

Journal of Knowledge Management: A Bibliometric Study

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Abstract

Bibliometrics are defined as the quantitative analysis of the characteristics, behaviour, productivity of all aspects of written communication, library staff and information users. The paper studies bibliometric study on Journal of Knowledge Management where the analysis of authorship pattern, most prolific author, degree of collaboration, subject wise dispersion are studies. Citation analysis is a part of bibliometric study which study on the relationship between cited article and source article. This paper also studies the volume wise distribution of citation and citation per paper analysis.

Keywords: Bibliometrics, Journal of Knowledge Management, Citation analysis, Average Citation per Paper, Degree of Collaboration).

INTRODUCTION

Alan Pritchard coined the term bibliometrics in 1969. He suggested that 'bibliometrics' should replace the term 'statistical bibliography' which had been used intermittently in the literature since 1923 when it was coined at the University of Cambridge [1]. He introduced this term to describe all studies, which seeks to quantify the process of written communication.

The word 'bibliometrics' is derived from Latin and Greek word, i.e. 'biblio' and 'metrics'. So the word bibliometrics etymologically stands for the application of mathematics to the study of bibliography. According to British Standards Institution [2], bibliometrics is the study of the use of documents and pattern of publication in which mathematical and statistical methods have been applied.

This paper studies the bibliometric analysis of the literature published in the Journal of Knowledge Management.

JOURNAL OF KNOWLEDGE MANAGEMENT: AN INTRODUCTION

The Journal of Knowledge Management (JKM) is an interdisciplinary peer-reviewed quarterly academic journal publishing original research, technical discussions, and case studies on knowledge management. It is indexed in Library and Information Science Abstracts, Inspec, and Scopus [3]. The focus of this journal is on the identification of innovative Knowledge Management strategies and the application of theoretical concepts to real-world situations. According to its homepage, it has also been accepted in Thomson Reuters Social Sciences Citation Index and its current impact factor is 1.586. According to 2014 Journal Citation Reports (Thomson Reuters, 2015) Journal of Knowledge Management is regarded as the premier journal in the field of knowledge management [4].

OBJECTIVES

The main objectives of this study are as follows:

- To find out volume wise contributions in a journal.
- To find out the Authorship pattern as single, two, three, four and more than three authors.
- To know about the most prolific authors of this journal.
- To know degree of collaboration.
- To ascertain the statistics of distribution of contributions in different aspects or fields of Library & Information Science.
- To study the volume wise distribution of citations in this journal.
- To know the average citations per paper during the period of five years.

REVIEW OF LITERATURE

Before starting the study some review of literature was also done which are mentioned below:

- Hulme used 13 annual issues of the *International Catalogue of Scientific Literature*, from 1901 to 1913, counting author entries for various subjects and graphing the information. Because of declines and advances evidenced in the chart, he did a further analysis resulting in the tabulation of the "Number of journals indexed arranged by countries" and listing of countries in order of total productivity of the number of journals indexed [5].

The purpose of his paper was to ascertain and illustrate by bibliographical data, various stages in the development of the mechanics of civilization. Hulme also

stated "increased activity in the library output of a science can invariably be associated with pre-existent courses, concluding that declines and peaks are influenced by population change, political, and economic movements.

- In 1926, the *Journal of the Washington Academy of Sciences* printed the paper "Statistics-the Frequency Distribution of Scientific Productivity". It was especially important because it developed a productivity formula which became known as Lotka's Law [6].

Chaurasia studied a total of 20 issues of *Annals of Library and Information Studies (ALIS)* published over year of 2002-2006. He analysed the number of articles per volume, authorship pattern, and degree of collaboration, subject coverage of articles, institutional and geographical contributions in the journal, dispersion and types of references cited by articles. The study shows the average number of contributions per volume was 21.4 and the majority of papers were authored jointly. Chaurasia used the degree of collaboration formula to determine the extent of collaboration in quantitative terms. Most of the papers were contributed by library professionals affiliated to university and college libraries and the majority of contributions were from India (96.2%). The sources cited were mainly journals (50.1%) followed by books (19.9%) [7].

METHODOLOGY

A total number of 30 issues of the Journal "Journal of Knowledge Management" from the year of 2012 to 2016 have been taken for this study. For this purpose, the data collection regarding number of papers in each issue, number of authors along with their institutional affiliations and addresses, fields of library & information for subject analysis and citations per issues were recorded and after doing analysis of these data, table, graphs and figures were prepared.

DATA ANALYSIS & INTERPRETATION

The data has been tabulated and discussed to find out the results according to various characteristics and objectives of the study.

Distribution of Contributions

This study analyse the number of article published in a year and its percentage of contribution in a volume.

Table1: Volume and Year wise distribution of contributions.

Volume	16	17	18	19	20
Year	2012	2013	2014	2015	2016
No. of Papers	57	56	65	69	71
Percentage	17.92	17.61	20.44	21.69	22.32

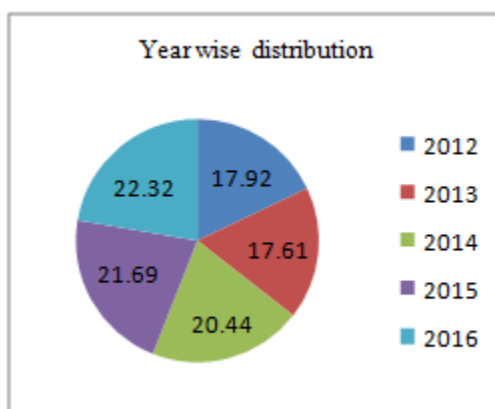


Figure 1: Year wise distribution

Table 1 and adjacent figure shows that Volume 20 (published in the year of 2016) has the highest number of papers and the Volume 17 (published in the year of 2013) has least number of papers in comparison to others.

Authorship Pattern

This study shows the contributions of authors as single author, two authors, three authors, four authors and more than four authors.

Table 2: Authorship pattern.

Authorship	Single	Two	Three	Four	More than Four
Numbers	50	118	106	23	21
Percentage	15.72	36.99	33.33	7.23	6.60

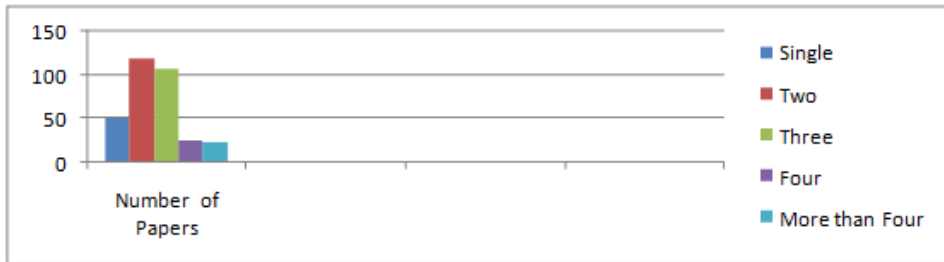


Figure 2: Authorship Pattern

Table 2 shows that the single authorship pattern has 50 (15.72%) papers which is lowest than other authorship pattern. Two authorship patterns have 118 (36.99%) papers, three authorship pattern has 106 (33.33%) papers, four authorship pattern has 23 (7.23%) papers and more than four authors has 21 (6.60%) papers. The average number of authors per paper is 2.51% i.e. 801 authors have written 318 papers.

Most prolific authors

This study is carried out with the help of Web of Science database which shows some of the top academicians' productivity. According to Lotka's law, large number of papers published by a limited number of authors which seems true after observing the below mentioned table:

Table 3: Most prolific authors

Name of Authors	Contribution (No. of Papers)
Serenko, A.	8
Bontis, N.	6
Del Giudice, M.	5
Dummay, J.	4
Kianto, A.	4
Bolisani, E.	3

The above table shows that Serenko, A. has contributed 8 papers during the year of 2012-2016 for the Journal of Knowledge Management which is highest in ranking and Bontis, N has contributed 6 papers and Del Giudice, M. has contributed 5 and so on.

Degree of Collaboration

Degree of Collaboration was first suggested by Subramanyam in the year of 1993 which takes the proportion of co-authored publications in the total number of publications [8]. The formula given by Subramanyam is as follows:

$$C = \frac{N_m}{N_m + N_s}$$

Where,

C= Degree of Collaboration

N_m= Number of Multi Authored Contributions

N_s = Number of Single Authored Contributions

In the present study, Degree of Collaboration is calculated for every year or every volume of the Source Journal and presented in the following table.

Table 4: Degree of Collaboration

Volume (Year)	Single	Multiple	Total	Degree of Collaboration
16 (2012)	11	46	57	0.81
17 (2013)	10	47	57	0.82
18 (2014)	9	55	64	0.86
19 (2015)	8	61	69	0.88
20 (2016)	12	59	71	0.83
Total	50	269	318	0.84

The table 4 depicts the value of C is 269/318=0.84. It also shows that the degree of collaboration was highest in Volume 19 (2015) and lowest is in Volume 16 (2012).

Subject wise Distribution

The study analyses the various field of subject in the area of Knowledge Management.

Table 5: Subject wise distribution

Name of Subjects	No. of Papers	Rank	Percentage (%)
Knowledge Management	116	1	36.48
Information Management	85	2	26.72
Knowledge Sharing	52	3	16.35
Knowledge Transfer	25	4	7.86
IT & I.C.T. based Knowledge Management	8	5	2.52
Tacit Knowledge	6	6	1.88

Social Media	3	7	0.94
External Knowledge	3	8	0.94
Physical Environment	2	9	0.62
Communities of Practice	2	10	0.62
User Information	2		
Public Health	1		
Others	1		

Table 5 shows that Knowledge Management occupies first place among all other fields of subjects in Library & Information Science. It shows the top five most dominating subjects fields in this journal. There are Knowledge Management with 116(36.48%) papers; Information Management with 85(26.72%); Knowledge Sharing with 52 (16.35%); Knowledge Transfer with 25 (7.8%) Information Technology and Information and Communication Technology based Knowledge Management with 8(2.52%) papers respectively.

Citation Analysis

The citation analysis is also a part of bibliometric study which studies the relationship between cited document and citing document.

Distribution of citations (volume wise)

This study shows the distribution of citations in each volume and its percentage.

Table 6.1: Distribution of Citations (Volume wise)

Year	Issue no.1	Issue no.2	Issue no.3	Issue no.4	Issue no.5	Issue no.6	Total
2012(V.16)	609	857	667	456	547	519	3,655
2013(V.17)	445	691	645	564	449	852	3,646
2014(V.18)	385	780	552	723	592	517	3,549
2015(V.19)	280	1325	678	819	819	111	4032
2016(V.20)	680	681	835	958	1123	868	5,145
							20,027

It can be observed from the Table 6.1 that total 20,027 citations are available over five years for the total contributions of 318 papers. The above table also displays that Vol. 20 has highest number of share i.e. 25.67% in the total citation i.e. 20,027 received during the study. The Vol. 18 has least number of share i.e. 17.72% in the total citations.

Average Citations per Paper (ACP)

This study analyses the average citations received per paper and derives the result in percentages.

Table 6.6.2: Average Citations per Paper (ACP)

Year	Volume	Citations	Papers	ACP
2012	16	3,655	57	64.12
2013	17	3,646	56	65.10
2014	18	3,549	65	54.60
2015	19	4,032	69	58.43
2016	20	5,145	71	72.46

In this table, it is observed that the average number of citations per paper is 63 which show the usefulness of Journal.

CONCLUSION AND IMPLICATIONS

The data analysis reveals the below mentioned conclusions which can be useful for the librarians, users, authors and publishers of this journal. The conclusion drawn in this article is indicative of the use, pattern and trend of literature used by scientist, researchers, and scholars in the field of knowledge management.

- The study of distribution of contribution in a volume shows the trend and pattern of growth during 2012 to 2016 and average number of contribution per volume is 64. It is useful to know the productivity of the journal.
- The study related to authorship pattern which displays that single author has contributed lowest number of papers in comparison to others such as two, three, four and more than four authors.
- The study of most prolific authors describes that A. Serenko has contributed 8 number of papers during 2012-2016 which is highest than others.
- The study of degree of collaboration displays that the degree of collaboration of Journal of Knowledge Management is 0.84.
- The analysis of subject wise distribution of papers reveals that most of the papers are published in the area of knowledge Management. Behind this result, it may be reason that this Journal is focused on Knowledge Management. Second position is occupied by Information Management because it is related field of Knowledge Management.

- Citation analysis was also carried out on the Source Journal. It appears that each volume and issue has good number of citations. It is also seen that Vol. 20 has highest number of share i.e. 25.67%.
- The Average Citation per Paper analysis depicts that around 63 citations were received by each paper published in the Journal of Knowledge Management.

REFERENCES

1. Lawani, S. M. (1981). Bibliometrics: its theoretical foundations, methods and applications. *Libri*, 31(4), 294.
2. British Standard Institution. (1976). British standards glossary of documentation terms prepared under the direction of the documentation standards committee. Published under the Authority of the Executive Board, 7.
3. Journal of Knowledge Management. (2017, April 07) Retrieved from https://en.wikipedia.org/wiki/Journal_of_Knowledge_Management
4. Emerald Publishing. (2017). Journal of Knowledge Management. Retrieved from <http://emeraldgroupublishing.com/products/journals/journals.htm?id=jk m>.
5. Hulme, E. Wyndham. (1923). Statistical bibliography in relation to the growth of modern civilization. Lectures, May 1922, London: Butter and Tanner Grafton, P.7
6. Lotka, Alfred J. (1926). Statistics-the frequency distribution of scientific productivity. *J. Washington Academy Science*, 16, 317-325.
7. Chaurasia, K.K. (2008). Bibliometric analysis of Annals of Library and Information Science (2002-2006). Proceedings MANLIBNET 9th Annual National Convention, New Delhi, India.
8. Subramanian, K. (1983). Bibliometric studies collaborations: A review. *Journal of Information Science*, 6 (1), 33-38.