CHAPTER-3
METHODOLOGY OF THE STUDY

3.0 Introduction

“A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”. Jahoda, Sellitz, Deutsch and Cook (1967).

Research design is a frame work which defines selection of method and specification of information gathering methods. It is overall operation plan to define information nature, source of information and methods of information collections. The effective research design allows data collection economically and within time frame. Data collection and analysis should be in a manner that it must attain objective of the research. The present study attempts to highlight the importance of institutional repositories in scholarly communication activities.

An assessment is made to evaluate whether progress in institutional repositories has had any role on the scholarly communication in these higher educational institutions. Descriptive research design has been adopted to achieve the research objectives.

3.1 Need for the study

In this present scenario, Institutional Repositories plays major role in scholarly communication to collect, create, preserve and disseminate the intellectual output of the academic scholars through open access environment. Institutional repositories have been established more than 12 years back, and ever since its establishment, they have been playing an important role in meeting the scholarly communication crisis. In this context, this study is an important one and attempts to analyze and identify the effectiveness of
scholarly communication activities of faculty members and research scholars after the implementation of IRs in the Universities of Kerala. It is important to evaluate whether progress in institutional repositories has had any role on scholarly communication in higher educational institutions.

After having thoroughly reviewing the literature on the chosen topic in India and abroad, the researcher has identified, no such study has been carried out anywhere. Hence, this study will be relevant one in university setup.

Kerala being the state with the highest number of educated population draws attention to find out the level and role of IR in the academic community. Thus, this study concentrates on the role of Institutional Repositories on Scholarly Communication in the universities of Kerala.

3.2 Statement of the problem

Considering the above factors, the statement of the present study is entitled as “Role of Institutional Repositories on Scholarly Communication: a study among Science and Technology Faculty members and Research Scholars in the Universities of Kerala”. It is hoped that the study will give an insight about how far the Faculty Members and Research Scholars have been able to be abreast of the advances in institutional repositories and their modern scholarly communication activities.

3.3. Objective of the study

Following are the major objectives

1. To determine the Infrastructure facilities, IRs contents and library professional role in the surveyed universities.
2. To find out awareness, knowledge on use and search of IRs among the respondents of the surveyed universities.

3. To find out awareness on information sources available through IRs among the respondents of the surveyed universities.

4. To find out the extent of using the mediums of scholarly communication activities among the respondents of the surveyed universities.

5. To find out the reasons behind contribution or non-contribution of IRs among the respondents of the surveyed universities.

6. To find out the benefits of IRs on scholarly communications among the respondents of the surveyed universities.

7. To find out the problems faced while accessing the IRs by the respondents in the surveyed universities.

8. To find out satisfaction level on IR services among the respondents of surveyed universities.

3.4 Hypotheses for the study

1. There is no significant difference among the surveyed respondents socio-demographic variables with the awareness on information sources available through IRs.

2. There is no significant difference among the surveyed respondents socio-demographic variables with extent of using the mediums for scholarly communication activities.
3. There is no significant difference among the surveyed respondents socio-demographic variables with reasons behind contribution or non contribution to the IRs.

4. There is no significant difference among the surveyed respondents socio-demographic variables with benefits of IRs on scholarly communication.

5. There is no significant difference among the surveyed respondents socio-demographic variables with problems faced while accessing the IRs.

6. There is no significant difference among the surveyed respondents socio-demographic variables with the satisfaction level on IRs services.

3.5 Research Methodology

In order to achieve the objectives of the study, both primary and secondary data were used. For collecting primary data, survey method adopted using questionnaire and schedule and, secondary sources such as comprehensive literature have been collected on the topic of research and reviewed to find the research gap. There were totally 70 literature have been collected and reviewed were listed in chronological order in the second chapter review of related literature.

3.5.1 Research Population

Among 12 universities available in Kerala, population for the present study covers entire Science and Technology Permanent Faculty members and Full time Research Scholars within the campus in the State Universities, having started Institutional Repositories with minimum three year’s completion. Three Universities in Kerala satisfy this specification, viz. Cochin University of Science and Technology (CUSAT), Kochi, Mahatma Gandhi University, (MGU), Kottayam and University of Calicut (Calicut),
Malappurum. The study covers the entire population in the subject area of Science and Technology Permanent Faculty members and Full time Research Scholars within the campus and IRs In-Charge Librarian in these three state universities under study.

Data collection details from three Universities in Kerala is given below

Data was collected from 01-09-2015 to 09-10-2015

<table>
<thead>
<tr>
<th>Name of the Universities</th>
<th>Total Population</th>
<th>Questionnaire Distributed</th>
<th>Received Filled Questionnaire</th>
<th>Respondents are aware of IRs</th>
<th>Respondents are not aware of IRs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F.M</td>
<td>R.S</td>
<td>Total</td>
<td>F.M</td>
<td>R.S</td>
</tr>
<tr>
<td>CUSAT</td>
<td>72</td>
<td>267</td>
<td>339</td>
<td>72</td>
<td>239</td>
</tr>
<tr>
<td>M.G.U</td>
<td>37</td>
<td>173</td>
<td>210</td>
<td>35</td>
<td>170</td>
</tr>
<tr>
<td>U. of CALICUT</td>
<td>59</td>
<td>196</td>
<td>255</td>
<td>55</td>
<td>180</td>
</tr>
<tr>
<td>TOTAL</td>
<td>168</td>
<td>636</td>
<td>804</td>
<td>162</td>
<td>589</td>
</tr>
</tbody>
</table>

Source: primary data

Among the total population of 804, 632 filled-in questionnaires have been received. Among the 632 respondents, the respondents who were aware of IRs only have been selected for the study. Among 632 filled-in questionnaires, 20 respondents have stated that they were not aware of IR. By removing 20 respondents from 632, only 612 samples have been selected for analysis.

3.5.2 Pilot study

Pilot study was conducted during the period of December, 2014 to January 2015. There are 12 state universities in Kerala; all these universities librarians were contacted through telephonic conversation, to ascertain whether these universities had IR facility available in their campus and online questionnaire were sent those university had IR facility to collect required information. Through the primary survey, it was determined that there are 4 universities in Kerala having institutional repositories. These universities are Cochin University of Science and Technology (CUSAT), Mahatma Gandhi University (MGU), University of Calicut and Kerala University of Fisheries and Ocean Studies (KUFOS). Out of the four universities, CUSAT and MGU IRs are available on
public domain and the others are available only within the campus. This is not a small number, when compared with the national higher educational institutions like IIT’s and IIM’s.

In the study conducted by Hulagabli (2015) about Institutional Repositories Initiated by Indian Institutes of Technology and Indian Institutes of Management, it was found that out of 16 IIT’s 8 of them have IRs and 2 of them are available on public domain and rest of them available on Intranet. In the case of 13 IIM’s only 3 of them are available on public domain.

3.5.3 Brief details about CUSAT, MGU, and University of Calicut are as given below

1. Cochin university of Science and Technology (CUSAT), Kochi.

In 1971, Government of Kerala established University of Cochin, with an objective of “development of higher education with particular emphasis on post-graduate studies and research in applied science, technology, industry and commerce”, which was later named as Cochin University of Science and Technology (CUSAT) in 1986. The university has a full-fledged Library to meet the information requirements of the academic community. This is the one of the best scientific and technical library in the country with fully automated. Through the University Library Web OPAC (http://opac.cusat.ac.in) anybody can globally access the bibliographic information of books, journals and theses of the library. The University Library provides campus-wide IP-enabled access to online journals under the UGC-INFONET DIGITAL Library Consortium and INDEST Consortium, under which electronic full text access is provided to scholarly literature of all major areas of learning like IEEE digital library, Science Direct, ACS, RSC, Nature, IOP, Springer etc. Presently, it available on e-Shodh Sindhu Consortium, initiative by MHRD under Government of India and being executed by
INFLIBNET Centre, it merged with three consortium initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. Apart from this, CUSAT has its own institutional repository named as “Dyuthi” which provides digital services by collecting, preserving, and distributing institutionally produced intellectual output of academic scholars of the university.

1.1. CUSAT Institutional Repository called “Dyuthi” (http://dyuthi.cusat.ac.in)

![Figure: 1 Home page Print Screen view of CUSAT repository ‘Dyuthi’ is shown above]

2. Mahatma Gandhi University (MGU), Kottayam.

On 2nd October, 1983 Mahatma Gandhi University was established. It imparts education in the interdisciplinary as well as conventional disciplines of science, social science and humanities besides in the professional disciplines of Engineering, Technology, Legal Studies, Management, Tourism, Disability Studies, Journalism, Pedagogy, Pharmacy and Nursing. MGU has fully automated central library using KOHA, Integrated Library System, which is free Open Source Software for the in-house management. Moreover, MGU launched its Institutional Repository called Mahatma
Gandhi University Online Theses Library, which is a rich reservoir of information. It provides open access to its digital collection of Thesis and Dissertation, which makes public funded research transparent and accessible for further research. In 2009, MGU received State IT award under the e-learning category for its University Online Theses Digital Library.

2.1 MGU Institutional Repository Called “Mahatma Gandhi University Online Theses Library” (www.mgutheses.in)

![Image of MGU Institutional Repository](mgutheses.com)

**Figure: 2 Home page Print Screen view of MGU repository is shown above**


University of Calicut was established in 1968, which presently has 35 teaching departments. The university library is fully automated and has a collection of about ninety-five thousand books and subscribes to 224 Journals including foreign and national in different disciplines and 10 Newspapers. Calicut University’s institutional repository is named as “DSpace repository” which collects, preserves, and disseminates intellectual output of it scientific community in a digital form.
3.1 Calicut university institutional repository called “DSpace repository” (http://192.168.20.27:8010/iruoc)

Figure: 3 Home page Print Screen view of the Calicut University DSpace Repository is shown above.

3.5.4 List of State Universities in Kerala

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Name of the Universities in Kerala</th>
<th>Place</th>
<th>Type</th>
<th>Year</th>
<th>IR service started</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Kerala</td>
<td>Thiruvananthapuram</td>
<td>Multidisciplinary</td>
<td>1937</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>University of Calicut</td>
<td>Malappuram</td>
<td>Multidisciplinary</td>
<td>1968</td>
<td>2012</td>
</tr>
<tr>
<td>3</td>
<td>Cochin university of Science and Technology(CUSAT)</td>
<td>Ernakulam</td>
<td>Multidisciplinary</td>
<td>1971</td>
<td>2008</td>
</tr>
<tr>
<td>4</td>
<td>Kerala Agricultural University</td>
<td>Thrissur</td>
<td>Agriculture and Engineering</td>
<td>1972</td>
<td>Nil</td>
</tr>
<tr>
<td>5</td>
<td>Mahatma Gandhi University</td>
<td>Kottayam</td>
<td>Multidisciplinary</td>
<td>1983</td>
<td>2008</td>
</tr>
<tr>
<td>6</td>
<td>Sree Sankaracharya Universit of</td>
<td>Kalady</td>
<td>Sanskrit and Vedic Studies</td>
<td>1994</td>
<td>Nil</td>
</tr>
<tr>
<td>7</td>
<td>Kannur University</td>
<td>Kannur</td>
<td>Multidisciplinary</td>
<td>1997</td>
<td>Nil</td>
</tr>
<tr>
<td>8</td>
<td>National University of Advanced Legal Studies</td>
<td>Kochi</td>
<td>Legal education</td>
<td>2009</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>Kerala University of Health Sciences</td>
<td>Thrissur</td>
<td>Health</td>
<td>2010</td>
<td>Nil</td>
</tr>
<tr>
<td>---</td>
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<td>--------</td>
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<td>-----</td>
</tr>
<tr>
<td>10</td>
<td>Kerala University of Fisheries and Ocean Studies</td>
<td>Kochi</td>
<td>Fisheries</td>
<td>2010</td>
<td>2014</td>
</tr>
<tr>
<td>11</td>
<td>Kerala Veterinary and Animal Sciences University</td>
<td>Wayanad</td>
<td>Animal Science</td>
<td>2010</td>
<td>Nil</td>
</tr>
<tr>
<td>12</td>
<td>Thunchath Ezhuthachan Malayalam University</td>
<td>Malappuram</td>
<td>Malayalam and Literature</td>
<td>2012</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Source: [http://ugc.ac.in](http://ugc.ac.in) and primary data

### 3.5.5 Methods of Data Collection

In order to collect the data, the researcher has brought out two separate questionnaires, in which, one for the respondents and one for the librarians to know more about the IRs and it’s functioning. Secondary data have been collected from books, journal articles, periodicals, unpublished working papers, etc. For designing questionnaire, some of the well structured questionnaires developed by Indian and foreign experts referred for the present study.

### 3.5.6 Data Collection Tools

The questionnaire method was adopted to collect information from Science and Technology Faculty members and Research Scholars and schedule method from IRs in charge Librarians to gather primary information for the study. The two set of questionnaires were developed, adopted and modified from the already existing studies which are, *LEarning about digital institutional repositories, creating an institutional repository: LEADIRS workbook* by Bartona & Waters (2004-2005); *Institutional Repositories: Ensuring Continued Access to Learning Objects: Final Report of the MIRACLE (Making Institutional Repositories A Collaborative Learning Environment) Project* by Rieh, Markey & Yakel (2009); *Faculty Survey: Institutional Repositories by*

3.6 Data Analysis Techniques

Data collected from the respondents were analyzed to find out the results. The data have been entered into Microsoft Excel and exported to Statistical Package for Social Sciences (SPSS) for analysis. Simple Percentage, Weighted Average Method (WAM), One-way Analysis of Variance (ANOVA) and Chi-Square test were used to analyze the data. One-way ANOVA and Chi-Square test analysis have been tested for significant level of 0.05.

3.7 Limitation of the Study

Every study will have its own limitations. Following were the limitations identified during the research process.

- The post graduate students and administrative staff of the concerned universities, have made very less contribution to the IR, and thus were not included in the study.

- The study is limited to the faculty members and research scholars of CUSAT, MGU and Calicut University, since IR existing in these three universities of Kerala.

- Little hardship witnessed while collecting the data from some of the faculty members, which had additional administrative responsibilities. The information provided by the respondents is deemed to be true and on the basis, analysis is
made. Though, the present study has some limitations, the researcher has taken all the efforts so that the aforesaid limitations will not affect the results.

3.8 Further Study

The present study is limited to Science and Technology faculty members and research scholars in the state universities of Kerala. It can be extended to area of Research and Development (R&D) institutions and Central Universities in Kerala or India. The study can also be extended to other subject area likes Humanities, Social Science, Language and Literature.
3.9 Chapters of the study

The study is divided into five chapters as mentioned below.

Chapter 1:

**Introduction:** deals with background of the study, historical development of open access movement, open access, scholarly communication and institutional repository definitions, role of IRs on scholarly communication, India, Kerala open access movement and IRs initiations.

Chapter 2:

**Review of related literature:** had been selected about Institutional Repositories, scholarly communication, and open access developments, these studies conducted in Kerala, India and abroad.

Chapter 3:

**Methodology of the study:** deals with need for the study, statement of the problem, objective of the study, hypotheses for the study, research methodology, research population, methods of data collection, data collection tools, data analysis techniques, limitation of the study and further study.

Chapter 4:

**Data Analysis and Interpretation:** deals with analysis made based on the collected data. Analysis made for various statements have been listed with tables followed by interpretation in this chapter.

Chapter 5:

**Findings, Recommendations and Conclusion:** since this chapter is base for any research, findings drawn from tables and interpretations were drawn is listed in this chapter. From the findings, strengths and weakness have been analysed and based on that some of the recommendations are given for effective use and development of IRs for scholarly communication.
REFERENCE


Websites

7. CUSAT.(n.d.). Retrieved from http://cusat.ac.in
10. MG University. (n.d.). Retrieved from http://mgu.ac.in

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