parameters with due control over sampling and non sampling errors. Sampling is a cost effective option in survey studies especially when populations are of big sizes and difficult to handle in practical sense. If the population is infinite and the study procedure is destructive; one has no other alternative than sampling.

- **Population of Colleges:**
  
  There were 97 colleges affiliated to the Solapur University during the academic year, 2014-15. These colleges form the population of College Libraries. The size of this population is 97.

- **Population of Librarians:**
  
  The librarians of all the college affiliated to the Solapur University during the academic year 2014-15 is 97. The size of this population is 97.

- **Librarians’ Sample:**
  
  The librarians selected from the population of librarians is that those who have responded to questionnaire constitutes what is called ‘Librarians’ Sample’. This group is used in the survey part of the study for data, collection using the questionnaire. The size of this sample is 97.
• **Population Census : Librarians:**

The important component of population is librarians of colleges. The researcher has considered all the respondents i.e. response received from all the colleges for analysis. As this population, i.e. librarians of the colleges have provided basic information for this research. Therefore, the researcher has taken into consideration all the responses received from college librarians. This group of population census is second important population considered for this research. Because it provides detail information on state-of-art of the college libraries. This is second important component of population considered for research.

The information response from the college librarians is received through the design questionnaire given to college librarians. Therefore, undoubtedly this is an authentic source of information on which second component of population census is covered and used to analyzed various factors of state of art libraries and services rendered by the libraries.

3.5 **POPULATION SUMMARY:**

There were, in all, 97 colleges with single or multi facilities affiliated to the Solapur University during the academic year 2014-15 and spread over 11 tahasils in the Solapur District. All the librarians of the college during the academic year 2014-15 from the population of librarian form the survey part of the study. All the librarians from 97 colleges considered in this thesis and working during the academic year 2014-15 form the population census for the survey part of the study.

Thus, 97 colleges under study spread over 11 tahasils at different locations in the District include aided and non-aided status. The colleges which receive financial assistance from Govt. are called aided colleges. However, the colleges those who do not receive financial assistance and run from their own resources i.e. from the fees of the student and funds made available by private institutions/management. Also, they are known as self supporting or non-aided or sometimes un-aided colleges.

As seen in the table 3.13 there are 97 colleges considered for study, 39 colleges are aided and remaining 58 colleges are un-aided. From each college one librarian is selected. There are 97 colleges considered for this research. Out of these 39 aided colleges and 58 unaided colleges. There are 39 librarians from
aided colleges and 58 librarians from un-aided colleges and 97 librarians is a cluster of sample units in this study.

There are 97 colleges considered for study. The part of the population form the part of population for this study i.e. one librarian from each college and response received from each college is considered to yield results from this universe of study. This data gathering is done through a comprehensive questionnaire designed for the purpose. Out of 97 colleges under study 39 colleges are aided and 58 colleges are un-aided.

This group of 97 college librarian form the sample of librarians in the survey part of the study. Cluster sampling with stratification used in the present study has been more advantageous than cluster sampling, stratified sampling or even multi-stage sampling alone.

The list of all colleges affiliated to Solapur university during 2014-15 and conducting regular courses is provided in the Table 3.1.

**Table 3.1 : List of Colleges affiliated to the Solapur University in 2014-15 and conducting Regular Courses of the University**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the College</th>
<th>Aided (A) or Non-Aided (N.A.)</th>
<th>Librarian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A.R.Burla Mahila Varishttha Mahavidyalaya, Solapur</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>A.G. Patil Institute of Technology, Soregaon, Solapur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Ardhanari Nateshwar Mahavidyalaya, Velapur, Malshiras</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Aushadhnirmanshastra Mahavidyalaya, Akluj, Malshiras</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>B.B.A. &amp; B.C.A. Mahavidyalaya, Akkalkot</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>B.B.A. &amp; B.C.A.</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Name of the College</td>
<td>Aided (A) or Non-Aided (N.A.)</td>
<td>Librarian</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------</td>
<td>-----------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>7</td>
<td>Baburao Patil College of Arts and Science, Angar, Tal. Mohol</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>B. P., Sulakhe Commerce College, Barshi</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Bramhadevdada Mane Institute of Technology, Belati, North Solapur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Bhagwant Institute of Technology, Barshi</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Bhai Channusing Chandele College of Social Work, Solapur</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Bharat. Mahavidyalaya, Jeur (M. Railway), Karmala</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Bharat Ratna Indira Gandhi Engineering College, Solapur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Chatrapati Shivaji Night College of Arts &amp; Commerce, Solapur</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>College of Architecture, Solapur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>College of Pharmacy, Solapur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>College of Education, Barshi</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>College of Engineering, Gopalpur, Pandharpur</td>
<td>N.A.</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>College of Engineerng,</td>
<td>N.A.</td>
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<td>28</td>
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<td>Sangmeshwar College, Solapur</td>
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<td>Solapur Social Association's, Arts &amp; Commerce College, Solapur</td>
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<td>Sahyadri College of Pharmacy, Methawade, Sangola</td>
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<td>Singhad Business School, Kegaon, Solapur</td>
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<td>Vasundhara Arts College, Solapur</td>
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<td>Yashwantrao Chavan Mahavidyalaya, Karmala,</td>
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<td>Yashwantbha Patil Mahavidyalaya, Bhose, Pandharpur</td>
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<td><strong>Total No. of Colleges = 97</strong></td>
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<td></td>
<td><strong>Aided = 39</strong></td>
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<td><strong>Librarian = 97</strong></td>
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<td><strong>Unaided = 58</strong></td>
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<td><strong>Selected = 89</strong></td>
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<td><strong>Not-Selected= 08</strong></td>
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Flow Chart No. 1: Flow Chart showing no. of colleges affiliated to Solapur University, Solapur along with no. of aided and unaided colleges

3.6 QUESTIONNAIRE AS A TOOL OF RESEARCH:

In general the word questionnaire refers to a device for securing answers to questions by using a form which the respondent fills in himself. Barr, Davis and Johnson define questionnaire as “a systematic compilation of questions that are submitted to a sampling of population from which information is desired.”

Though often referred to as “the lazy man’s way of gaining information”, questionnaire is the most flexible of tools, which possesses unique advantages over other kinds of tools in collecting both quantitative and qualitative information. It is evident that competent use of the questionnaire in the investigation of important problems cannot be condemned.

- Preparation of Questionnaire:
A questionnaire Questionnaire was developed with review from related literature. The following studies were majorly helpful in providing the direction for construction of questionnaires:
a) The results of a survey conducted among the premier libraries in Thirruvanathpurom, Kerala by Jeevan and Saji.

The details of the questionnaires are discussed in the next sub-point.

- **Procedure of the Survey through Questionnaires (Major Study):**
  
  The following steps were carried in the survey part of the study:

- **Preparation of the questionnaire:**
  
  As already stated a questionnaire was developed. The questionnaire helped to collect data on opinions of librarians about HR and ICT Analysis.

- **Analysis and interpretation of the data obtained through questionnaire QL:**
  
  After receiving the filled in questionnaires, the data was entered onto the computers and frequencies on various items in the questionnaires was obtained. This task though simple to write, exploited unendurable energy and time. The data then was analyzed statistically. The analysis of this data is in chapter 4.

### 3.7 HUMAN RESOURCE DEVELOPMENT OF COLLEGE LIBRARY STAFF

- Education and Training of University / College Library Staff.
- Need for Education and Training of Library Personnel in University and College Libraries.
- Methods of continuing Education and Training.
- Role of Professional Organizations / Agencies for promoting Education and Training Programmes for library personnel.
- Libraries.
- Library and Information Science Schools.
- Government
- Professional Associations.
- Analysis of Data.
- Conclusion

#### 3.7.1 Education and Training of University / College Library Staff:

Education is a life long process. More than eight and half decades have passed since the first attempt to educate library professionals began in this country. The Library Science Education began in 1911 owing in the initiative taken by Sayajirao Gaikwad II, the ruler of the erstwhile Baroda State. He invited
William Alanson Borden from the U.S.A. and under his direction established a network of libraries in the state of Baroda. It was in 1911, when Borden started a Library Science School at Baroda. The second school of library science was started in the undivided India at the Punjab University at Lahore, under the direction of another American Librarian, Asa Dce Dirkinson in the year 1915. In 1935, the Government of India started a regular full time course in Librarianship in the Imperial Library, Calcutta. (The National Library of India) under the stewardship of Khan Bahadur, K.M. Asodullah who was the Librarian for nearly two decades. Later on the Bengal Library Association the Madras University (1931) under Dr.S.R.Ranganathan, Banaras Hindu University (1942), Bombay University (1943) and Calcutta University (1946) started regular courses to educate library and information science professionals

After independence, a significant progress was made in the country in the field of library and information science education. Library and Information science is now recognized as an important discipline, in the University Education. Today more than 100 universities and Institutions are imparting library and information science education in India from certificate level to doctorate level degrees.

The following courses are offered by various universities in India.

i) Certificate Course in Library Science.
ii) Bachelor's Course in Library Science.
iii) Master's Course in Library Science.
iv) M.Phil in Library Science and
v) Ph.D. in Library Science.

Many of these universities, institutions, affiliated colleges and organizations not only provide regular programmes and courses at different levels but also conduct part time training programmes, and organize summer schools, refresher courses, orientation programmes for working librarians as a part of continuing education program for library and information professionals.

3.7.2 Need for Education and Training of Library Personnel in University and College Libraries:

"Every organization needs to have well trained and experienced people to perform the activities that have to be done. If current or potential job occupants
can meet this requirement, training is not important. When this is not the case, it is necessary to raise the skill levels and increase the versatility and adaptability of employees.

As jobs have become more complex, the importance of employee training has increased. When jobs were simple, easy to learn and influenced to only a small degree by technology changes, there was little need for employees to upgrade or alter their skills. But the rapid changes taking place during the last quarter-century in our highly sophisticated and complex society have created increased pressures for organizations to readapt their products and services the way they are produced and offered, the types of jobs required, and the types of skills necessary to complete these jobs. In a rapidly changing society, employees-training is not only an activity that is desirable but also an activity that an organization must commit resources to, if it is to maintain a viable and knowledgeable work force (Decenzo & Robbins, 1957).

Need for education and training has been felt in almost all the professions including library and information science, because of new developments taking place rapidly in every profession. There are various reasons which demands library and information professionals to pursue continuing education and training. Some of the reasons are as under -

a) **Information Explosion:**

   Information is now reported through a variety of channels and published in different formats. Information professionals besides keeping abreast of growing values of information will require acquiring skills and competencies to search worthwhile information from the vast pool of available information.

b) **Information Explosion:**

   Information is now reported through a variety of channels and published in different formats. Information professionals besides keeping abreast of growing values of information will require acquiring skills and competencies to search worthwhile information from the vast pool of available information.

c) **Information Explosion:**

   Information is now reported through a variety of channels and published in different formats. Information professionals besides keeping abreast of growing values of information will require acquiring skills and competencies to search worthwhile information from the vast pool of available information.
d) Information Explosion:

Information is now reported through a variety of channels and published in different formats. Information professionals besides keeping abreast of growing values of information will require acquiring skills and competencies to search worthwhile information from the vast pool of available information.

b) Developments in Information and Communication Technology:

Technologies especially computer and telecommunication technology has thoroughly revolutionized and has made impressive impact in the filed of library and information science and library services. Information technology facilitates collection, storage, organization, processing, analysis, presentation, communications and dissemination of data at a faster rate. The successful use of information technology also helps in the implementation of fourth law of library science. "Save the time of the reader/staff". The professionals who are engaged in the collection, organization and dissemination and management of information cannot ignore the use of information and communication technology in libraries.

a) New Horizons of Nature of Library and Information Science:

The library and information science is not only widening in its scope and coverage but also undergoing complete remodeling due to advances in information and communication technologies and emerging new methods of information handling. New areas such as scientometrics, resource generation and financial management, development of electronics contents, web designing, virtual libraries, and digitization are some of the areas where the library personnel require acquiring competencies.

b) Handling of New Information Tool and Services:

Library personnel should be able to handle networked information resources, handle e-books, manage electronic journals, access vast resources available on the Internet, use multimedia such as CD-ROM’s, DVD-ROM’s and collaborate with distant colleagues to develop better information services for their user communities. They must be trained in information and communication technologies to handle new information tools and services.

c) User Demands and Needs:

User’s information needs have also changed in the context of the changed information scenario. Their needs and demands are more complex. The users expectations are high to the extent that they hope for instant information access
i.e. they require pinpointed, expeditious and exhaustive information. In order to meet their demands the LIS professionals need to update their traditional skills of librarianship through continuing education programmes –

Besides the above reason, the main objectives for further education and training for librarians are –

to keep abreast with new developments.
to increase promotion prospects.
to develop and maintain competence.
to be educated in same specialized area of the profession.
to widen experience and practical knowledge in the practice of librarianship.
to promote personal job satisfaction.
to develop professional attitude and
to enhance existing qualifications.
to help them to improve their career prospects.
to meet the challenges of changing needs.
to learn to implement new ideas, methods and techniques.
to grow as a person as well as a professional

3.7.3 Methods of Continuing Education and Training.

The end aim of personnel management of any organization is to get the maximum quality output from the staff by their best performance. The necessary conditions and environment must exist in the organization for the staff to fulfill the objectives of personnel management. Among the many requirements which promote best performance of staff, education and training are the important aspects that would contribute to high performance of the staff. The following mentioned programmes can be taken as methods of continuing education and training:

a) Attending Lectures, Seminars, Conferences and Workshops:

Various professional associations, universities and institutions conduct seminars on current topics. The LIS professionals can be deputed to attend such seminars, conferences and workshops so as to get the exposure of current trends in the profession of library and information science. Seminars/workshops, organized by DRTC, NISCAR, INFLIBNET and others are more education in
nature. Professional associations such as ILA, IASLIC, also hold annual conferences and periodic workshops and provide forum for exchange of ideas on various topics of professional interest.

**b) Short-term Courses:** The library schools, libraries and documentation centers conduct short-term courses in order to update the skills of the existing workforce. The professionals need to participate in such short term courses. The library schools and universities further assess the need for new areas of importance in the profession and organize short term courses.

**c) Refresher Courses:** The purpose of conducting refresher courses is to acquaint the working professionals with the latest development in library and information science in order to increase their knowledge and efficiency. It always refreshes the minds of the participants by giving them new ideas, thoughts and technical know-how. Besides Library and information science departments or schools, library associations also conduct such types of refresher courses in the areas of operational management of libraries such as acquisition policy, processing of documents, resource sharing, library automation etc.

**d) In-service Training:** In-service training is an integral part in the continuing education programme of any profession including library and information science. In-service training includes continuing application of principles as well as experimentation of new developments within some employing agency. In the development of any responsible professionals in-service training is one of the essential elements in staff development. In the best instances in-service training is planned and continuing program conducted by staff members who are trained in and have extensive experience with creative and innovative teaching methods. All professional persons have a responsibility to get and also to provide in-service training.

**e) Reading, Writing and Editing:** Reading of various self learning packages, writing and editing of publications develop one’s self education. Learning is a life long process. If the professionals intend for continuing education, these are obviously the means of acquiring learning skill and developing thinking process.

**f) Study / Research Circles:** Professionals meet periodically to discuss the day to day activities of their libraries and some aspects of librarianship, prospects
in the field, application of information technology in the management of libraries
and information centers by forming a study circle or research circle. These
circles are quite productive and excellent media for working librarians to extend
and update their knowledge. Research circles also keep the professional abreast
with the wave front of knowledge in the subject, which help them to take-up
newer studies on the various problems and improve levels of efficiency and
creativity.

3.7.4 Role of Professional Organisations / Agencies for promoting
Education and Training Programmes for Library

- **Personnel:-**
  
  There are various professional organizations, schools of library and
  Information studies, specialized agencies responsible for conducting continuing
  education programmes for working professionals. These agencies are list below –

- **Libraries:**
  
  Library authorities or the employers organize in-service training
  programmes to create opportunities for its employees to make them well
  equipped for present as well as future work performance requirements. The aim
  of in-service training should be to –
  
  - Provide staff with job related knowledge.
  - Improve their skills and broaden their experience.
  - Guide them towards greater insight.
  - Develop a positive attitude towards work.

  To provide deeper understanding, staff meetings should be held. Visits to
  other libraries are organized. Seminars, debates and discussion of case-studies
  can also be conducted in the libraries with the help of library authorities. It is the
  responsibility of the library or library committee or an individual for planning
  and coordinating various programmes and services of the library to see that
  training in specialized library subjects and routines are organized to supplement
  continuing education opportunities for library personnel.

- **Library and Information Science Schools:**
  
  The library and information science schools or departments are changing
  their traditional methods of library education and equipping them with the
  required expertise so that they can organize short term courses for the library
professionals as a part of the continuing education programmes. These include courses such as indexing, abstracting, reprography, library automation and management. Some international training schools for the training of teachers of library and information science be identified so that teachers can be deputed to short term training programmes. Teachers in turn can train a number of professionals at their work places of work. The schools of library and information studies should update their course curriculum so that the state of art courses is able to facilitate desired changes in libraries.

• **Government:**

  The Government should support the training of library staff in the following areas –

  To train the library personnel in new techniques of information acquisition, transfer and communication technology.

  To increase excellence in library leadership through advanced training in library management.

  To train library personnel to serve the varied information needs of the various types of users.

  As the leadership is an essential point in the state-wide library development, the state agency should be capable of articulating continuing education needs, motivating people to participate and facilitate quality library education for every library in the state.

• **Professional Associations:**

  The role of professional associations is to work towards ensuring that the best use be made of their resources so that the necessary range of continuing professional development opportunities are available to those working in the library and information science area. The policies and activities of the association should be reviewed in the light of changing educational, economic and technological circumstances, as well as expectations of members. An association, should as part of its objectives, facilitate the establishment and improvement of libraries and library services’ and improve the standard of librarianship. There are other activities which include seminars, conferences, study circles, workshops and publication activities to keep the members up-to-date with developments in the library and information field. Professional librarians, in
particular are constantly facing change. They are required to cope-up only with such changes but also to learn to deal with such changes.
**Refresher/short-term Training Courses /Workshops:-**

In order to keep in touch with the latest developments in the field of library and information science, it is very essential to attend refresher courses, short-term training courses and workshops after regular intervals. In the present study, the library personnel were requested to intimate if they have attended any such courses. In order to create job satisfaction, improve motivation and inculcate high morale, it is necessary that the library personnel should be liberally provided necessary education and training. If the staff training and development is provided within an institution, it will naturally encourage the staff to take responsibility for institutional as well as their own personal development. The library authorities should encourage the library personnel to up to date their knowledge and improve their abilities through training facilities offered by University Grants Commission, library associations and other agencies. Unless the library staff of the university/college have keen awareness to changing environment and improve their skills and adapt themselves to new information handling trends, it may not be possible for them to be effective and efficient professionals of the future.

The study has shown that every organization needs to have well trained and experienced people to perform the activities that have to be done. If current or potential job occupants can meet this requirement, training is not important. When this is not the case, it is necessary to raise the skill levels and increase the versatility and adaptability of employees. Therefore, research scholar has mentioned the education and training of University / College Library Staff.

3.8 CONCLUSION :

Recruiting is the process of attracting job applicants possessing necessary skills, abilities, knowledge and attitudes required to fulfill the objectives of the library. The aim of recruitment should be to secure the best candidate for a given job. For ensuring selection of high quality staff. The purpose of any recruitment exercise is to select the person who will carry out the job most efficiently and effectively as per requirements and objectives of the organization.
CHAPTER – IV

ANALYSIS AND INTERPRETATION OF THE DATA

4.1 INTRODUCTION

In the previous chapter on Methodology to the study we have discussed population, sample, sampling, tools & techniques used in the research. In any quantitative research the data collected are analysed using appropriate mathematical and statistical techniques so as to arrive at conclusions and answer the objective set. Statistical treatment on the data collected during the study is given in this chapter. Analysis and interpretation of data in research consists of systematic observations and description of the characteristics or properties of objects or events for the purpose of discovering relationship between variables. The ultimate purpose is to develop generalization that may be used to explain phenomena and to predict future occurrences. Till the researcher arrives at the step of generalization, he has to use plenty of data. Statistics according to Wallis and Roberts, in modern connotation, statics is a body with collection, classification, analysis and interpretation of numerical data. Statistic is also regarded as a body of mathematical techniques or processes for gathering, organizing, analyzing and interpreting numerical data. Statistics does not study qualitative phenomenon but is applicable to those problems which can be represented in terms of qualitative expressions. However, it is possible to relate subjective concepts to numerical data in an indirect way.

Statistics are:

1) To draw inferences from sample characteristics to population characteristics the techniques used are called inferential statistics.

2) To reduce large quantities of data to manageable & understandable form the techniques used are called descriptive statistics.

Because most research yields such quantitative data, statistics provides basic techniques of measurement, analysis & interpretation of data and enables us to conclude from the available data arrive at the solution of the problems under investigation. The statistical concepts and techniques which are uses in the present study are discussed below.
4.2 STATISTICAL AND COMPUTATIONAL TECHNIQUES USED IN ANALYSIS

The following statistical measures / techniques are used in analyzing the numerical data in this investigation:

1. **Percentage**: it is used to present number of libraries and librarians among sample who have a particular response to a question questionnaires.

2. **Arithmetic Mean**: It is used to represent information given by librarians of the library and their own information regarding professional activities. It is also used for analyzing study of college libraries.

**Software / statistical tools software used**:

The following statistical function in M. S Excel & Minitab are widely used for analysis of the data in this research:

1. Normal probability & conversely values of normal distribution corresponding to given probability.
2. Probability of librarians t – distribution & conversely values of librarians t – variable corresponding to given probability.

<table>
<thead>
<tr>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you use email for placing book order?</td>
<td>72</td>
<td>80.89%</td>
</tr>
<tr>
<td>Do you subscribe e-form journals?</td>
<td>67</td>
<td>75.28%</td>
</tr>
</tbody>
</table>

It is satisfactory to note that 80.89% colleges are using e-mail for placing book order.

Further question regarding e-form journal subscription it is found that 75.28% colleges subscribe e-form journals along with traditional hard copy form journals.
Table No. 4.2: library services

<table>
<thead>
<tr>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you provide copy of library rules to the users?</td>
<td>78</td>
<td>87.64%</td>
</tr>
</tbody>
</table>

It is analysed from above response that 87.64% colleges are extending good services to the user by providing a copy of rule to users.

**library services:**

The analysis of question regarding circulation system revealed that 43 colleges (48.31%) colleges are still maintaining manual charging system on the counter; whereas, 46 colleges (51.69%) colleges are using electronic charging system on the counter.

Table No. 4.3: Other Facilities

<table>
<thead>
<tr>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have photo copying facility</td>
<td>39</td>
<td>43.82%</td>
</tr>
<tr>
<td>Do you provide photo copying facility to visitors?</td>
<td>39</td>
<td>43.82%</td>
</tr>
</tbody>
</table>

The further revelation is alarming, though it is very common thing of photo copy facility, only 43.82% college libraries are having Xerox machine, and they are of course providing it to the visitors of the library.

It is further observed that college are having Xerox machine but exclusively for library is provide only in 43.82%. It show deficiency in infrastructure are under utilization of valuable human resources.
Table No. 4.4: Statistical data

<table>
<thead>
<tr>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you maintain statistical data of the library?</td>
<td>88</td>
<td>98.87 %</td>
</tr>
</tbody>
</table>

All the college libraries, except one, are maintaining the statistical data i.e. 98.87% are maintaining it. It shows the optimum utilization of available human resources.

Availability of ICT hardware

Table No. 4.5

Table showing availability of ICT hardware

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
<th>Availability in the college libraries out of 89 college</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Server Machines</td>
<td>47</td>
<td>52.80%</td>
</tr>
<tr>
<td>2.</td>
<td>Client workstation</td>
<td>58</td>
<td>65.16%</td>
</tr>
<tr>
<td>3.</td>
<td>Laptop</td>
<td>36</td>
<td>40.44%</td>
</tr>
<tr>
<td>4.</td>
<td>Dot Matrix Printer</td>
<td>62</td>
<td>69.66%</td>
</tr>
<tr>
<td>5.</td>
<td>Inkjet Printer</td>
<td>49</td>
<td>55.05%</td>
</tr>
<tr>
<td>6.</td>
<td>Laser Printer</td>
<td>46</td>
<td>51.68%</td>
</tr>
<tr>
<td>7.</td>
<td>Barcode Printer</td>
<td>76</td>
<td>89.39%</td>
</tr>
<tr>
<td>8.</td>
<td>Flatbed scanner</td>
<td>47</td>
<td>52.80%</td>
</tr>
<tr>
<td>9.</td>
<td>Barcode Scanner</td>
<td>48</td>
<td>53.93%</td>
</tr>
</tbody>
</table>
On analysis or above table the factual data reveal that highest no. of colleges, 94.38% are maintaining UPS in the college library. It show the cordless of the college authority for the data preservation.

The lowest no. of college libraries 38.20% are having laptop for library and its users. This shows the non-fluency of institutions.

On an average the college libraries are deficient of hardware gadgets is explicit from the above table. On observation it is revealed that though there is non-availability of same of the gadgets, the share the services of gadgets available in the college.

**Table No. 4.6: Library Automation**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Is your library computerized?</td>
<td>78</td>
<td>87.64 %</td>
</tr>
<tr>
<td>2.</td>
<td>Whether your library software is user friendly?</td>
<td>79</td>
<td>88.79 %</td>
</tr>
</tbody>
</table>

Above two selected questions were placed before the libraries with an intention to verify the ICT environment in the college library and findings are quite satisfactory i.e. 87.64% libraries are computerized and the library software in use is user friendly agreed by 88.79% college libraries.
Table No. 4.7: Customer Support System

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Do you get library software upgrade service from vendor</td>
<td>66</td>
<td>74.15%</td>
</tr>
<tr>
<td>2.</td>
<td>Do you get extra budget for computerization of library?</td>
<td>46</td>
<td>51.68 %</td>
</tr>
</tbody>
</table>

To test ICT environment in the college library above two typical questions were asked and it is found that 74.15% college libraries get upgrade services from the vendors, but the college authorities are still not convinced for need of extra budget for computerization work as only 51.68% of them are getting extra budget.

Table No. 4.8
Table showing Staff Development

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Brief Description</th>
<th>Out of 89 college</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Have you enrolled yourself for any higher studies during your services in the library?</td>
<td>28</td>
<td>31.46%</td>
</tr>
<tr>
<td>2.</td>
<td>Is there any orientation programmer</td>
<td>80</td>
<td>89.88%</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Whether induction programmer given for new entrants is adequate?</td>
<td>81</td>
<td>91.01%</td>
<td></td>
</tr>
<tr>
<td>Do you feel that your library should organize in Hayes training programmes?</td>
<td>81</td>
<td>91.01%</td>
<td></td>
</tr>
<tr>
<td>Do you get financial benefits on completion or requisite training programmer?</td>
<td>63</td>
<td>70.78%</td>
<td></td>
</tr>
<tr>
<td>Do you feel that there is need to redesign the LIS Course curriculum as per current requirement?</td>
<td>74</td>
<td>83.14%</td>
<td></td>
</tr>
<tr>
<td>Do you feel that LIS Curriculums should be Redesigned with stress on IT Topics?</td>
<td>76</td>
<td>85.39%</td>
<td></td>
</tr>
</tbody>
</table>

Only 31.46 Librarians say that they have enrolled their self for higher studies while in service. It is analyased that 68.54% Librarians, either they have not registered for higher education while in service or they are not getting opportunity to do so. What ever it may but the lower percentage is alarming one.

89.88 % Librarians conduct orientation Programmers for the news users of the library, Particularly Newly Admitted Students for higher education courses.

The Response is quite high and it shows the correct instrument for user education.

The higher Number of librarians rely on adequacy of induction programmer for newly admitted users as the response is very high 91.01%

The higher number of librarians i.e.91.01 % are of the option that in-house Training is the requirement of the time.
70.78% Librarians get on advanced increment on completion of scheduled training.

The large no. of librarians i.e. 83.14% are of the opinion that there is need of Redesigning LIS Course Curriculums.

Also large no. of Librarians 85.39% are of the Opinion that there should stress on it topics in the Redesigned curriculum.

**Table No. 4.9: ICT Skills/ Awareness**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Brief description of question in questionnaire</th>
<th>Out of 89 colleges</th>
<th>% of ‘YES’ Responses through questionnaire total 89 libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Does your library / Institution provide any opportunity to your for Training in use of computers and other IT Equipments?</td>
<td>54</td>
<td>60.67</td>
</tr>
</tbody>
</table>

It is Analysed that only 60.67% college authorizes provide opportunity for training in use of computer and other relevant gadgets to the college Librarians.
Bar Chart No. 1

Bar chart showing use of library software.

The above bar chart is revelation of library software’s in use by the college libraries. It is explicit that 48.31% college libraries are using UGC recommended SOUL software. The rest no. vary from 15.73% to 2.24%

Further analysis expose that considerable no. of college libraries 7.86% are still using CDSISIS software which is now a days considered ad outdated. The observation revealed that they are leading towards use of SOUL as soon as they convert data.

**Custer support services time consumption by software supplying companies.**

The respondents were given three options.

a) Within 24 hrs. of complaint

b) Within 48 hrs. of complaints and

c) More than 48 hrs.

All the respondents, 89 college libraries, (100%) of them have put a tick mark (✓) to the third option i.e. more than 48 hrs.
It is a worry some time consumption by support service companies. The observation and discussion with the libraries revealed that it is because of the longer distance between the user libraries and software supply companies.

**Use of network technology:**

The respondents were given four options wireless, wired, mixed and other. The data received is very satisfactory. There are 47 college libraries wherein ‘Wi-Fi’ technology is in use, 22 college libraries are using ‘wired’ connectivity, seven college libraries are using mixed connectivity and rest 13 college libraries have opted for option ‘other’.

The further percentagewise analysis is that 52.80% college libraries are using ‘Wi-Fi’, network, 24.72% are using Wired connectivity, 7.87% are using ‘mixed’ connectivity and rest 14.61% are using ‘other’ technology.

**Pie Chart No. 4.1**

Pie chart showing internet connection availability in the library.

On analysis of above chart it is found that 53.93% college libraries are providing internet connection to the users, 26.52% are providing internet connection to the user from compute laboratory and rest of 19.10% college library are not providing this facility to the users of library.
It show that the highest no. of college libraries are providing internet facility in the library. The trend is quite satisfactory. But it is warming that good no. of college are neither providing internet facility in library not from computer laboratory.

**Professional Qualifications**:

The analysis of the corresponding data is prosecuted over here through a line graph

**Line Graph No. 1**

Line Graph showing qualifications of the librarians

On analysis of above line graph, it is explored that all the college librarians, (100%) are holding professional (Master degree) Post graduate degree in library & information science. 43.82% Librarians are having requisite qualification i.e. NET/SET (20.22%) college Librarians are holding research degree (M.Phil) and only 4.49% of them are holding doctorate degree.

The human resources available are highly qualified and trend is towards acquiring higher and research degrees.

How many in service training programmer attended during last five years?

This question was asked to test development of human resource to the librarians and respondents corresponding data is exhibited in the line graph
Line graph No. 2

Line graph showing no of in-service training programmes attended during last five years by the college librarians.

The line graph is self explanatory that highest no. of librarians 83.15% of them have completed 4+ in service training programmers’ during last five years, 10.11% have completed 3+, 4.50% have completed 2+ and the lowest 2.24% have completed 1+ in service training programmers’.

The further analysis exhibit that maximum no. of college librarians are continuously pursuing in service training programmers and they are trying to provide skilled human resource to the college library to fulfill the need of ICT environment.
Staff Development: Tick mark the areas of your training needs.

Table No. 4.10

Table showing the areas of training need tick marked (✓) by the respondents.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Areas of Training</th>
<th>No. of college Librarians response out of 89 librarian</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cataloguing</td>
<td>27</td>
<td>30.33%</td>
</tr>
<tr>
<td>2.</td>
<td>Serial Control</td>
<td>39</td>
<td>43.82%</td>
</tr>
<tr>
<td>3.</td>
<td>General Management</td>
<td>32</td>
<td>35.95%</td>
</tr>
<tr>
<td>4.</td>
<td>Personal Management</td>
<td>31</td>
<td>34.83%</td>
</tr>
<tr>
<td>5.</td>
<td>Hardware Maintenance</td>
<td>66</td>
<td>74.15%</td>
</tr>
<tr>
<td>6.</td>
<td>Database Development</td>
<td>42</td>
<td>47.19%</td>
</tr>
<tr>
<td>7.</td>
<td>System Analysis</td>
<td>39</td>
<td>43.82%</td>
</tr>
<tr>
<td>8.</td>
<td>Digital Library</td>
<td>69</td>
<td>77.52%</td>
</tr>
</tbody>
</table>

To verify the ICT environment above question was asked to college librarians and it revealed by. Respondents that highest response 77.52% for digitization of library it is further analyzed that librarians long for training in digitalization processing of library. The lowest training need (30.33%) librarians have expressed in cataloguing it is further analyzed that very few college librarians face problem in generating bibliographic data. The librarians have further expressed need of training in rest of the six areas. It is further analyzed that as on to day there is no areas wherein nobody is in need of training.
**Attitude:** The reasons for attending the continuing Educational Programmes.

**Table No. 4.11**

Table Showing the librarians reasons for attending the continuing Educational Programmes.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Reasons</th>
<th>Response of the college Librarians (out of 89)</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>To acquire new skills</td>
<td>78</td>
<td>87.64%</td>
</tr>
<tr>
<td>2.</td>
<td>To up date knowledge</td>
<td>81</td>
<td>91.01%</td>
</tr>
<tr>
<td>3.</td>
<td>To learn latest technology</td>
<td>84</td>
<td>94.38%</td>
</tr>
<tr>
<td>4.</td>
<td>To improve library services</td>
<td>86</td>
<td>96.62%</td>
</tr>
<tr>
<td>5.</td>
<td>To train junior staff</td>
<td>69</td>
<td>77.52%</td>
</tr>
<tr>
<td>6.</td>
<td>To improve relation with fellow professionals</td>
<td>66</td>
<td>74.15%</td>
</tr>
<tr>
<td>7.</td>
<td>To make compliance of mandatory requirement for promotions</td>
<td>86</td>
<td>96.62%</td>
</tr>
<tr>
<td>8.</td>
<td>Any other</td>
<td>07</td>
<td>7.86%</td>
</tr>
</tbody>
</table>

Analysis of above table it is revealed that highest response is given for improvement of library services is the purpose of attending continuing educational programme by 96.62% librarians. The outcome this analysis is that college librarians are having earnest desire to improve in ICT enrolments.
Along with this a good number of librarians 74.15% want to participate in training for improvement of relation with the fellow professionals. It show bit little affinity with the fellow professionals.

The lowest response is for ‘Any other ‘ i.e only 7.86% have opted for this option and this is a meager response.

The average of response for the reasons quoted at sr. no. 1,2,3,5 and 7 is 89.88% and it is the sincere expression of college librarians to improve themselves in the ICT environment.

**Attitude/ Opinion regarding the application of ICT in the library.**

**Table No. 4.12**

Table showing the attitude of college Librarians regarding application of ICT in the library.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Attitude</th>
<th>Response of the college librarians for Agree (out of 89)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ICT application facilitate quick access to current data</td>
<td>89</td>
<td>100%</td>
</tr>
<tr>
<td>2.</td>
<td>ICT application improve quality of library services.</td>
<td>89</td>
<td>100%</td>
</tr>
<tr>
<td>3.</td>
<td>ICT application help to enhance knowledge and skill of library professionals</td>
<td>89</td>
<td>100%</td>
</tr>
<tr>
<td>4.</td>
<td>ICT application increased job satisfaction of library professionals</td>
<td>79</td>
<td>88.76%</td>
</tr>
<tr>
<td>5.</td>
<td>ICT application help to improve</td>
<td>89</td>
<td>100%</td>
</tr>
</tbody>
</table>
The analysis of above table explore the correct reflection of college librarians view regarding ICT application in the college library.

It is found that 100% college librarians agree for the statements quoted under Sr. no. 1, 2, 3 and 5.

While searching whether ICT application increases job satisfaction, the response is only 88.76% and rest 11.24% disagree for the statement. It show the intellectual maturity of some of the librarians.

The further analysis trance out that 85.39% librarians agree for the statement that ICT application help to improve communication, and it show the prefect reflection of their opinion.

As regards to improvement in the status or college librarians only 85.39% librarians agree, where as 14.65% disagree, it is expression of factual position of the college librarians.

88.76% librarians agree that ICT make integration within the library.

Only 21.34% librarians agree for the statement that ICT application reduce work load, the further analysis explore that 78.69% do not agree for the statement. It is the inference that ICT application has increased the workload.
19.10% librarian feel that ICT application is a disturbance to routine work, and it is revelation of insufficient availability of skilled human resource. Only 24.71% agree that ICT application affect regular budgeting whereas remaining 75.29% do not agree with this statement. The revelation of this response show that in the maximum for ICT application.
Rating self awareness level and skills for the use of technology

Table no. 4.13

Table showing self awareness level and skills rating for the use of technology.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Skill</th>
<th>Good</th>
<th>Poor</th>
<th>Don’t Know</th>
<th>Don’t Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Computer</td>
<td>76</td>
<td>07</td>
<td>00</td>
<td>06</td>
</tr>
<tr>
<td>2.</td>
<td>Computer Networking</td>
<td>68</td>
<td>09</td>
<td>07</td>
<td>05</td>
</tr>
<tr>
<td>3.</td>
<td>CD/DVD Writer</td>
<td>52</td>
<td>24</td>
<td>06</td>
<td>05</td>
</tr>
<tr>
<td>4.</td>
<td>Multimedia</td>
<td>71</td>
<td>07</td>
<td>03</td>
<td>07</td>
</tr>
<tr>
<td>5.</td>
<td>LAN/WAN</td>
<td>42</td>
<td>37</td>
<td>04</td>
<td>06</td>
</tr>
<tr>
<td>6.</td>
<td>Server</td>
<td>27</td>
<td>54</td>
<td>03</td>
<td>05</td>
</tr>
<tr>
<td>7.</td>
<td>Mobile Phone</td>
<td>81</td>
<td>06</td>
<td>00</td>
<td>02</td>
</tr>
<tr>
<td>8.</td>
<td>Digital Camera</td>
<td>32</td>
<td>50</td>
<td>00</td>
<td>07</td>
</tr>
<tr>
<td>9.</td>
<td>Webcam</td>
<td>34</td>
<td>41</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>10.</td>
<td>MP 4 Player (e.g. ipod)</td>
<td>31</td>
<td>45</td>
<td>07</td>
<td>06</td>
</tr>
<tr>
<td>11.</td>
<td>Laser Printer</td>
<td>68</td>
<td>10</td>
<td>04</td>
<td>06</td>
</tr>
<tr>
<td>12.</td>
<td>LED/Multimedia Projector</td>
<td>28</td>
<td>51</td>
<td>04</td>
<td>06</td>
</tr>
<tr>
<td>13.</td>
<td>RFID Technology</td>
<td>17</td>
<td>61</td>
<td>03</td>
<td>08</td>
</tr>
<tr>
<td>14.</td>
<td>Barcode Scanner</td>
<td>61</td>
<td>11</td>
<td>08</td>
<td>09</td>
</tr>
<tr>
<td>15.</td>
<td>Image Scanner</td>
<td>12</td>
<td>62</td>
<td>07</td>
<td>08</td>
</tr>
<tr>
<td>16.</td>
<td>E-book reader</td>
<td>42</td>
<td>32</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>17.</td>
<td>Internet</td>
<td>74</td>
<td>09</td>
<td>002</td>
<td>04</td>
</tr>
<tr>
<td>18.</td>
<td>Wi-Fi</td>
<td>30</td>
<td>52</td>
<td>02</td>
<td>05</td>
</tr>
<tr>
<td>19.</td>
<td>Overhead Projector</td>
<td>68</td>
<td>10</td>
<td>04</td>
<td>07</td>
</tr>
<tr>
<td>20.</td>
<td>Modem</td>
<td>67</td>
<td>12</td>
<td>03</td>
<td>07</td>
</tr>
<tr>
<td>21.</td>
<td>Bandwidth</td>
<td>42</td>
<td>29</td>
<td>10</td>
<td>08</td>
</tr>
<tr>
<td>22.</td>
<td>Colour Laser Printer</td>
<td>52</td>
<td>27</td>
<td>03</td>
<td>07</td>
</tr>
<tr>
<td>23.</td>
<td>Photocopier</td>
<td>79</td>
<td>02</td>
<td>00</td>
<td>08</td>
</tr>
<tr>
<td>24.</td>
<td>Video Conferencing</td>
<td>16</td>
<td>02</td>
<td>04</td>
<td>68</td>
</tr>
<tr>
<td>25.</td>
<td>CCTV</td>
<td>62</td>
<td>09</td>
<td>03</td>
<td>15</td>
</tr>
</tbody>
</table>
The analysis of above table reveal that on an average 45.66% librarians say that they are having good knowledge of 33 computer related operations.

There are 25.60% librarians who are having poor knowledge of computer operation given the table.

There are 5.81% librarians who don’t know about these computer operations.

And there are 9.30% librarians who not use these operations.

The further analysis explores that though good number of librarians are having good knowledge of computer operation, the percentage of librarians having poor knowledge of these operations also the percentage of don’t know and don’t use librarians con not be disregarded.

The findings are that there is continuous need of improvement for awareness level and skills to sustains in the use of technology for development of suitable human resource in the ICT environment.

**Problems faced by library staff in use of ICT applied.**

The researcher has reckoned to core and frequent problems faced by library professionals while doing effective use of ICT applications.

The response of librarians is presented in the pie- chart.
Pie- Chart No. 4.2
Showing frequent problems faced by library professionals while doing effective use of ICT applications.

By analysis of this pie-chart it is explicit that 51.6% face problem of inadequate training, 42.69% face for lack of infrastructure, 47.19% face for no support from administration, 41.57% face for lack of support from authority, 34.83% face problem of no initiative from professional association, 30.33% face for lack of scope for ICT application, 32.58% lack of interest by users, 23.95% face problem of fear for ICT application and 19.10% librarians face same other problem.

The further analysis reveal that there are 10 core problems for librarians for doing effective use of ICT application.

Though Percentage on an average is 29.35% of all the reasons it can not be disregarded and there is need to remove such reasons for which there is core need to develop skilled human resource for library.
Searching the suggestions for updating the knowledge skills.
The researcher has logically developed 10 reasons for receipt of suggestions for updating
the knowledge skills to analyze this it presented in the following table

**Table No. 4.14**
Table showing core suggestion from the librarians for updating knowledge skill of library
professionals.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Suggestions</th>
<th>Response from Librarians (out of 89)</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Regular participation relevant conference workshops</td>
<td>78</td>
<td>87.64%</td>
</tr>
<tr>
<td>2.</td>
<td>In-house training programme for staff development</td>
<td>75</td>
<td>84.26%</td>
</tr>
<tr>
<td>3.</td>
<td>Going for higher studies / formal courses</td>
<td>69</td>
<td>77.52%</td>
</tr>
<tr>
<td>4.</td>
<td>Undertaking individual research work/ publication</td>
<td>54</td>
<td>60.67%</td>
</tr>
<tr>
<td>5.</td>
<td>Discussion of professional matter with colleagues</td>
<td>72</td>
<td>80.89%</td>
</tr>
<tr>
<td>6.</td>
<td>Attending professional Association meetings</td>
<td>79</td>
<td>88.76%</td>
</tr>
<tr>
<td>7.</td>
<td>Involvement in teaching</td>
<td>71</td>
<td>79.77%</td>
</tr>
<tr>
<td>8.</td>
<td>Reading latest book of the subject</td>
<td>81</td>
<td>91.01%</td>
</tr>
<tr>
<td>9.</td>
<td>Regular reading of relevant professional literature</td>
<td>78</td>
<td>87.64%</td>
</tr>
<tr>
<td>10.</td>
<td>Learning from web resources</td>
<td>74</td>
<td>83.14%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>728</th>
<th>821.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divided by</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Average</td>
<td>72.80 %</td>
<td>82.13%</td>
<td></td>
</tr>
</tbody>
</table>
The analytical revelation of the above data explore reveal that on an average 72.80% librarians average of agree for the suggestion is 82.13%.

The further analysis reveal that there is higher percentage of librarians agree for the core suggestions. The further analyze is that majority of the librarians are facing different reasons to update their knowledge skills and their urge is clear from the response of 82.13% average of consent tick marked (✓) by them.

The highest response (91.01%) is for the suggestion regarding reading latest books of the subjects and lowest response (60.67%) for under taking individual research work/publications. It does not mean that they are not serious about the research work, they are definitely serious about under taking research work/publication as the average percentage (60.67%) on higher side.
CHAPTER – V
FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION :
The present chapter is an outcome of the research topic studies. The findings are elaborated in the conclusions accurately to state the concrete findings. The predicted objectives are proved through the analysis and interpretation of data, the data collected on various items has been analysed and interpreted to state the answers to the predicted objectives. The recommendations are based on the outcome of results explored in this chapter. The inference drawn for recommendations are based on the results obtained on analysis and thereby in the findings. The future research topics too are having very close relevance with the findings obtained.

The data collected for this study is the base of this research and the data is collected by using of this research and the data is collected by using suitable tools. The data collection is based on the questionnaire given of the librarians which is a major tool used in the research.

The conclusions and findings drawn from this research study are given as under

5.2 FINDINGS :
The findings of the study are given further in five parts, objective wise as follows

1. Out of 89 college libraries in the sample say that 75.28% college authorities provide opportunity to acquire new skills through in service training.

2. 91.01% librarians feel that there is need of in-house training programmes.

3. 62.90% college librarians prefer time bound promotion on completion of advanced training.

4. Only 19.10% college librarians have given preference for time bound promotion as per seniority.

5. Very low i.e. 18% librarians have given preference for the criterion ‘promotion on the performance basis’.
6. 100% college librarians are holding Master degree in library and Information Science, 43.82% librarians are having requisite qualification i.e. NET/SET, 20.22% college librarians are holding M.Phil. degree and only 4.49 of them are holding doctorate degree.

7. 19.10% librarians are having one to five years of experience, 47.19% are having 6 to 15 years of experience, 20.22% are having experience of 16 to 25 years and rest 13.48% are having experience of above 25 years. The largest group of librarians i.e. 47.19% are having 6 to 15 years of experience and smallest group i.e. 13.48% are having experience of above 25 years.

8. The highest no. of librarians 73.25% agree that staff members are deputed for training on the basis of their requirement to the institution.

9. The highest no. of librarians 83.15% have completed ‘4+’ in-service training programmes during last five years, 10.11 have completed ‘3+’, 4.50% have completed ‘2+’ and lowest 2.04% have completed ‘1+’ in service training programme.

10. 70.78% state that continuing education programmes contribute to update the skills to a great extent.

11. The revelation of self awareness level and skill rating for the use of technology by librarians, they were asked to choose the rating for ‘32’ computer related skills good, poor, don’t know and don’t use. The average of ‘good’ is 45.66%, poor 25.60%, don’t know 5.81%, don’t use 3.30%.

12. The response of core suggestions from librarians regarding updating knowledge skills of library professionals found that

i) 87.64% college librarians suggest there is need of regular participation in relevant conference and workshops.

ii) 84.26% suggested for inhouse training programmes for staff development.

iii) 77.50% suggested need to go for high studies / formal courses.
iv) 60.67% suggested to undertake research work to individual level and publish it.

v) 80.89% suggested discuss the professional matters with colleagues.

vi) 88.76% suggested need to attend professional association meetings.

vii) 79.77% suggested need to have involvement in teaching work.

viii) 91.01% suggested for reading of latest books of the subject.

ix) 87.64% suggested regulate reading of relevant professional literature.

x) 83.14% suggested to learn latest skills from web resources.

13. 87.64% college libraries are having ‘Library Advisory Committee’

14. 80.89% college libraries are using e-mail for placing book orders.

15. 75.28% college libraries subscribe e-form (electronic form) journals.

16. The highest no. of college librarians i.e. 88 college librarians (98.87%) are maintaining statistical data.

17. Out of 89 college libraries in the sample 87.64% state that their libraries are computerized.

18. 88.79% libraries state that software in use for library is user friendly.

19. 74.15% libraries get library software upgrade service from vendor

20. Only 51.68% libraries get extra budget from management for computerization of library.

21. Only 50.56% college libraries are connected through LAN.

22. Only 60.67% libraries (Institutional authorities) provide opportunities to the librarian and library staff for training of computers and other ICT equipments.

23. All the 89 college libraries i.e. 100% state that it take more than 48 hrs. by customer support services section of the software supplying companies to solve the complaint.
24. 64.04% college libraries are facing problem while drawing reports from the software in use.

25. 89.89% college libraries do not face any problem to maintain the back-up.

26. No software is 100% perfect and user friendly.

27. On an average 50% staff from the existing staff of college library is computer literate.

28. It is explicit through analysis that highest no. of college libraries 85.39% are using computer for data security and lowest no. of college libraries 49.43% are using computer for ‘Serial Control’. Further, on an average it is found that 58.56% college libraries are using computer for Acquisition, cataloguing, circulation, maintenance, budgeting, online services, database development and report generating.

29. It is found that highest no. of college librarians 77.52% state that they need training in the area of digital library and lowest no. 30.33% state that they need training in the area of cataloguing / OPAC. Further on an average 46.62% state that they need computer training in the area of serial control, general management, personnel management, Hardware maintenance, database development and system analysis.

30. While tracing attitude of college librarians it is found that 100% librarians agree for ICT application facilitate quick access to current data, improves quality of library services, help to enhance knowledge and skill of library, professionals and help to improve communication. The lowest no. of librarians 21.34% agree that ICT application reduce workload of library professionals.

88.76% librarians agree that ICT application increased job satisfaction of library professionals. 85.39% agree that ICT application improve the status of library, 88.76% agree that ICT makes an integration within the library.

31. The result of frequent problem faced by library professionals while doing effective use of ICT application.

42.69% face problem of lack of infrastructure, 51.68% face problem of inadequate training, 47.19% face for no support from administration, 41.57% face for lack of
support from authority, 34.83% face problem of no initiative from professional
association, 30.33% face for lack of scope for ICT application, 32.58% face lack of
interest by users, 23.95% face problem of fear ICT application and 19.10% librarians
face some other problems.

32. 89.88% college libraries conduct orientation programme for new entrants.

33. 91.01% college librarians say that induction programme given for new entrants.

34. 83.14% college librarians are of the opinion that there is need to redesign the LIS
course curriculum as per current requirement.

35. 85.39% college librarians are of the opinion that LIS curriculum should be redesigned
with stress on IT topics.

36. 48.31% college libraries are using UGC recommended SOUL software and rest of
college libraries are using different softwares.

37. 87% college librarians expressed attitude that cost of the library software is very high.

38. Also, it is attitude of 87% college librarians that software companies supplying
library software charge very high fees for further training once the beginning training
is over.

39. 51.69% college libraries are using electronic charging system on the counter for
circulation of books.

40. It is found that highest no. of college librarians 96.62% state that they want to attend
the continuing education programme to improve library services and to make
compliance of mandatory require of promotions, lowest 7.86% state that they want to
attend continuing education programme for some other reasons. On an average
84.95% librarians want to attend continuing education programme for acquiring new
skills, to update knowledge, to learn latest technology, to train junior staff and to
improve relations with fellow professionals.
41. Only 43.82% college libraries are having photo copying facility, rest substantial 56.78% college libraries do not have photocopying machine. And similar, 43.82% college libraries do not provide photocopying facility to the visitors of the library.

42. Very lower no. of college librarians 28 i.e. 31.46% out of the sample of 89 colleges have enrolled themselves for higher studies during their services in the library. Rest 61 college librarians i.e. 68.54% could not enroll for higher studies during services in the library.

43. Out of 89 college librarians posts, only 79 post (88.76%) are filled in and 10 posts (11.24%) are lying vacant.

44. Also, it is revealed that there are 29 posts of ‘Assistant Librarians’ sanctioned in the 29 colleges. But out of 29 posts only 23 posts 79.31% are filled in and 6 post 11.24% are lying vacant.

45. Out of 89 college libraries in the sample only 55.05% have recruited the supporting staff in the library, whereas 44.95% colleges have not recruited the supporting staff in the library.

46. Only 10.11% college libraries are having exclusive connectivity for library, 70.78% are providing internet connectivity to library from campus connectivity and 19.10% college libraries have left the option blank.
5.3 CONCLUSIONS:

1. Majority of the libraries are using electronic media and gadgets for routine work.

2. Majority of libraries are subscribing e form journals.

3. Majority of the libraries aspire to have Xerox machine in the library.

4. Majority of libraries maintaining required statistical data.

5. 88.79% librarians express that software they are using is not user friendly.

6. Majority of the librarians are of the opinion that ‘induction programme’ for new incombents in adequate.

7. Majority of the libraries execute orientation programme or new enrants.

8. Majority of the college authorities provide opportunity to acquire new skills through in service training.

9. Majority of the librarians opined that there is need to redesign the library ad information science course curriculum as per current requirement with stress on IT.

10. Majority of the institutional authorities provide an opportunity for training or se o computers and other ICT equipments.

11. Majority of the libraries are using computer for daily routine work.

12. Majority of the libraries are using ‘SOUL’ software.

13. Majority of the libraries are having highly qualified human resource.

14. There is majority of ‘Young Librarians’ in the college libraries by age group analysis.

15. The highest no. of librarians prefer time bound promotion.

16. Majority of the college authorities depute library staff and librarian for advance training programmes.
17. The maximum no. of college librarians are continuously pursuing in service training prorammes and provide skilled human resource to the college librarians.

18. The highest no. of librarians 87.64% participate in ‘continuous education programmes’ to acquire new skills.

19. 100% libraries state that ICT application facilitate quick access to current data, improve quality of library services, and it enhance knowledge and skills of library professionals.

20. 88.76% opined that ICT application increased job satisfaction of library professionals.

21. It is found that self awareness level and skills of the librarians regarding use of technology are ‘Good’.

22. Majority of the libraries face problems for ICT implementation because of inadequate training.
5.4 RECOMMENDATION:

1. Library should extend maximum possible co-operation to ‘support staff’ or their advanced training programmes related to ICT so that library shall have skilled human resource to match the ICT environment challenges of the future period.

2. There is need to redesign library and information science curriculum as per requirement of current situation of ICT environment in the college libraries, therefore, it is recommended that all the universities should redesign LIS curriculum with a stress on ICT.

3. Librarian should be given opportunity to participate in maximum possible ‘advance ICT courses’ so that he can be a successful team leader in the ICT environment of college library.

4. It is recommended that librarian should be given an opportunity on priority basis for higher education, particularly for research so that librarian can be an excelling academician.

5. Librarian should be given maximum possible liberty to develop skilled human resource as per requirement of the library department to cope-up with ICT environment.

6. The authority should give a serious thought to provide ‘quint essential’ infrastructure to the library department.

7. It is recommended that college authority should consider some extra budget for computerization of library.

8. The authority should give an opportunity to support staff of the library on recommendation of the librarian to join ‘in service’ advance training programmes.

9. The authority should not withdraw the ‘skilled’, ‘computer trained’ support staff of the library to use them in some other departments.

10. The college authority should provide all the relevant gadgets for the computerization of library to cope-up with the ICT environment.
11. The library should be provide a separate internet connection to dispose of the ‘information needs’ of the ‘information center’.

12. The library staff should be motivated to participate in various training programme being conducted under ‘Continuing Educational Programme’.

13. While developing skilled ‘human resource’ to face the challenges in the ICT environment, all the support staff along with librarian should be allowed to participate in various conferences, seminars, workshops and training programmes.
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