



SITATION ANALYSIS OF THE JOURNAL LIBRARY HI-TECH

DISSERTATION

SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF

**Master of Library
&
Information Science**

BY

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2007-2008



DS3551

Dedicated
To my
Mummy and Papa

ALIGARH MUSLIM UNIVERSITY, ALIGARH

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Certificate

*This is to certify that **Ms. Aisha Jamshed Nasir** has completed her dissertation entitled "**Sitation Analysis of the Journal Library Hi-Tech 2001-2007**" in partial fulfilment of the requirements for the award of the degree of **Master of Library and Information Science (2007-08)**. She has conducted the work under my supervision and guidance.*

I deem it fit for submission.


(Dr. Sudharma Haridasan)
Sr. Lecturer
19/10/08

Acknowledgment

"In the name of ALLAH the most beneficent and merciful"

"All praise to almighty ALLAH, the creator, cherisher, and sustainer of the world .He created man and taught him that which he knew not (Al-Quran)". He is the most gracious and the most merciful to all His creators. He endured me with the requisite knowledge and ability to produce this piece of work, I bow down to Him, in gratitude with all humanity from the depth of my heart.

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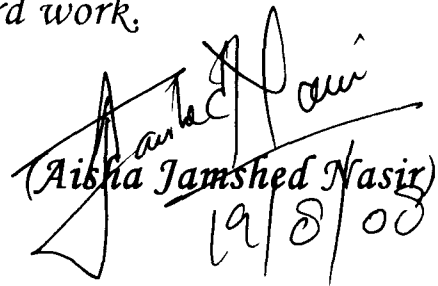
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Chapter-1

Citation Analysis : Definition, Importance, Application and Limitations

Chapter-1

CITATION ANALYSIS : DEFINITION, CONCEPTS, APPLICATION AND LIMITATIONS

1. INTRODUCTION

Information explosion is one of the most important reasons for the exponential growth of the production of all type of literature in the last few decades which lead to take measures in regard to keep track on the flood of Information, for this librarians and bibliographers look for quantitative and statistical methods.

To study the growth of literature the use of Statistical technique were begin in 1917 by E.J. Cole and N.B. Eales¹ who conducted a study by counting and categorizing publication by country of origin and by fields. This study was entitled as “History of Comparative Analysis: a statistical analysis” This study is considered the 1st study in which the ten statistical analysis has been used. The present day method which is widely for studying the bibliographical characteristics of document with the help of Statistical method is “Citation Analysis”.

2. CITATION ANALYSIS

‘Citation analysis’ is a generic term for a set of well-known techniques that have a long history in bibliometric studies of scholarly communication. As artifacts of the scholarly communication process, citation can reveals formal communication pattern.

Citation analysis is a statistical method used for arranging the cited material in some kind of rank, in order to study their relative importance.

A scientific paper does not stand alone but it is embedded in the literature of the subject. The nature of this embedding is specified by the use of foot notes and references lists. The facts in the author's mind is a relationship between a part or the whole of the cited document and a part or the whole of the citing document, citation analysis is that area of bibliometric which deals with the study of these relationships. The basic tool for this kind of study is a citation which is an ordered list of cited documents.

Citation analysis is a non-intrusive method when one author cites another author, a relationship is established citation analysis uses citation in scholarly work to establish links, many different links can be ascertained such as links between author, between scholarly works between journals, between fields, etc. Citation both from and to a certain document may be studied. One very common use of citation analysis is to determine the impact of a single author on a given field by counting the number of the author has been cited by author. Citation analysis permits researchers to see how frequently a work has been cited in article and is an invaluable tool for any literature review.

Thus, citations are bibliographical references which are usually appended with every research communication. When a document refers to another document, the later is called the cited document, and the former the citing document. Brief description about the cited document is known as citation which includes name of the author, document, pages, year of publication, places, websites etc. the pattern of Citation also differs from publication to publication. The Citations are also called references, readings and they may appear as end note as well as footnotes.

Citations Analysis essentially involves counting the number of

time a Scientific paper or Scientist or journals or websites is cited and it works on the assumption that influential scientists and important works will be cited more frequently than other. Citations Analysis has conquered the world of Science policy analysis. Aggregate of Citations are commonly used in evolution studies as indicators for the “impact” of publications, as one of the measures of the ‘quality’ of research groups or even of individual researchers. Co- Citations maps of scientific specialties and also increasingly Citations patterns among journals are used to describe the development of disciplines and specialties, and to identify engaging areas of ‘Scientific inquiry’.

According to E.C. White² (1985) Citations perform the following functions:-

- ❖ Recognizing Pioneers;
- ❖ Crediting related work;
- ❖ Identifying methodology;
- ❖ Substantiating claims;
- ❖ Providing leads to poorly indexed works;
- ❖ Authenticating data, and;
- ❖ Providing background reading.

The foundation of analysis, therefore, rest upon a basic assumption that the practice of quoting an author in a scientific communication make it authentic and meaningful.

3. DEFINITIONS OF CITATION ANALYSIS

A Citation is a reference to a book, article, webpage, or other

published item with sufficient detail to identify the item uniquely. While Citation Analysis is a technique of bibliometric study of literature based upon some degree of relationship between citing and cited article and documents.

According to Eugene Garfield³

“Citation frequency is measure of research activity or of communication about research activity”.

According to Broadus⁵

“True Citation analysis is one which deals with works cited as having actually been used in preparation of, or having otherwise contributed to the source paper”.

According to J.Martyn⁵

“Citation Analysis of the citationof references which form part of scholarly apparatus of primary communication”

4. HISTORICAL BACKGROUND OF CITATION ANALYSIS

The word “Bibliometric” or “citation analysis” was first coined by Allen Pritchard in 1969 to mean an application of mathematical and statistical method to books and other media process of written communication and of the nature and course of a discipline. The earliest attempt at using statistical methods for studying subject scattering was made in 1896 who applied this method to ascertain subject scattering of articles covered under some national and international bibliographies. Cole and Eales (1917) Gross and Gross in 1927 used citation count to rank the periodicals in chemistry which was regarded as the first users study of any significance

based on a more systematic citation count that later became that basis and a methodological direction to the Bradford's law of scattering S.R. Ranganathan coined the term 'librametry' for quantitative studies and analysis of library activities.

The origin of footnotes or citation practice is not new and also has been well established in scientific writings even when the early periodicals started about three centuries ago. D.J. Desola price has found out that the earliest name of a footnote was 'Scholia', which means 'relating to scholarship'. This is an indication that the practices of footnoting were considered to be a scholarly practice.

Citations have their own origins in the referencing practices of researchers and writers. The concept of identification to the source of an idea or quotation developed during the renaissance after the invention of printing. In England, the copyright Act of 1709 provided protection of literary property and established a precedent for the enactment of copyright laws in all countries, culminating in 1886 in the development of the principles of international copyright. The precise origin of the use of footnotes or references is obscure. The earliest example provided in the Oxford English Dictionary is William Savage's A Dictionary of the Art of Printing (1841), containing eighty-eighty "Bottom note also tended as footnotes".

The first practical application of this concept was Shepard's citation, a legal reference tool that has been in used since 1873. To try a case under Store Decisis, a lawyer must base argument on previous decisions, however, the lawyers must make sure that the decision have not been over ruled, reversed or limited in some way. Sheperd's Citation enables the lawyer to do this with a minimum of trouble. Taking advantage of coding system, Frank Shepard devised

a listing which every importance in which reported decision is cited in a subsequent case. The listing also shows what Status and journal cite the original decision. Using Shepard's citation, a lawyer must first locate a previous decision relating to his cement case. He, this by consulting a digest, index or encyclopedia which will provide him with the case members of any given decision. The lawyers then look up the case number in Shepherd citations and find all subsequent citing cases. From the information, he can determine whether the original decision was affirmed or modified in any way.

(a) Welch Medical Library Indexing Project

In 1952, Dr. Chauncey Leake was chairman of committee of consultants for the study of indexes to medical literature. This committee was supervising the John Hopkins Welch Medical Library Indexing project which was sponsored by the Armed Forces Medical Library.

(b) Eugene Garfield⁶

statements into a consistent format that would be useful as an Eugene Garfield one of the Welch project investors realizes that nearly every sentence in a review article is supported by a citation to a previous work. Thus, a review article could really be considered as a series of indexing statement. The problem then becomes one of transforming these indexes.

Grafield identified the reason for citing a document, these are as follows:-

- ❖ paying homage to pioneers
- ❖ giving Credit for related work

- ❖ Identifying methodology, equipment's, etc.
- ❖ providing background reading
- ❖ correcting ones own work
- ❖ correcting the work of others
- ❖ criticizing previous work
- ❖ substantiating claims
- ❖ Alerting to forthcoming work
- ❖ Providing leads to poorly disseminated, poorly indexed, or uncited work.
- ❖ Identifying original publications or other work describing an epomymic concepts
- ❖ Disclaiming work or ideas of others
- ❖ Disputing priority claims of others.

(c) Adair

In 1953, the Welch project conducted a symposium, news of which was reported in a Colorado newspaper. This article read by William C Adain, who was a former Vice-President of the firm that produced Sheperd's citation. Adair wrote to the Welch project and suggested that they consider the method employed by Sheperd's as a possible indexing techniques.

While his Queen article was awaiting publication; Garfield who by then was an associate editor of American documentation suggested that the Adair write the shorter article which world explains. The Adair article appeared in American Documentation in June 1955; Garfields articles appeared in science in July 1955.

(d) Landerberg

In 1958, Prof. Joshua Laderberg of Stanford University wrote to Garfield to inquire if any further work had been done on citation indexing. When informed of the financial problems involved in starting such a project. Laderberg suggested that the Garfield should apply for a grant from the government.

(e) Genetic Citation Indexing

In 1961, the National Institute of Health Initiated a cooperative programme with Garfield's Institute for Scientific Information (ISI) to prepare a citation index for the field of Genetics.

Garfield soon recognized, however that defining the genetics literature to be covered by a citation index would be quite difficult. Fine judgments would be required as to what was or was not genetics literature. As Garfield's suggestion, it was decided to undertake a comprehensive interdisciplinary approach to preparing a citation index and then extract a genetics citations index from that base of information.

(f) Science Citation Index

Taking the due from the legal literature and the usefulness of the Shepard Index, Eugene Garfield has been advocating, since 1950s, for such an index in the field of science and technology. He made some experimental studies and in 1961 brought out an experimental science citation index. Since 1964 Garfield's institution, the Institute for Scientific Information at Philadelphia, has been regularly bringing out the Science Citation Index (SCI). It started, in 1964, with coverage of 700 periodicals and all US

patents. In 1969 the number of source journals crossed the 2000 marks. Initially it had only two parts: citation index, and the source index. Later on, since the year 1966, a third part called permuterm index was also introduced. Today the web based version of that index covers 5,000 journals across more than 150 scientific disciplines.

The science citation index expanded format, available through the **Web of Science** and the online version, **SciSearch**, cover more than 5, 8000 journals.

(g) Social Science Citation Index

A great landmark took place in 1972 when ISI started publishing social science citation index, which provides access to current and retrospective bibliographic information author abstract and cited references found in over 1700 of the World's leading scholarly social science journals covering more than 50 disciplines.

(h) Arts and Humanities Citation Index

The ISI Arts Humanities citation index provides access to current and retrospective bibliographic information and cited references found in over 1,120 of the World's leading Arts and Humanities journals.

(i) Derwent Innovation Index

The Derwent innovation Index, available through ISI web of Science Interface, is a web accessible product that merges the Derwent World patent index with the Derwent patent Citation Index. Updated weekly it covers over 10 million basic invention and 18 million patents in all form over 40 patent issuing authorities.

(j) Other Citation Index:

Other than the examples mentioned above, efforts have been made to produce citation indexer or to utilize the principle of citation indexing for dissemination of information. But most of them user adhoc attempts published on experimental basis.

Citation indexes provide coverage of materials published in just one journal are of the earliest examples of this is the cumulative index to volume 35 though so of the Journal of the American Statistical Association. Another example of citation index with single Journal coverage is the one that appears in a cumulative index to volume of through 31 of the annals of Mathematical statistics.

5. GOAL OF CITATION

To convey the concept that writings can have an impact on others, and to learn how to determine this impact through citations.

6. CITER'S MOIVATION / PURPOSE

Citations are used to access the value, quality, impact, and penetration, originality visibility of individual and corporate performance within and across disciplines. Major motivations of authors behind using references as listed below:

- ❖ Paying homage to pioneers;
- ❖ Guing credit for related work;
- ❖ Identifying methodology, equipment etc;
- ❖ Providing background reading;
- ❖ Correcting one's own work;

- ❖ Correcting the work of others;
- ❖ Criticizing the work of others;
- ❖ Alerting researchers to forthcoming work;
- ❖ Substantiating claims;
- ❖ Providing leads to poorly disseminated, poorly indexed or uncited work.
- ❖ Authenticating data and classes of fact physical constants etc;
- ❖ Disclaiming work or ideas of others;
- ❖ Disputing priority claims of others;
- ❖ Identifying original publications in which an idea or concept was discussed;
- ❖ Identifying the original publication describing an eponymy concept or term;

7. NEED OF CITATION ANALYSIS

A plethora of knowledge is being unfolded everyday. This situation of overwhelming mass of available information is denoted by “Information explosion”. It is common knowledge that during the present generation more science related information has been produced than in the past. This is because of the specialization and diversification of knowledge, need of distinguishing oneself in academic circles and increasing members of printed or recorded information in various forms.

Today the amount of information available in books, articles,

periodicals, abstracting and indexing periodicals, conference proceedings, seminar papers, bibliographic databases has growth phenomena ling, According to a rough estimate S&T information now increases 13% per year. Therefore, information in this field will be double every 12 months (1 year). Electronic databases and databanks have proliferated.

According to UNESCO there are over 6,00,000 documents being published every year in more then 80 written languages. Out of these documents 3,00,000 alone are traditional books, 1,50,000 are periodicals and the rest 1,50,000 other types of documents like reports, patents, government publications, papers etc. The world growth of scientific literature is estimated at 6-7% a year. The rate of growth is so rapid that the scientific literature is getting doubled every year.

Cost is another factor for concern. According to a survey of expenditure carried by Roorkee University, the cost of journals doubles every fourth year. This has outstripped the purchasing capacity of libraries all over the world. It is said that even a very rich library like the library of congress of the USA, whose budget is in several crores of rupees, will not be able to procure each and every document that is being published from different parts of the world and in the different forms and languages. Therefore, to avoid difficulties created by the inflation on the one hand and the shrinking fund position on the other, a purposeful study of evaluating the types of literature and of selecting periodicals according to their use value is of immediate interest and need. The universe of knowledge demands is multidimensional and ever changing. Therefore, the evaluation of literature of a sample is essential and has been a practice of librarianship. Citation analysis is helpful to the organization of knowledge with which discipline the journal deals.

- ❖ authenticating data and classes of fact physical constants, etc;
- ❖ disclaiming work or ideas of others;
- ❖ disputing priority claims of others
- ❖ identifying original publications in which an idea or concept was discussed;
- ❖ identifying the original publication describing an eponymic concept or term;

8. DIMENSIONS OF CITATION ANALYSIS

There are a number of different approaches to citation analysis. Basic concepts of citation analysis that provide for study and research include:

i. Direct Citation: which establishes the relationship between document and the researchers who use them Direct citation is a technique that determines how many citations a given document, author, journal etc, has received over a period of time. The rationale for this is that citation are objective indicators of use and therefore an article, author journal that is frequently cited is more useful or productive, as the case may be, than one that is less frequently cited.

ii. Bibliographic Coupling: The relation of two documents by virtue of their joint descent from the third. The concept of bibliographic coupling was first elaborated, tested and coined by M.M.Kessler⁷ It is a number of common references cited in two documents that indicates the degree of similarity of contents of the citing papers. Two source documents containing a large number of common references are said to have a high coupling strength and are likely to be on the same topic. It links two papers that cite the same article, so that if papers. A and B both cite paper C, they may be said to be related, even though they don't directly cite each other. The more papers they both cite, the stronger their

relationship is. It is observed that the concept of relationship has certain drawbacks and not seem to be a valid unit of measurement because of two papers are citing a third paper, they may or may not be citing an identical piece of information of third paper being cited. The fact that two papers have a reference in common is no guarantee that both papers are referring to the same piece of information. So, it is merely an indication of the existence of probability of relation between two documents.

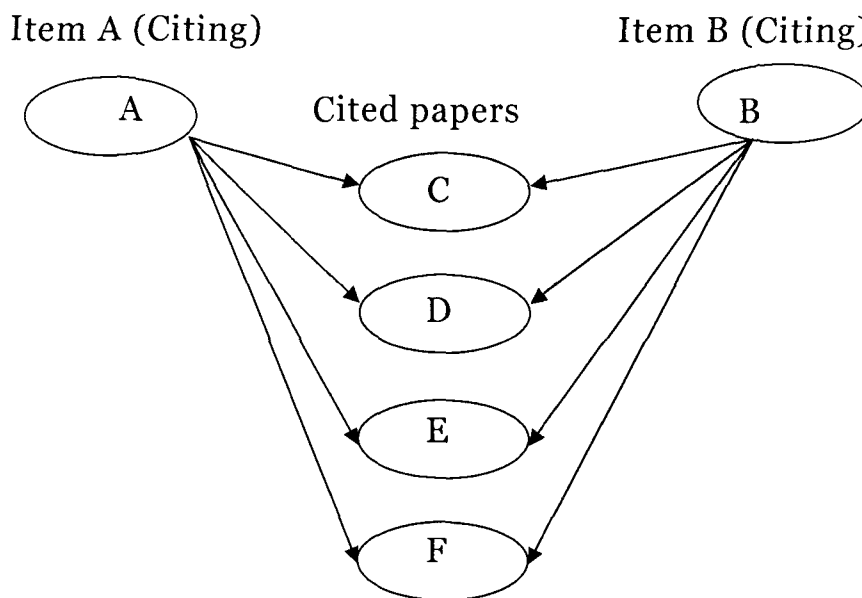


Figure1
Bibliographic Coupling

iii.Co-citation Coupling: The concept of co-citation was for the first developed by H. Small⁸ who proposed a new method of analyzing citations to generate clusters of related papers. He describes it as “the frequency with which the number of times two documents or papers are cited together in subsequent literature determine the co-citation strength of two cited documents/papers.” He also stated that cited documents are linked together through the process of co-citation, and this process is similar to the subject similarity measures of the co-occurrence of words between two documents.

A.E. Cawkell⁹ defines co-citation as “Subject similarity indicator, and demonstrates co-citation bibliographic coupling clearly through a citation matrix”.

T. Bellarado¹⁰ defines co-citation as “a process whereby an author cites to earlier documents in a new work”.

If papers A and B are both cited by paper C, they way be said to be related to one another, even though they don't directly cite each others. If paper A and B are both cited by many other papers, they have a stronger relationship. The more papers they are cited by the stronger their relationship is co-citation is dynamic measure in that co-citation strength of cited papers can be studied over a period of time as they continue to be cited together in subsequent literature.

One of disadvantage of co-citation techniques is that, it requires comprehensive citation data.

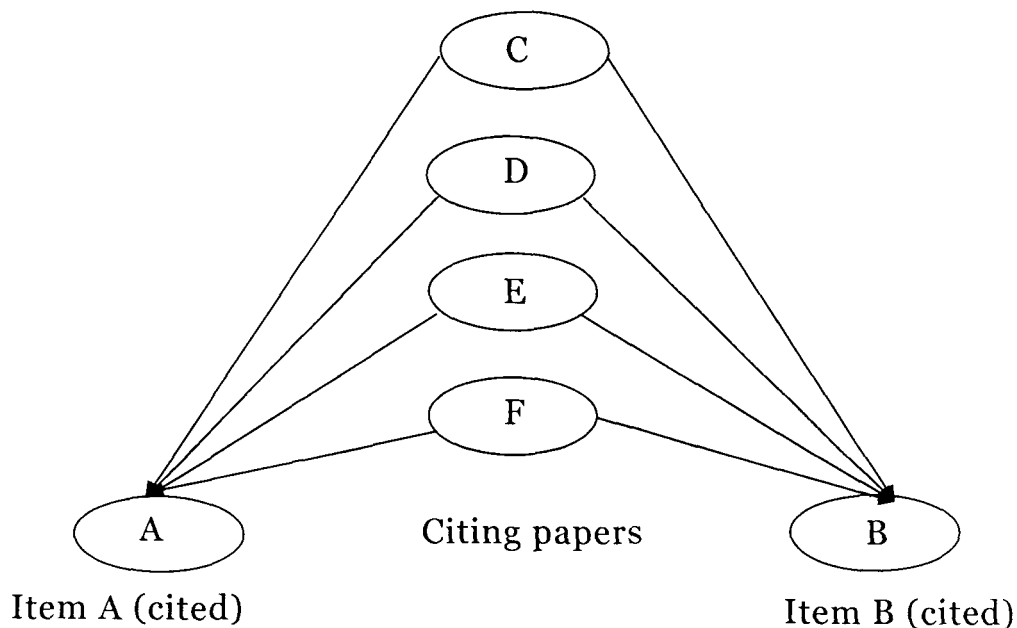


Figure2
Co-citation coupling

Garfield explains that the strength of co-citation can be calculated using the following formula.

$$S = \frac{\text{Co-citation of } A+B}{(\text{total citation of } A+B) - (\text{Co-citation of } A+B)}$$

9. APPLICATIONS OF CITATION ANALYSIS

Citation analysis can be applied for various studies

- (a) Library and information oriented studies, instances of which are visible in: rates of use of library materials, and rank ordered of listing of journals;
- (b) Science oriented studies as seen in network determination through co-citation and clustering;
- (c) Modeling of the historical development of science and technology;
- (d) Management oriented studies, this can be visualized in evaluation of productivity studies – in terms of productivity studies in terms of citation analysis.
- (e) Information search and retrieval

10. TECHNIQUES USED IN CITATION ANALYSIS

Citation analysis itself is a bibliometric technique in which works cited in publications are examined to determine patterns of scholarly communication. A lot of survey and studies have been done in the area of citation analysis. The techniques used in analysis of citations mostly are as follows:

I. Obsolescence

The term obsolescence also means no life or half-life documents, or no longer in use. This technique of obsolescence has been specifically used in confirming or rejecting the idea that document use or value declines with its age. That is, a document may become of least use after some time of their appearance for reasons, i.e. the information is valid, but incorporated in later works; the information is valid, but superseded by later work; the information is valid but is in a field of declining interest; the information is no longer considered valid.

II. Clustering

This is a technique, which with the help of citation analysis, tries to link different groups of documents with similar citations. Clusters are formed when an article (a member of the cluster) has coupling link with at least another member. No member of one cluster would have link with a member of another separate cluster.

III. Half Life

The time during which one half of all the currently active literature was published. This literature becomes 'unused', but not 'unusable'. Unlike radio active decay it does not become 'disintegrated but obsolescent.

❖ Cited Half – Life : Journal

The number of journal publication years going back from the current year which account for 50% of the total citations received by the cited journal in the current year.

IV. Scattering (Bibliographic)

The name Scattering or more specifically bibliographic scattering is used to devote the phenomenon of inhomogeneous clustering of bibliographic items e.g. articles, citations, word, frequencies etc over their sources e.g. Journals, cited articles etc. The scattering distributions are usually skewed and non-Gaussian Major bibliographic scattering phenomena are the journal scattering and citation scattering.

V. Citation Chasing

A legitimate research technique in which the bibliographies of works already located in a literature search are examined (“mined”) for additional sources containing further information on the topic. The process can be facilitated by using a citation index.

VI. Impact Factor

Impact factor (IF) is the average citation rate of a journals article . It is basically a ratio between the citation rate of the journal and its citation potential. Citation rate is define as the number of time cited, where as citation potential is define as the number of citable items published.

$$\text{Impact factor} = \frac{\text{The number of times a journal was cited}}{(\text{the number of citable items the journal published})}$$

Therefore IF= the number of times a journal was cited / the number of citable items the journal published

The impact factor reflects the impact of an average article published in the journal; it normalizes the number of citations, and it does not discriminate among journals.

VII. Citation Index

Citation Index is an ordered list of cited articles each of which is accompanied by a list of citing articles. The cited article is identified as a reference and the citing article as a source. The association of ideas existing between the cited and the citing articles is utilized in the preparation of the index. It may perhaps be said that cited articles are, ancestors and the citing articles are descendents and the descending relation of subject is reflected through the index.

Citation indexing is a relatively new method of organizing the contents of a collection of documents in a way that overcomes many of the shortcomings of the more traditional indexing method. The primary advantage of citation indexing is that it identifies relationship between documents that are often overlooked in a subject index. An important secondary advantage is that the compilation of citation indexes is especially well studied in the use of man machine indexing method that do not require indexers who are subject specialists. This helps to make citation current than most subject indexes. Furthermore citations which are bibliographic descriptions of document are not valuable to scientific and technological obsolescence as are that the terms used in subject indexes.

VIII. Immediacy Index

This is a method of showing how rapidly the materials published by a journal are picked up and used. It measures the extent to which articles make a quick impact on readers the timeliness or currency of the journal. Historical journals would presumably have low immediacy indexes; cutting edge medical journals could have relatively high immediacy indexes. One would

expect e-journals to have high immediacy indexes, since speed of publication is one of the most often cited advantages of e-journals. It is calculated by counting the numbers of citations received by articles in a journal during the year in which they were published.

Immediacy index for a journal=

$$\frac{\text{(Number of citations received in 1995 to 1995 articles)}}{\text{Number of 1995 articles}}$$

11. IMPORTANCE OF CITATION ANALYSIS

The primary function of citation is to provide a connection between two documents, one which cites and the other which is cited. Citation analysis as frequently practiced It is largely used for putting things in order. The things ordered can be journals, paper in journal, authors of papers in a journals or organizations to which authors of journal papers are affiliated. The type of order can be linear, as in ranking, or multidimensional as in the generation of citation networks.

Studies of obsolescence rates of journals, or documents may be considered to be special areas of ranking, over time. Whatever the type of analysis performed, the interpretation for the results depends upon the nature of relationship between the citing and cited documents.

Citation analysis is very often fruitfully applied to derive the following benefits:

(a) To lead the Reader to further studies in the field

This is perhaps the primary purpose of citations. Readers can verify the correctness of the information and thereby convince themselves.

(b) For the preparation of bibliographies

The first use of citation indexing was made in Shepherd's Citations published in 1873. This technique of citation indexing has been perfected by Eugene Garfield and others since the early 1960s. It is a fact that compilation of bibliographies in new fields is really difficult. In such circumstances, analysis of citations of articles may be the only way to gather information. The very fact that the citations have been verified evaluated and recommended by authors who are experts in their own fields make them all the more acceptable for inclusion in a bibliography.

(c) To study the use pattern of different types of documents

Citations given may be of books, journal articles, reports, standards, theses/dissertations etc. The relative use of each of these types can be ascertained based on the frequency of citations. For example, various citation studies have shown that journal articles are the most preferred source consulted by scientists since they constitute about 70 - 80 % of the total citations. Similarly citation practices among social scientists indicate that they give equal importance to books and journals.

(d) To find out the relative use of different languages

Since English has emerged as a world language, especially in science and technology, there is a predominance of English language publications in all branches. This can easily be understood from citation analysis. In the mid-sixties, for instance, the share of English language papers in Mathematics and Chemistry was more than 50%. Russian occupied the second position with about 20% followed by German and French.

Citation practices have also shown that the relative amount of literature in different subjects produced by different countries changes with time. It has been observed that German has declined very much in the 20th century, especially in the field of Chemistry where publications in this language reigned supreme.

(e) To study the use of literature from different countries

From the citations, the country of their origin can be identified in all types of materials like journal articles, books, reports etc. In many subject areas, U.S Publication are found to be used more heavily. In medicine, biochemistry, physiology and pharmacology, the leading role is played by U.S journals. Journals of U.K occupied the second position, but they come nowhere near their American counterparts in the frequency of use. Some of the user studies in India have shown that Indian publications are also equally cited in certain subjects.

(f) To study the scattering of subjects

Studies about the dispersion or scattering of subjects in different sources as evidenced by citation analysis have brought out interesting results. For example:

- ❖ Social science and arts subjects show a wider scatter of publication than the science.
- ❖ Research publications in technology show a greater dispersion than those in science.
- ❖ A new branch of science, especially an interdisciplinary one, shows a greater dispersion than an older branch of science.

- ❖ There can be differences in scatter between sub-fields within a subject as also among major subjects.
- ❖ The rate of scatter within the same subject alters with time.

(g) To decide the obsolescence rate of documents in different subjects

Citations in subsequent literature and usage pattern in libraries are considered as two indicators of the obsolescence of literature. Analysis of citations by age of the cited document can show the useful life of a document. In order to measure the decay or obsolescence rate of documents, the concept of 'half life' has been borrowed from Nuclear Physics. The fast growing subjects would have lesser half-lives compared to established disciplines. These time scales are highly useful in the planning of library holding.

(h) To determine the interdependence and lineage of subjects

The interdependence of basic and applied fields can be understood by citation studies. Establishment of this interdependence can be of use in the acquisition policy of special libraries or information centers. The analysis of citations of the Annual Review of Medicine for the year 1965-69 by Sengupta, I.N.¹¹ has established the contribution made by journals in the fields of biochemistry and physiology to the medical research. Further studies by him have brought to light the mutual contribution of biochemistry, physiology and microbiology.

(i) To prepare ranked list of periodicals

Ranked list of periodicals can be prepared by two methods:

By actual citation counting; and by counting the number of entries in indexing and abstracting periodicals.

In the first method, information is collected from the references cited in source articles. By studying the average number of citations, one can develop a list of cited journals in the ranked order.

In the second method, the number of items contributed by different periodicals during a specific period of time is calculated from the secondary source and the ranked list is prepared based on the productivity of journals. Such ranked lists are very often used as guidelines in the acquisition of periodicals as other materials in the library.

(j) To study the rate of collaborative research

Collaborative research can be effectively measured from the number of authors in papers. Such studies can be conducted to understand global trends, national trends or trends in different subjects. Studies in this direction have indicated that collaboration varies from discipline to discipline, within the same discipline from time to time, and from country to country. However, the extent of collaboration may not be revealed from the citations.

(k) For the analysis of scientific journals

Citation analysis provides a number of interesting and useful insights into the networking of journals. These insights are developed from five different citation measures, which were perfected by the Institute for Scientific Information (ISI).

(i) Citation rate of a journal

This is the number of times a journal has been cited. It can consist of all the references to the cited journal, counting even duplicate references from the same source article as a separate. It can also be calculated by counting only the number source of sources articles that cited the journal. A third method of calculation citation rate that is followed by ISI is by counting the number of references to the cited journal, but treating duplicate references from the same source article as only a single citation links.

(ii) Self-cited rate

This, again, is a measurement of self-citation. It shows what percentage of citations received by a journal originated in articles published by the journal. These self-Citation rates serve as indexes to newness, size and isolation of the intellectual universe in which a journal operates.

12. BENEFITS OF CITATION ANALYSIS

- a) Citation analysis is used to study the citation links between scientific papers, technical notes and reviews, for example, it may be used by the periodicals librarian for study of the structure of literatures and to identify core journals.
- b) It provides relevant measures of utility and a relationship of journals whose primary functions is to communicate research results.
- c) It helps in identification of key documents and creation of core lists of journals.
- d) It helps in clustering of documents according to common references and citations.

- e) It provides study of the attributes of literature including growth rate, obsolescence and citation practices.

13. LIMITATIONS OF CITATION ANALYSIS

Generally, all studies using citation and co-citation analyses suffer from two major limitations: the assumptions which underline citation analyses, and the problem with the sources of citation data. A number of factors limit the importance of citation data.

- (i) Negative citation i.e. citing a paper just to repudiate it. The result is that controversial papers will get more citations than really worthwhile papers.
- (ii) Too much of self citation and in house citation: while papers are written by a single author, the elimination of self citation is easy; but a further checking may be needed for multi-authored papers. The elimination of group self citation is the more difficult problem.
- (iii) Incomplete record of the workings of the information system.
- (iv) Lack of rationale behind citing to enable direct application of the data.
- (v) Some authors miss to cite, or ignore the debt of a citation and do not cite.
- (vi) Citing behaviour is not uniform in all publications and subjects, e.g. sciences, Social Science.
- (vii) Thus items, advertisements, letter statistical bulletins, etc. are never cited, indicating another characteristics bias in citing.

- (viii) The number of citations provided by each publication varies enormously, so it is difficult to estimate the total number of citations that will be generated by a given number of sources.
- (ix) Location and identifying a citation is not always straight forward.
- (x) Citations come in various forms and are described differently (reference, bibliography notes, readings)
- (xi) Citations may be found in the text of the document at the foot of the relevant page, in a letter, accompanying or diagram or at the end of the article or document.
- (xii) Practice or citing only to get the favour of the powerful or to appease others.
- (xiii) Problem of multiple Authorship: The citation indexes include only the first named authors of cited articles.
- (xiv) Problem of Homographs or Homonyms: to differentiate among many scientists with the same name and initials publishing in the field extra information such as institutional affiliation is needed otherwise citation could be incorrectly attributed to an author, particularly he/she has a common name, and even this problem is more difficult with Chinese or Japanese names than with English names.
- (xv) Problem of synonyms is also there. Until establishing a standard form for the author's name citation will be scattered. A woman's maiden and married names different treatment of foreign names and misspelling.

- (xvi) Citation data should not be too restricted in time, while there may be large variations in citation counts from one year to another.

14. CITATION ANALYSIS ON THE WEB

Data from Citation analysis is also useful in assessing the impact or possible effects of publications existing in electronic formats (i.e. Online or free journals cited more than others.) Although citation analysis is nothing new, greater computing power is making it more useful and widespread. Google's page Rank is based on the principle of citation analysis. Link popularity is not the only criterion that Google measures when ranking search results. The popularity of the referring pages is also a factor as of course is the contents of the actual page. Web pages that contain similar links, and pages that are both linked to and from other pages have a greater chance of appearing together in Google's "Similar pages" feature. Also, page Rank is not perfect, nor are Google's results. Yet Google, ranking methods have proven to be reliable.

15. WEB APPLICATIONS OF CITATION ANALYSIS

Recently a new growth area in bibliometrics/citation analysis has been emerging field of webometrics, or cybermetrics as it is often called. Webmetrics can be defined as using of bibliometric techniques in order to study the relationship of different sites on the World Wide Web. Such techniques may also be used to map out (called "Scientific mapping" in traditional bibliometric research) areas of the web that appear to be most useful or influential, based on the number of times they are hyperlinked to other websites.

Citation analysis is the examination of the frequency and

pattern of citations in articles and books. Due to unprecedented growth of electronic resource (e-resource) availability and online access to computer science. Literature leads to higher citation rates. As more and more scholarly documents become available in electronic form through the World Wide Web their use as sources in citation analysis is expected to increase in near future.

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21. <http://www.cybermetrics.cindoc.csic.es>
22. <http://www.interscience.wiley.com>
23. <http://www.freespace.virgin.net>
24. <http://www.garfieldlibrary.upenn.edu/>



Chapter-2

Web-based Citation: Situation

Chapter-2

WEB BASED CITATION: SITUATION

1. INTRODUCTION

It is a sobering fact that some 90% of papers that have been published in academic favour are never cited. Indeed, as many as 50% of papers are never read by anyone other than their authors, referees and journal editors. We know this thanks to 'Citation Analysis', a branch of information Science in which researchers study the way articles in a scholarly field are accessed and referenced by others.

Citation analysis is, however, about much more than producing shock statistics. Citation Analysis is also the machinery behind journal "impact factors" figures of means that researchers take note to decide, which journal they have to submit their work , so that it is read as widely as possible for this purpose we have web which has a bad huge impact on Citation-Analysis.

The Internet is one of the most important and complex innovation in human history, the largest and most complete tool for information exchange ever made available to the global population.

The really explosive growth in the use of the Internet that has been seen over the last few years has resulted form the Introduction of the 'WORLD WIDE WEB" (WWW). This growth of WWW has been reflected in a growing literature that attempts to analyses the users, content and structure of 'the Web'. It helps in conducting various studies and surveys, because of this reasons there is a continuous increase in the use of 'World Wide Web'.

2. WEB SPACES

An expression introduced by Smith to refer to top level domains such as .nz or Sectorial such as.com and law level domains such as vuw.ac.nz and group of directories such as <http://www.vuw.ac.nz/scrif>. It is nevertheless feasible to analyse web space by studying their links i.e. assuming that the outlinks and in links of web spaces are equip arable to the references and citations to of traditional scientific publications, one can perform the process of “websiting” (Rousseau 1997)¹ following the links received by a given web space and analyzing the situations. The in links which are received by the web spaces are called web “Situation”.

WEB BASED CITATION

“Informetrics” studies the Quantitative aspects of Information processes in general incorporating, applying, and surpassing the frontiers of bibliometrics and and “Scientometrics” and the “World Wide Web” on Internet has become today’s principal electronic information source, it is not surprising that, beginning in the mide-1990’s, informetric models and methods have been applied to the environment of the Internet and, more specifically, to the web. This has led to the rise of new disciplines that have been denominated “Cybermetrics” and “Webometrics”.

Through “webometrics” study we can observe that how users actually react and use specific web document the web is in out of control in growth, which means opportunities exist where good system architecture and diligent analysis can be applied for everyone’s benefit.

Definition of webometrics,² “the webometrics study is based on quantitative measurement indirectly includes the quantitative aspect of structure, use of information resources and technologies on www drawing on bibliometric and informetric approach.

3. WEB CITATION / SITUATION

“The web as a way of life” states that Internet users have come to rely on the vast amount of research and Information content available, and often consult the web before making dramatic life changing decision. Web resources are apple of information professional’s eye due to its value added services to meet their current and diversified information needs. In the World Wide Web (WWW), the web pages are the entities of Information, with hyperlinks from them acting as citations. Quantitative analysis on the WWW is being carried out in the same way, as is tradition in Citation database. As information on web increase towards extropy, its needed to apply some theory/metrics to develop new method of modeling techniques and metaphors to examine this emerging complex networks.

Citing web resources properly according to an established style is important in most of the subject field and it is different from citing traditional resources. Apart from the style of web citation, quality, authenticity and sustainability are the issue with documents on the web, demanding the immediate concern of the information professional.

The term situation is used to designate a Citation to an Internet based resource. It has been advanced by MC Kiernan³ to designate the relation between sites on the Internet. The term is employed irrespective of the citers medium: hence, its meaning is extended to include references to Internet based resources made by print material. In the same way, the verb to Site means the action of citing an Internet based resource, the term Sites means the author of the resource or the resource itself that cited an Internet based resource, and Sited designates a cited Internet based resources.

The term ‘situation in the sense of cited sites has been advanced by McKiernan (1996) and has been used, e.g. by A guillio during the

45/EASST meeting at Bieldfield studying this kind of links is conceptually the same as studying citations between published articles. The meaning however, is probably stingily different.

4. ANALYSIS OF WEB CITATION

Citation analysis is a well known technique that has long been used to study scholarly communication. Citation Analysis studies, citations in research articles often published in journals are analysis as artifacts of scholarly communication representing the citing authors use of the previously published work. The Institute for Scientific Information (ISI) databases including Science Citation Index (SCI) and Social Science Citation Analysis (SSCI), which index only journal articles, has served as the data source for most citation analysis studies. Web is becoming a new and powerful medium for scientific communication, citation analysis and other bibliometric techniques have been applied to the study of this new phenomenon in scholarly communication.

Citing sources properly and according to an established style is important in scientific paper citing a reference correctly allows reader to see where information come from, to go back to the reference to read more on the subject and to forstall accusations of plagiarism. But citing web resources is still new to most people. Citing web resources is not all that different from citing traditional resources. This is exactly the same information included while a net resource is cited, but it will look different because the web documents are accessed online rather than in other formats. Each standard format for web citation has its our way of citing references.

It is not a easy to cite web resources in a bibliography as it is to cite books, for the following reasons:

- ❖ Standards for citing web resources are still being developed

- ❖ Web resources, unlike print resources, do not uniformly present the equivalent of “titles pages” from which we can easily locate the information needed for a reference.
- ❖ Web resources have a relatively short lifespan.

5. COMPONENT OF WEB CITATION

Using the information from web resources in an academic paper, it is important to remember to cite these resources properly. Different style manuals require different citation formats. Although styles vary and not all elements appear on all web pages, most web citations include the following elements.

- ❖ author (last name, first initial);
- ❖ date of creation of the document;
- ❖ title of the page;
- ❖ title of the complete website (if different from the page);
- ❖ Uniform resources locator(URL) (Full Web Address);
- ❖ the date of access.

6. WEB-BASED CITATION ANALYSIS TOOLS

The rise in the use of web- based databases and tools to access scientific literature has revealed how vital it is to use multiple citation sources to make accurate assessments of the impact and quality of scientists work.

The web has given birth to more than 100 new databases or tools that allow citation searching. These fall into three categories:

The first allows the user to search in the full text field to determine whether certain items, author or journal have been cited in a document.

Examples of these databases or tools include the following:

- ❖ arXiv e-print server (arXiv.org)
- ❖ Cite Sear (citasees.ist, Psu.edu)
- ❖ Google Scholar (Schol google.com)
- ❖ Google book Search (books.google.co)
- ❖ Elsevier's Scirus (Scirus.com)

The second category for database or tool allows the user to search in the cited references field to identify relevant citation. These tool first been available in the total 1990's, when subject specific databases began adding cited references information to their own records. Example.

- ❖ Elsevier's Size Direct (Science cadreet.com)
- ❖ Science citation / SPIN from the America Institute of Physics (Science citation aip)

The third category is databases that work exactly like web of Science. The man and perhaps only good example of this category is Scopus (Scopus.com) which was launched in 2004 by Elsevier.

Another major thing that the use of Scopus and Google scholar has helped to established a link between information science research and cognitive science, computer science, education and engineering. Indeed, Web-based citation tools allow generating much more accurate maps or visualization of scholarly communication networks in general, such as establishing links between author, department, disciplines, journals or countries that cite or influence each other.

7. IMPACT FACTOR OF WEB BASED SOURCES

Impact factor (IF) is the average sitation rate of a journals articles. It is a ratio between the citation rate of the journa and its citation potential sitation rate is defined as number of times a web page links is sited, where as sitation potential defines as number of web based pages were sited.

$$\text{Web impact factor} = \frac{\text{No.of web page links(sitation)}}{\text{No.of webbased pages}}$$

The impact factor reflects the impact of an average of web pages, sited in the journal.

STANDARDS FOR FORMAT OF WED CITATIONS

There one several common standard formats for citation found in style guides. Styles various science disciplines a number of standard formats have been developed by different institution (www.merpl.org/teenzone/index.html). The “Online a reference guide to using Internet sources” (Flarnack and Kleppingen 2005) has death categorically with the citation style of different WWW sources, such as websites, email messages, web discussion forms postings, listserv messages, newsgroup manages, real time communication, Telnet, FTP and Gopher sites, and other.

Many institution provide standards for web citation some of the important and widely used standards are:-

APA (American Psychological Association Style)

e.g. Stump, K. and Batker, D. (August 1996), “Sinking fast: how factory trawlers are destroying US fisheries and marine ecosystems”, retrieved November 6, 1997, from

www.greenpeace.org/~usa/reports/biodiversity/sinking-fast/.

MLA (Modern language Association style)

e.g. Stump, K. and Batker, D., "Sinking fast: how factory trawlers are destroying US fisheries and marine ecosystems", August 1996, 6 November 1997, [www.greenpeace.org /~usa /reports/biodiversity/sinking-fast](http://www.greenpeace.org/~usa/reports/biodiversity/sinking-fast).

The Chicago Manual of style

e.g. Stump, K. and Batker, D., Sinking fast: how factory trawlers are destroying US fisheries and marine ecosystems, August 1996, [www.greenpeace.org /~usa /reports/biodiversity / sinking-fast](http://www.greenpeace.org/~usa/reports/biodiversity/sinking-fast). (6 November 1997)

8. Conclusion

Sitation analysis is concerned with the use of website, it is based on the use of electronic resources which, scholars site when they need reference for their work. The study of this type of sitations shows the new trend of citation analysis, in which society is transforming itself from the use of printed sources to electronic sources, this advancement shows the change in the scholarly communication.

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Chapter-3

Library Hi-Tech. :An Overview

Chapter-3

JOURNAL OF LIBRARY HI-TECH: AN OVERVIEW

1. INTRODUCTION

Library Hi-Tech is a “double blind peer reviewed academic journal”. It focuses upon computing and technology for the library community. Library Hi-Tech journal was first published in the year 1983. This journal is published by Emerald Group Limited. From the year 1997 this journal was made available on line. It is an electronic journal which comes quarterly and at present (i.e. on March 2008) it is available in 25 volumes.

2. SCOPE OF JOURNAL LIBRARY HI-TECH

Library Hi Tech is International in scope and defines technology in the broadest possible terms to include the full range of tools employed by librarians and their customers. The majority of journals issues are themed. Thus allowing for extensions in depth coverage and analysis of key areas.

Library Hi-Tech is an electronic Journal of library hence it covers the subjects of library and information science:

- ❖ Integrated library systems
- ❖ Networking
- ❖ Strategic planning
- ❖ Policy implementation across entire institutions

- ❖ Security
- ❖ Automation system
- ❖ The role of consortia
- ❖ Resource access initiatives
- ❖ Architecture and technology
- ❖ Electronic publishing.
- ❖ Library technology in specific continues
- ❖ User perspectives on technology
- ❖ How technology can helps disabled library users.
- ❖ *Library related websites*

3. AIMS/OBJECTIVES OF THE JOURNAL

The aim of the Journal Library Hi-Tech is to help readers anticipate the future; make best use of current technologies and to use new resources as soon as they became available.

- ❖ It advances the understanding of the potential of new and existing technologies.
- ❖ Explores the implications of technological changes
- ❖ Find out how to utilize current and emerging technologies.
- ❖ Stay informed of the latest developments and trends.

4. USERS/READERSHIP

- ❖ Senior Management

- ❖ Practicing librarians and Information professionals
- ❖ Library and Information researchers and lecturers
- ❖ Academics and Students.

5. LIBRARY HI-TECH IS INDEXED AND ABSTRACTED

- ❖ Book Review Index
- ❖ Computer Science Index
- ❖ Current Awareness Abstracts
- ❖ Current Contents/Social and Behavioral Sciences
- ❖ Current Index to Journals in Education
- ❖ ISNPEC (Electrical and Electronics Abstracts)
- ❖ Information Science and Technology Abstracts
- ❖ Journal Citation Reports/Social Sciences Edition
- ❖ (The) Informed Librarian
- ❖ Library and Information Science Abstracts
- ❖ Library Currents
- ❖ Library Literature and Information Science
- ❖ Library, Information science and Technology Abstracts
- ❖ LISA
- ❖ Internet & Personal Computing Abstracts
- ❖ FRANCIS

- ❖ Scopus
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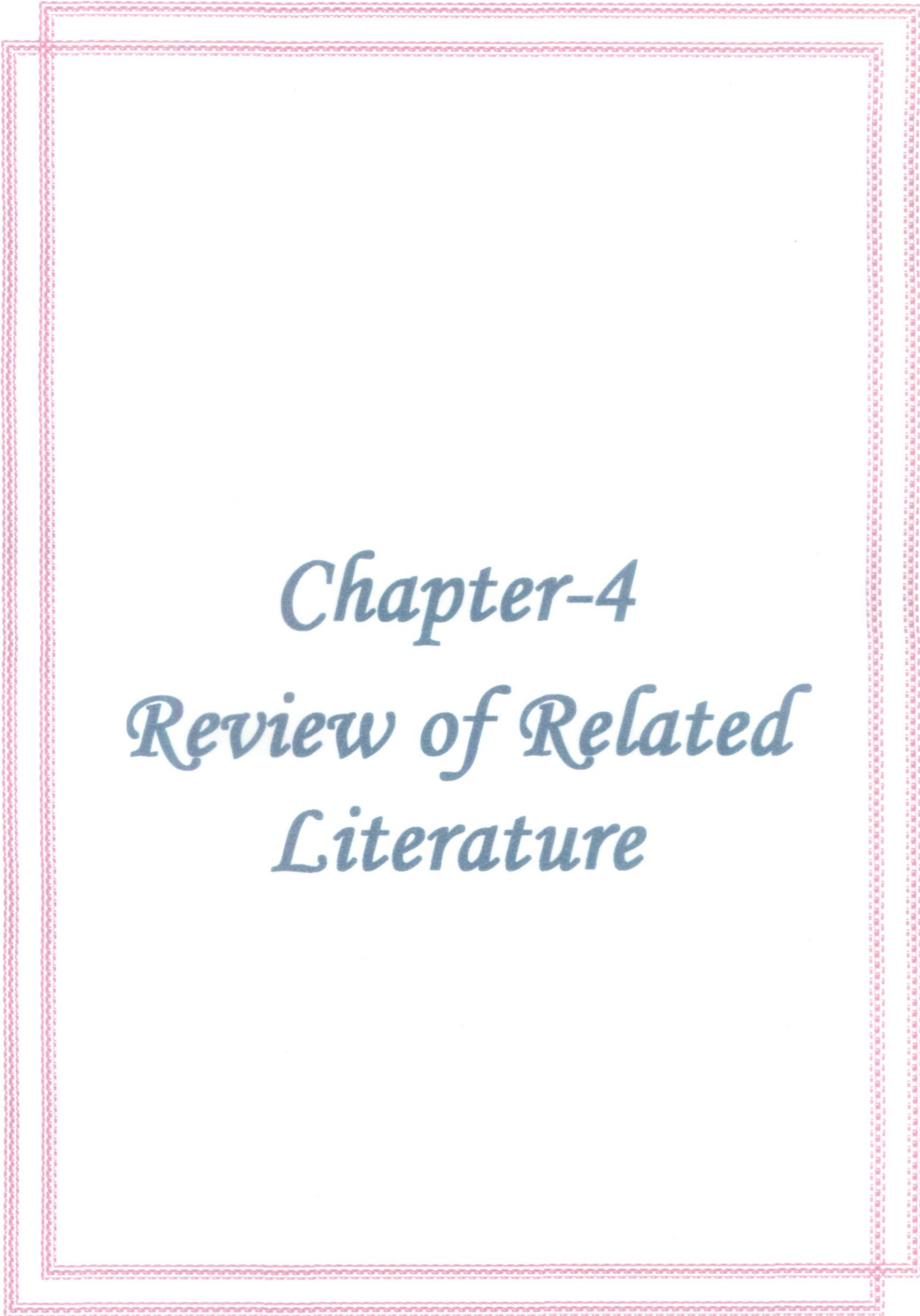
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Chapter-4
Review of Related
Literature

Chapter-4

REVIEW OF RELATED LITERATURE

Review of the Related Literature is very essential for a new research topic. Study of related literature impels locating reading and evaluating reports of research as well as report of casual observation and opinion that are related to the individuals planned research project. The search for literature should be conducted in a systematic way to actual optimum results otherwise the research may be lead to wastage of labour and time and poor retrieval relevant information. In brief, this chapter presents an overall review of studies conducted abroad as well as in India in a chronological order. The researcher has reviewed only those studies which were similar to the present study or indirectly related to the present study.

Haridasan, S. and Kulshrestha, V.K. (2007)¹ explains under the title of **“Citation analysis of scholarly communication in the Journal “Knowledge Organization”**: The purpose was to understand the information needs, use pattern and use behaviors of library and information science researchers particularly engaged in the field of knowledge organization. The data relating to all the references appended to the articles during the period under study were collected and tabulated. The finding of the study reveals that average number of citation is around books and documents published during the later half of the century. Authors from the USA, UK of Germany are the major contributors to the journal. The period considered is limited to nine years, i.e. 1993-2001. The model citation index of the journal is analyses using the first seven core authors. This citation index worked out for the most cited authors reveals the historical relationship of cited and citing

documents. This model citation Index can be used to identify, the most cited authors as researchers currently working on special problem to determine whether a paper has been cited, whether there has been a review of a subject, whether a concept has been applied, a theory confirmed or a method improved.

Eysenbach, Gunther (2006)² explains under the title of **“Citation Advantage of open Access Articles. A citation Study”**: The main objectives of this study were that it was a longitudinal bibliometric analysis of a what Open Access (OA) and non-OA articles published between June 8, 2004 and December 20, 2004 in the journal PNAS: “ proceedings of the National Academy of Sciences”. The data should be taken from a single, rather typical journal, and should be replicated with data from other never hybrid journals (“author – choice OA”). The findings indirectly also support policies of granting agencies which made OA publishing mandatory for grantees as it illustrates the advantage of openness in the dissemination of knowledge. Among the 237 participants of the author survey there were no statistically significant differences between the groups in self rated relative urgently importance and quality of their particular PNAS article.

Maharana, B, Kalpava, N and Sahu, N.K. (2006)³ Conducted a study under the title **“ Scholarly use of web resources in LIS research: A Citation Analysis”**: Its objective is to make an analysis of the nature and type of web resources and studies the various standard for web citation. The purpose of this study is to measure the amount of web resources used for scholarly contribution in the area of library and Information Science (LIS) in India. The data collected is 292 web citations through a structured checklist. The study revealed that 292 out of 837 were web citation, browsing a significant correlation between the use of Internet and research productivity of LIS professional in India.

Nuruzi, A (2006)⁴ discusses under the title “**The web impact factor: a critical Review**”: The goal of the study is to analyse the link based website impact (WIF). It is a Quantitatives tool for evaluating and ranking websites, top level domain and sub-domains. The paper also aims to discuss the WIF’S advantages and disadvantages, data collection problems and validity and reliability of WIF results. A key to this study has been the use of large scale search engine, such as yahoo and Alta Vista that search aging, such as yahoo and Alta Vista that allowed measurements to be made of the total number of pages in a website pages to those provided by the Institute Scientific Information(ISI). But the content of the web is not of the same quality as the databases maintained by the ISI. This paper suggests that web impact factors can be calculated as a way of comparing the attractiveness of web cites on domains on the web. It is concluded that, while the WIF is arguably useful for quantitative intra country comparison application beyond this to extra country assessment has little value.

Schmidt, Diane (2006)⁵ explains under the title of “**Field Guides in Academic: A Citation Study**”: The main objectives in this study were the field guides which are common in libraries but are generally not considered scholarly. This study examines citations to 50 field guides to determine how they were used in scholarly publications. The data was collected from journals of Academic Librarianship. The findings reveal that field guides are frequently cited as a source of data on the ranges, habits and descriptions of plants and animals.

Williams, V.K. and Fleichen, C.L. (2006)⁶ Conducted a study under the title “**Material used by Master’s students in Engineering and Implication for collection development: a citation analysis**”: To determine the materials used by graduate students in engineering and to guide library collection development

decisions. They identified engineering master's thesis accepted at Mississippi State University from 2002-2004 for inclusion in this study. It was found that journals, conference papers and books are the most used formats, with books ageing more slovenly than other journals, core journals list was developed by total citation and by number of citing authors. Variations among engineering disciplines age and subject classification of journals. Areas for further research user also noted.

Zhang, Yanjun (2006)⁷ conduct a study under the title of “**The effect of open access on citation Impact: A comparison study based on web citation Analysis**”: The main objective of the study was that this study compares web citations for an open access (OA) journal with those of a traditional access journal in the same discipline. OA Journal have established a new paradigm of scholarly communication. The data was collected in two parts (i) focused on ISI citations, which were used to form a comparison with web citation in the study; (ii) concerned web citation, which meant to include and merge citation of 3 different types reviewed (i.e. web text citation URL citation and hyperlink citation) so, that a complete set of web citation can be guaranteed. The finding reveals that this experimental study generated the web citation profiles of JCMC and NMS, 6.5% web citation have their own citing source type unidentifiable and 21.5% web citation have their country property unidentifiable.

Zhiqiang, W (2006)⁸ attempted to study under the title of “**Investigations on the accessibility of online citations in Chinese Academic Journals**”: Which describes the importance of online citations and their accessibility of IF measures. It examines the accessibility of online citations in academic papers of two Chinese core Journals from 1999 to 2003 to find out: the relationship between online citations accessibility and website; the retrieval of inaccessible or uncertain online citations.

Baver, Kathleen and Bakalbasi, Nisa (2005)⁹ explains under the title of “**An Examination fo Citation Counts in a New Scholarly Communication Environment: A Citation Study**”: The main objects of the study were that this paper presents a case study comparing the citations counts provided by web of science, scopus and Google scholar for articles from the journal of the American Society for Information Science and Technology (JASIST) published in 1905 and in 2000 using a paired t-test to determine statistical significance. The data was detained from the complete list of articles published in years 2000 and 1985, essentially corresponding to two citation periods of different length. The raw data consisted of 105 and 41 articles for 2000 and 1985, respectively. The finding reveals that a research of Google scholar will likely reveals both traditional journal articles, some of which will also be covered in web of science and Scopus, and additional unique material, but the scholarly value of some of the unique material remains an open questions.

La Bonte, Kristen B (2005)¹⁰ discuss under the article “**A Method for collection Development for a Rapidly Developing Field: Citation Analysis**”: The main objective or goal of this study is to use citation analysis to investigate whether the Science-engineering Library at UCSB is meeting the needs of the recently established CNSI. Citation Analysis measure how often items are cited in references, bibliographies or indexing tools and compares their frequency of occurrence to collection holdings. The methods used and the information obtained in this study can be used as a reference to other research institutions with a newly established interdisciplinary unit composed of faculty from multiple departments. This study contributes tot the extensive field of citation analysis but focuses on the most up-to-date information in order to evaluate an existing science collection and its

relation to a new institute in a rapidly evolving field. The data obtained from journal articles composed the majority of the literature used for nanoscience research and showed which journal titles are used the most. The finding reveals that the library subscribes to 98% of the journals in which faculty members are published or cited frequently, this information is useful to map the citation patterns of a new interdisciplinary field and can be used for future collection management decisions.

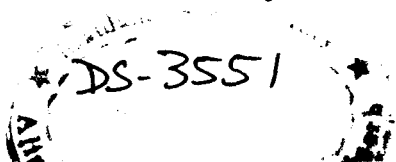
McKeelnic, L and Other (2005)¹¹ made a study entitled of **“How information behaviour researchers use each other’s work: a basic citation analysis study”**. It was based on the citation analysis conducted on a significant number of English language HIB articles published over a period of 7 years in 6 prominent LIS Journals. The bibliometric core of paper was identified, content analysis was performed on papers citing the core to determine how they were cited. A domain visualization was conducted of the citing relationships within the entire corpus. Citation analysis, content analysis and social network analysis were used to analyze the data. Fields outside of LIS citing HIB articles include engineering, Psychology, education and medicinal papers were cited generally for findings. The domain visualization depicted a clear case of HIB scholarship surrounded by a periphery of largely uncited literature. The results revealed that HIB literature is yet to have a significant impact on other disciplines.

Moed, Henk F. (2005)¹² explains under the title **“Citation analysis of Scientific journals and journal impact measures”**: The main objectives of this study explains that these measures were originally designed and applied to monitor the journal coverage of the Science Citation Index (SCI). They constituted a tool to identify on a permanent basis, the most important journals in the scientific communication system, and to highlight candidates to be included or

dropped in view of the need to establish a cost effective citation Index. ISI'S JCR provides detailed citation dated on all journals covered by the ISI citation Indexes and constitute the most frequently used information product on journal impact factors. The impact factor's numerator is determined by counting in the total database cited references containing the name of a particular journal. The finding reveals that the structure of the journal communication system differs significantly from one discipline to another, in the sense that the distribution of citation impact among journals in a discipline varies among disciplines.

Patsopoulos, Nikolaos A. (2005)¹³ explains under the title of **“Relative Citation Impact of various study Designs in the Health Sciences: A Citation Study:”**The main objective of the present study were to determine whether the type of study design affects the rate of citation impact of articles using various study designs- including meta analyses, randomized controlled trials, cohort studies, case control studies, case reports, nonsystematic reviews and decision analysis or cost sample of 2646 articles. The finding reveals that more than 10 citations in the first 2 years were received by 32.4% of Meta analysis published in 1991 and 43.6% of Meta analysis published in 2001.

Rahm, Erhard and Thor, Andreas (2005)¹⁴ surveyed under the title of **“Citation Analysis of database publications”**: The main objective of this article is an analyses of citation frequencies for two main database conferences i.e. (SIGMOD and VLDBJ) and three database journals i.e. (TODS, VLDB Journal, Sigmod Record) over 10 years. The citation data is obtained by integrating and cleaning data from DBLP and Google Scholar. This analysis considers different comparative metrics per publication venue, in particular the total and average number of citations as well as the impact factor which has so far only been considered for journals. This also determines the most cited papers,



methods, author institutions and their countries. The finding reveals that database conferences i.e. (ASIGMOD and VLDBJ) have a substantially higher citation impact than the database journals i.e. (TODS, VLDBJ and Sigmod Record), not only in terms of the total number of citations but also with respect to the 2 year and 5 year citation impact. The study underlines the high usefulness of Google Scholar for evaluations.

Sinn, R.N. (2005)¹⁵ made study under the title “**A local citation analysis of mathematical and statistical dissertation**”: This is a citation analysis of the 1980-2002 mathematic and statistics dissertations at Ohio University was compared with the Citation analysis of other sciences and disciplines, published in the literature. Mathematics and Statistics students were found to use their journal literature less frequently than highly research oriented fields like chemistry and biology and more frequently than applied fields like engineering and computer science. The same general trend among the discipline was seen when title dispersion was examined Mathematics and static’s used more journal little than chemistry and fever journals titles, than engineering. Collection managers can use the results of this study to protect a large core journal collection for mathematics and to keep monograph purchasing at an adequate level.

Pilkington, A. (2004)¹⁶ examined under the title of “**Defining Technology Management: A Citation / Co-Citation study**”: The main objectives of this study were that this paper investigates the issues arising from the struggle to establish TM (Technology Management) by examining its literature using citations and co-citation data obtained from Technovation. The data used in this study included the contents (articles, titles, authors, publication dates and citations) of Technovation between 1996 and 2003. The finding reveals that in this conference crisis, there was a lack of consensus regarding the extent of technology

Management and it differ from other disciplines such as the subfields of economics and public policy.

Fazel, Seen (2003)¹⁷ conduct a study under the title of **“Contemporary developments in Baha’i studies: an examination using citation analysis”**:The main objectives of the present study were to investigate contemporary developments using the technique of citations analysis, a widely used method to report trends in academia. The proportion of women writers were 27%. The most cited journal, using impact factor and uncitedness data were the Baha’i studies Review. The most cited books were published by University Presses or in Kalimat press ‘Studies in the babi and Bah’i Religion Series’. The finding reveals that in 1997-2001% of the articles on the Babi- Baha’I religions in Baba’i and non-Baba’i academic periodicals were written by women. In 1988-93, it was 21% and in 1978-83, it was 31%.

Gooden, Angela M. 2001¹⁸ explains under the title **“Citation Analysis of Chemistry Doctoral Dissertations: An Ohio State University Case Study: A Citation Analysis”**: The main objectives of the study were to analyze the citations in local chemistry dissertations during the period 1996-2000 to assist the Ohio State University Science and Engineering Library Chemical Sciences Librarian in determining which materials are most heavily used and which materials are needed to improve the collection. The data was collected from an Ohio State University’s Department of Chemistry. The finding reveals that journal articles were cited more frequently than monographs : 85.8% of the citations were journal articles and 8.4% of the citations were monographs. The result of this study may be used to assist OSU and other universities in chemistry collection development.

Burma, Yogender Singh (2000)¹⁹ explains under the title of “**Doctoral Research in IMTECH: document use pattern**”. The main objective of the study were to identify the bibliographic form, authorship pattern etc. The data was collected from twenty doctoral dissertations available at the institute of Microbial Technology (IMTECH) library, Chandigarh. There were 4752 references. The finding reveals that 85% citations were from journals. Journal literature was mostly contributed by multiple authors i.e. 87%.

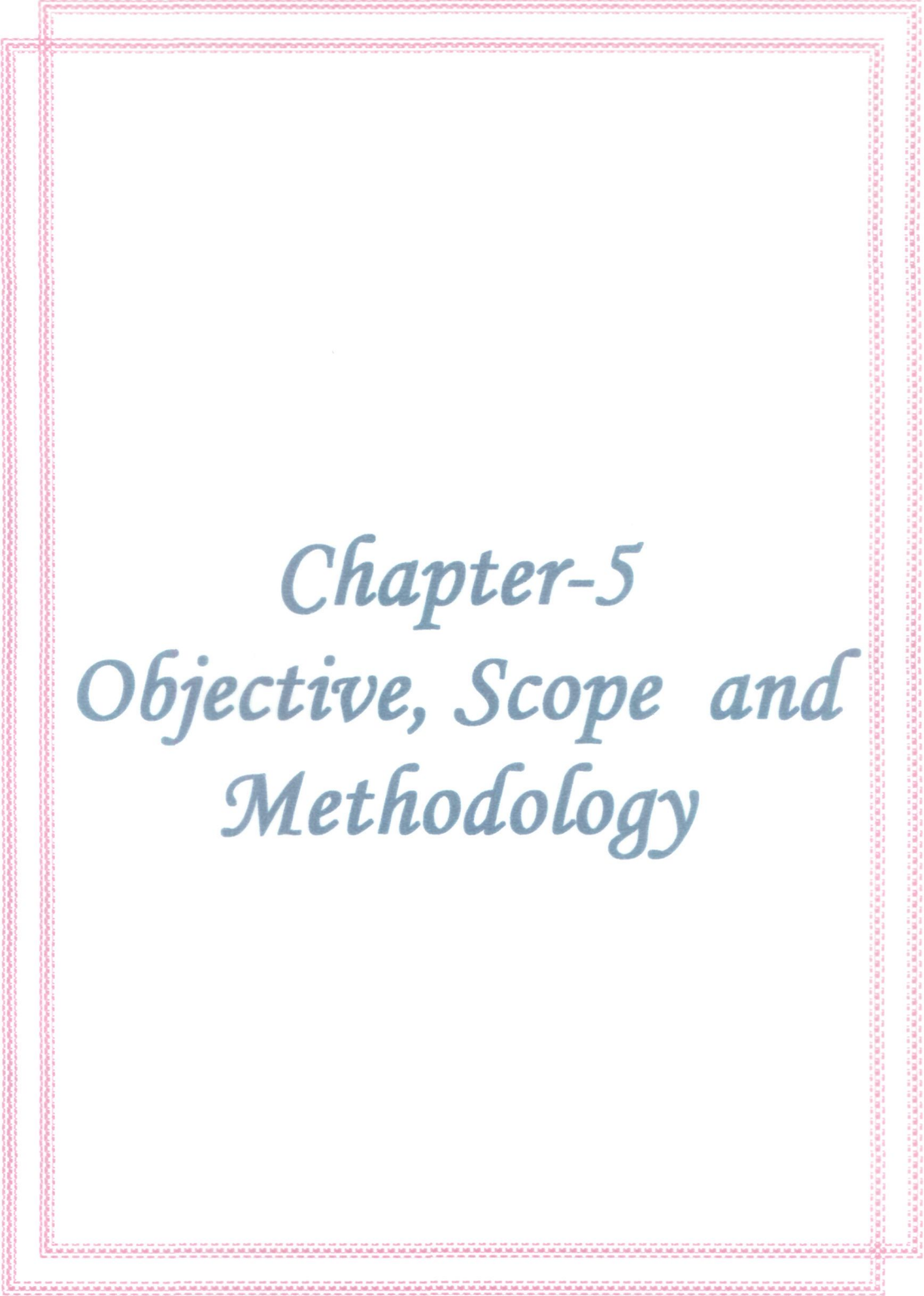
Harter, Stephen P. (1996)²⁰ explain under the title “**The Impact of Electronic Journals on Scholarly Communications: A Citation Analysis**”: The main objective of the study were that this article reports hard empirical data on the impact of the first wave of e-journals on the scholarly communities they serve. It assesses the extent to which scholars and researchers are aware of, are influenced by and build their own work, upon research published in e-journals. The purpose of this study is to measure the impact of electronic journals; the data for these eleven e-journals must be treated with great caution. The main sources were the Public Access computer systems Review, Online Journal of Current Clinical Trials and Psychology. The finding reveals that only eight of the 39 e-journals studied have been cited ten or more times over their lifetime, eleven of the journals have print counterpart.

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Chapter-5
Objective, Scope and
Methodology

Chapter – 5

OBJECTIVES, SCOPE AND METHEDODOLOGY

1. THE STUDY

This study is based on the use of '**sitations**'. Sitations are those web based references which we access through internet. Sitation study shows the current trend of citation analysis. It is a modernized form of citation. It involves the study of sitations, which are cited by different authors in their works for the purpose of taking references. These references are hyperlinked with main source and with that we can access these sources.

Sitation study of online Journal **Library Hi-Tech** form an important source of information. Such studies helps us to known what materials are available, how these sources and material can be accessed and used, how they are linked to each other, what is the nature of publication, what type of literature are cited, how long the literature remains useful to readers, knowledge of all these provides guidance to collection development policies, individual item selection and retention and binding decisions.

2. PURPOSE

The essential purpose of this study is to measure the amount of web resources used for scholarly contributions as well as to study how many times a number of web resources is cited. It further aims to describe the increasing and decreasing pattern of citing the web sources i.e. sitations as revealed through the sitation analysis in the Journal Library Hi-tech.

3. SCOPE

The topic of the present study is “SITATION ANALYSIS OF JOURNAL LIBRARY HI-TECH”. The main aim of this study is to find out. The current trend of using sitation in scholarly works in the field of library and Information Science. For this purpose the citations from each of the articles, papers etc of the journal Library Hi-tech are taken for analysis. The period of coverage is from 2001-2007.

4. LIMITATIONS

The present work is confined to following points:

- ❖ Seven years study i.e.2001-2007 of citations including sitations;
- ❖ Study of authorship pattern and its relation with citation and sitation;
- ❖ Study of forms of documents include articles , books , papers, conference proceedings, reviews, reports, government documents, case study , survey, achieves and others (standards, treaties, act, thesis, autobiographies);
- ❖ Ranking of journals (only frequencies).

5. OBJECTIVES

- ❖ To identify how many e-citation are used;
- ❖ To determine the year wise distribution of citations and e-citations;
- ❖ To identify the number of author who are associated with e-citation;

- ❖ To identify type of material used;
- ❖ Identify the core and essential journals which are cited;
- ❖ To identify how many corporate authors are cited; and
- ❖ To observe chronological distribution of e-citation.
- ❖ To find out the ratio of the usage of citations from print sources and those from web sources;

6. METHODOLOGY

Selection of an appropriate methodology is highly crucial in any social investigation. In the present study, the total number of citations are 3,845 including e-citations are collected from the journal *Library Hi-Tech* and covering the time period of seven years from 2001–2007.

Methodology of the present study includes the following steps:-

6.1 SELECTION OF SOURCE DOCUMENT

The first step, in this study is to select the source document from which data is to be collected. For this purpose references from each article from each issue of the **Journal Library Hi-Tech** was consulted. Under this study a total of 3,845 citations were analysed including e-citations.

6.2 COLLECTION OF DATA

After selecting the source document, the first and the most important task is collection of references from each article of the issues of the volumes of the *Journal Library Hi-Tech* were collected, which accounts to 3,845 citations. The data are collected from 2001-2007 i.e. for the period of 7 years.

6.3 PREPARATION OF ENTRIES

The database has been created with Microsoft excel software table was prepared and then it was configured for record creating and updating. MS Excel application was used to edit the database records and allows control on some fields contents and record validation. The database stores the following types of information of each reference

- ❖ Author up to three and corporate Bodies and Authors;
- ❖ Website
- ❖ Publication / imprint (Publisher and Place);
- ❖ Journal Title;
- ❖ Year of Publication;
- ❖ Year of citing the article;
- ❖ Form of literature; and
- ❖ Other information(date not define , document in publication etc.)

SPREAD SHEET FOR DATA ENTRIES

A	B	C	D	E	F	G	H	I	J
AUTHOR	JOINT AUTHOR	MORE THAN THREE	CORPORATE AUTHOR	SITE	PUBLISHER	NAME OF JOURNAL PL	YEAR		
1	Salestin, P.	Smith-Stuber, L.	Advanced Technologies Libraries	www.aal.org/aal/journals/abstracts/abstracts2002.htm	APPEC Secretariat, Singapore	AALL Spectrum	2002		
2	Salestin, P.	Smith-Stuber, L.	African Information Society Initiative	www.aal.org/aal/journals/abstracts/abstracts2002.htm	APPEC Secretariat, Singapore	AALL Spectrum	2002		
3	Oguzkurt, A.		Agriculture and Food Canada	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
4	Chen, C.		AMA	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
5	Sheng, Y.	Shi, H.	AMA	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
6	Chong, S.	Chen, L.	American Association of Law Libraries	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
7	Maharajan, M.G.	Vibron, M.C.	American Association of Law Libraries	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
8	Clark, P.B.	Vibron, J.G.	American Libraries	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		
9	Urcic-Agic, F.	Brigo-Cicovic, V.	American Libraries	www.aal.org/aal/journals/abstracts/abstracts2002.htm	Pon Elizabeth, South Africa	Administrative Science G	2002		

6.4 ANALYSIS

Citation analysis is a well known technique that has long been used, but e-citation or citation is a new technique. Citation Analysis is not very different from traditional citation analysis. For the purpose of analysis all the citations, as well as e-citation are arranged and rearranged in order to conduct the following studies:

6.4.1 Year wise distribution

This study includes the year wise distribution of citation and e-citation are cited in a year. It helps in showing the changing trend of using e-citations per year.

6.4.2 Authorship pattern

Authorship patterns are divided into following two categories:-

6.4.2.1 General Authorship Pattern

It helps us to know the most productive contributor in the subject. For this purpose, the information about all the authors are retrieved, arranged and tabulated in order to find the type of authorship.

6.4.2.2 Authorship pattern in relation to e-citation

The information about those authors who are using e-citation is retrieved leading to the most productive author associated with web-based citation.

6.4.3 RANKING OF JOURNALS

It helps to identify the core periodicals containing the

research literature used in **Journal Library Hi-Tech**. It is necessary to from the most productive journals used in references. The core journals in the field in relation to e-citations are identified through the study.

6.4.4 RANKING OF AUTHOR

It helps to know the eminent personality in the subject, by ranking the most cited authors' .For this purpose, analyse the frequency and counts authors productivity and ranked them including the authors who are associated to e-citations. Cited and Sited authors are ranked in order of decreasing productivity.

6.4.5 FORM WISE DISTRIBUTION

Literature sited in Journal Library Hi-Tech is published in different physical forms like, Journal, Books, conference proceedings, papers, indexes, journal document etc. The information regarding the form is collected from the source data and tabulated to find out the most dominant form of literature.

Chapter-6

Data Analysis, Interpretation & Representation

Chapter-6

DATA ANALYSIS INTERPRETATION AND REPRESENTATION

A total of 3845 of citation including e-citation were collected from all the volumes of the “**Journal of Library Hi-Tech**”, from 2001-2007, these citation formed the basis of the present study i.e. citation analysis and interpretation. The database table has been created by using Microsoft excel software. This database were further used for study purposes under the following heads.

1. YEAR-WISE DISTRIBUTION

Year wise distribution of citation and e-citation show the new trend of citing document. It gives the idea about the usage of printed sources as well as web-based sources for the purpose of citation.

Table -1 shows the total number of citation including e-citation for 7 years, i.e. 2001-2007, comes to 3845, out of which the total citation were 2015 (52.4%) and other 1830 (47.5%). The highest number of citation is 450 (22.3%) in the year 2007 and the lowest number of citation is 115 (5.7%) in the year 2000. this year wise distribution of citation is more clear in figure-1.

Table-1
Year wise distribution

S.No	Year	Total No. of citation	Citation	Cumul. %age	Sitation	Cumul. %age
1	2001	270	155 (8.4%)	8.4	115 (5.7%)	5.7
2	2002	490	240 (13%)	21.5	250 (12.4%)	18.1
3	2003	500	280 (15.3%)	36.8	220 (10.9%)	29
4	2004	540	225 (12.2%)	49.0	315 (10.6%)	39.6
5	2005	460	185 (10.1%)	57.1	275 (13.3%)	52.9
6	2006	725	335 (18.3%)	77.4	390 (19.3%)	72.2
7	2007	860	410 (22.4%)	99.8	450 (22.3%)	94.5
Total	7 yrs	3845	1830		2015	

Table 2 shows the increasing and decreasing trend of citing e-resources as used per annum. In the year 2007 total number of e-citations were 450 (52.3%) out of 860. In 2006 it was 390 (53.7%) out of 725. In 2005 total number of sitation were 275 (59.7%) .In 2004 there were slight decrease in the percentage of siting sitation i.e 315(58.3%) . From here decreasing trend start it continues in 2003 i.e. 220 (44%), in 2002 it increases again up to 250 (51%) and in 2001 it decrease to 115 (42.5%). This analysis shows that there is a continuous change in the usage of sitation .

Fig.1
Year-wise distribution of citations

■ Sitation
■ Citation

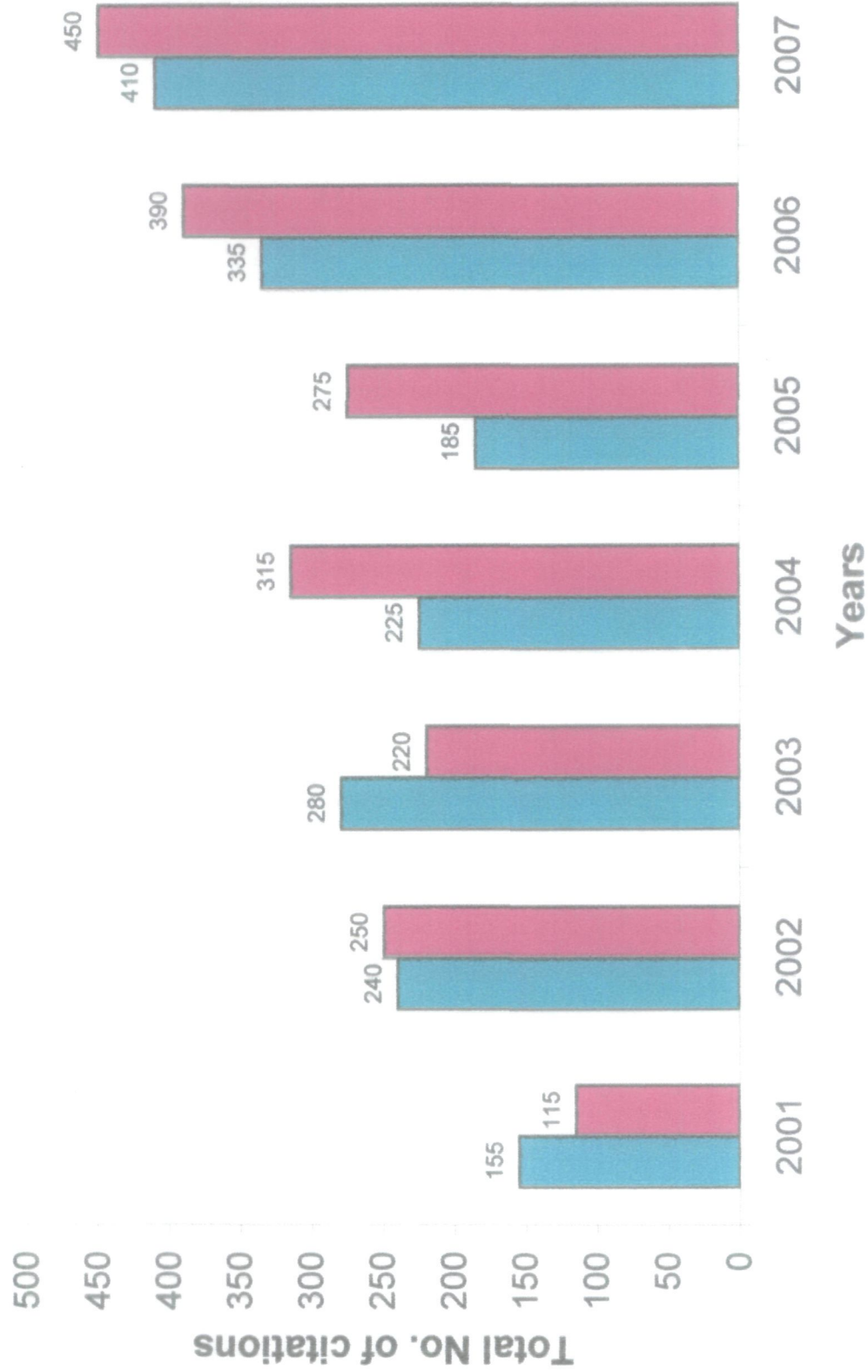


Table-2
Changing trends in citations

S.No.	Year	Total No. of citation	Citation	%age	Sitation	%age
1	2001	270	155	57.4	115	42.5
2	2002	490	240	48.9	250	51.0
3	2003	500	280	56.0	220	44.0
4	2004	540	225	41.6	315	58.3
5	2005	460	185	40.2	275	59.7
6	2006	725	335	46.2	390	53.7
7	2007	860	410	72.6	450	52.3
Total	7 yrs	3845	1830		2015	

2. AUTHORSHIP PATTERN

The characteristic of any subject literature include not only basic publishing pattern but that of the authors themselves. So, the authors were analysed to determine the frequencies of one, two, three author, more then three authors and corporate authors and to also know, how many of them were associated to e-citation.

Table 3 shows the total number of single authors in 'Journal of Library Hi-Tech' is 1456 in 7 years (i.e. 2001-2007) and 769 (52.8%) of them were related to web based citation. It gives a comparative study of between citation and sitations. In the year 2007, number of single authors were 422 and 198 (46.9%) were e-citation and 224 (53.7%) were simple citation. The highest in all is 103 (60.4%) out of 175 in the year 2004. analysis of the data shows more sited authors 769 (52.8%) were there then cited ones 687 (47.1%).

Fig. 2
Changing trends in Citations

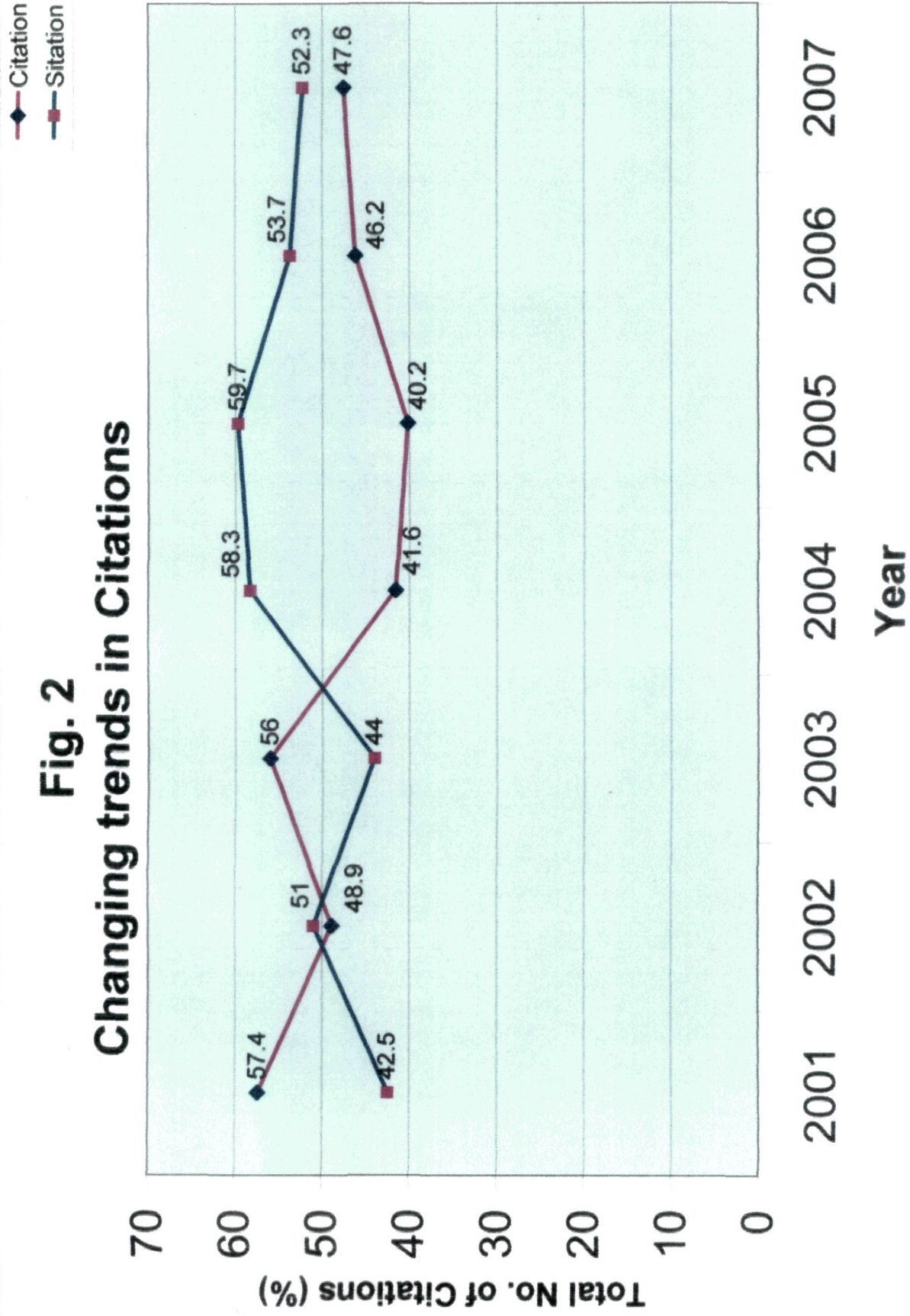


Table-3
Single Authorship Pattern

S.No.	Year	Total No. of Single Authors	Cited Authors	%age	Sited Authors	%age
1	2001	91	41	45	50	54.9
2	2002	189	86	45.5	103	54.4
3	2003	92	57	61.9	35	38.0
4	2004	175	69	39.4	106	60.0
5	2005	148	58	39.1	90	60.0
6	2006	339	152	44.8	187	56.6
7	2007	422	224	53.0	198	46.9
Total	7 yrs	1456	637		769	

Table 3(a) shows the total number of joint authors cited in 'Journal Library Hi-Tech' is 818 in 7 years and 401 of them were related to e-citation. Analysis of the data shows the comparison between citation and web-based citations. The number of citation in 2007 were 100 (52.3%) out of 191. In 2006, total number of citations were 122 in which 62 (50.8%) of them are citations. In 2005 more numbers of citation were there i.e. 50 (52.6%) than simple citations. It continues to increase in 2004 which is 59 (64.1%) out of 92. Data shows that the trend of citing resource is shifting from simple citation to web based citation.

Fig. 3
Single Authorship Pattern

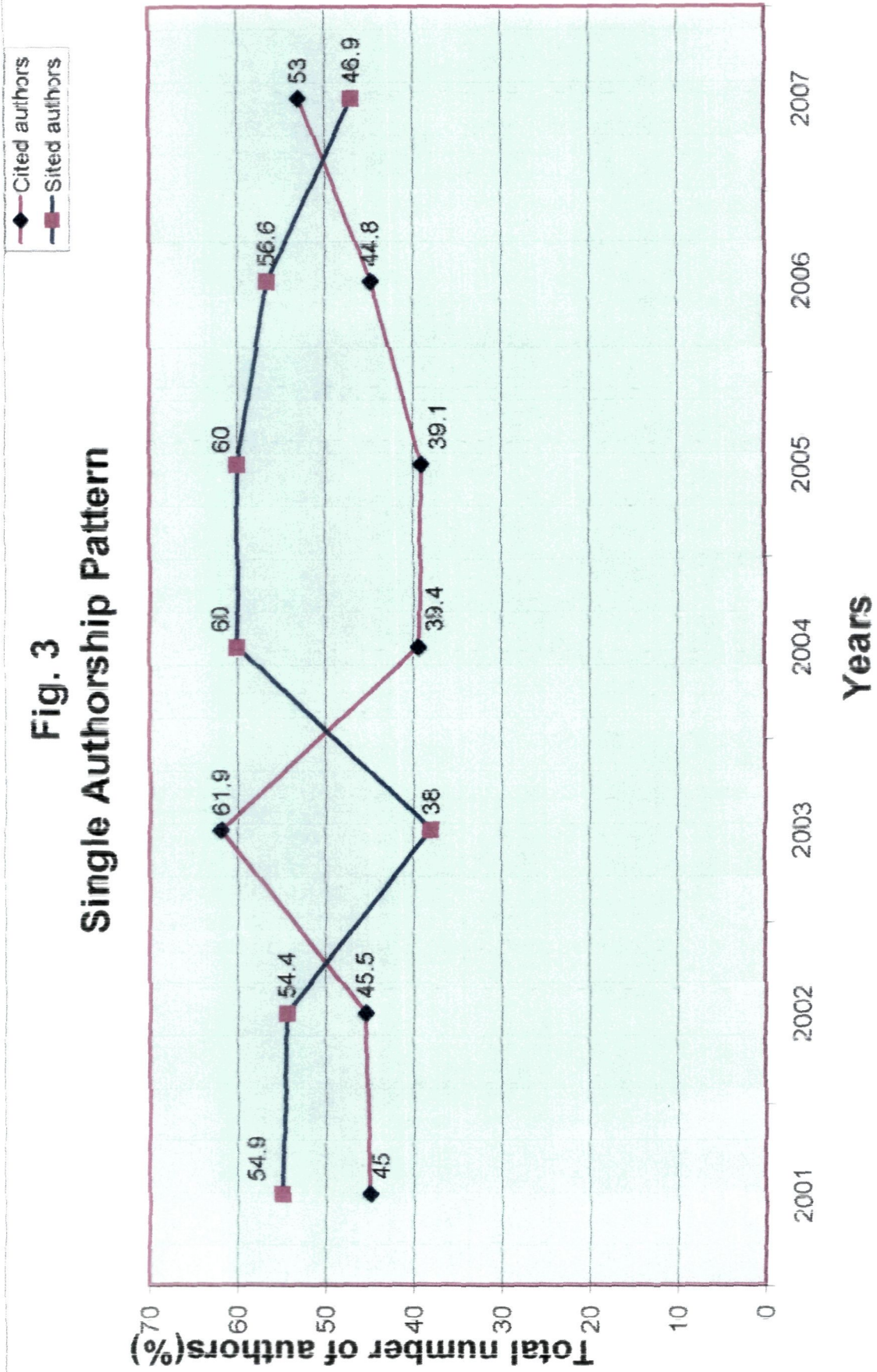


Table-3 (a)
Joint Authorship Pattern

S.No.	Year	Total No. of Single Authors	Cited Authors	%age	Sited Authors	%age
1	2001	79	54	68.3	25	31.6
2	2002	91	44	48.3	47	51.6
3	2003	148	90	60.8	58	39.1
4	2004	92	33	35.8	59	64.1
5	2005	95	45	47.3	50	52.6
6	2006	122	60	49.1	62	50.8
7	2007	191	91	47.6	100	52.3
Total	7 yrs	818	417		401	

Table 3(b) shows the authorship pattern of three and more than three authors. The total number of authors is 679 out of 367 were associated with e-citations. Analysis of the data shows the more emphasis is on the use of web based citation, rather than citations, into 2007 total citations were 120 and sitations are 80 (66.6%), in 2004 68 citations are there and 59 were simple citations. The least year of citing e-citations were 2001, in which only 15 (37.5%) citations are cited. This shows that there is an increase in the use of sitations by those authors who are working in collaboration. This change shows a new trend in the field of citation study.

Fig.3(a)
Joint Authorship Pattern

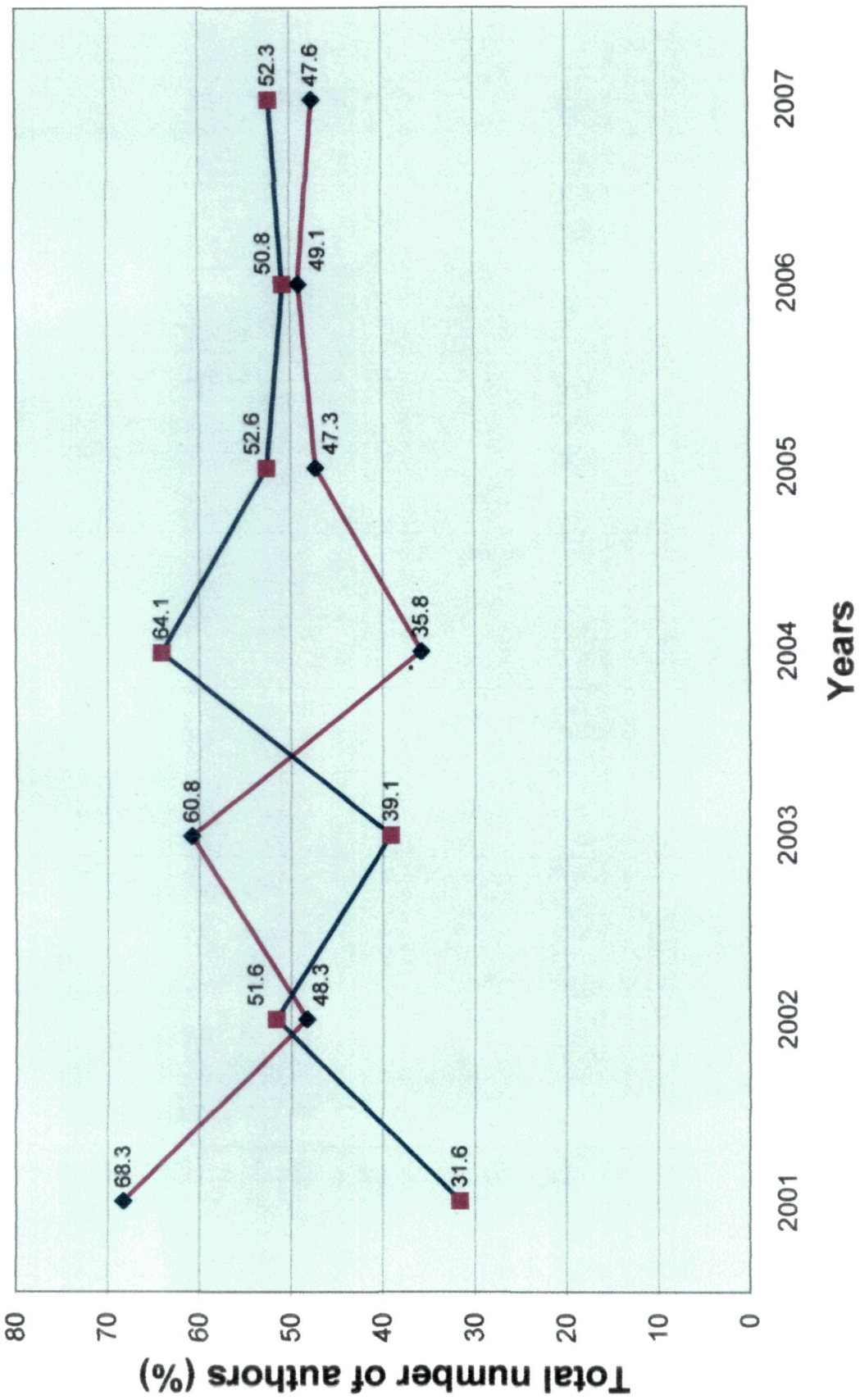


Table-3 (b)
Authorship Pattern (three and more than three authors)

S.No.	Year	Total No. of single Authors	Cited Authors	%age	Sited Authors	%age
1	2001	40	25	62.5	15	37.5
2	2002	100	60	60.0	40	40.0
3	2003	99	58	58.5	41	41.4
4	2004	88	38	43.1	50	56.8
5	2005	105	32	30.4	73	69.5
6	2006	127	59	46.4	68	53.5
7	2007	120	40	33.3	80	66.6
Total	7 yrs	679	312		367	

Table 3(c) shows the corporate authorship, the total number of authors were 679 and 367 of them were related to e-citation. The highest in all is 73 (69.5%) out of 105 in the year 2007, the least in all seven years is 2001. in which only 15 (37.55) sitation are cited by the authors. Analysis of the data shows that more and more works associated specially web based sources are most cited by the authors. More than half of the corporate authors are related with e-citations.



Fig. 3(b)
Authorship Pattern (three and more than three authors)

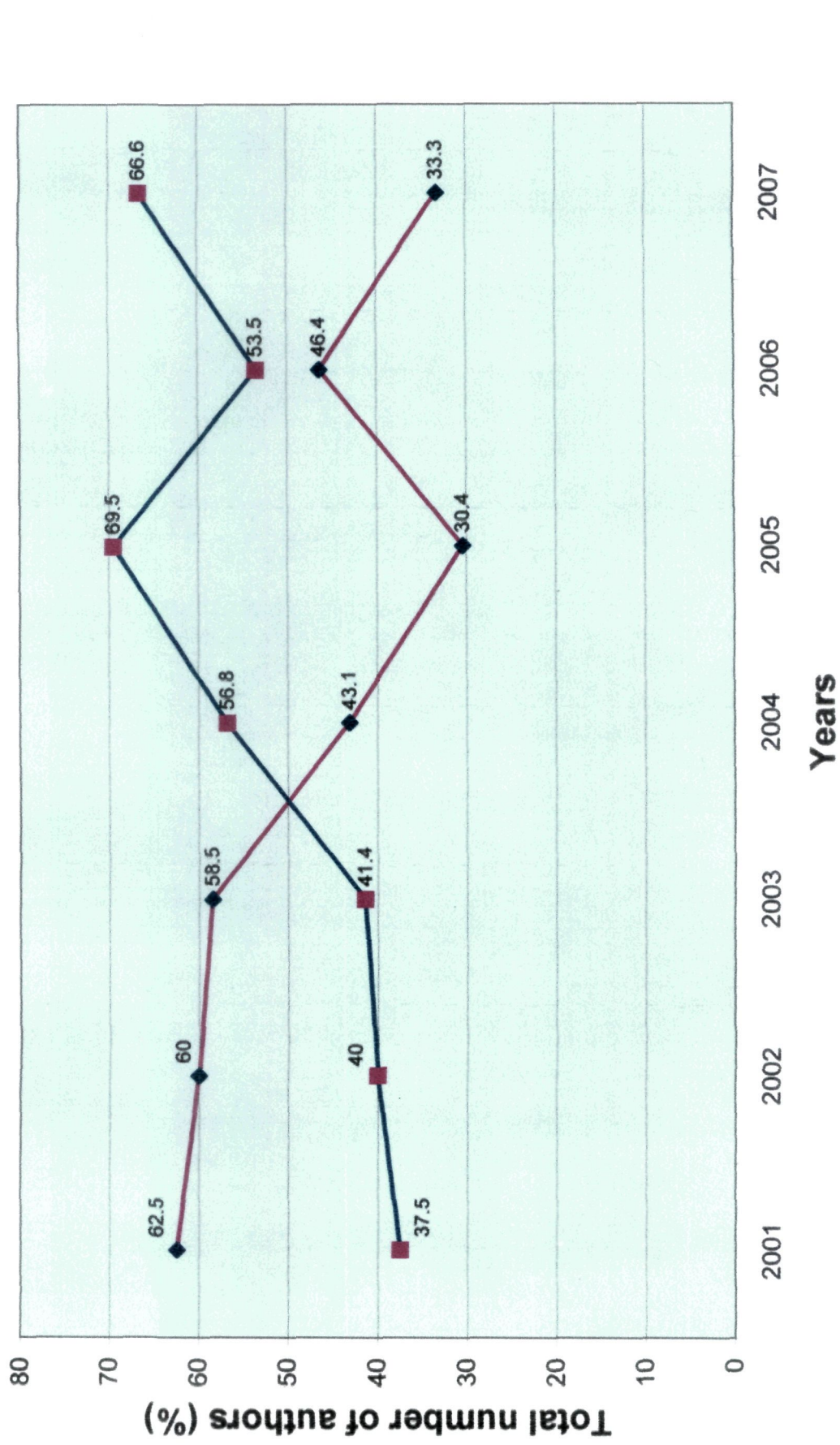


Table-3 (c)
Corporate Authorship Pattern

S.No.	Year	Total No. of Single Authors	Cited Authors	%age	Sited Authors	%age
1	2001	60	35	58.3	25	41.6
2	2002	110	50	45.4	60	54.5
3	2003	161	75	46.5	86	53.4
4	2004	185	85	45.9	100	54.0
5	2005	112	50	44.6	62	55.3
6	2006	137	64	46.7	73	53.2
7	2007	127	55	43.3	72	56.6
Total	7 yrs	892	414		478	

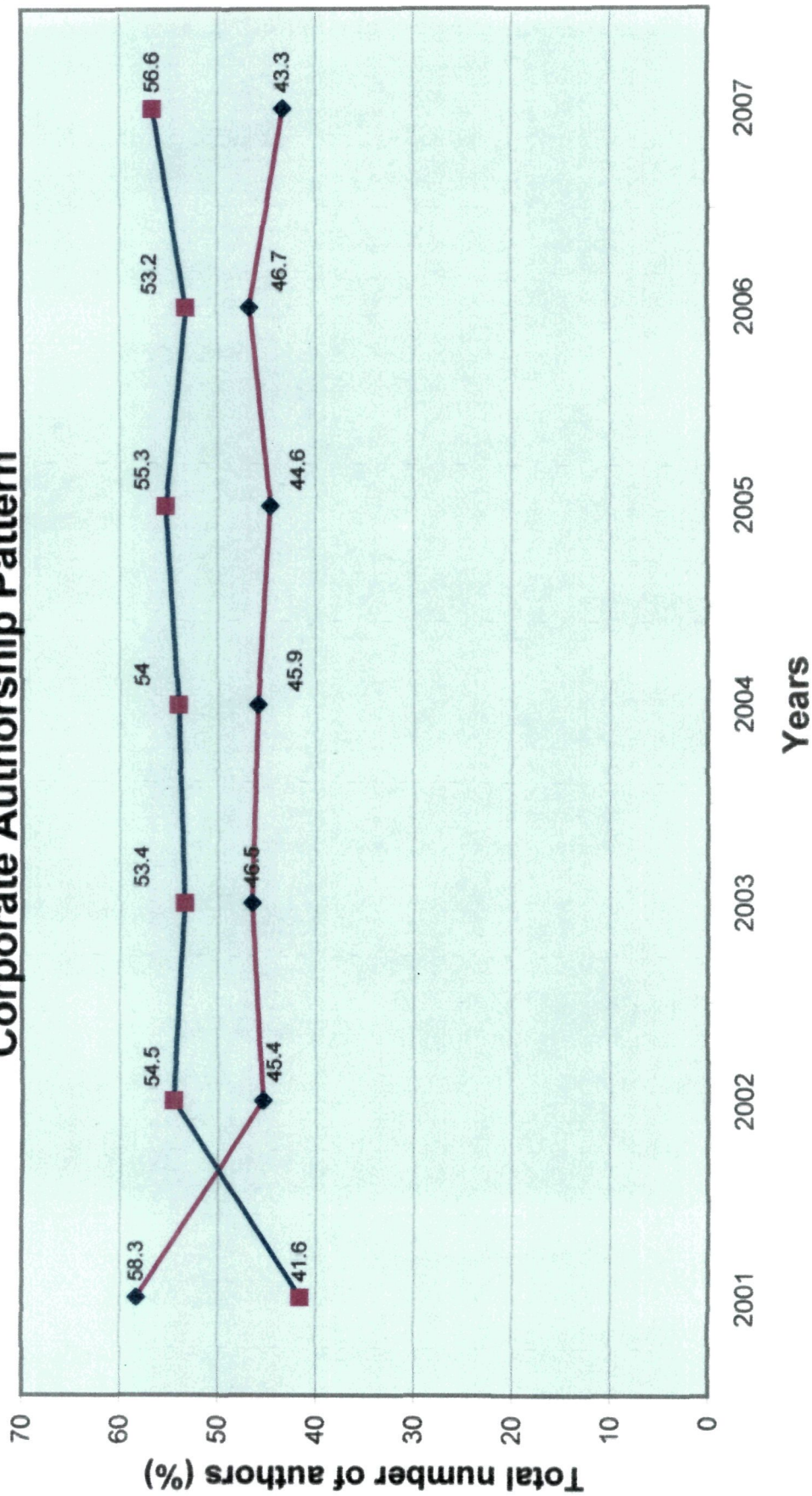
3. FORM WISE DISTRIBUTION

The various forms of the documents sited in the “Journal Library Hi-Tech”, are articles, books, case study, government documents, Index, Newsletters, papers, conference proceedings, reports, thesis etc. The study regarding the form-wise distribution of citation with e-citation have been done in order to know the most dominant form in which the information is cited in the journal. The study will be helpful to know what form of material are sited most.

Table 4 gives form-wise distribution of citation analysis has shown that 1105 (38.1%) citation out of total 3570 citations are articles; out of which 735 (49.8%) are articles related to e-citations. Book are the

Fig. 3(c)
Corporate Authorship Pattern

◆ Cited authors
■ Sited authors



second highest 530 (13.7%), followed including 280 (52.8%) citations, followed by papers, i.e. 250 (6.5%) including 150 (60%), followed by conference proceedings, i.e. 210 (5.4%) out of which 100 (47.6%) citations next is reviews i.e. 190 (4.9%) including 95 (50%) citations, followed by reports i.e. 169 (4.3%) and in which 110 (65%) were citations.

Table-3
Form-wise distribution

S.No.	Form of documents	Ranks	Total No. of citation	Citation	Sitation
1.	Articles	1	1466	731 (49.8%)	735 (50.1%)
2.	Books	2	530	250 (47.1%)	280 (52.8%)
3.	Papers	3	250	100 (40%)	150 (60%)
4.	Conference proceedings	4	210	110 (52.3%)	100 (47.6%)
5.	Reviews	5	190	95 (50%)	95 (50%)
6.	Reports	6	169	59 (34.9%)	110 (65%)
7.	Govt. documents	7	80	30 (37.5%)	50 (62.5%)
8.	Case studies	8	60	25 (41.6%)	35 (58.3%)
9.	Survey	9	60	20 (33.3%)	40 (66.6%)
10.	Archives	10	25	10 (40%)	15 (60%)
11.	Others		805	400 (49.6%)	405 (50.4%)
	Total		3845	1830	

Fig. 4 (a)
Form-wise distribution
Citation -2001-2007

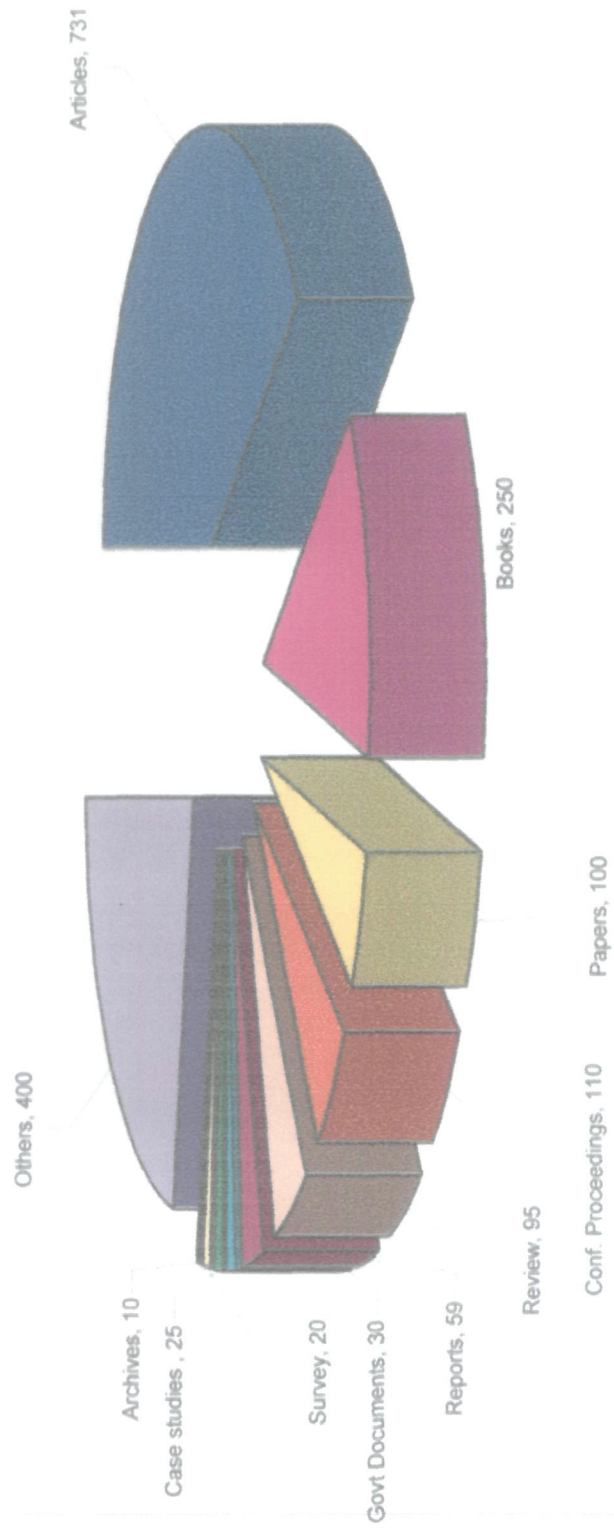
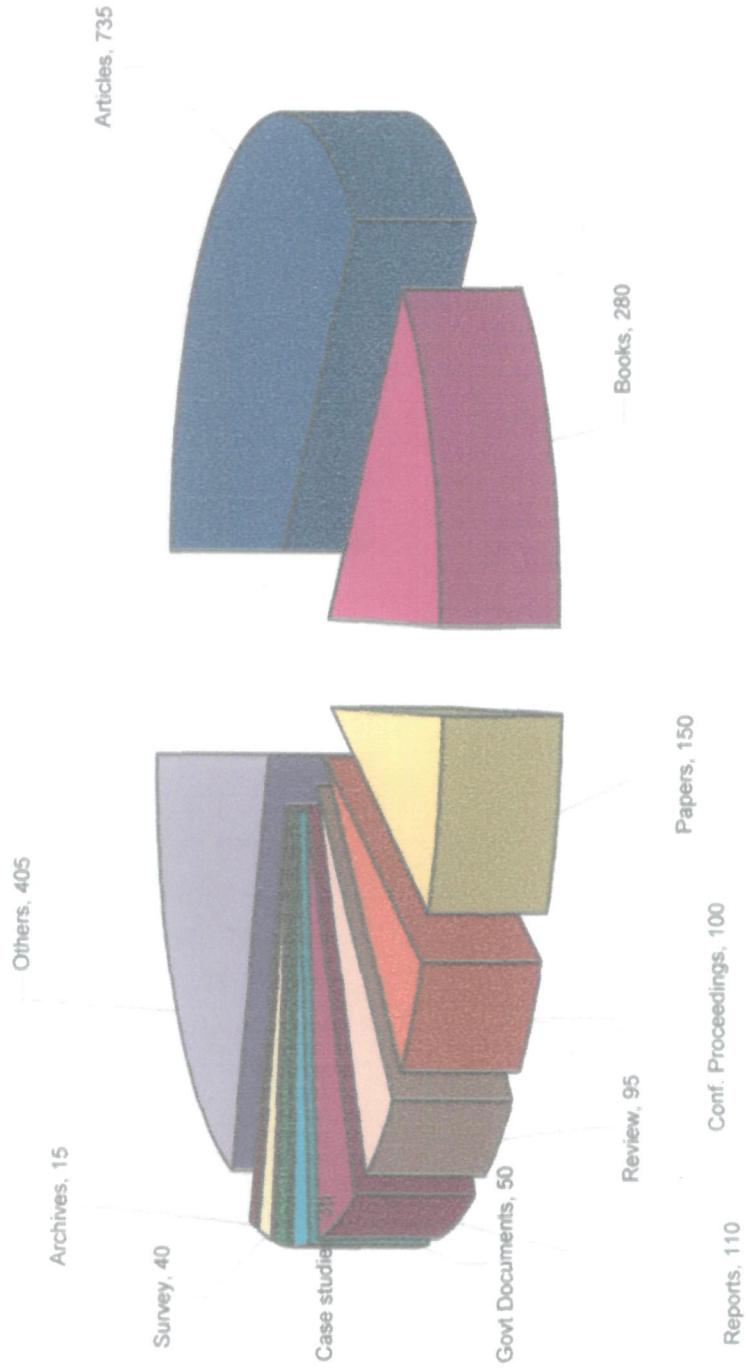


Fig. 4(b)
Form-wise distribution
Sitation 2001-2007



4. RANK ORDER OF CITED JOURNALS

Journal are very useful for researcher for the scientific communication but their increasing cost put the librarian to study the quantity, usefulness and suitability to a particular group of users. Therefore, the present study is to judge the valuable and productive journals, cited in 'Journal of Library Hi-Tech'.

Table 5 shows the rank list of 50 most cited journals with minimum of 11 citations, it is clearly evident from table 5 that Journal of Library Hi-Tech itself rank 1st with the highest citations number, i.e. 275 (8.4%).

D-Lib magazine, Library Journal, Library Trend, Library Review and African Journal of Library, Archives and Information Science occupies the 2nd, 3rd, 4th, 5th and 6th place in the rank list with contribution of 5.2%, 3.0%, 2.7%, 2.6%, 2.5% respectively.

Above mentioned journal according to their rank can be considered as a core journal of the cited journal in the journal library Hi-tech.

Table 5
Rank list of journals

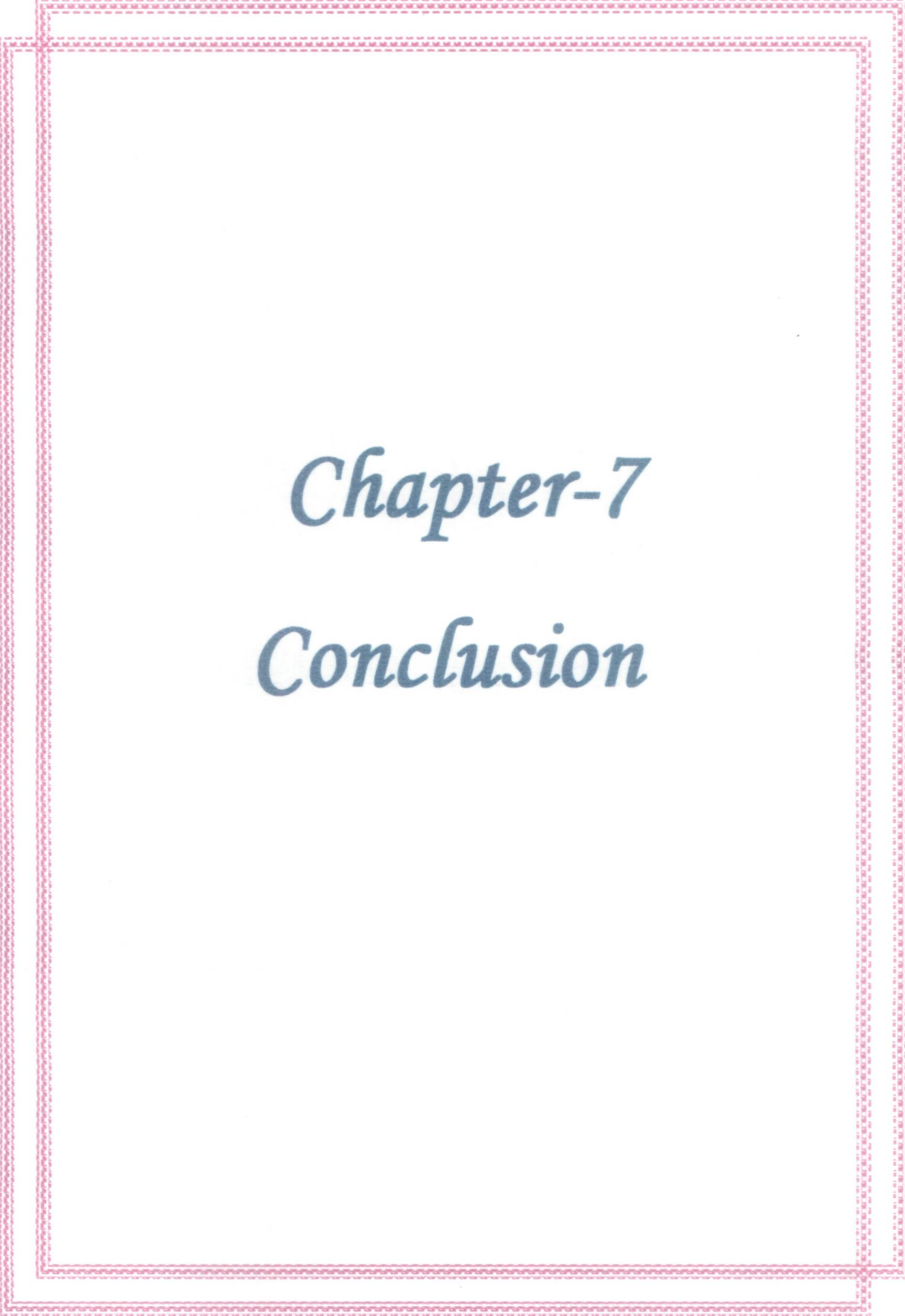
S.No.	Name of periodicals	Freq.	%age	Cumul. Freq. (%)	Ranks
1.	Library Hi-Tech	275	8.2	8.2	1
2.	D-Lib Magazine	175	5.2	13.4	2
3.	Library Journal	100	3.0	16.4	3
4.	Library Trend	91	2.7	19.1	4

5.	Library Review	89	2.6	21.7	5
6.	African Journal of Library, archives and Information Science	85	2.5	24.2	6
7.	Ethics and Information Technology	85	2.5	26.7	6
8.	Nature	83	2.5	29.2	6
9.	Journal of Information Science	81	2.4	31.6	7
10.	Library Management	70	2.1	33.7	8
11.	Annual Review of Information Science & Technology	65	1.9	35.6	9
12.	Library Quarterly	65	1.9	37.5	9
13.	Hypothesis	60	1.8	39.3	10
14.	Library collection, acquisition and technical services	60	1.8	41.1	10
15.	Journal of Documentation	58	1.7	42.2	11
16.	Reference librarian	57	1.7	44.5	11
17.	Wired Magazine	55	1.6	46.1	12

18.	Australian Library Journal	53	1.5	47.6	13
19.	LIBRI	53	1.5	49.1	13
20.	Journal of Library Science Research	51	1.5	50.6	13
21.	The Journal of Information & Knowledge Management System	48	1.4	52.0	14
22.	Cataloguing and Classification Quarterly	47	1.4	53.4	14
23.	Canadian Journal of Communication	45	1.3	54.7	15
24.	Journal of Academic Librarianship	40	1.2	55.9	16
25.	New Library World	40	1.2	57.1	16
26.	Annals of Internal Medicine	39	1.1	58.2	17
27.	College and Research Libraries	39	1.1	59.3	17
28.	Against the Grain	35	1.0	60.3	18
29.	Computer in Libraries	35	1.0	61.3	18
30.	Information Technology and Libraries	32	0.96	62.26	19
31.	Electronic Library	32	0.96	63.22	19

32.	Library and Information Science Research	31	0.93	64.15	20
33.	International Journal of Digital Libraries	30	0.90	65.05	21
34.	ASLIB Proceedings	30	0.90	65.95	21
35.	IEEE Computers	29	0.87	66.82	22
36.	Library and Archival Security	29	0.87	67.69	22
37.	Information Outlook	25	0.75	68.44	23
38.	Information Today	25	0.75	69.19	23
39.	Harvard Business Review	21	0.63	69.82	24
40.	Journal of Medical Library Association	21	0.63	70.45	24
41.	Information Searcher	19	0.57	71.62	25
42.	American Libraries	19	0.57	71.59	25
43.	Knowledge Engineering Review	18	0.54	71.59	26
44.	Performance Management and Metrics	15	0.45	72.04	27
45.	Bibliothik, Forschang and proxis	14	0.42	72.46	28

46.	Science & Engineering Ethics	13	0.39	72.85	29
47.	Bibliothiksdient	12	0.36	73.21	30
48.	Aradane	11	0.33	73.54	31
49.	BIT Online	11	0.33	73.87	31
141.	Title with 1-10 citations	818	24.6	98.47	
	Total	3315	98.4		



Chapter-7
Conclusion

Chapter-7

CONCLUSION

The analysis of citations including e-citation of 'Journal of Library Hi-Tech' reveals the changing trend of using citation to cite paper in the journal, there is a shift from citation to sitation, this transformation is due to the increase in the usage of Internet and World Wide Web. The result and the findings have been concluded point by point as under:

1. YEAR WISE DISTRIBUTION

Year wise distribution of citation with e-citations shows the modern trend of citing resources. Table 1 clearly shows that at present more and mare use of sitation is going on, the total number of citations in the journal are 3845 and more than half of the total citation i.e. 2015 (51.4%) were e-citation. The highest number of e-citation one sited in the year 2007 i.e. 450 (22.3%). The lowest number of e-citation 115 (5.7%) in the year 2001. This shows that there is a shift from the use of printed sources to electronic sources.

Table 2 shows the changing trends in citations of citing e-citation, specially in past 3 year this trend is increased more fastly then ever. The highest year of siting web-based citations is 2007 i.e. 450 (52.3%) followed by 2006 i.e. 390 and in 2005 it is 279.

2. AUTHORSHIP PATTERN

The majority of the documents have been produced by authors who are associated with e-citation.

In single author case the authorship pattern shows that more than half of authors i.e. 769 (52.8%) out of 1456 are in relation to web-based

citation which is shown in table 3.

Table 3 (a) reveals that the majority of the documents, i.e, 417 (50.9%) have been produced by the authors who are not related to e-citation. Thus, more cited authors are their then sited ones.

Authorship pattern for three and more than three authors shows that more sitations i.e. 367 (54.0%) are used by them rather than simple citations i.e. 312 (45.9%) shown in table 3(b)

For corporate authorship table 3(c) shows that the trend is changing and more corporate work associated with web-based citation are in use i.e. 478 (53.5%) then simple citation i.e. 414 (46.4%).

3. FORM WISE DISTRIBUTION

The major sources of information used by the journal of Library Hi-Tech are the Journal Articles.

It is clear from the table 4 that the journals have the highest number of citation 1466 including 735(50.1%) sitation consisting 38.1% of the total citations.

4. RANK ORDER OF CITED JOURNAL

Among the cited journal, the majority of then were online journals. The journal of Library Hi-Tech. is the most cited in all.

Table 5 reveals that the Journal of Library Hi-Tech. occupied the first ranks with the highest user of citation i.e. 275 (8.2%), followed by D-Lib magazine which occupies second with 175 citation forming (5.2%). The rank list of primary Journals can serve as a tool in selection of core journals in the field.

The conclusion of the study is that, it shows a new trend of sitation, which is totally based on the use of web-based sources. In scholarly works World Wide Web provides a fast and efficient means of citing resources.

As a result, the use of e-citation has been increasing. Thus, the study is meant to serve as a path finder for the academic and research community, to help them assess the impact of the use of citation.



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