CHAPTER III

OBJECTIVES, HYPOTHESES AND METHODOLOGY
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3.1 Introduction

In this chapter the objectives, hypotheses of the study and the methodology used are presented. This chapter briefly explains the survey instruments adopted to collect the relevant data and information both from India and Iran.

3.2 Objectives of the Study

The main objective of the study is to reveal the digitization and digital preservation of the heritage collection in India and Iran. The specific objectives of the study are as follows:

1. To find out the main reasons for digitization and digital preservation of heritage collection in India and Iran;
2. To identify the type of collection that is being digitized in India and Iran;
3. To ascertain the availability of infrastructure for the digitization and digital preservation of heritage collections in India and Iran;
4. To assess the budgeting areas for digitization and digital preservation of heritage collection in India and Iran;
5. To study the storage procedures of digitization of heritage collections;
6. To identify the ways of accessibility to digital materials in India and Iran;
7. To examine the traditional and modern methods for preservation of heritage collections in India and Iran;
8. To understand the challenges for digitization and digital preservation of heritage collections in India and Iran;
9. To suggest a model for digitization and digital preservation of heritage collections in India and Iran, so as to facilitate easy access and better usage of these materials.
3.3 Hypotheses of the Study

With regards to the objectives of the study, the following hypotheses have been framed:

1. Indian and Iranian libraries do not differ significantly in the type of collections that are being digitized.
2. Indian and Iranian libraries do not differ significantly in strategies used for digital preservation.
3. Indian and Iranian libraries do not differ significantly in metadata standards used for digital preservation.
4. Indian and Iranian libraries do not differ significantly in budgeting for digitization and digital preservation.
5. Indian and Iranian libraries do not differ significantly in the traditional methods for preservation of heritage collections.
6. Indian and Iranian libraries do not differ significantly in modern methods for preservation of heritage collections.
7. Indian and Iranian libraries do not differ significantly in the storage procedures for digitization and digital preservation.
8. Indian and Iranian libraries do not differ significantly in the accessibility ways to digital materials.
9. Indian and Iranian libraries do not differ significantly in barriers for digital preservation of heritage collections.
10. Indian and Iranian libraries do not differ significantly in models for development of digital preservation.

3.4 Methodology of the Study

The investigator has conducted a detailed literature survey on the topic by browsing CD-ROM database of Library and Information Science Abstracts (LISA) and online databases such as Library and Information Science and Technology Abstracts (LISTA) and Electronic Management Research Library Database (EMERALD), Science Direct, Vidyanidhi and Internet from 1969 to date. After
scanning, references were selected and recorded. Thereafter, they are explained in the form of review literature.

For collecting data, the investigator stayed at each selected libraries both India and Iran for a minimum three weeks to study the situation in the libraries, collection of heritage resources and infrastructure and technical manpower availability for digitization work. The data have been captured through the questionnaire, the investigator interacted with the Heads of the libraries as well as the users of the respective libraries to ensure the validity of responses and data.

Some of data was also collected by means of surveying various official documents (including annuals reports, procedure guidelines, and brochures, Websites and etc).

In this study, multiple data collection methods were used such as questionnaire method, informal interview and observation. The samples were selected from the libraries in India and Iran.

3.4.1 Sample Population

3.4.1.1 Libraries

In India, a large number of libraries with heritage resources in various states, across the length and breadth of the country, posed a major dilemma on the selection of libraries for the study. Hence, two intellectuals were consulted and websites examined. Finally, 8 major libraries, which had large heritage resources and also a high level of digitization of their heritage resources, were chosen.

In Iran, a large number of libraries exist. It was therefore, imperative that a careful choice had to be made of the libraries that were to be used for this study.

Hence, experts on the subject were consulted in Iran and the websites of these chosen libraries were examined in detail. Based on the advice of two noted experts on the subject, the wealth of information on the websites provided, and the level of digitization in these libraries, 7 heritage libraries were shortlisted. It is worth to note that almost all heritage libraries were covered in Iran, for the present study.
3.4.1.2 Users of Libraries

Since the study was mainly related to digitization of heritage resources, the investigator utilized the knowledge of individuals, familiar with facilities and services of the libraries for some period of time, with two years as a minimum. Short term users were excluded from the study. So, for collecting data from the users the purposive sampling technique has adopted since the investigator. Data was collected from these persons, informal interviews and a questionnaire was distributed to obtain data for the study. To obtain sufficient responses for validation, only those who were familiar with facilities and services of the libraries were chosen and few others did not meet the criteria selected.

3.4.2 Instruments Used for Data Collection

This type of applied research relied principally data that was obtained directly from respondents (Heads of Libraries and users). Specially designed data collection instruments comprising questionnaires, observation, and informal interview were instrumental for capturing relevant data.

3.4.3 Questionnaire

Ahuja (2001) describes questionnaire as documents that contain structured sets of questions, the answers to which are provided individually by respondents.

The investigator has designed questionnaires based on guidelines for digitization projects for collections and holdings in the public domain, particularly those held by libraries and archives by IFLA and UNESCO(2002), eLib Standards guidelines by Dempsey, (1998), guidelines for digitization of archival material by national mission for manuscripts and an introduction to digital projects for libraries, museums, and archives by university library Illinois, and after consulting with research supervisor, and based on these guidelines and standards, the questionnaires of research were prepared. Before finalizing the questionnaires, the idea of two experts in the field of digitization and digital preservation was made to get the validity of the questionnaires.

After the necessary revisions were made, preliminary questionnaires were pretested through a pilot study. Moreover, for collecting data from Iranian libraries
the final questionnaires were translated into Persian. The questionnaires are given in Appendices.

In this study, structured questionnaires that solicited information and opinions directly from head of libraries and users in various fields of digitization and digital preservation were administered to the respective respondents. Thus, the final questionnaires were distributed in person to Head of Libraries and users of respective libraries.

### 3.4.3.1 Questionnaire for Heads of Libraries

Heads of Libraries questionnaire are comprised a total of 35 questions. A total of 15 structured questionnaires were distributed to the head of fifteen selected libraries both from India and Iran and 15 filled in questionnaires were received. They were used to gather data pertaining to 4 sections:

- **Section A** is about profile of the selected libraries; section B is about the collection of libraries; section C is digitization activities of the libraries and section D is about digital preservation.

  In section A there are five aspects such as, chronology of the year of establishment, working days, designation, specialization and educational qualification, website of libraries and services/facilities. Section B gives details of collection of libraries.

  In section C, several aspects of digitization activities of the libraries such as: principal reasons for digitization, criteria for selection for digitization, total digitized collection, type of digitized collection, managing of digitized collection, sharing digitization work with other organization, budgeting, infrastructures, traditional methods for preservation and forms for preservation of heritage collection are presented.

  In section D, also several aspects of digital preservation such as: software for digital preservation, policies and procedures for preservation, digital preservation strategies, digital preservation metadata standards, main barriers for digital preservation, training of librarians for developing technical skills in the field of digital preservation, use of internal or external advisors, purpose of digital preservation,
storage of digitized material, creation of digital content, formats used for digital content creation, preserving digital content in master copy, formats used for master copy creation, accessibility of digital material, awareness of copyright issues and model for development of digital preservation are presented.

3.4.3.2 Questionnaire for Library Users

Users questionnaire is comprised a total of 17 questions. A total of 600 structured questionnaires were distributed to the users of eight libraries from India forming part of Indira Gandhi National Centre for the Arts (IGNCA), New Delhi (50); Khuda Bakhsh Oriental Public Library (KBOPL), Patna (30); National Archive of India (NAI), New Delhi (40); National Library of India (NLI), Kolkata (300); Nehru Memorial Museum and Library (NMML), New Delhi (35); Oriental Research Institute (ORI), Mysore (50); Rampur Raza Library (RRL), Rampur (40); The Asiatic Society Library (TASL), Kolkata (55).

The number of responses received from Indian libraries is as follow: IGNCA (41) 82 percent; KBOPL (20) 66.66 percent; NAI (30) 75 percent; NLI (300) 100 percent; NMML (30) 85.71 percent; ORI (50) 100 percent; RRL (23) 57 percent; TASL (50) 90.90 percent. Thus the average response rate of Indian libraries is 90.66 percent.

A total of seven libraries were identified in Iran for data collection. They are: Central Library and Documentation Centre University of Tehran (CLDUT), Tehran (85); Central Library of Tabriz (CLT), Tabriz (55); Library of Museum and Documentation Centre Parliament (LMDCP), Tehran (100); Malek National Library and Museum(MNL), Tehran (70); National Library and Archives of Islamic Republic of Iran(NIAL), Tehran (100); Organization of Libraries, Museums and Documents Centre of Astan Quds (OLMAQ), Mashhad (70); The Grand Library of Ayatullah al-Uzma Marashi Najafi (TGLAM), Qom (70).

The sample received from the users of Iran heritage libraries as follows: CLDUT (80) 94.11 percent; CLT (44) 80.00; LMDCP (100) 100 percent; MNL (65) 92.85 percent; NIAL (97) 97 percent; OLMAQ (60) 85.71 percent; TGLMA (59) 84.28 percent.

Thus a total of 600 questionnaires were distributed to the users of the eight libraries of India and 544 filled in questionnaires were received representing 90.66
percent and a total of 550 questionnaires were distributed to the users of the seven libraries of Iran and 505 filled in questionnaires were received representing 91.81 percent. So, the sum total of questionnaires distributed to a total of fifteen libraries is 1150 and the responses received are 1049 which account for 91.21 percent, both from India and Iran.

They were used to gather data pertaining to three sections. Section A is categorization of respondents; section B is use of libraries; section C is digitization and its use. In section A there are five aspects such as: category, gender; nationality, educational qualifications and area of specialization. Section B, which deals with the use of libraries which is grouped as follows:

a. Duration of familiarity with the library facilities
b. Frequency of library visits
c. Purpose of library visits
d. Type of traditional documents used
e. Type of information used.

Section C presents digitization and its use by respondents of the libraries both from India and Iran. Several aspects of digitization and its use like use pattern of digital repositories, accessibility of digital information, barriers to use information resources, usefulness of digitized of heritage resources, level of satisfaction of the users and future programs to access digital information by respondents are presented in Section C.

3.4.4 Observation

Observation is a systematically planned and executed method of data collection in which the researcher draws on direct evidence of the eyes to witness events, first hand (Mutai, 2000). In this study, observation used to observe the relative by which the libraries under study applied. It involved visiting key sections of the libraries to discreetly view and systematically record information pertaining to digitization and digital preservation of heritage collection. This was done with a view to verifying previously recorded facts, looking for new facts and for practically indentifying bottlenecks in the flow of research-worthy information to and from the targeted users.
3.4.5 Pilot Study

Prior to embarking on the data collection proper, all the data collection instruments prepared for this study were tried out on a small scale, in a few libraries in Delhi, India. For this purpose, a pilot study covering 50 users from three libraries and also 3 Heads of Libraries were selected at random. Based on the information elicited by the questionnaires, it was further revised in its format, content and sequence, for final use in the survey.

This pre-testing exercise had objectives of ensuring that unforeseen errors were eliminated, ineffective questions removed and unclear language or wordings corrected appropriately. As a result, the data collection tools were fine-tuned to suit as wide a range of respondents as possible, thereby improving the likelihood of obtaining a higher rate of returns for questionnaires issued. The visited libraries for the pilot study are listed as follows:

(a) Indira Gandhi National Centre for the Arts, New Delhi. (Visited library on 13th July 2009. Questionnaires pre-tested and were successfully administered on trial basis).
(b) National Archive of India, New Delhi. (Visited library on 20th July 2009. Questionnaires pre-tested and successfully administered on trial basis).
(c) Nehru Memorial Museum and Library, New Delhi. (Visited library on 27th July 2009. Questionnaires pre-tested and were successfully administered on trial basis).

3.4.6 Techniques Used in Data Analysis

Responses of 1049 users from 15 libraries were collected. The data obtained were tabulated and analysed using the Statistical Package for the Social Sciences (SPSS), Version 16. Hypotheses are tested and findings are drawn in the light of the objectives of the investigation. Finally, the results were reported in the form of thesis.

Tables were used to make the presentation clear and simple to understand. Following statistical techniques were used: Frequency, Percentage, Mean, Standard Deviation, Chi- Square Non Parameter Test and Independent-Samples T-Test. The significance values that fall below the 0.05 level are accepted.

3.4.7 Area Locations of Select Libraries

The study covered following libraries initiating digitization and possessing heritage collection which are shown in the maps of India and Iran.
Figure 1
Map of India

Note:
1. Indira Gandhi National Centre for the Arts, New Delhi
2. Khuda Bakhsh Oriental Public Library, Patna, Bihar
3. National Archives of India, New Delhi
4. National Library of India, Kolkata, West Bengal
5. Nehru Memorial Museum and Library, New Delhi
6. Oriental Research Institute, Mysore, Karnataka
7. Rampur Raza Library, Rampur, Uttar Pradesh
8. The Asiatic Society Library, Kolkata, West Bengal

1 Source: http://www.indianorphanages.net/home/india/indiamap.html
Figure 2
Map of Iran

Note:

9. Central Library and Documentation Centre University of Tehran, Tehran
11. Library, Museum and Documentation Centre Parliament , Tehran
13. National Library and Archives of Islamic Republic of Iran, Tehran
14. Organization of Libraries, Museums and Documents Centre of Astan Quds, Mashhad
15. The Grand Library of Ayatullah al-Uzma Marashi Najafi, Qom

Source: http://www.mapsofworld.com/iran/maps/iran-political-map.jpg
3.5 Summary

In this chapter the objectives, hypotheses were presented. Total 9 objectives investigated and 10 hypotheses were tested with statistical techniques.

The investigator did detailed literature survey on the topic by scanning different data bases, the multiple data collection methods are used such as questionnaire method, observation and informal interview. The sample selected from the libraries in India and Iran. Sample population for libraries was based on heritage resources and level of digitization. The responses received from libraries were 15, both from India and Iran.

Sample for users was based on the knowledge of individuals, familiar with facilities and services are provided by libraries. The responses received from users were 1049 scoring 91.21 percent, both from India and Iran. Area locations of select libraries were from different parts of both India and Iran.