A BIBLIOMETRIC ANALYSIS OF PUBLICATIONS PUBLISHED IN THE JOURNAL OF DOCUMENTATION DURING 1991–2013

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Abstract: The scope of the journal titled 'Journal of Documentation' is mainly information sciences, incorporating research articles, critical reviews and research reports. The bibliometric analysis of the research ournal is an attempt to measure and evaluate different types of publications in relation to trend, citation, volume, duration and authors. A total of 1193 peer-reviewed publications published during 1991 to 2013 have been analyzed through the database of Web of Science published by Clarivate Analytics. The frequency of journal was quarterly during 1945-1996, five issues a year during 1997-1999 and since 2000 it has become bimonthly. Highest number of articles published in 2011 and lowest in 1995 and country-wise highest numbers of records (431) were from England during 1991-2013. It is found that highest number of citations was 668 in 2010 and lowest was 7 in 1996 during the period of 1994 to 2013; highest record for a single author is 90 (7.544%) and lowest record is 2 (0.168%).The average citations per item are 5.03 and h-index is 35. The study revealed that impact factor of the journal for last five years was 1.333. The analysis is expected to be found useful by contributors and researchers as it shows the trends of citations.

Keywords: Biliometric Analysis, Trends of Citations, Authorship pattern, Subject analysis, Journal of Documentation.

Introduction

The bibliometrics term was used by Alan Pritchard in 1969 to explain the application of mathematics and statistical methods to books and other media of communication (Bellis, 2009). It includes the analysis of a series of publications described by changeable indicators of list of various publications, i.e. author(s), the place of publication, subjects, keywords, and citations. In the process of citation analysis, it is seen that one author cites another author, as a result, a relationship is established. Citation analysis uses citations in scholarly works to establish links. Various links can be ensured, for example - links between authors, scholarly works, the journals, the fields, or even between the countries.

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The term bibliometrics will be used explicitly in all studies which seek to quantify the processes of written communication and will quickly gain acceptance in the field of information science (Pitchard, 1969).

Wikipedia stated – "Bibliometric methods are frequently used in the field of library and information science, including scientometrics. For instance, bibliometrics are used to provide quantitative analysis of academic literature".

Bibliometrics has become a standard for scientific research where quantitative methods are employed. The fundamental features of bibliometrics administering associations amongst literatures, publications, publishers, researchers, fellows, statisticians, and librarians to conduct the bibliometric studies.

The present study is an attempt to analyze year-wise various scholarly publications that include articles, type of documents, authors, countries and other related citations published in this Journal. A total of 1,193 scholarly publications that published during the period of 1991 -2013 in the *Journal of Documentation* have been taken into account for the current bibliometric analysis. The prime objective of this study is to examine the journal's bibiometric characteristics and the subject relationship with other related disciplines by citation analysis. It also intends to move forward of previous bibliometric studies of the same journal for a comparatively shorter period.

Therefore, we are observing here a sizeable number of bibliometric studies for last two decades. The current study has been undertaken in order to discern the type, nature and contents of publications in *the Journal of Documentation.*

Literature Review

Singh, Sharma, and Kaur (2011) mentioned in their article that *Journal of Documentation* is a highly regarded journal that offers a platform for the diffusion of intellectual piece of writing, research information and critical analysis in library and information science. It connects a relation between researchers and scholars and philosophical expert practitioners in order to keep all are up to date and well-versed.

Tsay and Shu (2011) found in their bibliometric case study of *Journal of Documentation* that articles of journal are the most cited document, followed by books and book chapters, electronic resources, and conference proceedings, respectively. The researchers also revealed that the three main classes of cited journals in the journal papers are library science, science, and social sciences.

Roy and Basak (2013) revealed in their biliometric study of *Journal of Documentation* that there is a tendency of increase in contributions published in the years of 2005 - 2010. The average contributions in each volume is 41. The major contributions are from the subject of Information Retrieval (22.76%), Information Science (philosophy and theory) (11.78%), Cataloguing and Classification (10.16%) , Knowledge & Information Management (8.94%) and ICT, Digital libraries & Web Technologies (8.52%) published during 2005-2010 (Roy, and Basak, 2013).

Ellen Nebelong- Bonnevie and Tove Faber Frandsen (2006) stated that The *Journal of Documentation* in this study is described by its effect, public prominence, and eminent visibility. It connects with remote into the scientific community and fits in to a field that is more and more noticeable.

A study was carried out by Nelson Edewor to examine articles and authors published in Information Impact: Journal of Information and Knowledge Management (IIJIKM) over a four year period of 2010-2013. According to Edewor (2013), most preferred source of citation in LIS research is journal and Library Philosophy and Practice, an e-journal topped the list cited in IIJIKM. A significant revelation of this study is the use of Internet resources.

Bhutani, Kaushal and Godara (2013) had studied 605 publications of *Indian Journal of Endocrinology and Metabolism* (IJEM) during 2010-2011 that depict a dramatic increase in the number of publications as compared to the previous years. The study shows that maximum number of articles were dealing with pancreas, metabolic and followed by thyroid disorders and those articles were mostly from India. The wider coverage of this journal states that IJEM had begun to reflect global face of Indian endocrinology.

Thanuskodi (2010) talked about the research output of researchers who works in the area of social sciences. The study deals mostly with the number of articles, authorship model, subject wise dissemination of articles, standard number of citations per articles, and forms of papers mentioned in articles, etc.

Osareh (1996) stated that bibliometrics has been used vastly as a quantitative method for evaluating the literature in different disciplines, particularly in the last two decades.

Potter (1988) highlighted that bibliometric research mainly deals on the bibliometric laws based on its application. The frequently used three laws of bibliometrics are: Lotka's law: scientific productivity, Bradford's law of scatter, and Zipf's law: word occurrence.

The outcome of analysis of citation are used for various purposes, for example, to identify the impact of particular articles or journals on subsequent research and to record the interdisciplinary applicability of various journals (Desai, 2003).

Necessity of the Study

The periodical is the marker of literature growth in the field of bibliometric study, library and information science and knowledge management. This journal comes into view as the main outlet for dissemination of learning and knowledge. Due to the rising cost of the journals and shortage of enough budgets the choice of any particular journal for any library should be made cautiously. Therefore, the management is obliged to cut down the number of journal subscriptions. Bibliometric study has a lot of choices in the field of Library and Information science to recognize the research trends in the subject and core journals due to outline a subscription policy. These analyses would be useful for the librarians and library community to draw a improved policy for the management of library collections.

Journal of Documentation

The Journal of Documentation is one of oldest scholarly journals in library/information science that provides an unique focus on concepts, frameworks, theories, models, and philosophies interconnected to various papers and documentation of recorded knowledge. It is a peer-reviewed journal which is indexed in both databases, i.e. Web of Science and SCOPUS. It publishes original research papers with innovative techniques and results of broad range of implications, in all library and information science related topics and subjects (Emerald, 2017).

Objectives of this Analysis

This study has been undertaken with the objective of analyzing the following aspects:

Analysis of scholarly publications

• To make an analysis of year-wise trend of peer-reviewed publications published in the *Journal of Documentation* during 1991 to 2013.

• To identify the status of country affiliation published during the period of study.

• To determine the year wise citations including articles, authors and documents.

▪ To advance the previous study of same nature conducted covering a period of five rears.

Methodology

The method applied in the current study is bibliometric analysis that is used to investigate in-depth bibliographic aspects of the articles published in the Journal of Documentation (JDoC) from 1991 to 2013. The assignment deals with data of 1,193 peer-reviewed publications published in the *Journal of Documentation* during the period of 1991 - 2013. The data was collected from the database of Web of Science, a Thomson Reuters production. A total of 20 volumes, 96 issues from 1991 to 2013 of the journal are covered in the bibliometric analysis. The valuable data of published items and citations on yearly basis including authors, titles, document types, articles and countries are analyzed here. Broadly, the topic of the analysis is Information Science and Library Science.

The collected data extracted from Web of Science database was used manually using MS Excel. A number of graphs, charts and tables have been presented in the analysis. APA reference style has been followed in the present study.

Results analysis and Discussion about data

1. Year wise Distribution of Peer-Reviewed Publications and Citations

Table-1: Year-wise peer-reviewed publications

Year	Number of Publications
1992	2
1993	1

1994	1
1995	0
1996	1
1997	0
1998	83
1999	89
2000	81
2001	109
2002	92
2003	73
2004	66
2005	87
2006	71
2007	70
2008	71
2009	74
2010	59
2011	68
2012	55
2013	39

The highest number of publications was published in 2001 and there was no publication in 1995.

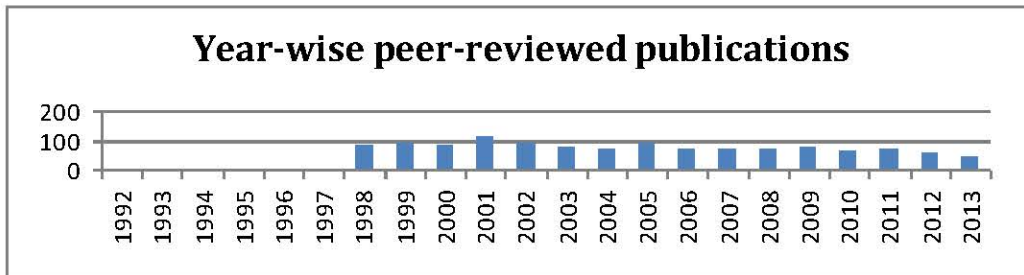**Figure-1: The Latest 20 years peer-reviewed items are displayed**

Table-1 and Figure-1 reveal year-wise peer-reviewed publications that include book review, article, editorial material, review, reprint, proceeding paper, biographical item, letter and correction. The highest number of items was published in 2001 and lowest in 1997 during the period of 1992 to 2013.

Table-2: Year wise citations

Year	Number of Citations
1994	12
1995	10
1996	7
1997	14

1998	24
1999	84
2000	113
2001	182
2002	235
2003	284
2004	300
2005	333
2006	412
2007	485
2008	609
2009	575
2010	668
2011	655
2012	649
2013	340

Table-2 shows the year-wise citation trend during 1994 to 2013. The highest number of citations was 668 in 2010 and lowest number of citations was 7 in 1996.

Table-3: Citation and h-index

Sum of the times cited	Sum of the times cited without self-citations	Citing articles	Citing articles without self-citations	Average citations per items	h-index
6000	5260	3994	3638	5.03	35

Table-3 reveals that during the period of 1991 to 2013, sum of the times cited = 6000; sum of the times cited without self-citations= 5260; citing articles = 3994; citing articles without self-citations = 3638; average citations per items = 5.03 and h-index = 35.

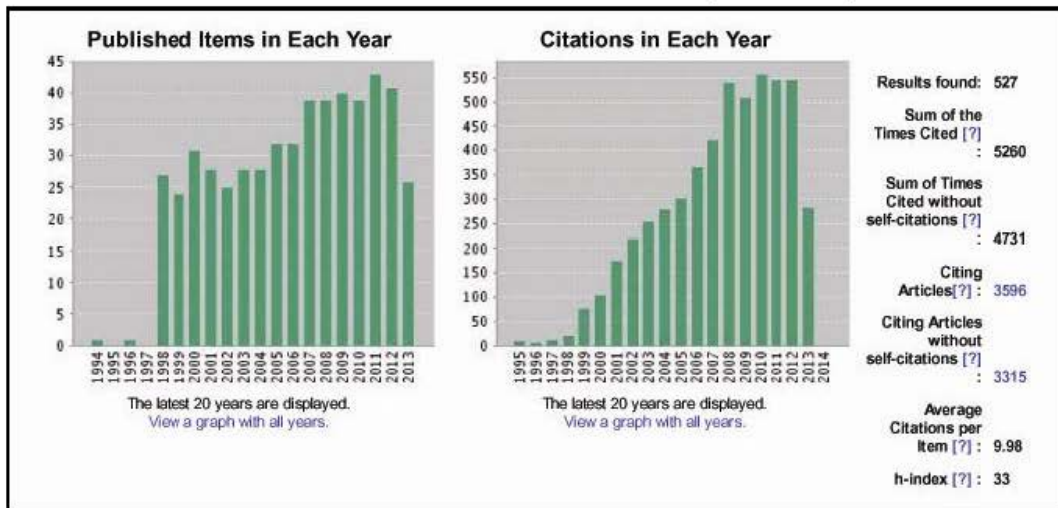**2. Year wise Distribution of Articles and their Citations (1994-2013):**

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Figure-2: Year-wise distribution of articles and citations

The above mentioned Figure-3 highlights that during the period of 1994 to 2013, the highest number of articles published in 2011 and lowest number is published in 1995. During this period a total of 527 articles have been found. Sum of times cited = 5260. Cited articles 3596, average citations per item = 9.98 and h-index is 33

3. Author wise analysis

**Table-4: Author-wise distribution based on no. of publications count**

RANK	AUTHORS	RECORD COUNT	% OF 1193
01	BAWDEN D	90	7.544 %
02	OPPENHEIM C	36	3.018 %
03	LINE MB	28	2.347 %
04	PORS NO	20	1.676 %
05	HJORLAND B	16	1.341 %
06	FORD N	15	1.257 %
07	CRONIN B	14	1.174 %
08	HANNABUSS S	14	1.174 %
09	MARCELLA R	14	1.174 %
10	URQUHART C	14	1.174 %
11	CAWKELL T	13	1.090 %
12	NICHOLAS D	13	1.090 %
13	BADE D	12	1.006 %
14	ROWLEY J	12	1.006 %
15	THELWALL M	12	1.006 %
16	HUNTINGTON P	11	0.922 %
17	MEADOWS J	11	0.922 %
18	SAVOLAINEN R	10	0.838 %
19	STURGES P	10	0.838 %
20	WOLF KH	9	0.754 %
21	ZUMER M	9	0.754 %

In Table-4, the lowest benchmark for authors is 9 that belong to Zumer M and Wolf KH, on the other hand, Bawden D had published the highest number of publications.

Figure-3: Author wise distribution based on publications count

The author-wise bar chart for records indicate that author Bawden D has published highest number of publications, whereas, Zumer M and Wolf KH remain lowest.

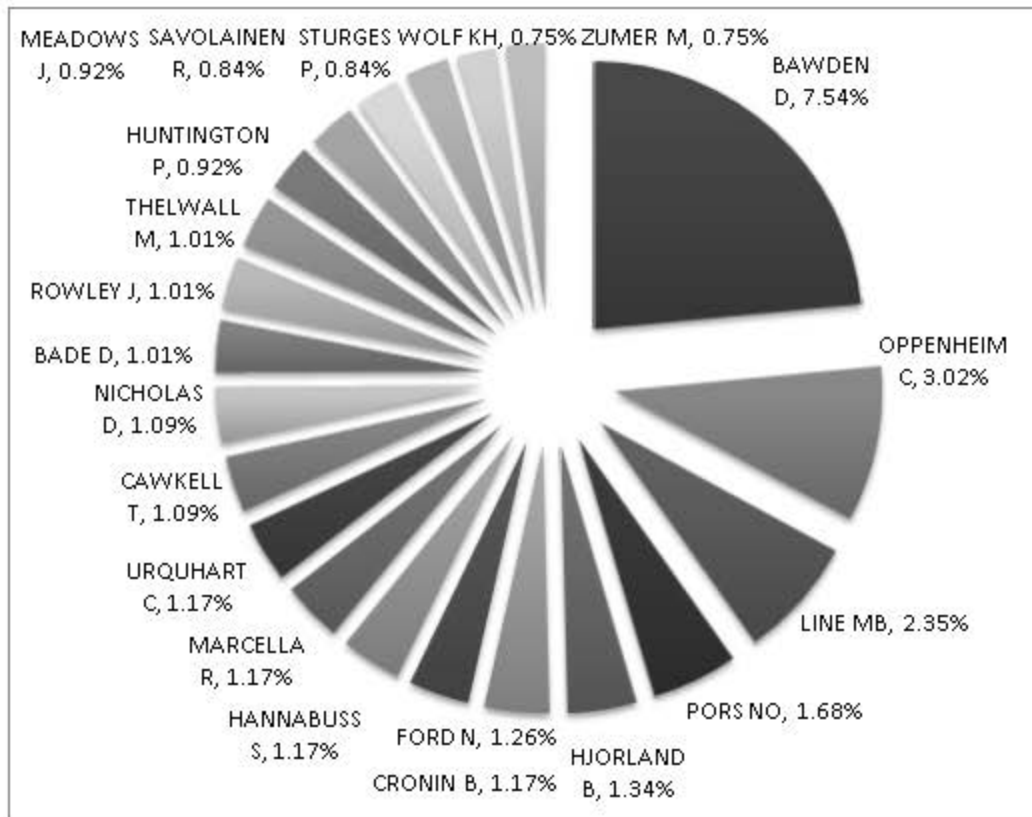**Figure-4: Percentage wise distribution of authors**
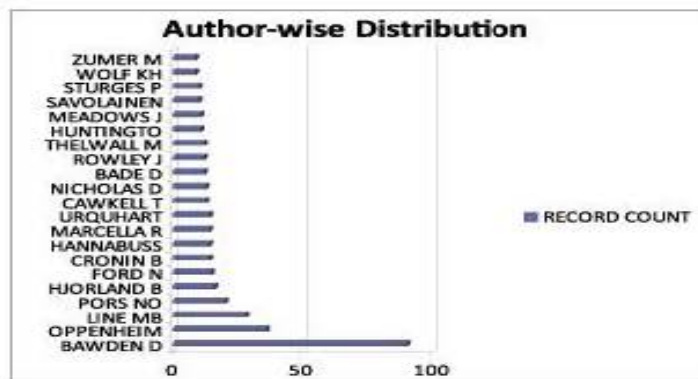
Table-4 and Figures-3 & 4 reveal that among 1193 publications the highest number of publications for single author is 90 (7.544%), 2nd highest is 36 for (3.018%) and 3rd highest is 28 (2.347%). The lowest number of record is 2 (0.168%) that belongs to 94 authors.

4. Country wise Analysis

### Table-5: Country, no. of publications and percentage wise analysis

Rank	Countries	Number of publications count	% of 1193
01	England	401	33.613
02	USA	172	14.417
03	Scotland	81	6.790
04	Denmark	63	5.281
05	Finland	37	3.101
06	Wales	35	2.934
07	North Ireland	30	2.515
08	Canada	26	2.179
09	Australia	24	2.012
10	Slovenia	23	1.928

Table-5 indicates country-wise distribution. England is ranked in the highest position with 401 publications, USA 2nd with 172 and Scotland 3rd with 81 records counted. The

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top ten countries with publications numbers and percentage are mentioned in the above table and the chart below:

5. Document type wise Distribution

Figure-5: Document type
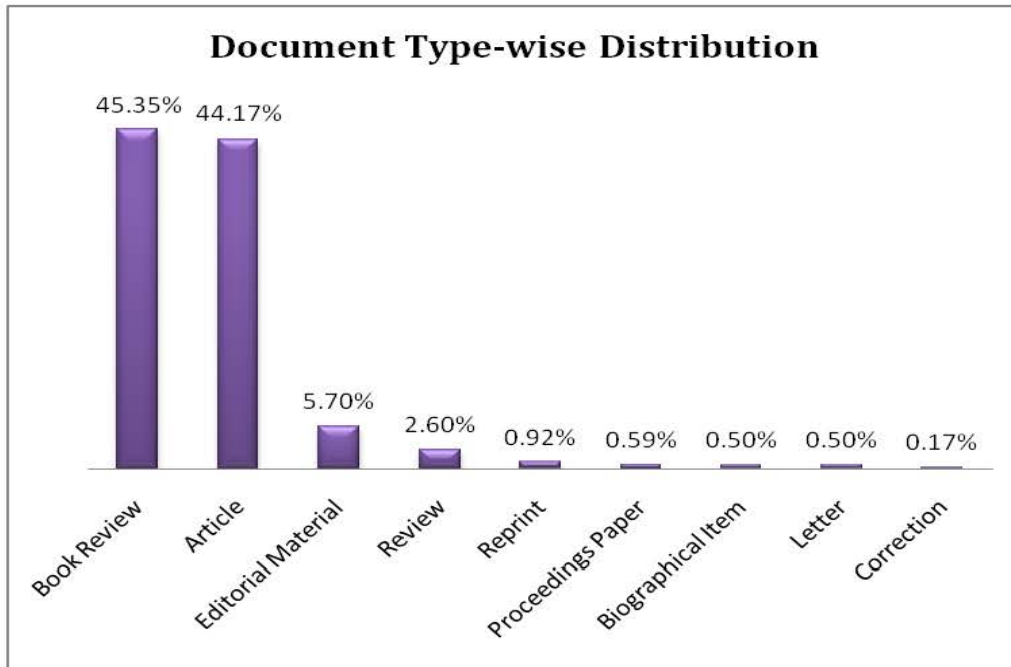
According Figure-6, the highest number of document type is **book review**, its record count is 541 (45.34%) and lowest number document type is **correction** and it's record count is 2(0.16%). The top ten type of documents, number of records and percentage are mentioned above.

Impact Factors

The impact factor of the journal is very important to assess the acceptance of the publications to the researchers. The important work is done only by Thomson Reuters ISI Web of Knowledge database. The impact factor of *Journal of Documentation* for the year of 2012 is 1.138 and last five years impact factor is 1.333. A snapshot of the impact factor of the journal is given below:

Figure-6: Impact Factor through ISI Web of Science
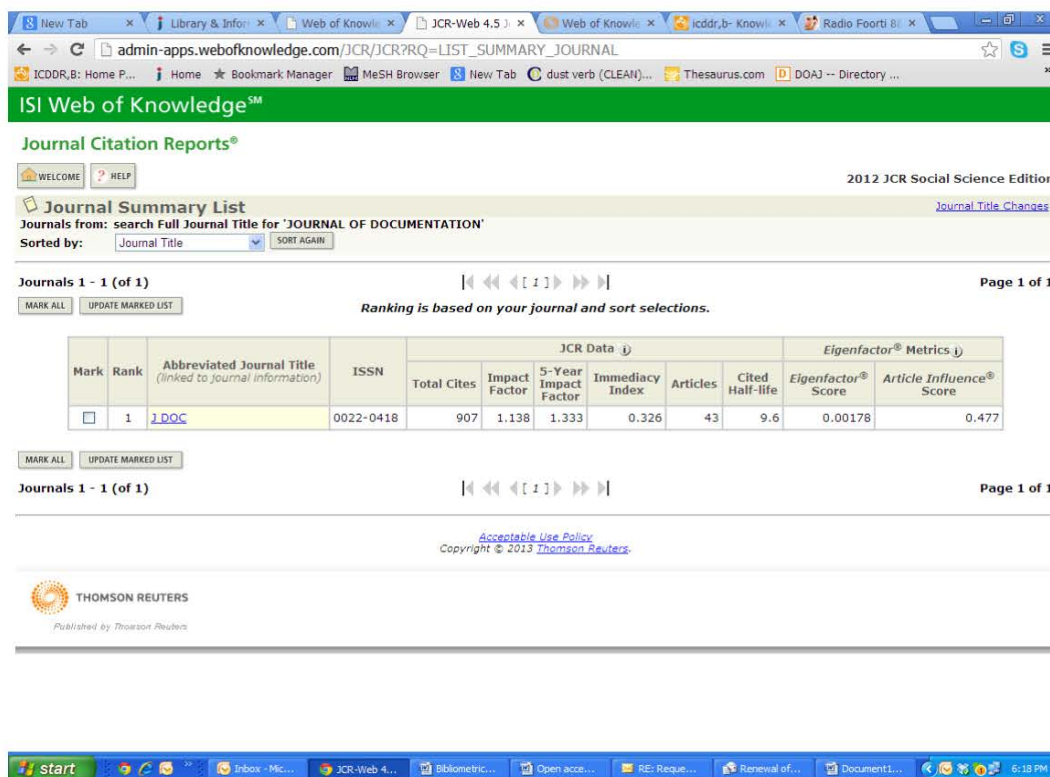
Findings

The present bibliometric analysis was based on of peer-reviewed publications that were published in the *Journal of Documentation* during 1991 to 2013. The findings of the study are given below:

- In regard to **frequency**, the journal was published quarterly between 1945 and 1996, during 1997 to 1999 it published five issues per year. Since 2000, it is published bimonthly;

- The **number of articles** published per volumes varies;

- The **issues** per volumes also differ year to year;

- The highest number of **publications** (including book review, article, editorial material, review, reprint, proceeding paper, biographical item, letter and correction) were published in 2001 and lowest in 1997;

- The highest number of **articles** published in 2011 and lowest number is published in 1995;

- In **country** wise distribution, the highest number of records were published from England (431) during the period between 1991 – 2013;

- In **Document type** wise distribution, the Book Reviews count for highest records;
- The highest number of **citations** were 668 cited in 2010 and lowest number of citations were 7 recorded in 1996 during the period of 1994 to 2013;
- The highest number of record for a single **author** is 90 (7.544% of 1193) that belongs to Bawden D and the lowest number of record is 2 (0.168%) that applies to 94 authors.
- Results found 1193; Sum of the times cited = 6000; Citing articles = 3994; Average citations per items = 5.03; **h-index = 35**;
- The **impact factor** of *Journal of Documentation* is 1.138 for the year of 2012 and impact factor for the last five years is 1.333.

Conclusion

The scholarly publications in the database of Web of Knowledge/Web of Science have been used as a key source of data in the present study. The findings of the study will enable researchers for doing further analysis in different aspects of bibliometrics. The present study that contained mainstream scholarly articles, research reports, and critical reviews of *Journal of Documentation* gave a clear picture about citations, impact factor and h-index. The study provided bibliometric trend in the field of author, title, article, country and reviews. It also showed year wise trends of citations of the journal during 1991-2013. The previous studies of the same journal should also help authors and researchers in order to evaluate bibliometric scenario in the field of documentation and information science.

Acknowledgement

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