

# Knowledge Management: A Bibliometric Analysis

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*Knowledge management has acquired great importance in this information overloaded situation. Every organization or institution in these days gives utmost priority to knowledge management. Because any organization or institution would be useful and persuasive if and only if it caters the information needs of patrons and society in general. A good knowledge management system is a must to cater the information need of the society. A good, efficient knowledge management system can play a vital role in enhancing the dissemination and retrieval of the information. Besides, it save the time and resources to a great extent. This forced the academic world to concentrate more on the theme knowledge management. Many authors studied and written on this theme further and discussed it from different point of views with a view to paving the way to function better and satisfy the information needs. This article makes a bibliometric analysis of the paper written on the theme knowledge management in order to find the research trends on this theme.*

## **Introduction**

In these times, the power and influence of a nation or society is measured in terms of knowledge it possesses and contribute than mere holdings of weapons or most modern technologies. The principal agent which support knowledge explosion is research. And the fuel which ignite the research of a nation none other than information centers especially the libraries. Libraries or information centers are often compared with the gate way to knowledge, information and wisdom. Information centers, alike any other institutions, is in need of management without proper management no institution or organization can achieve the desire goals in near future. There are different facets or dimensions of management. Among them knowledge management has acquired great importance in this information overloaded situation. Information centers would be useful and persuasive if and only if it caters the information needs of patrons and society in general. This prompted the scholarly world to write and discuss about knowledge management. This resulted in the publications of many documents dealing with the theme knowledge management. Today, the theme knowledge management is an inevitable part of scientific literature and assumes great importance in each data bases to guide the research endeavors of scholars. Bibliometric analysis of the document published on the theme of Knowledge management in the data base will give new insights to the researcher in formulating their content and the research gaps.

## **2. Review of Literature**

The article authored by Maagan Nakash and Don Bouhnik gives general idea about knowledge management and its importance (Nakash & Bouhnik, 2020). The article titled “Knowledge Management: A Global Examination based on Bibliometric Analysis by Magaly Gavir –Marin et.al elaborates about the importance

and usage of ScientoPy tool in bibliometric analysis (Gavira-Marin et.al., 2017). The article authored by Mahadu Manoharrao Shinde affirms the importance of knowledge management in information centers (Shinde, 2011). The article titled “Introduction to bibliometrics for construction and maintenance of thesauri methodical considerations” gives a brief narration about what is bibliometrics and its importance in a bird’s eye view (Schneider & Bourland, 2004). The book titled Management of Libraries in Digital Era: Perspectives and Challenges describes basic notions of knowledge management and role of knowledge management in libraries (Yadagiri & Kumar, 2015). The article titled “Knowledge management in higher institutions: Benefits and Issues” narrates the beneficial aspects of knowledge management in institutions and organizations (Suliman, 2022).

### 3. Methodology

Though there are number of databases, the present study considers bibliographic records obtained from Scopus. Scopus is a digital database and widely used by researchers. Bibliometric study considers Scopus to be relevant database because it provides a set of metadata that is essential for this type of analysis, including abstracts, references, number of citations, list of authors, institutions, countries and the journal impact factor.

Scopus is based on keyword search. The criteria for these key words are based on existing studies that identify KM by Indian authors. At the point “Knowledge Management” is searched and could find 85,358 documents appeared. When it delimited to Indian authors it reduced into 2,617 documents. Since 2022 and 2023 are incomplete years, these years were excluded and fixed the documents form 1990-2021. Then about 2469 documents were founded out. These documents were submitted to process in the ScientoPy to remove the duplicated files. The study takes this 2,469 documents on KM by Indian authors to carryout bibliometric analysis. To make a thorough review of two thousand and more publications related to knowledge management the study presented and utilized a novel literature review script ScientoPy to analyze documents according to predefined metrics.

ScientoPy was introduced by the authors to analyze content of publications. This ScientoPyscript has the capability to:

- ❖ Read Clarivate Web of Science and Scopus databases (.CSV files).
- ❖ Filter publications by document type.
- ❖ Find and remove duplicated documents.
- ❖ Graph the history of the top topics (keywords, authors, countries).
- ❖ Graph the history of selected items inside a topic.
- ❖ Find trending topics using the top average growth rate (AGR).
- ❖ Calculate the h-index for authors and countries.

ScientoPy is a Python script that automatically generates and reports the top topics (based on authors' keywords), authors, and countries, along with related documents. This automatic data synthesis avoids potential bias as in individual studies. Nevertheless, author name analysis (such as author top list) has a risk of bias across the studies due to possible similarities in names. The writers of this review know and warn about this possibility of documents' author names similarity, which is part of the limitation of any scientometrics study; thus, in this moment not all the authors and data bases have a unique author identifier, like the ORCID, associated with all entries (Gavira-Marin et. al., 2017).

#### **4. Objectives**

- ❖ To trace down the literature published on KM in Scopus by Indian authors.
- ❖ To know how many Indian authors are contributed to the theme KM in Scopus.
- ❖ To know about bibliometric study in detail.
- ❖ Compliment previous work and provide a broad quantitative and qualitative view of KM research by using the main bibliometric procedures, namely performance analysis and science mapping.

#### **5. Knowledge Management**

Knowledge management consists of strategies and practices used in an organization to identify, create present distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge either embodied in individuals or imbedded in organizational process or practices. D. S Yadagiri and Pavan Kumar give short description about KM as follows:

An established discipline, KM includes course taught in the fields of business administration, information system, management and library and information sciences. More recently, other fields have started contributing to KM research; these include information and media, computer science, public health, public policy. Many large companies and non-profit organizations have resources dedicated to internal KM efforts, often as a part of their business strategy information technology or human resource management departments. Several consulting companies also exist that provide strategy and advice regarding KM to these organizations (Yadagiri and Kumar, 2015, p. 327).

Citing Abbas, Ali Muhammad Suliman points out five major aims of knowledge management they are; "Knowledge creation, generation and production, Knowledge processing and filtering, Knowledge application and utilization, Knowledge storage or retention, Knowledge sharing and dissemination" (Suliman et al., 2022, p. 49). Proper Knowledge Management can strengthen and benefit the society to a great extent.

#### **6. Bibliometric Study: An Overview**

Bibliometrics studies the properties and behavior of information. It uses mathematical and statistical analysis to describe patterns of publication within a given subject field. Criteria used for bibliometric analysis are

words and their occurrence, paper and their citation, books/journals and the number of times they are loaned by a library and authors and the number of publications. According to Potter bibliometrics are divided into two types they are evaluative and descriptive. By descriptive bibliometrics we mean, the study the body of literature by counting the number of authors, articles, journals, year of publication, contributing country, etc. By evaluative bibliometrics we mean the evaluation of the productivity of authors, and find the impact of a topic in a subject field. Quoting Sutcliffe, Schneider defines bibliometrics as the study of the quantitative aspects of production, dissemination, and use of recorded information. (Gavira-Marin ,et.al. 2017). According to Kesler, bibliometrics consist of number of empirical methods such as bibliographic coupling and co-citation analysis (Gavira-Marin et.al., 2017).

The records corresponding to these results are analyzed using bibliometric analysis. Bibliometric analysis consists of performance analysis and science mapping. Performance analysis is based on the bibliometric indicators like number of documents published, number of citation received, etc. To strengthen and compliment the performance analysis science mapping is used, which aims to show the structural and dynamic aspects of a research field. Mapping of the articles on KM by Indian authors begins by conducting a co-citation analysis. Co-citation analysis can be done by using co-citation of journals (Co-citation of journals seeks to identify journals that are frequently cited), co-citation of authors (analysis of co-citation of authors seeks to show the structure and connections of authors who are cited together more frequently), analysis of co-occurrences of key words (Analysis of co-occurrences of key words uses key words and seeks to study the conceptual structure of a field of research (Gavira-Marin et. al., 2017).

**7. Results and Findings**

The study considers 2,469 documents obtained from Scopus data base. The bibliometrics analysis methods of performance and science mapping were used to analysis the data obtained. Through the aid of ScientoPythe analysis is done.

**7.1 Source of documents on KM**

Table 1 depicts the source of documents which are taken for the analysis. The present study has taken only the documents on KM which appears in the much celebrated and widely using Scopus data base owned by Elsevier between the years 1990-2021. The study has taken 2,469 documents to carry out the bibliometric analysis and no duplication is detected.

<b>Data base</b>	<b>No. Article</b>	<b>No. Conference Papers</b>	<b>No. Review Papers</b>	<b>Total documents</b>
Scopus	1042	1321	106	2469
Web of Science	0	0	0	

**Table: 1**

### 7.2 Types of Document in Scopus on KM

Documents are a broader concept. Documents consists of books, conference papers, articles, review literatures etc. The documents on KM in Scopus consist of conference papers, articles and reviews. Figure 1 shows the types of documents in Scopus on the theme KM. In the last two complete years more documents on KM appeared in the form of conference papers (24%), whereas articles are written on the theme assumes 23%. The review papers are on the theme KM is very less compared to conference papers and articles. Before the 2020 conference papers marks the highest productivity on the theme KM than articles or review papers.

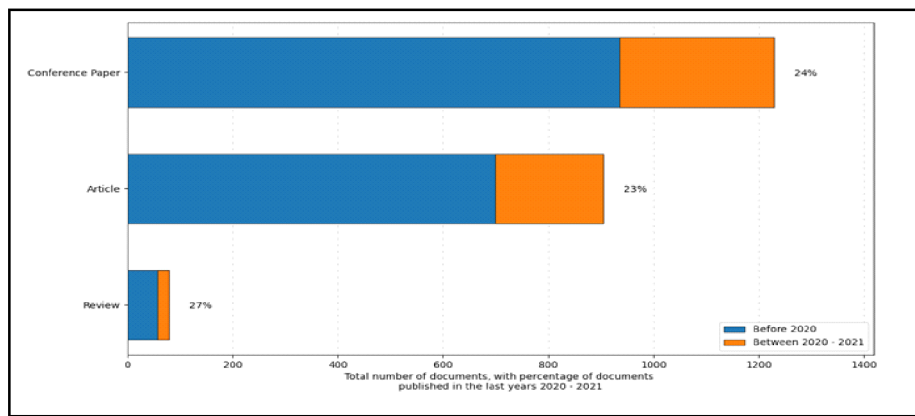


Figure: 1

### 7.3 Growth of documents on KM in Scopus

Research and scientific writings are ever growing phenomenon in these days. Documents on KM are also very much studied and explored in the past and recent years. Figure 2 pinpoints that between 2020-2021 only 24% studies were conducted on the topic of KM. Hopefully it will be increased in the coming years.

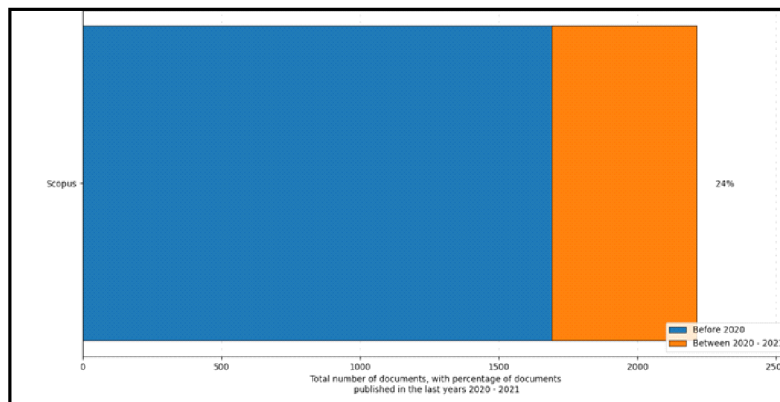
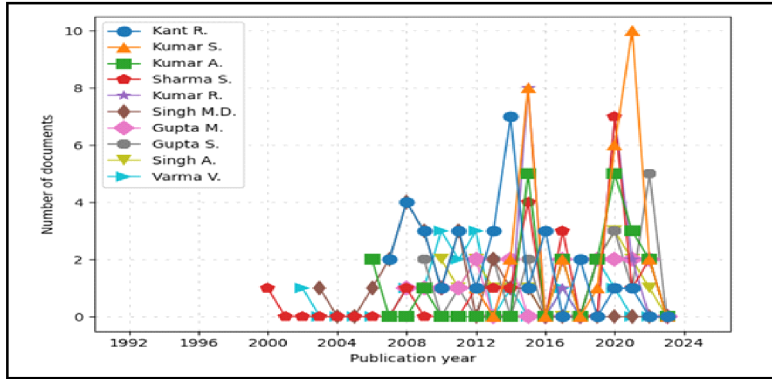


Figure: 2

**7.4 Publication and Citation on KM by Indian Authors in Scopus**



**Figure: 3**

KM is an important aspect of any organization especially of information centers. This topic has attracted many writers across the world. There are number of Indian authors who enormously written and discussed about the them KM. Figure 3 shows the prolific Indian writers who have substantially contributed in the area of KM. Before 2022, the most contributed author in the field of KM is Kant R. He has written more than 30 documents on this theme. He was followed by Kumar S. He has also written more than 30 documents before 2022 on Knowledge management. Though Gupata S. has written less than 15 documents before 2022 and has contributed more than anyone in the last two years (around 28%). In the last two years the other one who substantially written on the topic of knowledge management is Gupta M. He has contributed around 11% in the last two years. Indian writer’s presence is greatly contributed in the edification on KM.

**7.5 The most productive journal /source in KM by Indian authors**

**Table: 2**

No.	Source	Total	AGR	ADY	PDLY	H-Index
1	ICCAKM,2021	6	3.0	3.0	100.0	1
2	Critical Review in Biotechnology	2	1.0	1.0	100.0	2
3	ABLAZE, 2015	26	0.0	0.0	0.0	0.0
4	International Conference on Information and Knowledge Management, Proceedings	19	0.0	1.5	15.8	9
5	ICCAKM, 2020	16	0.0	8.0	100.0	4
6	Journal of Information and Management	8	0.0	0.0	0.0	5
7	International Journal of Innovation and Learning	6	0.0	0.0	0.0	6
8	Lecture Notes in Computer Science	6	0.0	0.0	0.0	3
9	International Conference on Industrial Engineering and Engineering Management	4	0.0	0.0	0.0	1
10	International Journal of Knowledge Management	4	0.0	1.0	50.0	2

The table 2 clearly depicts that in the conference ABLIZE twenty six Indian authors have written papers on KM but its h-index is very less. Whereas, International Conference on Information and Knowledge Management, Proceedings published 19 papers by Indian authors and it could secure 9 h-index. International Journal of Innovation and Learning has contributed only 6 papers but it obtained 6 score as h-index. Journal of Information and Management has produced 8 papers on the theme KM and obtained 5 h-index score. Whereas, in the International Journal of Knowledge Management only four Indian authors are published papers on the theme KM. Thus, it is clear that Indian authors get upper hand in conference proceedings compared to journal articles. In other words, Indian authors get visibility in conference proceedings than journal to discuss the theme of KM. Among the top ten sources of KM by Indian authors, 77 documents were appeared in the conference proceedings, where as only 20 documents are published in journals.

### 7.6 An overview of the most productive and influential Indian authors in KM

KM is an ever-growing theme in academic or scientific writing. So many writers are concentrating on the topic KM and its possibility in academic sphere table 3 shows the main Indian authors who are contributed in the field of KM. Indian authors also contributed very much in narrating and explaining the concept and theme knowledge management. The main authors who are contributed and narrated on KM before 2020 are Kant R., Singh M.D., Varma V., Chawla D., Kumar S., Kumar A., Sharma S., Gupta M., Kumar R., and Singh A. The order is drastically changed in the years between 2020-2021. In this two years it is Kumar S. who has written on KM than any of the authors mentioned previously. He has written 53% about KM in these years. He was followed by Kumar R. (47%), Kumar A. (40%), Sharma S. (40%) and Singh A. (33%). Table 7.6 clearly depicts the order of the productive authors in the field of KM.

**Table : 3**

Author most productive before 2020		Author most productive between 2020-2021	
1.	Kant R.	1.	Kumar S.
2.	Singh M.D.	2.	Kumar R.
3.	Varma V.	3.	Kumar A.
4.	Chawla D.	4.	Sharma S.
5.	Kumar S.	5.	Singh A.
6.	Kumar A.	6.	Gupta M.
7.	Sharma S.	7.	Varma V.
8.	Gupta M.	8.	Kant R.
9.	Kumar R.	9.	Singh M.D
10.	Singh A.	10.	Chawla D.

### 7.7 Frequently used key words in the documents on KM

Figure 4 depicts the frequently used key words in the documents related to KM are knowledge management, knowledge based systems, India, computational methods, data mining, information management, knowledge transfer, artificial intelligence, semantics and knowledge sharing. The most frequently used keyword before 2020 in the documents related to KM are knowledge management, knowledge based systems, computational methods and India. Between the last two complete years 2020-2021, the most frequently used key word is also knowledge management (24%) it is followed by knowledge transfer (36%), artificial intelligence (32%), semantics (21%), data mining (18%), knowledge sharing (18%), India (14%) and knowledge based systems (14%) and computational methods (1%).

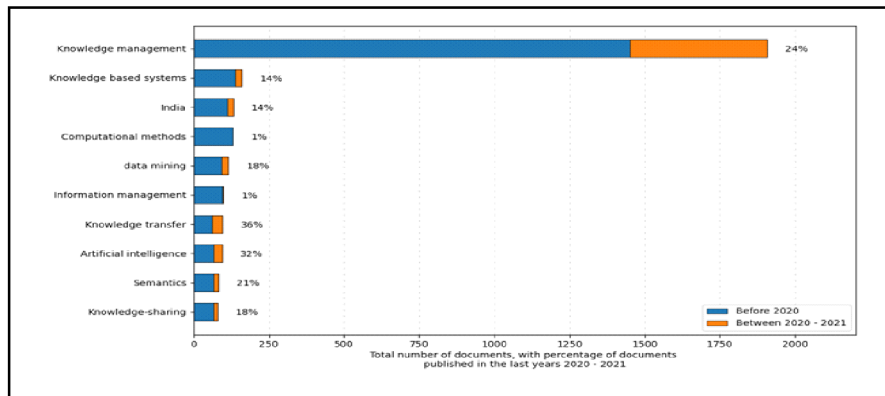


Figure : 4

### 8. Conclusion

The objective of the paper was to examine the path way of KM research by Indian authors by employing bibliometric analysis. This analysis used two main bibliometric method i.e., performance analysis and science mapping. The first method uses several measures and bibliometric indicators, such as the number of citations and productivity to evaluate the importance, impact and quality of publications in a particular field. Science mapping aims to complement performance analysis using co-citation techniques and co-occurrences of keywords from a temporal perspective. This analysis was conducted using ScientoPy tool. The results were obtained through use of the Scopus, which is a bibliographic database that is widely regarded as the most influential in the scientific community. From an overall perspective, this study shows that KM research in business and management has experienced spectacular growth in recent years.

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