3. RESEARCH METHODOLOGY

Research is a meticulous and methodical inquiry or investigation into a subject in order to discover or revise facts, theories, applications etc. Thus research can be defined as a scientific and systematic search for pertinent information on a specific topic.

In social sciences the important aims of research are

- To understand functioning of the system
- To study the individual behaviour
- To evaluate a social problem its effect and to find the possible solution
- To explore social reality
- To develop theory

Accordingly various research methods may be applied depending on the goals, objectives and requirements of the research.

The methodology of the research comprises of research method, sample, data collection tools and analysis of data.

The attempt has made to examine backup practices in digital library of research and higher learning institutes in Gujarat. To get information about backup devices, services available for backup, post backup practices, preservation of backup, to identify obstacles occurring to it and human resources & their skill upgradation for baking up etc. Thus area of the research can be said digital preservation.
3.1 Method of the Study:

There are various types of research such as descriptive research, analytical research, applied research, fundamental research, quantitative research, qualitative research, conceptual research, empirical research, exploratory research, historical research, interdisciplinary research and multidisciplinary research etc.

The present study is descriptive research. The descriptive method of research is concerned with the description of data and characteristics of the selected population for the study. The aim is to acquire a factual, accurate and systematic data that can be used in many ways for interpretations.

To get information regarding various aspects of backup, researcher used survey method. A survey is a comprehensive study of situation or selected population.

3.2 Population and sample of the study:

Polit and Hunger (1993) refers to the population as an aggregate or totality of all the objects, subjects or members that confirm to a set of specification” The concept of a population is fundamental to any survey research.

There are large numbers of research and higher learning institutes in Gujarat. Preliminary list of the libraries of research and higher learning institutes in Gujarat was prepared with the help of ‘Directory of institutions and colleges in Ahmedabad, Gandhinagar & Universities in Gujarat 2010’ and some online resources. After preparing the list, preliminary survey was conducted to select the libraries of research and higher learning institutes which have good collection of
digital resources & digital library/ digital archive and / institutional repository and taking steps/backup for preservation of such digital resources. After preliminary survey, five research institutes and seven higher learning institutes were selected. Majority of them are from Ahmedabad & Gandhinagar.

Selection was based on:

- Collection of digital resources
- Digital Library
- Digital Archive
- Institutional repository

Thus based on these criteria the following libraries of research and higher learning institutes were selected for the present study to examine backup practices.

**Research and Higher Learning Institutes are:**

1. Electronic Multimedia Research Centre (EMRC), Ahmedabad
2. Indian Space Research Organisation (ISRO), Ahmedabad
3. Institute for Plasma Research (IPR), Gandhinagar
4. Physical Research Laboratory (PRL), Ahmedabad
5. Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar
6. Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) Gandhinagar
7. Indian Institute of Management Ahmedabad (IIM-A)
8. Mudra Institute of Communications (MICA), Ahmedabad
9. Nirma University (NU), Ahmedabad
10. Pandit Deendayal Petroleum University (PDPU), Gandhinagar
11. DLISc., Sardar Patel University (SPU), Vallabh Vidyanagar
12. Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat

Libraries of EMRC & ADINET, Ahmedabad and INFLIBNET, Gandhinagar were selected for pilot study.

ADINET & INFLIBNET are resource sharing network. They are not in the scope of the study. But they have their own backup practices. So to get idea about backup practices as well as to check data collection tool covered in pilot study.

**Total Questionnaire distributed and response received:**

**Table: 3.1 Sample size**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Libraries</th>
<th>Questionnaire</th>
<th>Response Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sent</td>
<td>Response received</td>
</tr>
<tr>
<td>1</td>
<td>Research institutes</td>
<td>05</td>
<td>04</td>
</tr>
<tr>
<td>2</td>
<td>Higher learning</td>
<td>07</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>institutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>
Table: 3.1 shows information regarding questionnaire distributed and response received. Total 12 questionnaires were distributed in libraries of research and higher learning institutes, of which 10 duly filled in questionnaires were received back. The response rate was 80.33%. CSMCRI, Bhavnagar & SVNIT, Surat did not give response.

The questionnaires were distributed during January-June 2013 personally & through email. While distributing the questionnaires, due care was taken to have the representative sample. The duly filled in questionnaires were collected after making 2-3 visits to the respective libraries. In addition to personal visits, some of libraries were also approached through email and mobile/telephone for seeking their response. The analysis is based on 80.33% responses.
3.3 Data collection:

3.3.1 Primary Data:

Primary data required for the study was collected through questionnaire; however, gaps were filled through the use of other techniques such as interview, schedule and observation. The questionnaire is enclosed in Appendix 1.

Researcher discussed with library & information science professional, subject experts and computer professional to collect the basic information.

Researcher visited ERP Data centre, BSNL and HCP Design and Project Management Pvt. Ltd., Ahmedabad to get information about backup practices.

**ERP Data centre, BSNL Ahmedabad:**

BSNL have quite large amount of data. BSNL have ERP Data Centre to take care of their data. Data centre takes backup online (on server) and offline (Tape drive) daily. In post backup practices; tagging, verification and preservation -store backup in proper environment & cleaning of media are done at regular interval. Data centre do not have backup policy as well as special budget for backup. Technician/Engineer and / or Administrator are responsible for backup. Selection of backup device done considering criteria such as capacity, speed, price & security respectively. Data centre feels that proper backup practice requires time and great care.

**HCP Design and Project Management Pvt. Ltd., Ahmedabad:**

HCP design is architecture firm having rich digital collection. It uses Koha, Resource Space, Word press and Joomla to manage their collection. Here daily full automatic backup is performed. Before data loss experienced, they did monthly manual backup. Hard disk is use as backup device. They do not perform post backup practices. Librarian is concerned for backup practice and get help of IT professional, if require.

Based on Literature review, Experts views & Visit, researcher prepared draft of questionnaire covering all essential aspects of backup such as reason for backup, data loss experience, importance of backup, backup policy, frequency of backup, backup method, backup devices, online backup services, post backup
practices, backup storage locations, preservation of backup, obstacles in it and human resources for backup etc.

Before the survey, Pilot study was conducted to ensure the respondent’s ability to understand the questions given in the questionnaire without any ambiguity of language, concepts & terms used in the questionnaire.

Based on pilot study, changes made wherever it was felt necessary. As per the suggestions made by the librarians, subject experts and computer professionals, the questionnaire was modified and distributed to libraries.

3.3.2 Secondary Data:

Secondary data collected on the basis of survey of literature regarding digital preservation (need for digital preservation, definition & meaning of digital preservation, preservation strategies, preservation initiatives), backup (backup devices & its issues, backup methods, backup process, backup policy) and studies related to digital preservation & backup at national and international level.

Researcher referred various online and print resources such as websites, articles, books, presentation, conference proceedings and thesis etc. to review literature pertaining to the area of the study.

Fig.3.2(a)
3.4 Data Analysis:

The collected data has been classified and calculated by percentage & frequencies. Analysed information has been presented in suitable tabular & graphical format using MS Excel 2007 to visualize the statistically significant difference more clearly and has been interpreted.

3.5 References:

The references have been cited according to APA style using website ‘citationproducer.com’.
References:


CitationProducer.(2012). Retrieved from http://citationproducer.com/apa-citation/


