3. BIBLIOMETRIC: OBJECTIVE, SCOPE AND METHODOLOGY

The exponential growth of literature and rapid development of libraries generated several evolutionary studies about the effectiveness and efficiency of information services. These studies led to the identification and application of appropriate quantitative measuring techniques known as bibliometrics. Libraries and information managers all over the world began to use bibliometric techniques in their day to day administration. These bibliometric studies throw light on the pattern of growth literature, inter-relationship among different branches of knowledge, productivity and influence of authors, pattern of collection build up, their use etc. Day to day bibliometric is attaining inter disciplinary character and sophistication.

Reference materials are required for up-to-date information in various fields due to the explosion of knowledge and with the rapid changes noticed in all domains of human activity. But efficiency can not be ensured unless this service is planned and executed in accordance with precise techniques of modern library and information science. Bibliometric is one of such modern development in library science that helps library personnel to design accurate strategies associated with their work.

Bibliometric analysis is one of the popular methods employed in recent days for identification of core documents in various subject fields for a particular scientific community in a geographical proximity. In fact citation study is one of the effective and indirect methods to understand the information requirements of users. Citation method is used in the present Study to understand the information needs, use patterns and use of behavior of botanical science research scholar.

3.1 RELEVANCE OF THE STUDY

Rising journal subscription costs, shrinking budget allocation, and lack of space for current library holding have resulted in number of ‘document use studies’. Librarians have been trying to determine library collection development
policies which will make optimum use of money and space available while meeting the current and future needs of the library users. The number of new titles of journals has grown at an alarming pace while subscription prices of established journals have been forced to cancel certain titles in order to keep up with increasing cost, as well as not purchasing new titles and making room for the current ones.

Escalation in cost of scientific publications, the lack of adequate library budgets and the different fiscal years ahead, have all created problems both to the users of information as well as to the providers and organizers of information. The agencies which have to organize and provide information resource and services have to understand the requirements of the users of information as well as characteristics of the subject literature, in order to develop a need-based information resources and services to meet the information requirements of scientists working in various fields. Therefore, a clear understanding of the characteristics of subject literature is one of the prerequisites and has paramount importance in planning and designing of information system and service in a particular field. The characteristics of subject literature such as pattern of growth and scattering productivity, dissemination, distribution, communications, obsolescence patterns, utilization and consumption etc, have all been found very useful in planning, developing and organizing information resources and services and also taking meaningful decisions in solving some of the problems of libraries, documentation and information centers. Hence, in this study, which is based on Ph.D thesis submitted to University specially Agra and Lucknow for the period of 2000 – 2010 in Botanical Sciences a bibliographic literature have been undertaken to study characteristics of botanical sciences literature

3.2 SCOPE

The present research study is "Bibliometric study of Ph.D. thesis submitted in Botanical Science in Lucknow University, Lucknow and in Dr. B.R. Ambedker University, Agra during 2000 to 2010". It is mainly based on Ph.D. thesis in
Botanical Sciences submitted in both Uttar Pradesh Universities. The study was carried out to analyze the citation pattern of botanists. A total 310 thesis covering the period 2000-2010 from botanical science have been studied. The main purpose of the study is to find out the current research trends in Botanical Science. Allied subjects of Botanical Science have excluded from this research study

3.3 OBJECTIVE

The main objectives of this research study are to;

1. Determine the average number of citations,

2. Study the use pattern of the different type of documents,

3. Study the rate of collaborative research,

4. To identify the productive authors in the field of Botanical Science,

5. Study the distribution by place of publication,

6. Compile a rank list of core periodicals.

3.4 METHODOLOGY

The following methods were adopted for the present study:

i) Literature Survey

ii) Citation Analysis

i) LITERATURE SURVEY:

In order to identify similar studies in bibliometrics, the LISA plus electronic version was searched. In addition to this, some of the primary periodicals in the field of Library and Information Science were also scanned.
ii) **CITATION ANALYSIS:**

According to Garfield "true citations analysis is one which deals with work cited as having actually been used in the preparation of or having otherwise contributed to the source paper". In the present study, this method is used for measuring the relative use of journals as source of research information and also for identifying the core literature of specialized areas or discipline"

A list of Ph.D. thesis submitted in Botanical Sciences during 2000-2010, in Uttar Pradesh Universities was prepared.

1. Each thesis has been examined and the details such as year of publications, name of the author, total number of references appended to etc. were recorded.
2. After this entries were made on the plane paper and each every citation was grouped in different categories such as form of document, decade of origin of literature, type of authorship, country of their origin etc. These paper slips were then put to different analysis. The major categories included are as follows:

**3.1.1.1 FORM-WISE DISTRIBUTION:**

Literature in botanical science is published in different forms like books, journals, government publications, research reports, patents, electronic publications, monographs, thesis etc. The information regarding the form was collected from source data, tabulated to find out the most dominant form of literature.

**3.1.1.2 YEAR-WISE DISTRIBUTION:**

It is useful to know the currency of source documents. This type of the study reveals that the number of works in a particular decade in which most of the published literature was used. For this purpose a table showing year wise distribution has been prepared.
3.1.3 AUTHORSHIP PATTERN:

It is done to know most productive contributors in the subject. For this purpose, the information about all the authors was retrieved, arranged and tabulated in order to find the type of authorship.

3.1.4 COUNTRY-WISE DISTRIBUTION OF ITEMS:

It is done to identify the place of origin of documents which are given in the references of thesis. The entries were grouped on the basis of their place of origin. They were counted and tabulated.

3.4.1 COLLABORATIVE TRENDS IN RESEARCH PUBLICATION

According to Subramanyam it can be find out by calculating the ratio of number of multi authored papers to the total number of papers published. He has given the following formula to calculate it,

\[
C = \frac{Nm}{Nm+Ns}
\]

Where \( C \) = Extent of collaboration,

\( Nm \) = Number of multi authored papers, and

\( Ns \) = Number of Single authored papers.

This is done to identify the rate of extent of collaboration in the research field.

3.4.2 RANKING OF PERIODICALS

This is done to identify the core periodicals containing the research literature in the Botany. For this purpose a ranked list of periodicals was prepared.
3.5 LIMITATIONS

1. All the references of Internet have been included in block period 2000-2010.

2. Collaborative research trends have been calculated only for those authors whose article published in periodicals. The authors of books, theses, dissertations, government publication, reports, patents etc have not been included in the measuring of extent of collaboration of research.

3. The selection of dissertation was limited to 3 (Three) per year according to random sampling method in order to make it more effective.

4. The coverage was limited to 10 years in order to make it more inclusive.

5. The periodical cited by scholars in universities ranked up to three citations in the table.

6. Conference and seminar papers have been counted as more than 5 authors in whom there is no chief editor of the conference or seminar report,

7. All the Internet references have been counted under the field of other countries in the geographical distribution.

8. In this study only the theses in Botanical Sciences has been included.

CONCLUSION

In the end findings of the study have been summarized and concluded