Status of Literature in Knowledge Management in Web of Science (2007-2014): A Bibliometric Study

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Abstract

Purpose -The purpose of this study is to identify and describe the characteristics of literature published in the field of "KM" over the period of 8 years with a view to identify the place, language, year of publication, subject areas, forms of documents, country of origin etc. Design/methodology/approach -A total numbers of 4371 items are collected from the source document "Web of Science", from the year 2007-2014. Findings -The overall productivity of Knowledge Management (KM) works has been growing, reaching up to 495 publications per year from 2007 to 2014, but their productivity are somewhat irregular. Most of the literature of KM in Web of Science is published in non KM focal journals.KM play a major role from the ancient time so there is differentiate in research by country wise.The most productive top five countries in the field of KM research are USA, England,

1 Introduction

ue to the rapid growth of knowledge, librarians and information scientists face greater problems in acquisition, collection, organization and dissemination of relevant documents within limited financial resources. To overcome these problems, they need techniques by which they can use the limited financial resources to the optimum. Amongst the large number of techniques available, the bibliometrics is one of the effective techniques. The Bibliometric study is popular because it helps to improve scientific documentation, information and communication activities by quantitative analysis of library collections and services. Besides its specific research as a social activity, a quantitative analysis of the generation, propagation and utilization of scientific information aspect. It is well known fact that the knowledge is growing at a very fast rate and it is necessary that a new work and findings should be highlighted among the research scholars and others who interested in them.

The present study will help the librarian in the selection of literature in the field of "knowledge management".

2 II.

3 Knowledge Management

Knowledge management emerged during the mid-1990s and received considerable attention from many scholars and practitioners. Knowledge management has been practiced by numbers of fields associated with information systems, business and management, LIS, computer science, communication etc. Wen (2005) describes its emergence first in the business sector, then in higher education, and now in library management. Although the emergence of knowledge management can be traced to only last decade, Hawkins (2000) claims that for many in the academic world, knowledge management is an old concept, a function historically performed by librarians. Knowledge management in its simplest sense, can be described as the management of both explicit (recorded) and tacit knowledge. Knowledge management is an emerging key concern of many business organizations. The

business model of knowledge management is now being adopted by many non-profit organizations like libraries. Different disciplines use the term "knowledge" to denote different things, and so defining it precisely and exactly is not easy. Nonaka and Takeuchi (1995) define knowledge management as the capability of an organization to create new knowledge, disseminate it throughout the organization, and embody it in products, services and systems. A comprehensive idea about knowledge management has been given by Davenport et al. **??**1998) as KM is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organizations objectives. The knowledge to be managed includes both explicit, documented knowledge, and tacit, subjective knowledge. Management entails all of these processes associated with the identification sharing and creation and maintenance of knowledge repositories, and to cultivate and facilitate the sharing of knowledge and organization learning.

Knowledge management can be broadly defined as the set of processes, tools, and techniques for the most effective and efficient use of the knowledge management aims to improve maintain, and create organizational capabilities to generate sustained competitive advantage. Knowledge management has been promoted as a valuable business concept for almost two decades. Although originally emerging in the world of business, the practice of knowledge management has now spread to the domain of nonprofit and public sector organizations, including that of libraries. The goal of knowledge management is to effectively apply an organization's knowledge to create new knowledge to achieve and maintain competitive advantage (Alavi and leidner, 2001). KM is a combination of people, process and technology. This involves people from a wide variety of disciplines including, for example, information technology (IT), Psychology, LIS and human resource management (HRM).

4   III.

5   Objectives of Study

The present study aims at identification and describing some of the characteristics of literature published in the field of "KM" over the period of 8 years (2007-2014) with a view to identify the place, language, year of publication, subject areas, forms of documents, country of origin etc. The specific objectives of the present study address the following aspects:

To track the growth of scholarly publications on KM from 2007 to 2014.

To explore the types of publications.

To identify the most productive researchers in the field of KM in Library and Information Science.

To prepare a ranked list of journals and to find out the core journals in the field of "KM".

To know the most productive countries in the field of "KM".

To identify the scattering of the publications under different subjects areas.

To know the languages in which the most of literature on the KM has been published.

IV.

6   Methodology

? The first most important task is to select the source document form which data is to be drawn. For this purpose, Web of Science (WoS), previously known as Web of Knowledge) has been consulted. Web of Science is an online subscription-based scientific citation indexing service maintained by Thomson Reuters that provides a comprehensive citation search. Whether looking at data, books, journals, proceedings or patents, Web of Science provides a single destination to access the most reliable, integrated, multidisciplinary research.

? The main objective of the study is to find out current information marked by web of science in the field of "KM" during the period of 2007-2014.

? Next step was to analyze the data that was collected from the source document. The total number of records collected from the Web of Science was exported on MS-Excel-2007 and the whole data was arranged and rearranged in order to achieve the following objective.

7   a) Ranking of journals

The main objective of the study is to identify the core periodicals (journals) congaing the research literature on "KM". It is necessary to know the most productive periodicals on the subject. To conduct the study, the articles published in different periodicals were grouped together and arranged according to the decreasing number of records.

8   b) Ranking of author

This study has been conducted to know the eminent personalities in the field of "KM". The present study analyzed the authors on the basis of their frequency of contributions i.e. how many contributions have been made by the different author. Ranking of authors is done to identify the most productive contributions in the subject.

9 c) Year wise distribution

In this analysis, year of origin of items were studied to know how many items belong to a particular time period on the basis of their frequency belonging to that particular year. The data was analyzed and tabulated to find the growth of literature on KM.

10 d) Country wise distribution

This is done to determine the geographical scattering of items on KM productivity of different countries in the subject under the study, which is given in Web of Science. The entries were grouped on the basis of their place of origin. They were then counted and ranked in a table.

11 e) Subject-wise distribution

This analysis has been done to know the scattering of literature on "KM" in various subject fields. This analysis shows the interdisciplinary character of the subject field. The analysis has been done on the basis of subject field of periodicals publishing on KM literature. The information about the subject fields were obtained from Web of Science database.

12 f) Form wise distribution

There are number of forms of documents in which literature on 'KM' is published. The aim of analysis is to know the major forms of documents used for producing new information in the subject under study. Data has been tabulated to find out the most used forms of documents.

13 g) language wise distribution

It is great significance to know the language in which the literature in a area of specialization is published. For the purpose of language-wise analysis, the entries were grouped according to their language of the documents. After this study they were counted and then prepared a ranked list of languages.

V.

14 Data Analysis

For this study, the total numbers of 4371 items are collected from the source document 'Web of Science' from the year 2007-2014 on the topic "Knowledge Management". The data, so collected was analyzed as under:

15 a) Year-wise distribution

For this study, the total numbers of 4371 items are collected from the source document "Web of Science", from the year 2007-2014 listed in Table **??**.1.

16 b) Subject-wise distribution

Usually, most of the materials on a given subject are publish in the journals belonging to the same subject. However a significant amount of literature is published in the journals of other related or marginal subjects. These analyses had been done base of keywords of the published literature, abstract of documents (articles, reviews etc.). The analyses is given in the below table No The characteristics of any subject literature include not only the basic publishing patterns but also the contribution by the authors. There are certain authors in every subject who account for several papers in their field. However, some of them are well known in a given field. It is therefore important to know the eminent authors in the field of Knowledge Management. This information is useful equally for the librarians as well as the researchers.

The prime objective of the study is to find out the authors whose contribution is significant in the field of 'Knowledge Management'. For this purpose, a ranking list of 45 productive authors have been prepared and presented in the table no. 3 in order of decreasing number of papers published in the selected field of 'Knowledge Management'.

17 d) Ranking of journals

Now a days, journal have got key position, as an important source of current information, they play a significant role in scientific communication. Articles of the journals provide the most of required information to information sources. It may be found that certain core journals contribute most of the literature on particular topic. This information of core journals in various Subject will go a long way in preparing the subscription list of journals by the librarian and information scientists. The present study therefore is meant to identify the most important journals, contributing the most of the literature of research value in the field of "Knowledge Management".

In the collected data all the 3930 references were found to be in 951 journals, which have been ranked up to 39 positions on the basis of their decreasing frequency.

In this study the first rank was occupied by the journals titled "Journal of Knowledge Management" with the frequency of 278, which accounts for 7. **??**7 Table No. 5 and 6 show that 1466 items on 'Knowledge Management'

appeared in 32 periodicals/journals as 37.30% of total appeared items constituting in 3.36% journals. They may be regarded as core periodicals in the field of 'Knowledge Management'.

The journals having their frequency of occurrence in the range of 278-18 are 32(3.36%) and the total number of items is 1466(37.30%). The journals having frequency range of 17-16 are 10(1.05%).

The present ranking list may be useful for the librarian in talking policy decisions regarding subscription list of periodicals on the subject 'Knowledge Management'. It will be equally important for the document lists in preparing an exhaustive documentation list. The study may be useful for the information professionals, as they would know the core journals carrying the highest percentage of items.

18   e) Country Wise Distribution

Certain countries give more research in particular subjects than others. This is very much useful not only for the information manager in finalizing the subscription list of periodicals but also for the research scholars as they tend to know the countries that are leaders in their respective field of research. The figure no. 3 shows that literary output of USA is more than other countries in the ranking list; USA accounted for 960 items of total 4371 items and thus occupies the first rank.

19   f) Form wise distribution

The literature on the topic "Knowledge Management" has been published in different forms such as articles, reviews, proceedings papers, editorials, book reviews, meeting abstracts, corrections, book chapters, letters, news items, etc. One of the objectives of our study was to know the different forms in which the literature on the subject 'Knowledge Management' is being published. This helps the information scientists or librarians in knowing the most important forms of literature on the topic "Knowledge Management". Table ??.7 shows that the literature on Knowledge Management is being published in different forms. Analysis of collected data reveals that Article is the most dominant form of publication in the field of Knowledge Management occupying first position and corresponding to 89.91 percent of the total items. This is followed by others forms of publications, such as reviews (4.65%), Editorial Material (2.97%) and Book reviews (1.78%) occupying second, third and fourth positions respectively. It is important to mention here that articles published in journals are most vital form of media of scholarly communication among researchers belonging to the subject "Knowledge Management". Forms-wise distribution of publications is also shown in Literature on a particular subject may be published in different languages. For researchers and information scientists, it is always important to know the language(s) in which the material of their area or specialization is published. This study provides information about the most dominant language(s) in which the literature on the subject "Knowledge Management" is being published. Table ??.2 shows the distribution of these items according to the language of their publication. It may be observed from Table ??.4 that a total of 4371 items were published in 12 different languages. Among these 12 languages, 'English' was found as the most dominant language corresponding to 94.83 percent of total publications. English is followed by Spanish (2.4%), Portuguese (1.3%) and German (0.595%) languages. It is interested to note that 99.15 percent items have been published in these four languages and reaming 0.85 percent of items were published in eight languages.

20   Findings and Conclusion

The prime objective of the bibliometric study i.e., quantitative or numerical or statistical analysis of recorded communication, is to know the subject, forms, languages, countries, years, leading core journals etc. in the subject "Knowledge Management". After the collection of data form 'Web of Sciences', it was analyzed according to bibliometric technique and results were drawn in the form of table, graphs and pie charts.

On the basis of this study major findings may be concluded as follows:

? From the study dealing with year wise distribution of items, it is found that largest amount of document were produced in the year 2012 with 654 items i.e. 14.96% on the subject "Knowledge Management". The other most productive years are 2011 and 2009 accounts for 609 items i.e. 13.93% and 573 items i.e. 13.10%, respectively.

? From the form wise distribution, it is found that Article are most popular form, with 3930 items i.e., 89.91 %, followed by Review with 208 items, i.e., 4.75%, Proceeding Paper with 140 items i.e., 3.20%. This analysis may be useful for the librarian to decide about the various forms of documents,

? Subject wise distribution shows that the most dominant subject area items were found to be 'Management' in which 1471 items constitutes 33.64%. The second and third rank goes to 'Information Science Library Science' with 1123 items i.e., 25.68%, 'Computer Science Information Systems 'with 629 items i.e., 14.38% respectively.

? Language wise distribution analysis shows that 94.83% literature in this field is published in English language 2.42% in Spanish language, .595% in Portuguese and so on. English is the most dominant language in this field. This analysis suggested that researchers should know at least one foreign language other than English.

? At last Bradford's and Lotka's laws were applied to the collected data to testify the validity of laws in the present context. However, Lotka's law could not be verified, as it seem to out dated for the literature on "Knowledge Management" is concerned. But Bradford's law is thus partially proved in this study. Finally it may be concluded that Bibliometric study is very well established technique of identification and describing some of the characteristics of literature. This study helps the librarian or information scientists in deriving certain

207 conclusions, which help them in taking certain fruitful steps in the smooth running of library and also helps in
208 satisfying the need of the users to the great extent. Now a day's Bibliometrics studies are becoming very popular,
because of explosion of knowledge.   [1] [2]

2016

Figure 1: Year 2016

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Figure 2: Fig. 1 :

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Figure 3: Fig. 2 :

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Figure 4: Fig. 3 :

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Figure 5: Figure

4 ▶

Figure 6: Fig. 4 :

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Figure 7: Fig. 5 :

No

1 : Year-wise distribution of Document

S.NO.	Year	No. of Documents	Percentage of documents
1	2007	411	9.403
2	2008	490	11.210
3	2009	573	13.109
4	2010	560	12.812
5	2011	609	13.933
6	2012	654	14.962
7	2013	562	12.857
8	2014	512	11.714
	Total	4371	

Figure 8: Table No .

No

Table No. 2 : Subject wise distribution

S.No.	Rank	Subject Area
1	1	Management
2	2	Information Science Library Science
3	3	Computer Science Information Systems
4	4	Computer Science Artificial Intelligence
5	5	Operations Research Management Science
6	5	Business
7	6	Computer Science Interdisciplinary Applications
8	7	Engineering Industrial
9	8	Engineering Electrical Electronic
10	9	Computer Science Software Engineering
11	10	Engineering Manufacturing
12	11	Engineering Multidisciplinary
13	12	Engineering Civil
14	13	Computer Science Theory Methods
15	14	Economics
16	15	Education Educational Research
17	16	Computer Science Cybernetics
18	17	Medical Informatics
19	18	Environmental Sciences
20	18	Public Environmental Occupational Health

21　16　19 20　9.4 Health Care Sciences Services 11.21 13.109 12.81 13.93 Social Sciences Interdisciplina

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2007 2008 2009 2010 2011 2012 2013 2014

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[Note: .-2 gives a subject wise break up in the field of 'Knowledge Management'. The most dominant subject area items were found to be 'Management' in which 1471 items constitutes 33.64 %. The second and third rank goes to 'Information Science Library Science' with 1123 items i.e., 25.68 %, 'Computer Science Information Systems 'with 629 items i.e., 14.78 % respectively.]

Figure 9: Table No

No

Status of Literature in Knowledge Management in Web of Science (2007-2014): A Bibliometric Study

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2 47   10 Chen Ym 55 Authors Have Five Contrib

3 48   11 Bontis N 138 Authors Have Four Contril

4 49   12 Serenko A 292 Authors Have Three Con

5 50   13 Chua Ayk 1038 Authors Have Two Cont

6 51   14 Yang J 7657 Authors Have One Contribu

7   Lee S   Total

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 8 35 36 37 Table No. 3 gives th

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39	Lee Cs
40	Kuo Th
41	Huang Cc
42	Garcia-
	Morales
	Vj
43	Davison
	Rm

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Figure 19: Table N

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. 7

shows the list of 25 countries which are involved in
producing the research materials on "Knowledge
Management" during 2007-2014.

Table No. 7 : Country Wise Distribution

S.No.	Country/Territories	Records	Percentage
1	USA	960	21.963 %
2	England	459	10.501 %
3	Taiwan	418	9.563 %
4	Spain	363	8.305 %
5	Peoples R China	335	7.664 %
6	Canada	242	5.536 %
7	Australia	223	5.102 %
8	Germany	188	4.701 %
9	Italy	162	3.706 %
10	France	153	3.500 %
11	Netherlands	129	2.951 %
12	South Korea	127	2.906 %
13	Brazil	110	2.517 %
14	Finland	82	1.876 %
15	Iran	76	1.739 %
16	Switzerland	76	1.739 %
17	Singapore	74	1.693 %
18	India	69	1.579 %
19	Malaysia	68	1.556 %
20	New Zealand	68	1.556 %
21	Sweden	67	1.533 %
22	Poland	63	1.441 %
23	Japan	62	1.418 %
24	Austria	60	1.373 %
25	Greece	53	1.213 %

Figure 11: Table No

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Figure 12: Table No .

No

. 8 : Form Wise Distribution of documents

S. No.	Document Types	Records	Percentage	Percentage of Cum. Freq.
1	Articles	3930	89.91	89.91
2	Reviews	208	4.65	94.56
3	Editorial Materials	130	2.97	97.53
4	Book Reviews	78	1.78	99.31
5	Meeting Abstracts	16	0.36	99.67
6	Corrections	4	0.09	99.76
7	Book Chapters	2	0.04	99.80
8	Letters	2	0.04	99.84
9	News Items	1	0.04	99.88
	Total	4371	99.88	

Figure 13: Table No

No

4	German	26	0.595 %
5	French	9	0.206 %
6	Russian	6	0.137 %
7	Czech	5	0.114 %
8	Turkish	5	0.114 %
9	Croatian	2	0.046 %
10	Hungarian	2	0.046 %
11	Polish	2	0.046 %
12	Slovak	2	0.046 %
	Total	4371	

0.09%

0.37%

4.75% 3.20% 2.97% 1.78% 0.05% 0.05%   0.05%

89.91%

. 9 : Language wise distribution

S.No.	Languages Records		Percentage
1	English	4145	94.830 %
2	Spanish	106	2.425 %
3	Portuguese	57	1.304 %

Figure 14: Table No

which are to be procured in the library to serve the requirements of researchers on the subject.

? Author wise distribution shows that 7657(82.66%) items contributed by single authors and 1606(17.3%) items contributed by more than authors (multiple authors). The most productive authors in the field are: i. Cheung CF 14 ii. Serenko A 13 iii. Yang J 12

? From the study dealing with ranking of journals, it is found that the journal title 'Journal of Knowledge Management', published from Great Britain, is most productive, reposting 278 items i.e. 7.072% of the total references. This is followed by 'Knowledge Management Research Practice' published from the UK with 184 items i.e. 4.68% of the total and 'Expert System with Applications' published from the UK with 140 items i.e. 3.56% of the total.

? From Geographical study, it was found that USA is the biggest producer with 960 items i.e., 21.96%, of the total. This is followed by England and Taiwan with 459(10.50%), 418(9.56%) items respectively. India has 69 (1.57 %) items.

[Wen (2005)] *Implementing Knowledge Management in Academic Libraries: A Pragmatic Approach. Paper Presented at the Third China-US Library Conference*, S Wen . 2005. March. Shanghai. p. .

[Hawkins ()] 'Libraries, Knowledge Management, and Higher Education in an Electronic Environment'. B Hawkins . `http://conferences.alia.org.au/alia2000/proceedings/brian.hawkins.html(accessed04/04/2016` *Proceedings* 2000. 2000. (ALIA)

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