CHAPTER- 1
INTRODUCTION

1.1 Introduction

In the present age of information and communication technology- ICT, Academics and university libraries have become an integral part of its parent departments due to the adoption of new latest technological storage, processing, retrieval and service. So also in case of a university library which tries hard to develop in each students, teachers and researchers a sense of responsibility in the pursuit of knowledge. Majority of the private university libraries do not have proper information resources, infrastructures and facilities to meet the needs of their users. Among other things, the quality of higher education and research, especially at the graduate level, depends upon the standard of the college or university or other libraries, the information resources available, the usage and the management of its information services to its users. These libraries are now being challenged by a new ICT environment which demands changes in the attitudes and skills towards information handling. The traditional approaches to information processing are renovated by the advent interaction of latest computer technologies, ICT resources and have become a challenging task to the librarians and library staffs. Therefore, the academics libraries need to process, organize, manage, utilize and retrieval the knowledge or information resources in relation to the information use and requirement of their users.

Information and Communication Technology (ICT) have changed library and information services globally. Digital media has revolutionized the information society and advances in ICT have dramatically changed the information provisions. The internet has provided universal access to information. Technological innovation has changed the rate of conversion of knowledge, information and data into electronic format. Development in the software has generated powerful knowledge management software which has transformed the way; knowledge is organized, stored, accessed and retrieved. The digital revolution driven by ICT innovation has transformed University libraries fundamentally. It has impacted on every sphere of University library activity. The University libraries traditional role of information custodian has been reduced to that of being one of many information providers.
1.2 Meaning & Definitions of Research

Research in common parlance refers to a search for knowledge. Once can also define research a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. The Advanced Learner’s Dictionary of Current English lays down the meaning of research as “a careful investigation or inquiry specially through search for new facts in any branch of knowledge.”

According to Lundburg

“Research is sufficiently objective and systematic to take possible classification, generalization and verification of the data observed”.

According to Francis G. Cornell

"To be sure the best research is that which is reliable verifiable and exhaustive, so that it provides information in which we have confidence. The main point here is that research is, literally speaking, a kind of human behavior, an activity in which people engage. By this definition all intelligent human behavior involves some research."

"In social studies, teachers, administrators, or others engage in 'Research' when they systematically and purposefully assemble information about schools, school children, the social matrix in which a school or school system is determined, the characteristic of the learner or the interaction between the school and pupil."

According to W.S. Monroe

Monroe, University of Illinois states, "Research may be defined as a method of studying problems whose solutions are to be derived partly or wholly from facts. The facts dealt with in research may be statements of opinion, historical facts, those contained in records and reports, the results of tests, answers to questionnaires, experimental data of any sort, and so forth. The final purpose of research is to ascertain principles and develop procedures for use in the field of social studies; therefore, it should conclude by formulating principles or procedures. The mere collection and tabulation of facts is not research, though it may be preliminary to it on eve a part thereof."

According to R.M. Hutchins

R.M. Hutchins, Chancellor of the University of Chicago, in "The Higher Learning in America" says, "Research in die sense of the development, elaboration, and refinement of
principles, together with the collection and use of empirical materials to aid in these processes, is one of the highest activities of a university and one in which all its professors should be engaged."

*J. H. McGrath and D. E. Watson* defined the term 'Research' more comprehensively. "Research is a process which has utility to the extent that class of inquiry employed as the research activity vehicle is capable of adding knowledge, of stimulating progress and helping society and man relate more efficiently and effectively to the problems that society and man perpetuate and create."

**According to Francis Rummel**

“Research is a careful inquiry or examination to discover new information or relationship and extend and to verify existing knowledge”.

**According to John Best**

“Research is a more systematic activity directed towards discovery & the development of an organized body of knowledge”.

**According to Herring**

“Scientific Research is a cumulative process, it is also a rejective process especially in the social sciences undertaking can be not only be gains in knowledge but also by discarding assumptions”.

**1.3 Statement of the Problem**

Selection of the topic of research is one of the most important aspects on the basis of that researcher tries to find some facts and solution of the problem. In the age of ICT, library uses different types of information and technological resources to satisfy end of library users. With the help of latest technological advancement, libraries now moving towards electronic/online services based on Information and Communication Technology (ICT). Private University libraries are much more advanced in using and providing ICT based information to their users. Considering this aspect, researcher has tried to conduct study of Private University libraries in the Gujarat State. The study will emphasis on use of various types of Information Communication Technology (ICT) Resources and provide ICT based services by different Private University Libraries in the Gujarat State and its comparison
1.4 Need Usefulness for the Study

The purpose of the study is to investigate the use, resources, services level of Information and Communication Technology (ICT) application / more and more use in the Private University Libraries in the Gujarat State. This study would be helpful for the following reasons:-

a) To understand the availability of ICT infrastructure in the Private University libraries.

b) To know which types ICT resources/tools the Private University libraries.

c) To know which types of online use electronics resources subscribed or use in Private University Libraries i.e. online electronic journals, online electronic databases, online e-books, online e-projects and etc.

d) To know Private University Libraries has institutional member of different Library Network i.e. INFLIBNET, DELNET, MALIBNET, ADNINET etc.

e) To know the collection of these libraries in electronic/digital form.

f) To help to understand the implementation of ICT tools for providing effective information services in Private University libraries.

g) To know the future plan of these Private University libraries in the Digital/Electronic/Technological era.

1.5 Objectives of the Study

For defining the objectives of the study, care have to be taken the objectives of the study are well within the scope of the research envisaged by him/her.

Following are the objectives of the study:

1. A Status of Information and Communication Technology (ICT) in Private University Libraries at various level/section.

2. To know the Information and Communication Technology resources/infrastructure available the Private University libraries.

3. To know about hardware and software available and used in the Private University libraries in the Gujarat State.

4. To know about which type of Online/E-Journals/E-Magazines/E-Databases Subscribed or available in the Private University libraries.
5. To know about those Private University libraries what is the actual budget spent in Rs. for ICT Resources in last/present year.
6. To know various areas of application of information and communication technology in the Private University libraries. i.e. Housing Keeping Jobs, OPAC, CAS, SDI, Online Searching, CD-ROM Search, Internet search etc.
7. To identify the quality of ICT based library and information services provided to the users by Private University libraries in Gujarat State.
8. To provide an awareness of the transcendent use of ICT for quick library operation
9. To guide the library professional regarding various workflow of housekeeping operation using ICT
10. To provide a pathway on the different features of ICT for web cataloguing and classification
11. To create consciousness among library professional and users on the use of OPAC and Web OPAC as a single search platform to library resources

1.6 Scope and Limitation of the Study

As a part of our Ph. D. Course, one has to conduct and submit thesis with stipulated time limit. Keeping this limitation in view the researcher has selected Private University libraries of the geographical area surrounding the Gujarat State.

List of Private University Libraries which are selected for the study.
1. Ahmedabad University
2. Anant National University
3. AURO University
4. C.U.Shah University
5. Calorx Teacher's University
6. Charotar University of Science and Technology
7. Dhirubhai Ambani Institute of Information and Communication Technology
8. GLS University
9. Ganpat University
10. INDUs University
11. ITM vocational University
12. Kadi Sarva Vishvavidyalaya
13. Lakulish Yoga University  
14. Navrachana University  
15. Nirma University of Science and Technology  
16. Pandit DeenDayal Petroleum University  
17. Parul University  
18. Rai University  
19. R.K. University  
20. UKa Tarasadia

20 Private University Libraries of Gujarat State

A researcher has conducted detailed study and analysis about Use of ICT Resources and provides different types of ICT’s based Services to its Users in the Private University libraries in Gujarat State. The Researcher has used Survey Method of Research and Questionnaire data collection techniques.

1.7 Research Approach

There are three kinds of research approaches:

1. Historical Approach
2. Experimental Approach
3. Survey Approach

1. Historical Approach

The critical examinations of past event of happenings in order to know truth and later on, to generalize is known as historical research. It is worth to mention the famous English Dramatists George Bernard Shaw’s view that “the past is not behind the group. It is within the group”. Pandit Jawaharlal Nehru says that “man’s growth from barbarism to civilization is supposed to be the theme history”. This means a proper study of past will provide key to the present.

What is Historical Research?

The following are the meanings of historical research:

Historical research is the application of the scientific method of inquiry to historical problems. It demands standards of careful methodology and spirit comparable to those which characterize other types of research.
It involves identification and limitations of the problem, formulation of the hypothesis, collection, organization, verification, validation and analysis of data; testing the hypothesis; and writing of the historical account. All of these steps lead to new understanding or the past and its relevance to the present and future. Historical studies in education provide important information concerning the effects of certain past educational practices and may suggest programmes for future action, based upon the evaluation of these past experiences.

(A) **Purpose of Historical Research**

- The foremost purpose of doing historical research is to gain a clear perspective of the present. Present problems e.g. racial integration or the recent opposition federal aid to education are undertaking only on the basis of third historical background. Most current events have a past “History” and it is generally for us to acquaint ourselves with this history if we appreciate their real significance.

- A common motive underlying historical research is the desire of the scientist to arrive at an accurate account of the past. This may involve nothing more than a scholarly interest in truth, i.e. the desire to know what happened and how? And Why? The men of the times allowed it to happen.

(B) **The Steps of Historical Research**

- **Identification and Definition of the Problem:** It is a difficult proposition since it involves not only the location of the problem, which has a historical significance, but also the availability of adequate data.

- **Collection of Data:** Collection of data may involve anything digging up ancient ruins to stumbling on old documents or remains. Although occasionally material in fold manuscripts located by chance, most educational data probably have to be gathered in the routine fashion by giving through minutes of meetings diaries, etc. In this way data are collected by two sources primary and secondary.

- **Criticism of Data:** The establishing of the validity of data generally involves the dual process, of first establishing the authenticity of the sources and then the validity of its content. Interpretation of Data: interpretation of data must be made from standpoint of whatever hypothesis or theory of the data will most adequately support. It is
necessary that data be considered in relation to one another and synthesized a
generalization or conclusion which places the overall significance in focus.

(C) **Criteria of Evaluating Historical Research**
The following are the major points to evaluate such researches:
- Has the problem been defined clearly? Is the problem capable of solution? It is the competence of the investigator?
- Has the data of a primary nature available in sufficient completeness to provide a solution or has there been over dependence on secondary or unverifiable source?
- Has the dependability of the data been adequately established? has the relevance of the data been adequately explored?
- Does the author display adequate mastery of his data and insight into their relative significance? Does he display adequate historical perspective? Does he maintain his objectivity? Does he see the relationship between his data and other historical facts?
- Does the style of writing attract as well as inform? Does the report make a contribution on the basis of newly discovered data or new interpretation? Does it reflect scholarliness?

(D) **Limitations of Historical Research**
- It is very difficult to study historical events on the basis of cause-effect relationship.
- Many obstacles hinder the objectivity of the study.
- It is very important for the investigator to have a special historical perspective. Besides these limitations importance of historical research has declined due to use of scientific method in social sciences.

Historical research is one of the accepted and established forms of research in the information professions. Readers may still register some surprise at the inclusion in a social sciences text of a character on historical investigation, as history has traditionally been perceived as a humanities discipline, so perhaps a slightly more expanded rationale is required.

2. **Experimental Approach**
Experimental research is considered to be the photo types of the scientific method. It involves procedure for gaining knowledge by collecting new of fresh observations under controlled conditions.
**Meaning and Definition of Experiment**

According to Willam I.B. Beveridge “An experiment usually consists in making an event occur known conditions whereas many extraneous influences as far as possible are eliminated and close observation is possible so that relationship between can be revealed.”

According to **F. S. Chapin** “An experiment is an observation under controlled conditions.”

According to **John W. Best** has defined experiment that “Experimental research is the description and analysis of what will be or what will occur, under carefully controlled condition.”

According to **Johada and others**: “It is a method of testing hypothesis” “Experiment is the proof of a hypothesis which seeks to make up two factors into a casual relationship through the study of contrasting situations which have been controlled on all factors the one of interest, the latter being either the hypothetical cause or the hypothetical effect.”

In experimental research the independent variable as well as dependent variable are involved where the former can be manipulated as an experimental variable in order to see the effect on the latter. The experimental research is again divided into:

- Laboratory experiment and
- Field experiment

The only difference between the laboratory experiment and the field experiment is the matter of degree of ‘artificial’ and ‘real’.

**Steps of the Experimental Method**

- Selecting and delimiting the problem.
- Reviewing the literature.
- Preparing the experimental design.
- Defining the population.
- Carrying out the experiment.
- Measuring the outcomes.
- Analyzing and interpreting the outcomes.
- Drawing up the conclusions.
- Reporting the result.
3. **Survey Approach**

The practice of conducting surveys goes back to at least eleventh century. Use of surveys has become widespread in many disciplines in twentieth century. Survey approach is present-oriented research.

**Major types of surveys**

- **Comparative survey**: A comparative survey aims to compare two or more research situations on the basis of criteria. It indicates strong or weak points of research situation concerned.

- **Descriptive research**: A descriptive survey describes a specific phenomenon at a given point of time. It can be used to test theories or to find answers to research questions.

- **Evaluative research**: An evaluative survey aims to evaluate certain aspects of a research situation on the basis of a criteria laid for the purpose.

1. **8 Methodology**

Research works in various fields of knowledge adopted methods for research like experimental method, survey method, observational method, historical method. So all these methods are described as under.

1. **Scientific method**: aims to discover what the facts truly are, and the use of the method must be guided by the discovered without reflection. This method uses in pure science and it requires an exact information which require whole information of and not left information for it.

2. **Observational method**: may be defined as the scientific procedure of comprehending things, qualifies, quantities and relationship. The purpose of observational is to obtain more and more facts.

3. **Survey method**: studies large and small populations by selecting and studying samples chosen from the populations to discover the relative incidence, distribution and interrelations of sociological and psychological variables.

4. **Historical research**: is concerned with study of the past events, occurrences, in a truthful account of integrated records concerning the person, place, power, state, government findings relationship with time magnitude and geography.
Survey method is used in this Thesis considering the Use of Information and Communication Technology in Pharmacy College Libraries. Questionnaire techniques are used for data collection tools.

For the present study, the researcher has chosen the Survey Methods using the questionnaire and interview techniques with the librarian and staff of libraries in the sample.

1.9 Collection of Data

There are mainly following three techniques of gathering data in research

1) Questionnaire Techniques

A questionnaire is also data collection instrument. The researchers most commonly use this method for collecting data. In order to gather data on a particular research topic. The researcher lists the questions to which the answers are required. The list of questions grouped in some order is given personally, or sent / mailed to the target population.

A questionnaire is a set of written questions for respondents to answer. These answers become primary data for investigation. According to Krishna Kumar (1992) “A questionnaire is written document listing a series of questions pertaining to the problem under which the investigator requires the answers.” Schvaneveltd (1985) defined questionnaire “A data gathering device that elicits from a respondent the answers or reactions to the printed (pre-arranged) questions presented in a specific order.” Bashu and Harter (1980) opined those questionnaires are often used in surveys as the primary data collection instruments.

Advantages of Questionnaire technique:

- Low cost
- Respondents get an opportunity to prepare and revise the answers, if necessary.
- Ease of preparation, which is not always true. Sometimes, it can be a laborious process before it is finalized.
- Easy to distribute.
- Easy tabulation of answers.

Limitations

- The investigator may have made unrecognized assumptions.
- Poorly phrased questions can be a serious drawback.
• Biased sample is a major problem. Experience indicates that genuine scholars and regular users of libraries are more responsive.
• Those who are dissatisfied with library (ies), senior persons (being extremely busy) and lazy persons are less responsive. It is just possible that many of those who have not responded many represent different views. There is a possibility that there may be significant difference between those who have responded and others who have not responded.
• A questionnaire would have a if it has not included questions, the answers to which would have enabled the investigator to analyze relationship between meaningful independent variables, permitting him to predict such relationships.

In Library and Information Science mail questionnaire is the single most used instrument employed for gathering of data. The success of a questionnaire depends a great deal on the drafting skill of the researcher and the willingness on the part of the respondents to respond to it.

(2) Observation Techniques
Observation involves the investigator watching the subject (s), or research satiation or phenomena. “Observation method is a data collection method in which a person (usually trained) observes subjects or phenomena and records information about characteristics of the phenomena.” (Sproull, 1988)

But there are some limitations of this method:
• One can not anticipate as to when a critical activity will takes place. A critical activity may take place when the investigator is not there to observe it.
• The duration of an event may be too long, thus difficult to observe. Certain activities, such as consultation of a catalogue would get finished in a short time but the study of how a research scholar carries out research is difficult to observe due to lengthy period of activity involved. There are limitations in what can be learned through direct observation.
• It is difficult to quantify data obtained through observations than other kinds of data.
• As a method of gathering data, it is slow and expensive. Often, analysis of accumulated data is also slow and expensive.
(3) Interview Technique

In questioning method, there exits two kinds of researcher-respondent interactions. These are (a) Personal interaction and (b) Impersonal interaction

a) **Personal interaction**: In personal interaction a researcher and respondent meet face to face and the questions are posed by the researcher to the respondent.

b) **Impersonal interaction**: In impersonal interaction a researcher is represented by a piece of paper containing a list of questions and the same is distributed to the respondent.

In case the personal interaction is used, then the technique available for questioning is an interview. We face to face conversations between the researcher and the respondent are called an interview. Interviewing is a process of personal interaction between a researcher and respondent.

There are also some limitations of this technique:

- an interview is both expensive and time consuming. Interview-included error can occur due to bias arising from the age, color, religion, race, sex, cast and social class of the interviewees; Trained interviewer can overcome many of the problems associated with bias by making adequate preparation and proper use of interview technique.
- Poorly phrased questions can be a serious drawback.
- Questions leading to ambiguous answers pose limitation.
- The investigator may have made certain unrecognized assumptions.
- An interview would have a limited value if it not include questions, the answers to which would have enabled the investigator to realize relationships between meaningful independent variable, permitting him to predict such relationships. Information obtained an interview is often difficult to analyze. This is considered bas the main limitation of an interview.

1.10 **Chapterization**

The entire study is divided into five chapters. The brief coverage of each chapter is given below:

**Chp-1: Introduction**

The first chapter provides an introduction to the research problem in private university libraries. The chapter discusses the research concept, meaning of research and important
definition of research. The need for undertaking study with objectives, scope and limitation of study, research approach, research methodology used for this study and data collection tools and techniques and the chapterization information.

**Chp-2: Review of Literature**

The second chapter given review of literature. The researcher should through all the existing literature relating to his problem. This is essential to know whether the problem has already been investigated before. The researcher will get acquainted with the different areas covered by various studies. A critical appraisal of previous studies is more meaningful, useful and correct approach in any field of investigation. The researcher has gone through various researches on quality measurement various books, articles, dictionaries, encyclopedia, reference books, research paper on library.

**Chp-3: Information and Communication Technology (ICT)**


**Chp-4: Information Private University and Libraries**

A chapter is provides basic information about Private University Libraries of Gujarat State.

1. Ahmedabad University
2. Anant National University
3. AURO University
4. C.U.Shah University
5. Alorx Teacher's University
6. Charotar University of Science and Technology
7. Dhirubhai Ambani Institute of Information and Communication Technology
8. GLS University
9. Ganpat University
10. INDUs University
11. ITM vocational University
12. Kadi Sarva Vishvavidyalaya
13. Lakulish Yoga University
Chp-5: Analysis and Interpretation
A chapter deals with analysis, tabulation and interpretation on the collected data through a questionnaire. The data in respect of availability of ICT infrastructure in the Private University libraries covered under the study, application of ICT tools and ICT based information services etc.

Chp-6: Conclusions
A chapter deals with suggestions and findings with conclusions followed by bibliography and appendix.

1.11 References