CHAPTER 3: RESEARCH METHODOLOGY
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Introduction

Research Methods in Library and Information Studies, the monographic series of which this book is a part, addresses research in all areas of library and information studies by presenting, delineating, explaining, and exemplifying a full range of research methodologies. Works in this series are intended to serve the needs of scholars, graduate students, library managers, information professionals, interdisciplinary faculty, teacher librarians, library media specialists, and teachers. In addition to the topics already treated by this series, others may include historical analysis of information provision, design, and resources; biographical treatment of leaders, change-agents, and key figures; bolometric analysis of the web, e-journals, and other digital resources; applied techniques for community information needs analysis and library evaluate on; quantitative analysis of library collections, resources, and delivery mechanisms; theoretical analysis of relevance criteria in various settings; feminist analysis of document representation in classification and subject access systems; content analysis of library and information studies literature; and explanations and examples of key statistical techniques used by library managers in action research projects.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done identifiably. Research methodology includes the various steps that are adopted by a researcher in studying his research problem along with the logic behind them. So, for any qualitative research work including Ph.D. does research methodology must be included in the research carried out by the researcher. Research methodology is an important organ for any research. So, that the researchers have emphasizes the important aspects of research methodology in this chapter.
3.1: Objectives of the study

To fulfill the aim of the study “assessing overall working environment and rewarding practices of dairy units”, different objectives had been made. The objectives of the present study are as follows

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I. To study the need as well as identify the areas of automation

II. To examine the circulation system of Gujarat State University Library and identify its limitations,

III. To identify and discuss various steps that are involved in planning and implementation of automation in general and circulation system in particular, which provides guidance to proposed library automation in Gujarat State University Library System (G S U L).

IV. To find out the impact of Automation on University and its major shifts And practices in Gujarat state University.

V. To provide basis for planning automation for Gujarat State University Library, which is intending to automate library functions by initiating its circulation function.

VI. To observe the prevailing difficulties in Library Automation in University’s Library’s.

VII. To compare how University’s Library Automation has affected the information seeking behavior at library professionals at various levels at both the State.

VIII. To find out the various kinds of advantages happened through Automation in library in both the state.

3.2: Selection of the Research Problem

There are 15tn universities including Grant-in -ad universities and institutions of state importance in Gujarat. These universities are administered by the Government through legislation. Ten of them are Grant-in -ad Universities funded by the Government of Gujarat. The rest of the universities are financed mainly by the State Governments and are popularly known as State Universities.

The number of State universities is increasing year by year to cater to the increasing needs of the people in the unrepresented backward and rural areas and to make higher
education available to all. In addition, there is a 'mushroom' growth of university’s. The universities are not only expanding the existing departments but are also establishing new departments to offer new college’s in unrepresented subject areas like Geo-chemistry and Futurology. To satisfy the information needs of the users, libraries are encountering the problem of increased workload in acquiring, organizing and retrieving the required information to their readers.

Even though the demand for libraries is increasing and awareness for libraries is growing, the universities are not in a position to allocate the required funds to libraries due to financial constraints. But libraries are under pressure both from management and users to improve their services within limited resources and this has created the need for the introduction of computers. Choosing the research problem appears simple some time but it requires careful contemplation before doing it. The best help can be obtained from the research guide.

My selected research problem is “Automation in University Libraries of Gujarat State: Empirical Study” in context of the 10tn university library Gujarat sate. I did enough of the preliminary study and referred many articles, thesis and various books before selecting it. Investigating on my topic;

3.3: Research Design

Research is an intensive and purposeful search for knowledge and understanding of social and physical phenomena. Research is scientific activity undertaken to establish something, a fact, a theory, a principal or an application. It is an academic activity. Research in common parlance refers to a search of knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. Research is an art of scientific investigation. Research is a movement form known to unknown. It is actually a voyage of discovery. We all possess the vital instinct of inquisitiveness for, when the unknown confronts us, we wonder and our inquisitiveness makes us probe and attain full and fuller understanding of the unknown. This inquisitiveness is the mother of all knowledge and methods, which man employs for obtaining the knowledge of whatever the unknown, can be termed as research.

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to research purpose. Research method is rather an organized tool to solve the research problem. It may be defined as a method of studying how research is conducted. In this thesis, I would like to use Questionnaire Method primarily to find out the effect of University library automation. This is the comprehensive master plan of the study undertaking given the general statement of the method used and procedure followed. It help the researcher to insure that the requisite data.
3.4 Sources of data

To make the study more comprehensive and purposeful data was collected from primary and secondary sources. In this study internal and external source for data collection had been used. In the internal and external sources of data collection these two types of data comes into pictures. In order to achieve the objectives of present study, relevant primary and secondary data was used.

- **Primary sources of Data:**
  - Questionnaire is circulated to the libraries to ascertain the data relevant to their working;
  - Interviews with the functionaries and beneficiaries in University Libraries;
  - Interaction with the library professionals involved in library automation in university libraries in the Gujarat state university.
  - Participative observation of the process of work in the library, especially the circulation function in the University Library and automated university libraries in Gujarat. Such as Sheffield University Library, Bath University Library and Nottingham University Library.

- **Secondary Sources of Data:**
  - Books; -Journals; articles; -Reports of the Committees and Commissions; and –Annual Reports of the University Library. -magazines, and University Handbook etc. The source of information, already gathered for some other purpose from other sources such data are called secondary data. These data can be available

There is a need to discuss the problems and approaches to planning with the professionals, who are involved in the planning process and are also working with the systems presently. A discussion cum interview was taken up with the professional involved in this process in the university libraries in the India.

Observation of university library operations in Gujarat setae has helped to understand various aspects of automated circulation system and enabled the study to identify difficulties likely to be experienced by Gujarat state University Library. These problems were discussed with the professionals and have been studied on the basis of experiences of developed countries. An attempt has been made to propose relevant solutions.

Every library has its own experience in planning and implementation. It was been felt necessary to visit the libraries to understand the problems encountered by these libraries.
Hence visits to some of the university libraries in Gujarat state have been made to observe and discuss the problems with the staff.

The professional education of the researcher in the university’s has helped not only to understand but also to make an in-depth study of the problem. An opportunity to have hands-on experience in using automated and a detailed study and observation of each automated function in the University proved to be an advantage in making the study. Further it gave real impetus to the study.

Both micro and macro literature has been scanned to identify the relevant documents and this helped in elucidating the experiences of other libraries involved in library automation.

3.5: Sampling Design

A sample design is a definite plan for obtaining a sample from a given Population. If it refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the no of items to be included in the sample. The researcher must prepare the Sample design which should be reliable for research study. For collection of primary data, sampling design is prepared.

3.6 Sampling unit:

Decision is taken after concerning the sampling unit. Sampling unit is the Professionals and staff working on all the levels in both the universities. i.e.

1. Sardar Patel University, V. V. Nagar
2. M. S. University of Baroda
3. Gujarat University, Ahmedabad
4. Gujarat Ayurved University, Jamnagar
5. Vir Narmad Dakshin Gujarat University, Library
6. Anand Agricultural University, Anand, University Library
7. Bhavnagar University, Bhavnagar, University Library
8. Dharmsinh Desai University, Nadiad
9. Saurashtra University, Rajkot University Library
10. Nirma University Library, Ahmedabad
3.7 Sample size

It refers to the no of items selected from the universe to constitute a sample. The size of sample is 580 professionals and staff working on all the levels in both the universities.

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6. Anand Agricultural University, Anand, University Library
7. Bhavnagar University, Bhavnagar, University Library
8. Dharmsinh Desai University, Nadiad
9. Saurashtra University, Rajkot University Library
10. Nirma University Library, Ahmedabad

3.8 Sampling Plan

Target University librarian: The target University librarian of the study was employees in various University libraries in Gujarat. A census of Ten University library of Gujarat was taken. Sampling Technique:

A simple random sampling technique was used to select 10 University librarians from selected dairies. Researcher had also got information for the questionnaire from management of each dairy. Both primary and secondary type data were collected for the study. The researcher has used primary data for gathering details related to the study. The structured questionnaire has been used for the purpose. The use of secondary data from the published sources like annual reports and websites of the University library has been used for gathering the general information of the selected sample University libraries.

3.9 Simple random sampling

It refers to that sampling technique in which each and every unit of the population has an equal opportunity of being selected in the sample. In simple random sampling which items get selected in the sample is just a matter of chance – personal bias of the investigator does not influence the selection.

3.10 Hypothesis

1. Association between criteria of automation and the type of university.
2. Association between the knowledge resources (Printed and non printed and type of university structure
3. Binomial Test
4. One Sample Chi Square Test (Online Services of Library)
3.11 Data Analysis

Descriptive statistics, Pearson Chi – Square test, (Analysis of Variance) the collected data. The data analysis was carried out with the help of statistical software “SPSS” (Trial Version). For each statistical test, corresponding p – values were obtained and on the basis of this value, the last conclusion for rejection / acceptance of the particular hypothesis was made. Researcher had put the level of significance at 5%. i.e. if the p-value is less than 0.05, we reject hypothesis otherwise we accept it.

* Specifying data requirements
* Determining the type of questions to be asked.
* Deciding the number and sequence of questions.
* Preparing the preliminary draft of questionnaire.
* Revising and pre-testing the questionnaire.

The questions used in this study falls under the following categories:

* Open-ended questions
* Close ended questions
* Rating and ranking question
* Multiple choice questions

3.12 Limitations of the study

Libraries around the world work in different environments. Even the university libraries are found to be in varied degrees of development due to the prevailing environment such as attitude of the management, size of the library. The problems encountered by them are of a variegated nature. However, the situation may almost be the same in the university libraries located at a particular region. In this regard, it is assumed that Gujarat state Universities Library. Will be greatly benefited by considering the experiences of other university libraries in Gujarat. But unfortunately the u southern Gujarat are yet to initiate automation.

The M. S. University of Baroda is in the initial stages of automation. Furthermore, the experiences encountered by other libraries may not suit Gujarat state University libraries environment, because each individual university has its own peculiar local and idiosyncratic problems. In this context certain problems peculiar to Gujarat state Uni.lib. May have to be perceived in the right perspective. Right now, lack of automated university libraries in Gujarat is a major limitation to a study of this nature. However, the participant observation of university libraries in the Gujarat has given a broad perspective conceptually and enabled the researcher to suggest a pragmatic model of automation for a Gujarat state University Library.
University libraries in the Gujarat has given a broad perspective conceptually and enabled the researcher to suggest a pragmatic model of automation for a Gujarat state University Library. And I will select only Ten University in Gujarat state. Literature on automation of university libraries in India is not problem specific. It is descriptive and hypothetical based on the experiences of the developed countries. An attempt has been made to look into the future by using the researcher's professional experience and by consulting the literature published in developed countries.