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Introduction: Scope, Objectives and Methodology
Introduction

Citation is the best available indicator of the use of a publication. The term citation refers to the full bibliographic description of a referred material, which is used or is relevant to a particular research work. A systematic study of citation in a discipline provides a criterion for measuring the degree of interaction among researchers. Bibliometrics is a set of methods used to study or measure texts & information. Citation analysis & content analysis are commonly used bibliometric methods. While bibliometric methods are most often used in the field of library & information science. Bibliometrics, have wide applications in other areas also. In fact, many research fields use bibliometric methods to explore the impact of their field and the impact of asset of researchers, or on the impact of a particular paper.

Bibliometric is an emerging thrust area of research in the field of library & information science. It involves the quantitative evaluation of publications of all micro, macro communications through mathematical & statistical calculation. Bibliometrics study can be applied to any discipline to find out its trends and growth of literature. Its application in library management, designing of information system, understanding the information needs of managers, formulation of management policies & strategies in the area of management studies are well documented. Citation is mathematical analysis of references or citation appended at the end of each scientific communication as an essential part of it. The author(s) of a paper
customarily presents a bibliography or references as authentic source of information. Citation analysis is for understanding subject relationships, author effectiveness, and publication. Citation analysis is also a way to understand users.

There are many reasons for conducting a local citation study. Two pertinent reasons related to collection development are consideration of the removal of bound print volumes of journals, and consideration of electronic journal back files for purchase or lease. This study applies a citation study towards the evaluation of these issues, and demonstrates how similar studies can be applied elsewhere.

Shelving space is expensive, and space itself is often in high demand. Many libraries are under pressure to make difficult decisions regarding older materials sitting on shelves, including print journals. On another front, electronic journal back file offerings from publishers are commonplace now, with all of the major publishers having some archival package available. In order to assess the value of these back files, and/or the need to maintain bound print volumes, some measure of the potential use is essential.

Past and current use of older volumes of journals can be used as a proxy for such an assessment. Two methods are available: shelving studies and citation studies. Shelving studies are useful, in the same way that download reports from journal publisher web sites are, but suffer from some of the same limitations. There is no way to know how the journal was used, nor who used it. In addition, they are
painstaking, slow, and highly susceptible to human error and inconsistencies. While useful, a more accurate measurement is desirable.

Citation studies offer reliability, relevance, and reasonable speed. Citation studies of dissertations provide valuable information for the most important, higher profile programs of an institution. Since these programs are likely to be major selling points for the university, as well as primary earners of grants, providing the necessary resources to support them is a high priority for any academic library. Theses/Dissertations clearly indicate the needs of doctoral students, and also indicate the research specialties of the faculty and departments as a whole. With exceptions for new (or defunct) programs, current and historic data is readily available in an institution’s dissertations, though significant processing is required.

**Scope of the Study**

The present study attempts on the pattern of information use by researchers in the field of sciences. Under the study a focus has been given at deriving qualitative and quantitative analysis based on the citations collected from the end of the chapters of doctoral theses submitted in sciences at North Bengal University, Darjeeling from 1987-2007.
Objectives

The investigation aims at establishing the following objectives

1. To study the year wise break up of theses in various discipline of sciences submitted to North Bengal University during 1987-2007.

2. To study the guideship pattern in sciences

3. To study the productivity of guides in the selected discipline

4. An analysis of the recorded citations to determine the average number of citations in selected disciplines of sciences.

5. To study the rate of collaborative research by analyzing the authorship pattern of the citations.

6. To study the pattern of contributing authors in the various discipline of sciences.

7. To determine the use of different types of documents like books, periodicals, journals articles, conference proceedings, reports, online, etc.

8. To observe the chronological distribution of citations to determine the productive years of used publications.

9. To study the country wise distribution of cited journals to find out the country of origin of the published journals.

10. To compile a rank list of core journals in the various selected disciplines of sciences.
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Methodology

The research design adopted was a descriptive study. The doctoral theses which are the products of research activity have been examined for the present study. Two hundred and seventy four (274) doctoral theses accepted between 1987-2007 by North Bengal University in the field of Science (Physics, Chemistry, Mathematics, Zoology and Botany), form the sample for the study.

Bibliographic details (names of authors, supervisors, the category of the item, publication details, age of the item as on the year of the thesis etc) of all the references appended to the 274 theses were collected in a predefined data sheet i.e., Microsoft Access. The total number of citations appended to these documents is 48,934. Necessary information has been recorded, analyzed and tabulated for making observations.