Chapter 1

Introduction: Problem and Methodology
CHAPTER – 1
INTRODUCTION: PROBLEM AND METHODOLOGY

1.0 INTRODUCTION

Research plays a vital role in the educational process as a source of latest information. The main aim of the research is to find out the truth which is hidden and has not been revealed as yet. Each research study has its own specific purpose. In short, research can be conceptualized as diligent, protracted investigations using adequate methods to discover latest knowledge, to develop unique applications of existing knowledge or to explain relationships between ideas or events (Mestri, 2008).

Today academic institutions like universities and colleges including R&D organizations play a crucial role in the generation and application of latest knowledge through research. The research conducted at these organizations constitute the essence of scholarly communication. The research carried out by scholars and scientists working at different levels and positions is finally published as research reports, dissertations, theses, proceedings, books, and articles etc. Publication is a formal means of communication. It is the most appropriate way to share and disseminate one’s knowledge. Which is used as a tool for reporting the research findings. The communication of research is very essential for innovation, growth, and development of the institution, society and the nation at large.

While research and publication have been given significant importance by the academia, the utility of the methods and techniques of measuring the research output or productivity has drawn considerable attention amongst the scholars, authors, and administrators. These methods attempt to quantitatively analyze academic literature. The set of such methods comprises the branch of study called Bibliometrics.

It has been defined by Alan Pritchard as “the application of mathematical and statistical methods to measure quantitative and qualitative changes in different media” (Patra, 2006). Pritchard designed the purpose of bibliometric as “to shed light on the process of written communication and of the nature and course of development of a descriptive means of counting and analyzing the various facets of written communication” (Pritchard, 1969). Researchers may use bibliometric methods of evaluation to determine the influence of a single writer or to describe the relationship
between two or more writers or works. Bibliometrics has now emerged as a well established interdisciplinary research field. It has well established bibliometric laws and indicators used in various measurements like Relative Growth Rate, Doubling Time, Bradford Law, Lotka Law, Authorship Pattern, Collaborative Measures, Participative Index.

Research and publication not only enhances advancement in any discipline but has also become important criteria for visibility, reputation, and recognition of the academic institutions globally. This is quite evident from the rankings of educational institutions released or published by several reputed agencies. Furthermore, research related activities form the core of the Performance Based Appraisal System (PBAS) based on Academic Performance Indicators (APIs) in recruitments and Career Advancement Scheme (CAS) adopted by the University Grant Commission (UGC) for higher educational institutions in India. A similar criterion for academic performance evaluation is widely accepted in various countries.

The present study is an endeavour to apply bibliometric laws and indicators to analyze various aspects of publications on the discipline of LIS. The study help in understanding the overall publication trends amongst the Universities of North India in the discipline of LIS.

1.1 RESEARCH QUESTIONS

1. Which is the preferred publication type as their communication channels (Journals, Books/Book Chapters, and Conference Proceedings) in the discipline of LIS?
2. What is the pattern of collaboration in the discipline of LIS?
3. Which journals are the most preferred journals for publishing in the discipline of LIS?
4. What are the Relative Growth Rate (RGR) and Doubling Time (D(t)) of research output in the discipline of LIS?
5. What is the Author Productivity of the respective LIS departments?
6. What is the research productivity of male and female LIS faculty members?
1.2 STATEMENT OF THE PROBLEM

The researcher observed that very few studies have been carried on publications of faculty members in the field of Library and Information Science. Moreover, there are a few studies which gathered information directly from faculty members. A majority of studies collected data from databases i.e. LISA (Library and Information Science Abstracts), LISTA (Library and Information Science & Technology Abstracts) and Annual Reports, etc. A significant number of studies deal with subjects/discipline other than LIS. As of now, we do not have comprehensive information concerning publication pattern or trend of LIS faculty members working in the Universities of Northern India. There is a lack of systematic, authoritative, and updated information regarding these aspects which can facilitate comparative analysis (both intra and inter) for deeper insight in the present holistic scenario. There is no comprehensive information regarding preferred publication types like journals, books/book chapters and conference proceedings. No study has been done considering fifteen (15) universities belonging to seven (7) states of the North India in the discipline of LIS.

1.3 OBJECTIVES OF THE STUDY

1. To identify the preferred publication type as their communication channels (Journals, Books/Book Chapters, and Conference Proceedings) in the discipline of Library and Information Science (LIS) of the Universities considered for the study.

2. To compare the Author Productivity of LIS departments of the select universities.

3. To identify Authorship Pattern and Collaborative Measures in the discipline of LIS.

4. To compile a ranking list of top 10 preferred journals (National or International) in LIS.

5. To determine the total research output at different hierarchies of designations.

6. To examine the Relative Growth Rate (RGR) and Doubling Time (D(t)) of research output in the discipline of LIS.

7. To analyze the research productivity of male and female LIS faculty members.
1.4 HYPOTHESES

H₀₁: There is no significant variation amongst Journals, Books/Book Chapters and Conference Proceedings as preferred communication channels in the total research output.

H₀₂: The relative growth rate is not constant during the publication year of LIS faculty members.

H₀₃: There is no significant difference in research productivity at different hierarchies of designations (Assistant Professor, Associate professor, and Professors).

H₀₄: There is no significant association between the research productivity of male and female LIS faculty members of select north Indian universities of LIS.

H₀₅: The Modified Collaborative Coefficient (MCC) has no variation during the publication year of LIS faculty members.

H₀₆: There is no significant variation in the contributions of co-authored publications and single authored publications.

1.5 RATIONALE OF THE RESEARCH PROBLEM

The study is an endeavour to map the research output of LIS faculty members. There are a number of studies pertaining to research output in the various subjects/disciplines but no comprehensive study on research output of Library & Information Science covers fifteen (15) universities belonging to seven (7) states. Prior studies are limited with respect to the time-span considered for the study. The LIS faculty members published their articles in peer-reviewed journals, books and conference proceedings. Not all these peer reviewed documents are necessarily indexed by citation databases. There is a need for study on the basis of primary data including Curriculum Vitae (CV) and annual reports. Previous studies collected data from databases. These databases do not cover publications in all formats (Journals, Conference Proceedings and Book/Book Chapters) (specially Indian) adequately. Not all the bibliometric indicators have been used by the authors of previous studies. Thus, justifying the need for a study wherein all important bibliometric indicators are applied on the research output of LIS discipline. It also encourages research scholars for undertaking further study in LIS or any other subjects/disciplines.
1.6 SIGNIFICANCE OF THE STUDY

The study is significant as it helps in understanding the overall publication trends amongst the universities of North India in the discipline of LIS. It provides a broader scenario regarding the growth of literature and author’s productivity pattern. The study is also helpful in understanding the co-authorship pattern in an effective way along with the identification of journals considered more frequently for publication by faculty members under study. The findings of the study contributes significantly to creating a constructive and competitive environment through its comprehensive and systematic analysis. The study adds more status and trend clarity of the published works of LIS faculty members of select universities. The study provides the insight and understanding regarding the preferred means of scholarly communication (publications). Thus, helping the librarian regarding collection development. In the present study the researcher has collected the publication data from the respondents (faculty members) directly as first hand information instead of databases. This approach strengthens the reliability and validity of data as the online databases do not index all the publications of the faculty members. Moreover, the researcher could not find the details of old publications those are in print format only. In this study the researcher has also used Relative Growth Rate (RGR), Doubling Time (DT) and collaborative measures like Collaborative Index, Collaborative Coefficient and Modified Collaborative Coefficient. Wherever applicable, relevant statistics tests have been applied on these bibliometric indicators for comprehensive analysis. Thus, the present study entails to lessen the existing research gap in the concerned field of study.

1.7 UNIVERSE OF THE STUDY

There are hundred (100) Universities including State & Central in North India, Out of these only fifteen (15) Universities have Department of Library and Information Science. The population of the present study comprises 67 faculty members of LIS departments of selected 15 universities. These 15 universities are located in 7 states of North India.

Apart from these 15 universities, there are some other universities also which offer Library and Information Science courses. But either they do not have
permanent/ regular faculty members or they do not have Master Degree Program. The names of such universities are:

- Jamia Millia Islamia, Delhi
- Hemwati Nandan Bahuguna Garhwal University, Srinagar (Uttrakhand)
- Choudhury Devi Lal University, Sirsa (Haryana)
- Choudhary Charan Singh University, Meerut (Uttar Pradesh)
- Mahatma Gandhi Kashi Vidyapeeth, Varanasi (Uttar Pradesh)
- Sampurnanand Sanskrit University, Varanasi (Uttar Pradesh)

1.8 SCOPE AND LOCALE OF STUDY

The researcher considered the research output of Library and Information Science (LIS) faculty members working on a permanent basis in the selected 15 universities. The study has also included the faculty publications prior to joining their current position in the concerned department. For the purpose of study the publications upto December 31, 2014, have been considered.

The list the 15 universities having a department of LIS are as below:

**Table 1.1**

**State Wise List of Universities in North India**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the State</th>
<th>Name of the university</th>
<th>Number of Faculty Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Punjab</td>
<td>1. Guru Nanak Dev University, Amritsar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Punjabi University, Patiala</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Haryana</td>
<td>3. Kurukshetra University, Kurukshetra</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Maharishi Dayanand University, Rohtak</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Himachal Pradesh</td>
<td>5. Central University of Himachal Pradesh, Dharamshala</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Kashmir University, Srinagar</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Delhi</td>
<td>8. University of Delhi, Delhi</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Chandigarh</td>
<td>9. Panjab University, Chandigarh</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Uttar Pradesh</td>
<td>10. Aligarh Muslim University, Aligarh</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Babasaheb Bhimrao Ambedkar University, Lucknow</td>
<td>5</td>
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<tr>
<td></td>
<td></td>
<td>12. Banaras Hindu University, Varanasi</td>
<td>5</td>
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<tr>
<td></td>
<td></td>
<td>13. Bundelkhand University, Jhansi</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14. Dr. B.R. Ambedkar University, Agra</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15. University of Lucknow, Lucknow</td>
<td>1</td>
</tr>
<tr>
<td>7 States</td>
<td>15 Universities</td>
<td><strong>67</strong></td>
<td></td>
</tr>
</tbody>
</table>

(Source: http://www.ugc.ac.in/oldpdf/alluniversity.pdf)
1.9 RESEARCH METHODOLOGY

The present study deals with research output of library and information science faculty members in the North Indian universities. The research output of faculty members are formally published in journals, books/book chapters and conference proceedings as preferred communication channels. The details of publications of faculty members are available at the university websites, annual reports, author websites or author blogs. Not all the universities covered under study have uploaded details of published data i.e. Curriculum Vitae (CV) of their faculty members of their official websites. In the case of annual reports, consolidated information is not available as it covers annual publication only. Moreover, in the present study, the publications of faculty members during their previous jobs (if any) are also included. Author websites and author blogs are also not maintained by the majority of LIS faculty members considered for the present study. In order to avoid these obstacles and to have an authoritative and complete information census method of research has been adopted to collect data.

The data was collected for the present study by adopting different modes i.e. an online questionnaire and also had a personal interaction with faculty members by personally visiting them, through phone calls, social media, emails and stamped self-addressed envelopes were sent, requesting the faculty members to complete the questionnaire & send their publications details in Print. The respondents were assured of their anonymity.

For the present study, the term publication consists of articles, conference papers, books and book chapters. Here, the book chapters also include chapters in the encyclopaedia, and festschrift etc. In the case of multiple authorship, the study has considered each of the authors without attempting to identify a primary author. However, the editor of the book is not considered for the study.

The researcher uses bibliometric laws and indicators to obtain objectives and test the validity of hypotheses. Some of the bibliometric indicators which have been applied are Relative Growth Rate, Doubling Time, Bradford Law, Lotka Law, Authorship Pattern, Collaborative Measures (Collaborative Index (CI), Degree of Collaboration (DC), Collaborative Coefficient (CC), and Modified Collaborative Coefficient (MCC), Participative Index.
The collected data has been analyzed with the help of Excel sheet and IBM SPSS Statistics (Statistical Product and Service Solution). The study has used Analysis of Variance (ANOVA), Scheffe’ test, Chi-square test, and other appropriate tests for interpretation of results and testing of the hypothesis. Thereafter, the hypotheses and data have been interpreted and relevant conclusions have been drawn by careful analysis.

1.10 LIMITATIONS OF THE STUDY

Only 19.40% of faculty members filled the online questionnaire. On the other hand, the researcher could not obtain the complete record of publications from 5.98% faculty members. The present study is limited to the quantity of research output instead of the quality of publications (citations). The study does not include deemed and private universities only central and state universities are included in the study.

1.11 DELIMITATIONS OF THE STUDY

The study is restricted to the LIS departments in selected 15 universities of North India only. The publications of only the permanent (regular) faculty members (Assistant Professor, Associate Professor, and Professor) having at least one-year service length has been considered. The researcher has considered the total research output of faculty members irrespective of their present job/position. The study included only presently (during the time of data collection) working faculty members in the selected 15 universities of North India. The faculty members retired during 2013-2016 are included in the study. The universities conducting LIS program through distance education mode has not been included in this study. The date of establishment of the departments of Library and Information Science has been ignored).

1.12 DESIGN OF THE CHAPTERS

The thesis has been divided into the following five chapters.

Chapter I: Introduction: Problem and methodology

This Chapter provides an overview of the origin of library and information science, library and information science education, research questions, statement of the problem, objectives, hypotheses of the study, the rationale of the study, the
significance of the study, the universe of the study, the scope of the study, research methodology and delimitations.

**Chapter II: Review of Literature**

This chapter covers the review of literature in which the studies pertaining to the problems has been reviewed to avoid duplication of work. A survey of the available literature has been carried on to ascertain the kind of relevant work which has already been carried out related to the research problem and the same has been discussed in the chronological order. Further, the inference has been drawn and mentioned at the end of the chapter.

**Chapter III: Bibliometric: Definitions, Laws and Indicators**

Meaning of bibliometrics, bibliometric laws, and indicators i.e. Relative Growth Rate, Doubling Time, Bradford Law, Lotka Law, Authorship Pattern, Collaborative Measures (Collaborative Index (CI), Degree of Collaboration (DC), Collaborative Coefficient (CC), and Modified Collaborative Coefficient (MCC)), Participative Index.

**Chapter IV: Department Profile**

This chapter provides the brief introduction of the departments of Library and Information Science of the universities under study. The profile of the departments of Library and Information Science include the year of establishment, list of name of faculty members, their designation, specialized area, and courses run by the department of Library and Information Science of the universities under study.

**Chapter V: Data Analysis and Interpretation**

This chapter provides a systematic analysis of the data collected. The study has used Analysis of Variance (ANOVA), Scheffe’ test, Chi-square test, and other appropriate test for interpretation of results and testing of the hypothesis.

**Chapter VI: Findings, Conclusions, and Suggestions**

This chapter concludes the study based on the analysis and findings of the previous chapter, the researcher provides relevant suggestions regarding the topic of the study. The recommendations for further study are also mentioned.
References

A comprehensive list of references/bibliography has been provided at the end. The list has been arranged alphabetically in APA style of references.

Appendices

- Tables depicting values of various Bibliometric Indicators pertaining to individual universities have been given as Appendix 1.
- Appendix 2 contains the online questionnaire for collecting the basic information of the respective faculty members.

Note:

Although, the research problems/research gap, research questions, objectives, hypotheses, scope etc. have been designed on the basis of review of related literature and the inferences drawn thereof, the same has been discussed in detail in the next chapter i.e. Chapter-2, due on account of its length and better understanding.
References


