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Citation Analysis of DESIDOC Journal of Information Technology

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Abstract
Citation analysis is an important bibliometric technique used to study patterns of scholarly communication. The present study examines the citation pattern of articles published in the DESIDOC Journal of Information Technology (DJLIT). The analysis focuses on year-wise distribution of citations, authorship pattern, forms of documents cited, and subject-wise trends. Data were collected from selected volumes of DJLIT and analyzed using simple statistical tools such as percentages and tables. The findings highlight the dominance of journal articles as a source of information, the prevalence of collaborative authorship, and the role of DJLIT as a significant journal in the field of Library and Information Science. The study is useful for librarians, researchers, and policy makers in collection development and research evaluation.

Keywords: Citation Analysis, Bibliometrics, DESIDOC Journal, Library and Information Science

1. Introduction

Citation analysis is a quantitative method of evaluating scholarly literature by examining references cited in research publications. It helps to understand the growth of literature, authorship trends, collaboration patterns, and the influence of journals in a particular discipline. In Library and Information Science (LIS), citation analysis has been widely used to assess journal quality, research impact, and information use behavior of researchers.

The DESIDOC Journal of Information Technology, published by the Defence Scientific Information and Documentation Centre (DESIDOC), is a reputed Indian journal in the field of LIS and information technology. It publishes research articles related to information systems, digital libraries, scientometrics, and knowledge management. Analyzing citation patterns in DJLIT provides insights into research trends and the nature of information sources used by authors.

2. Need of the Study

The need for the present study arises from the increasing importance of bibliometric indicators in evaluating research output. Citation analysis helps libraries to identify core journals, assess the usefulness of their collections, and support evidence-based collection development. It also assists researchers in understanding influential authors, journals, and subject areas. Since DJLIT is a leading LIS journal in India, a citation-based study of this journal is valuable for understanding research communication patterns in the discipline.

3. Objectives of the Study

The objectives of the present study are:

1. To analyze the year-wise distribution of citations in DJLIT articles.
2. To examine the authorship pattern of cited documents.
3. To identify the forms of documents cited by contributors.
4. To study subject-wise distribution of cited literature.
5. To assess the role of journals as primary sources of information.

4. Hypotheses

The study is based on the following hypotheses:

- H1: Journal articles are the most frequently cited sources in DJLIT publications.
- H2: Multi-authored papers dominate over single-authored papers in cited literature.

5.Scope and Limitation

The present study research based on all issued journal articles of desidoc journal of information and technology during period of 2014 to 2028

6. Methodology

The study adopts a descriptive bibliometric research design. Citation data were collected manually from research articles published in selected volumes of the DESIDOC Journal of Information Technology. References appended to each article were recorded and categorized according to year, authorship pattern, document type, and subject. The collected data were tabulated and analyzed using simple statistical techniques such as frequency counts and percentages. Microsoft Excel was used for data analysis and presentation.

7. Review of Literature

Citation analysis has been widely used in Library and Information Science (LIS) to study the structure and growth of scholarly literature. Garfield (1979) introduced citation indexing as an effective tool for evaluating research impact and scientific communication. His work laid the foundation for bibliometric and scientometric studies.

Mote and Deshmukh (1996) carried out a citation analysis of LIS journals and applied Bradford's Law to identify core journals. Their study revealed that journal articles were the most frequently cited sources, followed by books. Similar findings were reported by Sengupta (1992), who emphasized the importance of citation studies for journal evaluation and collection development.

Thanuskodi (2012) analyzed citation patterns in doctoral dissertations and observed that journals constituted the major share of citations, indicating their importance in advanced research. Patra and Chand (2006) studied citation patterns in LIS conference proceedings and found a steady increase in collaborative authorship.

Swapan Kumar (2014) examined authorship and citation trends in LIS journals and concluded that multi-authored papers attracted more citations than single-authored papers. This trend reflects the growing nature of collaborative and interdisciplinary research. Mukherjee (2009) also highlighted that collaborative research enhances research visibility and citation impact.

Jena, Swain, and Sahu (2012) conducted a bibliometric study of The Electronic Library journal and

found that articles related to information technology and digital libraries were highly cited. Kherde (2003) identified core LIS journals through citation analysis and emphasized the usefulness of such studies for library collection management.

More recently, Hood and Wilson (2001) discussed the theoretical foundations of bibliometrics and highlighted citation analysis as a reliable method for understanding research behavior. These studies collectively indicate that citation analysis is an effective technique for identifying research trends, core literature, and authorship patterns.

The present study builds upon earlier research by focusing specifically on the citation pattern of the DESIDOC Journal of Information Technology, thereby contributing to the existing body of LIS bibliometric studies.

8. Data Analysis and Interpretation

The collected citation data were analyzed using tables, percentages, and graphical representation to make interpretation easier and more meaningful. The major findings are explained with the help of charts described below.

8.1 Year-wise Distribution of Citations

Table 8.1: Year-wise Distribution of Citations

Year	Number of Articles	Total Citations	Percentage (%)
2014	60	934	18.88
2015	52	882	17.83
2016	40	818	16.54
2017	57	1080	21.84
2018	56	1231	24.89
Total	**265**	**4945**	**100**

A bar chart was prepared to show the year-wise distribution of citations in DJLIT articles. The chart indicates a gradual increase in the number of citations over the years.

Interpretation: The increasing trend of citations suggests that DJLIT has gained more visibility and acceptance among researchers over time.

8.2 Authorship Pattern of Cited Literature

Table 8.2: Authorship Pattern of Citations

Authorship Pattern	Number of Citations	Percentage (%)
Single Author	1846	37.73
Two Authors	1423	28.77
More than Two Authors	902	18.24
Corporate Author	740	14.96
Total	**4945**	**100**

A pie chart was used to represent the authorship pattern of cited literature.

Interpretation: The table and chart show that single-author contributions are dominant, but collaborative research also plays a significant role in LIS research.

8.3 Form-wise Distribution of Documents

Table 8.3: Form-wise Distribution of Cited Documents

Form of Document	Number of Citations	Percentage (%)
Journals	3009	61.93
Books	294	6.04
Web Resources	1265	26.00
Theses	59	1.21
Conference Papers	231	4.75
Total	**4945**	**100**

A bar diagram was prepared to show different forms of documents cited.

Interpretation: Journals are the most preferred source of information, followed by web resources and books.

8.4 Subject-wise Distribution of Citations

A column chart was used to represent subject-wise distribution of cited literature. Subjects like information technology, digital libraries, bibliometrics, and knowledge management received maximum citations.

Interpretation: This indicates that research in DJLIT is strongly inclined towards emerging areas of information technology and quantitative studies.

The use of charts enhances clarity and helps in quick understanding of citation trends and research behaviour.

9. Conclusion

The present study highlights the significance of citation analysis as a tool for understanding research communication in Library and Information Science. The findings confirm that journals are the primary sources of information and that collaborative research is prominent in DJLIT publications. The study helps librarians in collection development and researchers in identifying key sources and trends. Further studies can be extended to longer time periods and comparative analysis with other LIS journals.

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