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Library Knowledge Management (LKM) assessment comparison between Scopus and web of Science: A Bibliometric view.

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Abstract:

Background: The evolution of information and knowledge has affected all organizations, including Libraries. Knowledge management is predominant in the fields of business management information systems, Management library, and information science. This study aims to identify and gather literature on the concepts of knowledge management (KM) related to libraries.

Methods: The purpose of this article is a bibliometric study on Knowledge management related to the library in the WoS and Scopus databases. The aim is to know main issues such as the evolution of development over the years, Citation, publication, source, author, and country comparative areas are discussed. This study will support potential scholars in this area by offering a summary of the literature they are looking at and identifying new approaches to science to place their work and the most important authors.

Results: According to the search strategy used, a total of 416 and 277 documents were published in Scopus and web of sciences, respectively. The average citation per document was 7.35 (Scopus) and 4.27 (web of science). The findings indicate an overall gradual rise in the publishing rate over the sample period. The leading countries in KM research were the United States and China, in all datasets, including India and the United Kingdom. Entitled “A formal definition of Big Data based on its essential features” has the highest citations in both databases.

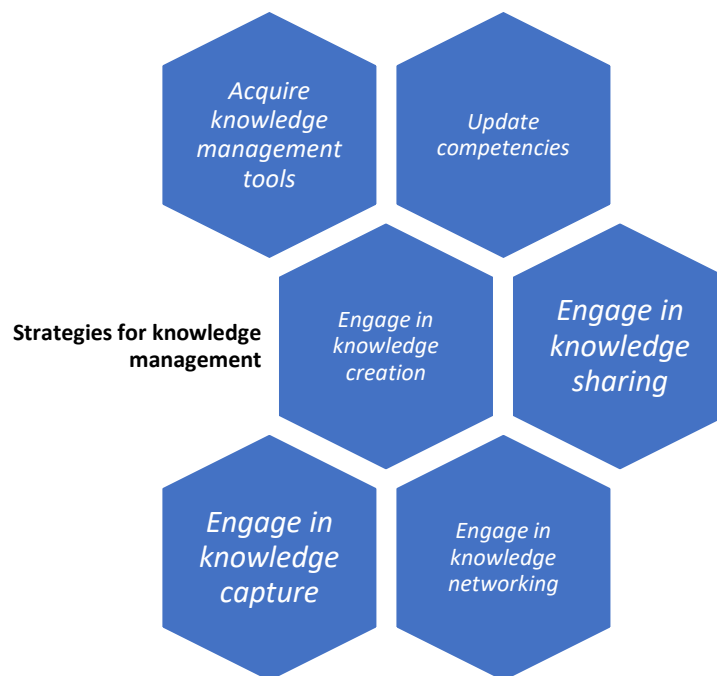
Conclusion: This bibliometric review offers an updated historical perspective on the development of KM study and illustrated the role performed by various contributors. However, it does not represent adequately the contributions of African countries and organizations, which implies increased support and an emphasis on KM research to improve knowledge management research

Keywords: Knowledge management, Bibliometric Study, Library

Introduction:

Knowledge Management (KM) is that the method of collecting, organizing, and exchanging knowledge resources with workers around the organization.(1) modern era organizations are founded on the best available information and knowledge. Firms need to find out from past mistakes instead of repeating them if they need to prosper in today's this can be accomplished by the employment of information. (2) For businesses whose success is dependent on the generation, application, and integration of knowledge by professionals and people, knowledge management (KM) is essential. Higher education institutions are made up of specialists with a wide range of skills. As KM is a new topic in the academic environment, several universities are actively interested in connected activities in this sector.

Organizational objectives such as increased performance, competitive advantage, innovation, sharing of lessons learned, integration, and continuous development are often the focus of knowledge management activities. These activities overlap with organizational learning, but are distinguished by a greater emphasis on knowledge management as a strategic asset and encouraging information exchange. Organizational learning is aided by knowledge management.(3)



Methodological design:

Bibliometric studies with systematic literature evaluation have helped scholars better explore research trends within a certain field of study and identify future research lines in fields such as business models within the previous decade. The collection of scientific journal articles represents a representative sample of international research activity. This research chose to use the WoS and Scopus databases for research conducted before the prior of 2020.

Query String:

WOS	TI=("knowledge management") OR AK=("knowledge management")) AND (TI=(library OR libraries) OR AK=(library OR libraries)) Databases= WOS, CCC, DIIDW, KJD, MEDLINE, RSCI, SCIELO Timespan=All years Search language=Auto	277
Scopus	(TITLE ("knowledge management") OR AUTHKEY ("knowledge management")) AND (AUTHKEY (library OR libraries) OR TITLE (library OR libraries))	416

Table 1. Important search strategy parameters

Search word	Knowledge Management & Library
Category	Title & Author Keyword
Period	Year of Publication \leq 2020
Language	All
Database	Scopus & Web of Science
Date	07.02.2021

Analyzing existing literature there are several review methods available, including critical review, literature review, meta-analysis, systematic search, and review. As a systematic quantitative literature review, bibliometrics uses a transparent thorough systematic approach and, more significantly, a repeatable review procedure to collect and systematize data.

Results:

Table 2. Unit Analysis

Type of Analysis	Type of Unit analysis	Scopus	Web of Science
Co-Authorship	Authors	778	592
	Organianizations	621	306
	Countries	65	52
Co-occurrence	All Keywords	1917	820
	Author Keywods	1084	697
	Index Keywords or Keyword Plus	1183	157
Bibliographic coupling	Document	416	277
	Source	208	178
	Authors	778	592
	Organizations	621	306
	Countries	65	52
Co-citation	Cited reference	10424	5682
	Cited sources	5312	3371
	Cited authors	11289	4579

The unit analysis data are downloaded from Scopus and web of science database created using VOS viewer software. The above table is mentioned about complete details of Co-Authorship, Co-occurrence, Bibliographic coupling, Co-citation.

Table 3. Articles and citations Comparison between Scopus and Web of Science

Year	Scopus						Web of Science					
	fi	hi	Fi	Hi	C	$\sum c$	fi	hi	Fi	Hi	C	$\sum c$
1991	0	0.00%	0	0.00%	0	0	1	0.36%	1	0.36%	0	0
1997	0	0.00%	0	0.00%	0	0	1	0.36%	2	0.72%	0	0
1998	3	0.72%	3	0.72%	16	16	5	1.81%	7	2.53%	14	14
1999	2	0.48%	5	1.20%	8	24	2	0.72%	9	3.25%	16	30
2000	3	0.72%	8	1.92%	15	39	1	0.36%	10	3.61%	9	39
2001	9	2.16%	17	4.09%	219	258	6	2.17%	16	5.78%	78	117
2002	11	2.64%	28	6.73%	92	350	3	1.08%	19	6.86%	31	148
2003	15	3.61%	43	10.34%	174	524	4	1.44%	23	8.30%	19	167
2004	16	3.85%	59	14.18%	221	745	10	3.61%	33	11.91%	138	305
2005	29	6.97%	88	21.15%	488	1233	6	2.17%	39	14.08%	51	356
2006	18	4.33%	106	25.48%	102	1335	9	3.25%	48	17.33%	56	412
2007	24	5.77%	130	31.25%	233	1568	10	3.61%	58	20.94%	70	482
2008	16	3.85%	146	35.10%	125	1693	9	3.25%	67	24.19%	3	485
2009	14	3.37%	160	38.46%	121	1814	9	3.25%	76	27.44%	31	516
2010	26	6.25%	186	44.71%	253	2067	23	8.30%	99	35.74%	123	639
2011	16	3.85%	202	48.56%	45	2112	13	4.69%	112	40.43%	19	658
2012	31	7.45%	233	56.01%	97	2209	15	5.42%	127	45.85%	48	706
2013	29	6.97%	262	62.98%	123	2332	11	3.97%	138	49.82%	17	723
2014	18	4.33%	280	67.31%	138	2470	8	2.89%	146	52.71%	56	779
2015	23	5.53%	303	72.84%	106	2576	26	9.39%	172	62.09%	78	857
2016	19	4.57%	322	77.40%	334	2910	18	6.50%	190	68.59%	221	1078
2017	26	6.25%	348	83.65%	98	3008	27	9.75%	217	78.34%	70	1148
2018	23	5.53%	371	89.18%	28	3036	21	7.58%	238	85.92%	19	1167
2019	21	5.05%	392	94.23%	23	3059	14	5.05%	252	90.97%	13	1180
2020	24	5.77%	416	100.00%	2	3061	25	9.03%	277	100.00%	3	1183
	416				3061		277				1183	

fi- frequency number of article; hi- relative frequency; Fi- accumulated absolute frequency; Hi- accumulated relative frequency; C- citations received; $\sum c$ -accumulated citations.

It's clear from Table 3, which compares the production of articles about Knowledge Management in the WoS and Scopus databases, that 2005, 2012, and 2013 had the highest production of

articles during the period analyzed in the Scopus, 2017, 2015, and 2020 has highest article production in the web of science database. while articles published in 2005 and 2016 had the highest number of total Citations received during the period analyzed in the Scopus database. All articles having a minimum number of citations in all years except 1991 and 1997.

Price determined that scientific information grows at an exponential rate, with the present world information doubling every 10–15 years (Price's law). Even though each field will evolve at its own pace, they will all go through the same stages: antecedents (first publications), exponential growth (becomes a research focus), and linear growth (growth slows down, review, and knowledge file). In terms of research, Figure 1 shows that knowledge management is in the exponential development phase of Wos value, with the accumulated production function adjusted to an exponential equation with $R^2 = 0.6554$.

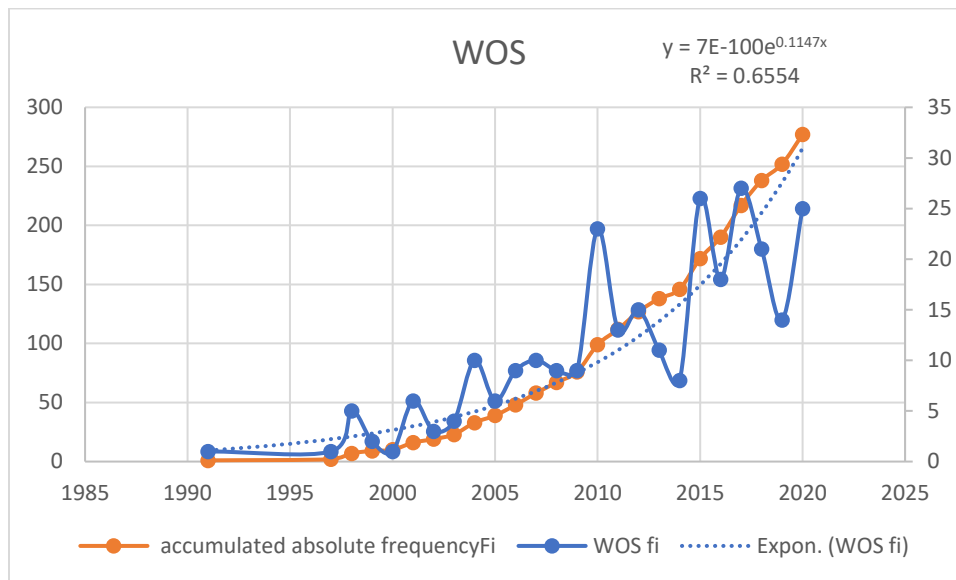


Figure 1. Web of Science DB article production growth on Knowledge Management

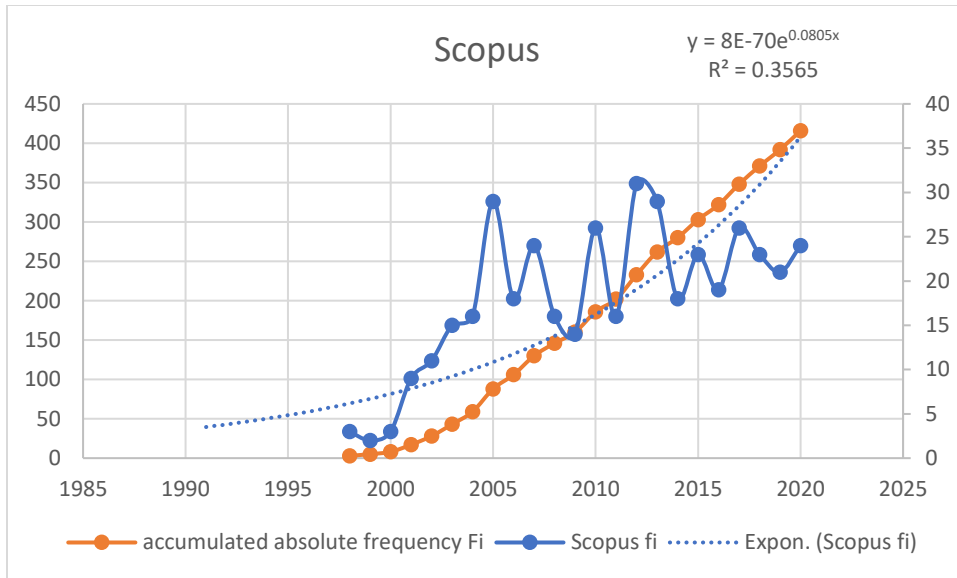


Figure 2. Scopus DB article production growth on Knowledge Management

The existence of a substantial association between both databases is confirmed when the annual distribution of the number of articles included in WoS is compared to Scopus. Figure 3 depicts the data and its fit to a line with a correlation coefficient of $= 0.5059$, indicating that this line explains 51% of the link between the number of articles published per year.

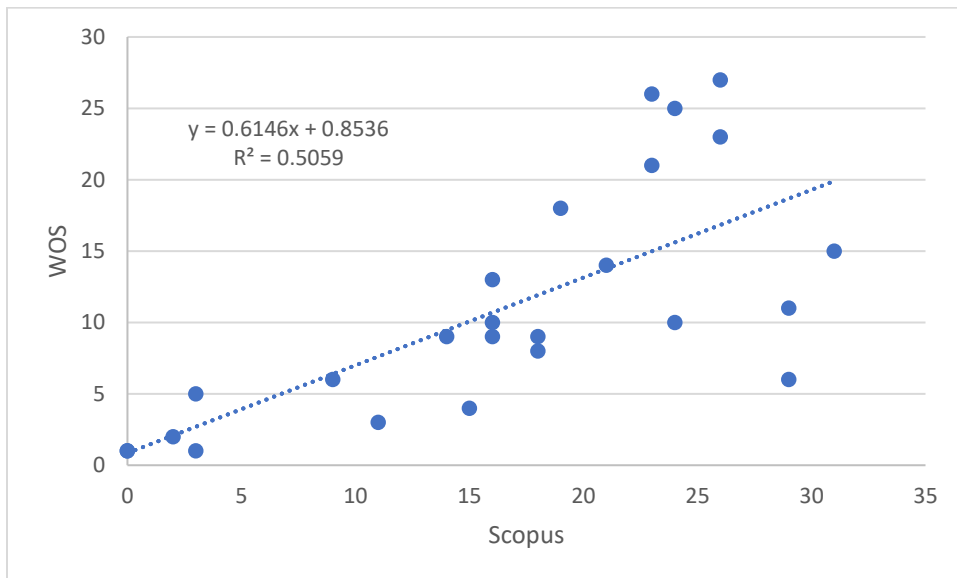


Figure .3 Article Correlation between Scopus and Web of Science

Citations:

According to Table 3, the 416 Scopus-indexed documents received 3061 citations, with the average number of citations for articles published in the same year being 7.35 citations/document. Although Wos figures are lower, they follow a similar pattern to WoS, whose 277 articles received 1183 citations, with an average of 4.27. Scopus got the first rank with 488 citations in 2005 and second and third with 134 and 253 citations in 2016 and 2010 respectively. Similarly, WOS topped the list with 223 citations in 2016 and 2nd and 3rd with 138 and 123 citations in 2007 and 2010 respectively

Figures 4 and 5 show the Scopus and Web of Science citation correlation values ($R^2 = 0.005$) and ($R^2 = 0.0167$), respectively. The existence of a strong correlation between both databases is confirmed when the annual distribution of the number of citations included in Wos is compared to Scopus. Figure 6 depicts the data representation and its fit to a line with a correlation coefficient equal to ($R^2 = 0.3902$), indicating that this line explains 39% of the relationship between the number of citations published per year.

Figure .4 Scopus citation correlation correlation

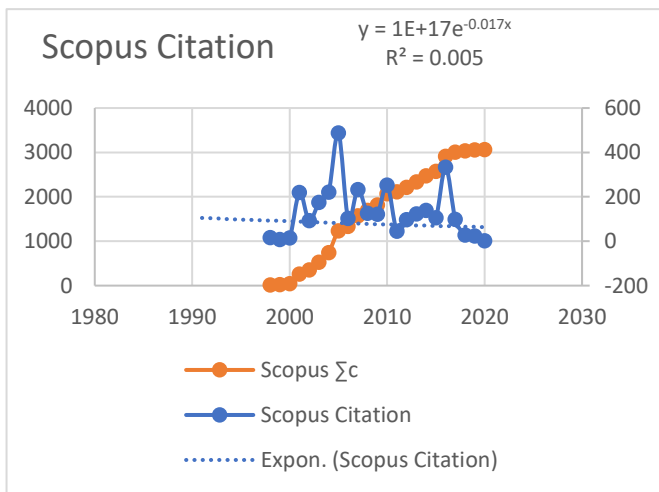
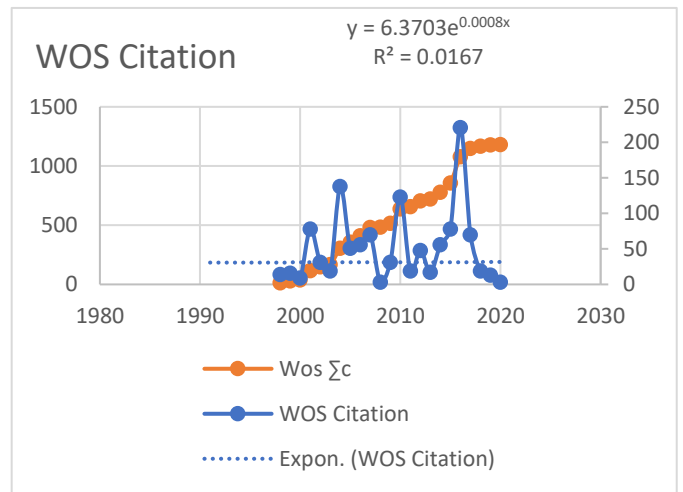


Figure .5 Web of Science citation



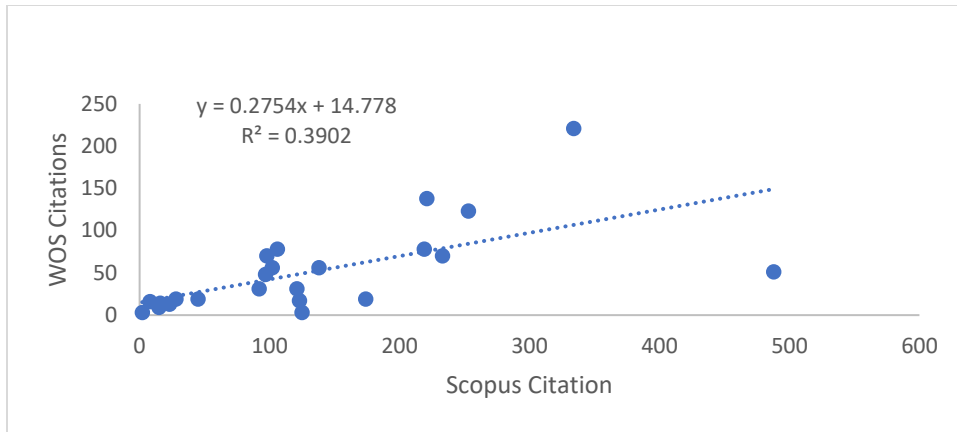


Figure .6 Citations Correlation between Scopus and Web of Science

Shared Article:

As indicated above, the Scopus database contained 416 publications linked to knowledge management, compared to 277 papers found in WOS. In total, 151 of these articles are overlapping, meaning they appear in both databases, accounting for over 36% of Scopus documents and 55% of Web of science materials.

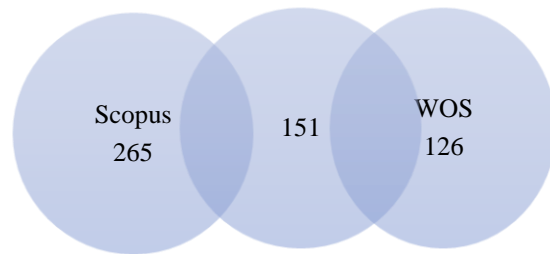


Table.4 Top 10 most cited articles in Scopus and Web of Science

DOI	Year	Age	TI	Scopus			WOS		
				R	C	C/Age	R	C	C/Age
10.1108/LR-06-2015-0061	2016	4	“A formal definition of Big Data based on its essential features”(4)	1	288	72.00	1	201	50.25
10.1016/j.acalib.2010.03.003	2010	10	“Adoption of Library 2.0 Functionalities by Academic Libraries and Users: A Knowledge Management Perspective”(5)	2	107	10.70	2	83	8.30
10.5860/crl.62.1.44	2001	19	“Knowledge management and academic	3	90	4.74	3	62	3.26

			libraries”(6)						
-	2004	16	“Computational chemogenomics approaches to systematic knowledge-based drug discovery”(7)	5	58	3.63	4	54	3.38
10.1007/s11423-013-9330-5	2014	6	“Electronic reading and digital library technologies: understanding learner expectation and usage intent for mobile learning”(8)	6	52	8.67	5	39	6.50
10.1007/s10817-007-9070-5	2007	13	“User interaction with the matita proof assistant”(9)	9	43	3.31	6	34	2.62
10.1108/00012530210441737	2002	18	“Knowledge management in public libraries”(10)	21	30	1.67	7	27	1.50
10.1177/0165551504042806	2004	16	“Dissemination of competitive intelligence”(11)	12	38	2.38	8	24	1.50
10.1515/LIBR.2004.190	2004	16	“Exploration of the field of knowledge management for the library and information professional”(12)	20	30	1.88	9	23	1.44
10.1108/02640470410561901	2004	16	“The utilisation of an intranet as a knowledge management tool in academic libraries”(13)	15	32	2.00	10	23	1.44

The entitlement begins as “A formal definition of Big Data-based” published in 2016 ranks first with the highest number of citations on both Scopus and web of science, but when it comes to citation wise, Scopus ranks first with 288 citations on the same topic and web of science second ranks with 206 citations. The top 6 ranks are occupied the same titles in the Scopus and web of science databases.

Table .5 Top sources comparison between Scopus and Web of Science

Title	Scopus			WOS		
	R	fi	C	R	fi	C
“Library Management”	1	20	261	4	7	39
“Reference Services Review”	2	12	261	201	1	3
“Journal of Information and Knowledge Management”	3	11	91	201	1	0
“IFLA Journal”	4	10	38	2	9	16
“Journal of Library Administration”	4	10	63	12	4	3
“Library Philosophy and Practice”	4	10	21	-	-	-
“Electronic Library”	5	9	104	1	11	78
“Library Review”	5	9	402	41	2	201
“Health Information and Libraries Journal”	6	8	11	5	6	9
“Journal of Librarianship and Information Science”	6	8	18	3	8	9

Table 5. displayed top sources comparison between Scopus and Wos based on Scopus publication. Library management journal 1st rank in the Scopus with 20 publication, but the same library management journal in the Wos got 4th rank with 7 publication. Electronic Library journal got 1st rank in the web of science with 11 publications. The same journal got 5th rank in the Scopus with 9 publications.

Table .6 Top Author comparison between Scopus and Web of Science

Author	Affiliation	Scopus				WOS			
		R	fi	hi	C	R	fi	hi	C
Agarwal, Naresh Kumar	“School of Library and Information Science, Simmons College MA, United States”	1	9	11	103	2	4	7	32
Islam, Md Anwarul	“School of Knowledge Science, Japan Advanced Institute of Science and Technology (JAIST), Ishikawa, Japan”	1	9	14	118	2	4	8	32
Ugwu, Cyprian Ifeanyi	“Department of Information Science, University of South Africa, South Africa”	2	8	4	14	1	7	1	1
Roknuzzaman, Md	“Graduate School of Knowledge Science, Japan Advanced Institute of Science and Technology (JAIST), Nomi-city, Japan”	3	6	6	87	438	1	3	0
Umemoto,	“Graduate School of Knowledge	3	6	11	87	-	-	8	0

Katsuhiko	Science, Japan Advanced Institute of Science and Technology, Japan”								
Mitsuru Ikeda, Mitsuru	“Japan Advanced Institute of Science & Tech., Nomi, Japan”	4	5	15	79	24	2	12	32
Nazim, M.	“Faculty of Law, Banaras Hindu University, Varanasi, 221005, India”	4	5		28	369	1		3
Branin, Joseph J.	“Ohio State University Libraries, Columbus, OH, the United States”	5	4	4	48	-	-	-	-
Leon, Carlos	“Departamento de Tecnología Electrónica, Seville University, Avda. Reina Mercedes S/N, Seville, Spain”	5	4	17	9	28	2	16	4
Martin, Antonio	“Departamento de Tecnología Electrónica, Seville University, Seville, Spain”	5	4	4	9	28	2	3	4

Table-6 shows the top ten most productive authors according to the number of publications in Scopus and WoS. In the same table, the relative frequency and citations for the individual authors are also displayed. The authors Agarwal, Naresh Kumar, and Islam, Md Anwarul are on the first rank of Scopus with 9 publications, whereas he is on the second rank of WoS with 4 publications. The author, Cyprian Ifeanyi Ugwu, is ranked second in Scopus with 8 publications, and the first rank in WoS with 7 publications and 14 citations. The author, Roknuzzaman, Md, is ranked 3rd in Scopus with 6 articles, and 438th in WoS with 3 publications.

Table 7 Top Country comparison between Scopus and Web of Science

Country	Scopus			WOS		
	R	fi	C	R	fi	C
United States	1	117	1049	2	53	323
China	2	44	113	1	54	47
India	3	27	188	5	12	35
UK	4	25	169	4	14	39
Iran	5	18	125	8	7	16
Japan	6	16	209	11	4	34
Spain	7	16	121	5	12	81
Bangladesh	8	13	137	10	5	19
Nigeria	9	12	13	7	8	9
Australia	10	11	150	10	5	18

The author's associated country was used to analyze the country's scientific output for both Scopus and WoS databases. Table 7 shows the contribution of the top ten countries to worldwide published literature on knowledge management from 1991 to 2020. It shows that the United States, China, and India were the most prolific country in Scopus, whereas China, The United States, and India were ranked second, first, and fifth in the WoS databases. In Scopus, the United States has 117 published literature compared to 53 in WoS. China and India had 44 and 27 published literature in Scopus, respectively, compared to 54 and 12 published literature in WoS. The United Kingdom is ranked fourth in Scopus, with 25 published publications, and fourth rank in WoS, with 14 publications.

Conclusions:

The primary ends came to in our review on the present status of exploration in Knowledge management the executives are displayed in this segment, which depends on a bibliometric investigation of logical articles listed in the WoS and Scopus data sets. Due to the unmistakable ordering guidelines utilized by these data sets, a portion of the discoveries of the correlation investigation of hybrid and uniqueness between the two data sets are additionally accumulated to figure out which is the most agreeable to use because of its fronts of the Knowledge Management region.

According to our study of knowledge management with fluctuation from 1993 to 2020 on both databases Scopus and web of science without any major changes. But out of a total of 416 publications of Scopus, 265 publications are exclusively excluded from the web of science database. Library management journal ranks first in the list of publishers with Scopus 20 and 4th rank in the web of science database with 7 publications. Similarly, in the countrywide comparison United States of America got 117 publications in Scopus with 1st rank, and 53 publications in the web of science with 2nd rank. China got 44 publications with 2nd rank in the Scopus database and 54 publications in the web of science with 1st rank. This research concludes that library knowledge management should help librarians and other researchers need more attention to come up with more publications in the future.

Reference

1. Gunjal B. Knowledge Management: Why Do We Need it for Corporates [Internet]. Rochester, NY: Social Science Research Network; 2019 Apr [cited 2021 Mar 9]. Report No.: ID 3375572. Available from: <https://papers.ssrn.com/abstract=3375572>
2. Yazdani S, Bayazidi S, Mafi AA. The current understanding of knowledge management concepts: A critical review. *Med J Islam Repub Iran* [Internet]. 2020 Sep 28;34:127–127. Available from: <https://pubmed.ncbi.nlm.nih.gov/33437723>

3. Introduction to Knowledge Management [Internet]. 2007 [cited 2021 Aug 24]. Available from:
https://web.archive.org/web/20070319233812/http://www.unc.edu/~sunnyliu/inls258/Introduction_to_Knowledge_Management.html
4. Mauro AD, Greco M, Grimaldi M. A formal definition of Big Data based on its essential features. *Library Review* [Internet]. 2016 Apr 4 [cited 2021 Feb 14]; Available from:
<https://www.emerald.com/insight/content/doi/10.1108/LR-06-2015-0061/full/html>
5. Kim Y-M, Abbas J. Adoption of Library 2.0 Functionalities by Academic Libraries and Users: A Knowledge Management Perspective. *The Journal of Academic Librarianship* [Internet]. 2010 May 1 [cited 2021 Feb 14];36(3):211–8. Available from:
<https://www.sciencedirect.com/science/article/pii/S0099133310000601>
6. Townley CT. Knowledge Management and Academic Libraries | Townley | College & Research Libraries. [cited 2021 Feb 14]; Available from:
<https://crl.acrl.org/index.php/crl/article/view/15420>
7. J M. Computational chemogenomics approaches to systematic knowledge-based drug discovery [Internet]. *Current opinion in drug discovery & development*. 2004 [cited 2021 Feb 14]. Available from: <https://pubmed.ncbi.nlm.nih.gov/15216933/>
8. Hyman JA, Moser MT, Segala LN. Electronic reading and digital library technologies: understanding learner expectation and usage intent for mobile learning. *Education Tech Research Dev* [Internet]. 2014 Feb 1 [cited 2021 Feb 14];62(1):35–52. Available from:
<https://doi.org/10.1007/s11423-013-9330-5>
9. User Interaction with the Matita Proof Assistant | *Journal of Automated Reasoning* [Internet]. [cited 2021 Feb 14]. Available from: <https://dl.acm.org/doi/abs/10.1007/s10817-007-9070-5>
10. Teng S, Hawamdeh S. Knowledge management in public libraries. *Aslib Proceedings* [Internet]. 2002 Jun 1 [cited 2021 Feb 14]; Available from:
<https://www.emerald.com/insight/content/doi/10.1108/00012530210441737/full/html>
11. Marin J, Poulter A. Dissemination of Competitive Intelligence. *Journal of Information Science* [Internet]. 2004 [cited 2021 Feb 14];20(2):165–80. Available from:
<https://pureportal.strath.ac.uk/en/publications/dissemination-of-competitive-intelligence>
12. Sinotte M. Exploration of the Field of Knowledge Management for the Library and Information Professional. 2004 Sep 1 [cited 2021 Feb 14];54(3):190–8. Available from:
<https://www.degruyter.com/document/doi/10.1515/LIBR.2004.190/html>
13. Mphidi H, Snyman R. The utilisation of an intranet as a knowledge management tool in academic libraries. *The Electronic Library* [Internet]. 2004 Oct 1 [cited 2021 Feb 14]; Available from:
<https://www.emerald.com/insight/content/doi/10.1108/02640470410561901/full/html>