

CHAPTER – III

RESEARCH DESIGN

3.1 INTRODUCTION

This chapter deals with the contents and meaning of undertaking the study in terms of objectives and process of analyzing the objectives in the form of formulation of appropriate hypothesis. Further the methodology of this study is spelt out in the mode of data collection, methods of data analysis, statistical techniques and limitations of the study. In this study an attempt is being made to highlight the utilization status of electronic resource services in the University Libraries of Kerala. University Libraries, particularly in recent past are providing some of notable information services that can be accessed via the university library websites are Web OPAC, used in which web browser and search engines for fast access; latest addition display, data search, access to full text and bibliographic databases, online document delivery, access to institutional repository and open access resources, databases and multimedia access resources, compilation of research profile, remote access and so on.

3.2. METHODOLOGY

The present study is descriptive in nature and it is a case study on the “Use of Electronic Information Resources in University Libraries in Kerala – A Study on User Point of View”. The researcher has chosen descriptive research design and the method is normative survey. The survey is also analytical in terms of collecting the details of the use of web based information services in university libraries of Kerala. This covers descriptors such as objectives of the library information services, the process,

the impact of user's practices, E-resources required and the data have been collected using structured Questionnaire. The Questionnaire is refined and modified based on the basis of the pilot study carried out in Universities of Kerala State with the consultation of experts.

3.3 SIGNIFICANCE OF THE STUDY

All professions including Science, Arts and Humanities were emphasized potential use of digital technologies for their academic, research and professional practices. Open source and customized applications of web technologies through a handful of opportunities for the professionals to access, consume and profit over the IT enabled products and services. So, the Internet and World Wide Web (WWW) has become the culture of the knowledge society rather as technology. Higher education, being the foremost knowledge industry has been significantly used the technology for teaching learning practices including research.

National governments and International organizations have been encouraged a number of initiatives on ICT enabled teaching learning access across the globe with easy to use and time saving features which is also become economically viable and customized to meet specific desires of the end users. It has host tremendous challenges and opportunities for the university libraries to elope with the developments that took place in higher education industry by re-engineering and redesigning the library services and provision of technology enabled services to the individuals, rather groups of users, at their doorsteps rather in library premises and on anticipation rather on demand, at any time rather on working hours. It is also found from the literature search, there are very few studies in this region, particularly on assessing the web based library services among the university libraries. All these

genuine factors need Library and Information Science researchers to continuously access the impact of online and web enabled and library networking electronic resources, services and facilities in university library environment to meet the rapidly and consisting changes that occur in user needs.

3.4 STATEMENT OF THE PROBLEM

The selected user groups in university libraries of Kerala are expected to utilize the resources of the library of the university as it is their major source of information. Are they making full use of it? When they find that source not adequate to meet their requirements do they make use of the internet? They could encounter problems in their quest either because of their lack of skill in accessing information resources or because they are not at all aware of their existence and availability.

At present situation the universities are enhancing the research and qualities of digital presence through dynamic websites and online systems and including e-learning portals and subject gateways. The university libraries are also gradually and appropriately used web technologies to enable the access to their user community not only with in the university but also across the campuses. As like, the assessment of conventional and physical library services. The use and relevance of library websites, the E-content and web enabled information services need to be examined, for its impact among the user community. Hence, the present study “USE OF ELECTRONIC INFORMATION RESOURCES IN UNIVERSITY LIBRARIES IN KERALA: A STUDY ON USER POINT OF VIEW” is chosen in order to estimate the advantages and limitations of utilizing web based resources and services particularly in university libraries.

3.5 OBJECTIVES OF THE STUDY

The following are the important objectives of the study:

1. To find out the extent of dependency on library for teaching and research among university library users of Kerala.
2. To find out the level of expertise with computers among university faculties and research scholars in the selected universities of Kerala.
3. To study the use of various online services provided by the selected university libraries in Kerala.
4. To identify the most commonly used browser and search engine by the respondents in the selected universities of Kerala.
5. To find out the frequency of accessing E- resources among respondents in the selected universities of Kerala.
6. To find out the most preferred place for accessing e- resources among the respondents in the selected universities of Kerala.
7. To study the purpose of using E- resources among university faculties and research scholars of the selected universities in Kerala.
8. To assess the period of using e- resources by university faculties and research scholars of the selected universities in Kerala.
9. To identify the method of acquiring IT skill by the university faculties and research scholars of the selected universities in Kerala.
10. To find out the most preferred format for downloading articles among the university faculties and research scholars of the select universities
11. To rank the problems encountered while accessing e- resources by the university faculties and research scholars of the selected universities.
12. To identify the need of trained personnel assistance while browsing online information by the university teachers and research scholars of the selected universities in Kerala.

13. To study the influence of E - resources on academic efficiency by the university faculties and research scholars of the selected universities in Kerala.
14. To identify the satisfaction level of e-resource facilities among university library users selected universities in Kerala.
15. To suggest some justification measures to increasing the usage of e-resources among university library users.

3.6 HYPOTHESES

The following hypotheses were formulated based on the framed objectives and they were tested by employing appropriate statistical tools.

1. There is no significant difference in their dependency on library for research and teaching among university faculties and research scholars of selected universities in Kerala with respect to gender, faculty and designation.
2. There is no significant difference in the level of computer expertise among university faculties and research scholars of select universities in Kerala with respect to gender, faculty and designation.
3. There is no significant difference in using the browser and search engine among university teachers and research scholars of selected universities in Kerala with respect to gender, faculty and designation.
4. There is no significant difference in the frequency e-resource accessing among university library users of selected universities in Kerala with respect to gender, faculty and designation.
5. There is no significant difference in their preferred place for accessing e-resources among university teachers and research scholars of select universities in Kerala with respect to gender, faculty and designation.
6. There is no significant difference in the e-resources using purpose among university library users of selected universities in Kerala with respect to gender, faculty and designation.

7. There is no significant difference in the method of acquiring IT skills among university teachers and research scholars of selected universities in Kerala with respect to gender, faculty and designation.
8. There is no significant difference in the preferred format for downloading articles among university teachers and research scholars of selected universities in Kerala with respect to gender, faculty and designation.
9. There is no significant difference in the influence of academic efficiency e-resources among university library users selected universities in Kerala with respect to gender, faculty and designation.

3.7 SAMPLING

In Kerala state there are 1). Cochin University of Science & Technology (1971) located at Ernakulam and the type of Multidisciplinary; 2). Kannur University (1997) located at Kannur and the type of Multidisciplinary; 3). Kerala Agricultural University (1972) located at Thrissur and the type of Agricultural & Engineering; 4). Kerala Univ. of Fisheries & Ocean Studies (2011) located at Kochi and the type of Fisheries; 5). Kerala University of Health Sciences (2011) located at Trissur and the type of Health; 6). Kerala Veterinary and Animal Sciences University (2011) located at Wayanad and the type of Animal Science; 7). Mahatma Gandhi University (1983) located at Kottayam and the type of Multidisciplinary; 8). Sree Sankaracharya University of Sanskrit (1994) located at Kalady and the type of Sanskrit & Vedic Studies; 9). University of Calicut (1968) located at Malappuram and the type of Multidisciplinary; 10). University of Kerala (1937) located at Trivandrum and the type of Multidisciplinary and 11) . National University of Advanced Legal Studies (2009) located at Kochi and the type of Legal Education. Besides Government Departments, the activities of Government of Kerala is spread over several other Government Institutions such as Commissions, Autonomous Bodies, Cultural

Institutions, Public Sector Undertakings, Welfare Fund Boards, Co-operative Organisations, Development Authorities, Universities etc. The following table showed that details.

University	Location	Type	Founded
Cochin University of Science & Tech.	Ernakulam	Multidisciplinary	1971
Kannur University	Kannur	Multidisciplinary	1997
Kerala Agricultural University	Thrissur	Agri. & Engg.	1972
Kerala Univ. of Fisheries & Ocean Studies	Kochi	Fisheries	2011
Kerala University of Health Sciences	Thrissur	Health	2011
Kerala Veterinary and Animal Sciences Uni.	Wayanad	Animal Sciences	2011
Mahatma Gandhi University	Kottayam	Multidisciplinary	1983
Sree Sankaracharya University of Sanskrit	Kalady	Sanskrit & Vedic Studies	1994
University of Calicut	Malappuram	Multidisciplinary	1968
University of Kerala	Trivandrum	Multidisciplinary	1937
National Uni. of Advanced Legal Studies	Kochi	Legal education	2009

Out of the 11 Universities, researcher has taken only multidisciplinary type of universities (University of Kerala; University of Calicut; Mahatma Gandhi University; Kannur University and Cochin University of Science and Technology) for this study. Five universities were selected on the random basis.

The researcher has been distributed 150 questionnaires each selected universities on random sampling and as per the requirement of the objectives of the present study. The scholar requests the university library users (faculties and Research

Scholars) to fill the questionnaire as per their convenience and returned the questionnaire to the investigator as early as possible. The questionnaire distributed basis of simple random sampling method and sometimes used the personal interview for the researcher. The filled up questionnaire has been collected from the respondents for the data analysis and interpretation.

The selected universities and the number of respondents from each university are as follows:

1. University of Kerala, Trivandrum	-	146
2. University of Calicut, Malappuram	-	143
3. Kannur University, Kannur	-	141
4. Cochin University of Sci. & Tech., Ernakulam	-	138
5. Mahatma Gandhi University, Kottayam	-	136
Total Sample	-	704

The sample was further classified into three categories based on the status of Gender, Subject of study and category. The random sampling techniques was adapted to selected respondents has been tabulated and in the present report results have been shown in the tabular and graphical format.

Table 3.1: Distribution of Respondents Based on Gender Wise

S.No	Universities	Male	Female	Total
1	University of Kerala	79	67	146
2	University of Calicut	78	65	143
3	Kannur University	73	68	141
4	Cochin University of Sci.&Tech.	74	64	138
5	Mahatma Gandhi Univeristy	71	65	136
	Total	375 (53.27)	329 (46.73)	704

Table 3.2: Distribution of Respondents Based on Subjects

S.No	Universities	Social Science	Science	Total
1	University of Kerala	79	67	146
2	University of Calicut	80	63	143
3	Kannur University	76	65	141
4	Cochin University of Sci.&Tech.	70	68	138
5	Mahatma Gandhi Univeristy	68	68	136
	Total	373 (52.98)	331 (47.02)	704

Table 3.3: Distribution of respondents based on category

S.No	Universities	Asst. P	Assoc. P	Prof.	R S	Total
1	University of Kerala	19	12	9	106	146
2	University of Calicut	20	10	6	107	143
3	Kannur University	18	8	7	108	141
4	Cochin University of Sci.&Tech.	15	9	8	106	138
5	Mahatma Gandhi University	12	7	7	110	136
	Total	84 (11.93)	46 (6.53)	37 (5.26)	537 (76.28)	704

3.7.1 Sample Size

Printed questionnaire has been distributed in person to the respondents of five identified Universities (UGC recognized Universities) in Kerala. Total 750 questionnaires are distributed to different kinds of user in selected university libraries in Kerala (150 questionnaires in each university, of which, 704 were filled in and received the response rate is 93.87 percent.

3.8 INFORMATION NEED

Information need indicates the gap between the 'available information' and the 'information needed and to be obtained'. The quantum of information needed

identified and expressed by the respondents has been taken as the score to measure information need.

3.8.1 Sources used for Information Seeking

After identifying information need the individuals try to obtain the needed information through various sources and they are referred to here as sources used for seeking information. The number of sources (both formal and informal) resorted to by the respondents have been taken, as such, as the score for the present study.

3.9 COLLECTION AND ANALYSIS OF DATA

To investigate the usage of electronic information resources among University teachers and research scholars the survey research method was adopted. The data required for the study were collected through comprehensive and well designed questionnaire which was prepared keeping in view the objectives of the study. The questionnaire consists of two sections: Section - I deals with the personal data like Name, Gender, Educational status, Department, University, Years of experience, Designation, e-mail address and Section - B contains questions related to the level of expertise in using computers, frequency of accessing electronic resources, purpose of accessing e- resources, place of, accessing e- resources and other relevant questions based on the objectives of the study. The researcher visited the five universities and handed over the questionnaires to the university teachers and research scholars. University teachers refer to Lecturers, Readers and Professors and Research scholars refer to students doing either M.Phil. or Ph.D. Data were collected through a well structured pre-tested questionnaire developed for the purpose. On completion of data

collection, the collected data were coded, processed and tabulated to make the findings meaningful. Then relevant inferences and conclusions were drawn.

The filled questionnaires were arranged in University wise and an analysis was made on the basis of Gender, Faculty and Status.

3.10 STYLE OF RENDERING OF LITERATURE

The style of rendering of citation and references of the literature used and incorporated is according to APA Style Manual. The formats suggested for books, journal articles, conference presentations, e-journals, e-books, thesis and dissertations, and websites are adopted with slight changes without making structural change of the style manual.

3.11 STATISTICAL TOOLS

The following statistical tools were used in this study.

- a. Percentage analysis
- b. ANOVA – two way
- c. Mean and Standard Deviation
- d. Co-efficient variation

3.11.1 Percentage analysis

The principle Percentage = Rate x Base is used in many business problems.

The formula is $P = RB$.

Letter Explanation

- P Percentage (portion, part, or share), always *without* a percent sign
- R Rate or percent, usually *with* a percent sign
- B Base, the original amount

3.11.2 Standard Deviation Definition

Standard deviation is a statistical measure of spread or variability. The standard deviation is the Root Mean Square (RMS) deviation of the values from their arithmetic mean.

Formula: Standard Deviation

$$s = \sqrt{\frac{\sum(X-M)^2}{n-1}}$$

where,

- Σ = Sum of
- X = Individual Score
- M = Mean of all scores
- N = Sample size (Number of scores)
- Variance = s^2

3.11.3 Correlation Co-efficient Definition

A measure the strength of linear association between two variables, Correlation will always between -1.0 and +1.0. If the correlation is positive, we have a positive relationship. If it is negative, the relationship is negative.

Correlation Co-efficient

$$\text{Correlation (r)} = \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\text{Sqrt}([N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2])}$$

where,

- N = Number of values or elements
- X = First Score
- Y = Second Score
- ΣXY = Sum of the product of first and Second Scores

$$\begin{aligned}\Sigma X &= \text{Sum of First Scores} \\ \Sigma Y &= \text{Sum of Second Scores} \\ \Sigma X^2 &= \text{Sum of square First Scores} \\ \Sigma Y^2 &= \text{Sum of square Second Scores}\end{aligned}$$

The numerator degrees of freedom come from each effect, and the denominator degrees of freedom is the degrees of freedom for the within variance in each case.

3.11.4 Two-Way ANOVA

It is assumed that main effect A has a levels (and $A = a-1$ df), main effect B has b levels (and $B = b-1$ df), n is the sample size of each treatment, and $N = abn$ is the total sample size. Notice the overall degree of freedom is once again one less than the total sample size.

3.12 LIMITATIONS OF THE STUDY

Kerala is located on the eastern coast of southern India and is home to a number of universities. This state also has a well-developed educational system that tends across basic, collegiate as well as higher levels of education. It is served by research institutes as well as academic centers of excellence. The universities of Kerala are the storehouses of knowledge and promote academic brilliance and artistic brilliance alike. The researcher has taken only multidisciplinary types of universities (University of Kerala; University of Calicut; Mahatma Gandhi University; Kannur University and Cochin University of Science and Technology) for this study. There are five State Universities in Kerala which are accredited by National Assessment and Accreditation Council (NAAC) is selected for the study on the basis of convenience. Following are the major limitations of the study:

- The study is restricted to University teaching staff and Research scholars of social Science and Science faculties only.
- The study is narrowed to Kerala University Libraries only. The result arrived at from the study may or may not be applicable to other Universities.
- The survey method which adopted for collecting the data in this study has its own limitations. Hence, the generalization of the findings of the study is subject to the above condition.
- The study is restricted between the data collection period is the academic year of 2012 to 2013.