CHAPTER THREE
RESEARCH METHODOLOGY

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CHAPTER THREE
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3.1. Introduction

After setting the objectives, the next activity in the process is to choose the means by which the stated objectives are to be achieved. In other words, selection of methods is required for conducting research. Indeed, today many methods of research are available. Further, the method of choosing a suitable method for research has grown into a systematic subject in itself, and it is called Research Methodology. Choice of method depends upon the nature, the scope, the objectives and the depth of the problem on hand.\(^1\)

Methodology means science of method as well as a body of methods or systematic procedures and techniques required for accomplishing an activity. So methodology of research implies the body of methods i.e. procedures and techniques of collection, organization, analysis and evaluation of data or facts, which should be mastered and followed in order to execute research. Like all methodologies, research methodology also deals with the resources and limitation of methods, methods in this case being research methods.\(^2\)

Research methods are the procedures, techniques and tools by means of which necessary data or pieces of information for a particular research are collected, collated and verified, and also the line of operation as to the organization and analysis of the data or information.\(^3\) It is important to know the range of research methods available and to know how they work, and their respective advantages and disadvantages. This knowledge confers skills which help the accomplishment of a piece of research work efficiently and without unnecessary wastage of time.
3.2. Sources of Data

The study is to analyse and evaluate the contents of the eighty doctoral dissertations and cited references given at the end of these dissertations in horticulture. A total eighty dissertations accepted and which are kept in the Central Libraries of both universities. Seventy five doctoral dissertations accepted and deposited in the Central Library, BCKV during 1991 to 2010; and five doctoral dissertations accepted and deposited in the Central Library, UBKV during 2001 to 2010 were studied. A total of 10,845 citations were collected from 14 different forms of document used by the researchers in horticulture for 20 years i.e. during the year from 1991 to 2010. Only four types of documents i.e. journal articles, books, conference papers and theses & dissertations, cited 10,510 (96.912%) citations and only 335 (3.088%) citations from other 10 different types of documents. In this context an attempt is made for the analysis of citations on journal articles, books, conference papers and theses & dissertations only.

3.3. Literature Analysis

The literature on horticulture is an interesting as well as an appropriate area for bibliometric investigation. The analysis of the literature consisted of two major kinds:

1. Source literatures

The first endeavour was the content analysis of eighty doctoral dissertations on horticulture submitted by researchers to the BCKV and UBKV during the period of study. Here, it is designated those dissertations as source literatures or citing documents.
2. References

The second endeavour was the citation analysis of the literature consisting of all forms of document cited as references or bibliographical references or bibliographies in the doctoral dissertations. Here it is designated as cited references or cited documents.

3.4. Research Design

The study of printed documents can be referred by the generic term ‘document research.’ Studies under this category of research are designed to shed light on the nature and use of reading materials. Here, the objective is a quantitative analysis of doctoral dissertations documents, their researchers, supervisors, titles, departments and references appeared in the dissertations. Bibliometrics, as a form of ‘documentary research’ involves a statistical measurement of several interrelated aspects of source documents (doctoral dissertations) and the references in them. Since the findings reported in this study are an outcome of a study of documents (doctoral dissertations), this can be called a document or documentary research. It is designed to investigate and describe in detail the several aspects involved in the existing system of generation, dissemination and use of information regarding objectives of the study.

3.5. Design Worksheet

The bibliographical detail of the source documents/citing documents (doctoral dissertations) and the cited documents (references appeared at the end of each doctoral dissertation) were recorded on the specifically prepared two worksheets: one for citing documents and another for cited documents. Here the worksheet means a plain paper containing different heads. Title of the dissertation, name of the supervisor and research
scholar, name of the department and faculty, year of dissertation submission, number of tables, number of figures, number of plates, forms of documents used as heads in worksheet for citing documents (Appendix one); and number of citations, titles, years, languages, subjects, countries used as heads in another worksheet for cited documents (Appendix two).

3.6. Selection of Population and Sample

It is observed that a total eighty doctoral dissertations were accepted and deposited in the Central Libraries of both BCKV and UBKV were studied during the period of study. The data for this study were gathered from these eighty doctoral dissertations in horticulture and its branches. The sampling procedure for the study was purposive since data was being collected for specifying a target period from 1991 to 2010. This sample also represented the total population of the dissertations. The population of the study was the total population of eighty doctoral dissertations submitted within the coverage period of the study. All eighty doctoral dissertations were analysed.

3.7. Data Collection Method

Several methods suggested in the books about research methods in social sciences in general and library and information science in particular, were studied in relation to the objectives set for such study. Title pages and the list of references were photocopied from each of the eighty dissertations. All photocopies of each dissertation were manually examined and citations were extracted from the list of references of each of the dissertation. Data extracted from the dissertations included dissertation title, research scholars, research scholar’s department, year, page length, subject area, illustration and figures presentation, supervisorship patterns, designation and gender of supervisors.
The data of the study were also collected and evaluated with the help of citation analysis. Citation analysis was widely applied to the bibliographic data from journal articles, books, conference papers and theses & dissertations only. The parameters used for citation analysis were (i) formwise distribution of the citations, (ii) authorship pattern of the citations, (iii) ranking of cited documents (iv) geographical distribution of cited documents, (v) language distribution of cited documents, (vi) chronological distribution of documents, (vii) obsolescence study of the cited documents

3.8. Data Analysis Method

The extracted data were entered into the computer using MS-Excel Worksheet. Frequency distributions, charts, graphs, and measures of central tendency like mean and median were obtained by using MS-Excel. The gathered data were analysed using descriptive statistics of frequency counts, percentages and cumulative percentages. For determining the country of publication, language and year of publication of journal citations, the Ulrich’s International Periodical Directory and other sources available in the library were consulted. Dewey Decimal Classification (DDC) 22nd edition and Sears List of Subject Headings (SLSH) 18th edition were used to determine the subject headings of analysed cited documents. INSDOC’s National Union Catalogue of Scientific Serials in India (NUCSSI) was used to identify any wrongly abbreviated journal titles and also to determine the history, country and year of origin of the journal titles.

Information provided through entries in the list of bibliography have been collected from either list of references in chapter one to eight or outside related references which were already consulted. Each entry presented in reference sections and bibliography section according to American Psychological Association (APA) Style Manual, 6th edition, 2007.
References


CHAPTER FOUR
HORTICULTURE: AN OVERVIEW

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