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Review

MAPPING KNOWLEDGE MANAGEMENT RESEARCH: A BIBLIOMETRIC OVERVIEW

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Abstract. In recent years, knowledge management (KM) has consistently attained considerably growing research attention. Consequently, several literature reviews have been performed addressing different topic areas of KM. This paper seeks to present a comprehensive bibliometric and network analysis on KM to understand its development from the perspective of academic communities. Subsequently, it seeks to identify the structure of associations between prior and current themes, predict emerging trends and offer a longitudinal perspective on KM research. This study used web of science database and the initial sample was trimmed down by considering only the articles contributing to KM literature, and further 8,721 KM papers published in the last 30 years were systematically evaluated. The descriptive statistics and science mapping methods employing co-citation analysis were performed with VOSviewer software. In the descriptive analysis, we have analysed publication trends over time, geographical localization of the contributing institutions, journals, most prolific authors, top-performing institutions and most cited articles. Science mapping analysis is based on co-word analysis and co-citations analysis, namely articles' co-citations and authors' co-citations. The main findings of this paper will help researchers and academicians to develop knowledge in a specific sub-field by analysing the research outcomes of the papers included in the body of literature.

Keywords: knowledge management, Web of Science, bibliometric analysis, network analysis, VOSviewer.

JEL Classification: D83, O32, O33, Q55.

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Introduction

Over the past 20 years, research on knowledge management (KM) has witnessed considerable attention throughout the world and is well at the end of its third decade of investigation. The KM is becoming a strategic factor for all industries to survive in today's dynamic global business competition (Cerchione et al., 2020; Kaklauskas & Kanapeckiene, 2005).

The concept of knowledge has been analysed in literature from different perspectives concerning what is knowledge (Lin & Ha, 2015), where it is embedded (Buenstorf & Costa, 2018; Lönnqvist, 2017; Miklosik et al., 2019), and how it can be classified (Polanyi, 1958; Nonaka, 1994; Holsapple, 2005). Starting from these conceptualizations, the interesting recent trends have been appeared such as impact of knowledge risk management on performance (Durst et al., 2019), market knowledge sourcing determinants (Endres et al., 2020), heterogeneous knowledge ties (Maghssudipour et al., 2020), role of international joint venture in managing and exploiting knowledge (Zhang et al., 2018), KM and green innovation (Abbas & Sağsan, 2019). These trends have given unique conceptualization in the KM domain dealing with efficient and effective KM processes, as well as systematic strategies pertaining to knowledge creation, processing, sharing, and execution (Raudeliūnienė et al., 2018).

Besides, in the past, a number of reviews on the topic of KM have been published in recent years. Few of them have investigated the KM in specific subject areas (Cerchione et al., 2020), while others have shed light on several aspects: major trends and challenges in KM (Asrar & Anwar, 2016), key KM approaches (Alexandru et al., 2019), processes for exploration and exploitation of knowledge (Centobelli et al., 2019), KM in strategic alliance (Tsai, 2016), KM and firm performance (Inkinen, 2016; Sulistio & Dianawati, 2020), corporate culture and KM (Buckova, 2017), KM and sustainability (López-Torres et al., 2019), KM in SMEs and startups (Castagna et al., 2020) and KM performance measurement (Asiaei & Bontis, 2019; Cardoni et al., 2020). These reviews have identified few research areas and research questions in the literature to be analysed for further research.

Despite the growing interest in KM and the number of review papers already published, there is a scarcity of contributions analysing how the whole KM academic research has evolved over the time. Thus, the aim of this paper is to answer the following research questions: 1) what are the key topics covered widely in literature? 2) which papers contributed more to the KM field? 3) what is co-words structure in the literature? 4) what is the social structure based on the authors' co-authorship? and 5) what is the co-citation based structure of articles and authors?

The remain of the paper is organised as follows: Section 1 presents the research methodology used in this paper. Section 2 and Section 3 discuss the results of the performance analysis and science mapping, respectively. Finally, we draw our conclusions and future research directions in Section 5.

1. Research methodology

In this paper, we employed the WoS database a digital platform globally acknowledged among scholars for its quality standards (Mulet-Forteza et al., 2019) that makes it one of the most used tools for searching and analysing both publications and journals among other

databases like Scopus. Many researchers dealing with bibliometric analysis papers adopt WoS since it allows downloading properly all the relevant bibliometric information needed for this approach and performs much better than other databases in the accuracy (Wang & Waltman, 2016). Furthermore, researchers emphasized that deploying multiple different databases arise the issue of data homogenization which negatively impacts results (Mariani & Borghi, 2019). We further intend to perform co-citation analysis considering the cited references inside the same papers collected from WoS. This approach enables to recognize the additional pertinent literature, even from other databases, that may be overlooked during standard approaches of literature search (Trujillo & Long, 2018).

The following keywords were used during December 2019 to retrieve the papers: ("knowledge manag*" OR "knowledge creat*" OR "knowledge stor*" OR "knowledge shar*" OR "knowledge transf*" OR "knowledge appl*" OR "knowledge diffus*" OR "knowledge acqui*" OR "knowledge integrat*" OR "knowledge utili*" OR "knowledge us*" OR "knowledge combinat*" OR "knowledge assimilat*" OR "knowledge adopt*" OR "knowledge exploit*" OR "knowledge explor*"). The use of these keywords makes it possible to select papers dealing with the main knowledge management processes analysed in the body of literature (i.e., knowledge acquisition, knowledge creation, knowledge storage, knowledge sharing, knowledge transfer, knowledge diffusion, knowledge application, knowledge integration, knowledge utilization, knowledge use, knowledge combination, knowledge assimilation, knowledge adoption, knowledge exploitation, and knowledge exploration). We only considered papers published in English language and restricted the literature search between the time period of 1990 and 2019. Further, we excluded the conference proceedings, editorial notes, book chapters, book reviews, and extended abstracts. Subsequently, we trimmed down the initial sample by eliminating the irrelevant articles which do not significantly contribute to KM literature. A validation criterion regards the integration of contributions that were not found through the research string and/or comprised in the selected academic database but were cited in the literature on KM. Therefore, this criterion validates the choice of the search string and academic database. Finally, 8,721 papers were retrieved which include reviews and full papers written in English language and published until 2019. Finally, sample papers were analysed using two bibliometric procedures: performance analysis and science mapping.

2. Performance analysis results

Figure 1 shows that research on KM increases over the years. Despite the growth between 1990 and 1999 was very slow, the scientific literature on KM in peer-reviewed journals increased significantly after 1999. It passed from 619 articles published until 1999 to 4,422 articles published between 2000 and 2014. More recently the growth was even more significant with 3,680 papers published only in the last five years. This aspect confirms that the research on KM has attained growing research attention in recent times.

The statistics confirm that 2,353 journals have contributed total of 8,721 articles published on KM. For the journal ranking, in case of equal publications by two or more journals, the number of citations is considered for ranking. Table 1 show that the 25 most contributing journals have published a total of 1,930 articles representing about 22.13% of all identified

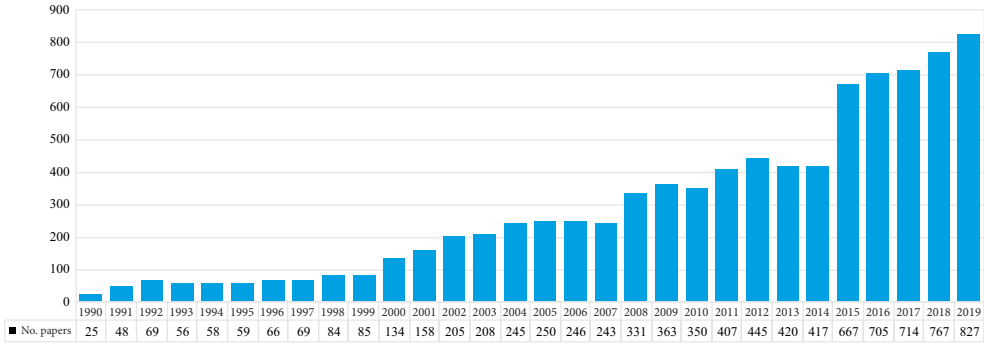

Figure 1. Publication trend over the time

articles. Therefore, the contribution of the remaining 2,328 journals is about 77.87%. Notably, "Journal of Knowledge Management" emerges as the journal with the highest number of published articles on KM (409), followed by "Knowledge Management Research & Practice" and "Expert Systems with Applications" with 190 and 154 articles published, respectively.

The analysis of journals with highest number of citations reveals that the top 25 journals are cited 107,696 times. "Journal of Knowledge Management" is also the journal with the highest number of citations received (9,667). "Strategic Management Journal" and "MIS Quarterly" journals are not in the list of top 25 contributing journals, but they appear in the second and third place in the top 25 journals rank considering the number of citations received with 9,418 and 7,581 citations received, respectively (Table 1). These two journals represent the 24.76% of the total citations of the 25 most contributing journals. Similarly, "Knowledge Management Research & Practice" is the second top contributing journal but not appeared in the top 25 list of most cited journals. If we compare the average citations per paper of "Strategic Management Journal" and "MIS Quarterly" with "Journal of Knowledge Management" and "Expert System with Applications" which are two leading journals (also appeared in the top-cited journal list) based on the number of papers published over the time, a large difference will be found.

Table 2 reports journals' metrics for the top 25 contributing journals. These journals cover eight subject areas. According to Buckley and Carter (1999), KM is a crossroad research topic focusing on different subjects even if, in line with the nature of the KM topic, "Business, Management and Accounting" and "Computer Science" emerged as the subject areas most frequently encountered. Therefore, indeed, Table 2 reports publications belonging to different subject areas, a wide range of journals, published in different countries under different publishers. For that reason, Neves and Da Silva (2016) suggest categorizing papers by the journal to support both researchers and practitioners in identifying who publish such topics in a particular domain. Among 25 journals, nine journals belong to "Elsevier", four to "Emerald", two to "Springer", two to "Taylor & Francis". Remaining seven journals belong to "Inderscience", "World Scientific", "Association of Professional Managers in South Africa", "Sage", "MDPI" "Wiley", "Technische", "Technischen", and "Idea Group", respectively. Meanwhile, eleven journals belong to the "United Kingdom", six to "Netherlands", four to "United States", one to "Germany", one to "South Africa", one to "Switzerland", and one to "Austria".

Table 1. Distribution of the top 25 contributing and most cited journals

Rank based on papers published			Rank based on citations received			
#	Journal	No. of articles	#	Journal	Citations	Average citations per article
1	Journal of Knowledge Management	409	1	Journal of Knowledge Management	9,667	23.63
2	Knowledge Management Research & Practice	190	2	Strategic Management Journal	9,418	367.72
3	Expert Systems with Applications	154	3	MIS Quarterly	7,581	361.00
4	International Journal of Information Management	103	4	Organization Science	7,130	310.00
5	International Journal of Technology Management	96	5	Expert Systems with Applications	6,267	40.69
6	Journal of Information & Knowledge Management	72	6	Academy of Management Journal	5,879	367.43
7	Vine Journal of Information and Knowledge Management Systems	63	7	Management Science	5,732	286.60
8	Journal of Business Research	60	8	Journal of International Business Studies	4,653	172.33
9	Computers in Human Behavior	59	9	Journal of Management Information Systems	4,480	224.00
10	Decision Support Systems	55	10	Information & Management	4,170	85.10
11	South African Journal of Business Management	53	11	Decision Support Systems	3,978	72.32
12	Industrial Management & Data Systems	51	12	International Journal of Information Management	3,972	38.56
13	Journal of Computer Information Systems	50	13	California Management Review	3,952	359.27
14	Information & Management	49	14	International Journal of Human-Computer Studies	3,620	92.82
15	Research Policy	49	15	Journal of Management Studies	3,532	130.81
16	Journal of Information Science	48	16	Research Policy	3,487	71.16
17	Sustainability	47	17	Organizational Behavior And Human Decision Processes	2,638	293.11
18	Journal of Universal Computer Science	44	18	Long Range Planning	2,516	132.42
19	Knowledge and Process Management	42	19	Journal of Business Research	2,452	40.9
20	International Journal of Human Resource Management	40	20	Journal of Business Research	2,362	46.31
21	International Journal of Knowledge Management	40	21	Academy of Management Review	2,362	337.42
22	Knowledge-Based Systems	40	22	Journal of Information Science	2,120	44.16
23	International Journal of Human-Computer Studies	39	23	Progress in Human Geography	1,996	665.33
24	Scientometrics	39	24	International Journal of Human Resource Management	1,872	46.8
25	Management Decision	38	25	Organization Studies	1,860	109.41

Table 2. Details of the top 25 contributing journals

Journal	Publisher	Journal country	Scopus Coverage	H index	SJR score	Impact factor	Psychology	Business, Management and Accounting	Decision Sciences	Engineering	Computer Science	Economics, Econometrics and Finance	Environmental Science	Social Sciences
Journal of Knowledge Management	Emerald	United Kingdom	1997-Ongoing	95	1.28	4.60		•						
Knowledge Management Research & Practice	Springer	United Kingdom	2006-Ongoing	30	0.72	1.48		•						•
Expert Systems with Applications	Elsevier	United Kingdom	1990-Ongoing	**162**	1.19	4.29				•	•			
International Journal of Information Management	Elsevier	United Kingdom	1986-Ongoing	91	1.71	**5.06**					•			•
International Journal of Technology Management	Inderscience	United Kingdom	1986–1989, 1996-Ongoing	51	0.50	1.16		•			•			•
Journal of Information & Knowledge Management	World Scientific	United States	2012-Ongoing	17	0.19	–					•			•
Vine Journal of Information and Knowledge Management Systems	Emerald	United Kingdom	2016-Ongoing	24	0.36	–		•			•			•
Journal of Business Research	Elsevier	Netherlands	1973-Ongoing	**158**	1.68	4.02		•			•			
Computers in Human Behavior	Elsevier	United Kingdom	1985-Ongoing	137	1.71	4.30	•							
Decision Support Systems	Elsevier	Netherlands	1985-Ongoing	127	1.53	3.84	•	•	•		•			
South African Journal of Business Management	Association of Professional Managers in South Africa	South Africa	2008-Ongoing	12	0.17	0.43		•						

End of Table 2

Journal	Publisher	Journal country	Scopus Coverage	H index	SJR score	Impact factor	Psychology	Business, Management and Accounting	Decision Sciences	Engineering	Computer Science	Economics, Econometrics and Finance	Environmental Science	Social Sciences
Industrial Management & Data Systems	Emerald	United Kingdom	1980-Ongoing	88	1.13	3.72		•		•	•			
Journal of Computer Information Systems	Taylor & Francis	United Kingdom	1995-Ongoing	55	0.68	1.10					•			•
Information & Management	Elsevier	Netherlands	1977-Ongoing	142	**1.72**	4.12		•	•		•			
Research Policy	Elsevier	Netherlands	1997-Ongoing	**206**	**3.41**	**5.42**		•	•	•				
Journal of Information Science	Sage	United States	1979-Ongoing	57	0.63	2.32					•			•
Sustainability	MDPI	Switzerland	2009-Ongoing	53	0.54	2.59							•	•
Journal of Universal Computer Science	Technische	Austria	1996-Ongoing	48	0.33	0.91					•			
Knowledge and Process Management	Wiley	Germany	2008-Ongoing	38	0.39	–		•						
International Journal of Human Resource Management	Taylor & Francis	United Kingdom	1990-Ongoing	98	0.95	3.15		•						
International Journal of Knowledge Management	Idea Group	United States	2008-Ongoing	19	0.30	–		•			•			
Knowledge-Based Systems	Elsevier	Netherlands	1987-Ongoing	94	1.46	**5.10**		•	•		•			
International Journal of Human-Computer Studies	Elsevier	United States	1994-Ongoing	109	0.68	2.00				•	•			•
Scientometrics	Springer	Netherlands	1978-Ongoing	95	1.11	2.77					•			•
Management Decision	Emerald	United Kingdom	1967-Ongoing	82	0.73	1.96		•	•					

Herein, "Research Policy", and "Expert Systems with Applications" have the highest H-index values (206, and 162, respectively). Besides, the "Research Policy" and "Information & Management" emerged as leading SJR scorers with 3.41 and 1.72, respectively. "Research Policy" and "Knowledge-Based Systems" appeared as high impact factor journals with 5.42 and 5.10 impact factor values, respectively (Table 2).

2.1. Author influence

The results show that there are 19,175 authors publishing 8,721 papers on KM. Table 3 reports the 20 most prolific authors (in terms of number of articles published), the number of citations received, the number of papers they published, their H-index and affiliation. Results show that Akhavan Peyman from Malek Ashtar University of Technology, Tehran (Iran) is the most prolific author and published 16 articles followed by Kianto Aino from Lappeenrannan Teknillinen Yliopisto, Lappeenranta (Finland) with 14 articles. In the third place among the top contributing authors, Georg Von Krogh from the ETH Zürich University (Switzerland) is also the dominant cited author with 1,486 citations and the highest average citations per article (123.83).

2.2. Affiliation and country statistics

Figure 2 indicates the origin of the institutions who contributed most in the advancement of the KM research. Notably, in case of equal number of articles by two or more countries, the number of citations is considered for ranking. It can be concluded that United States, United Kingdom and China based institutions are the major contributors. Most importantly, Asian institutions' contribution is quite less, only few Northeast Asian countries (China, Taiwan, and South Korea) have significantly contributed to the KM research. In detail, considering the top 5 contributing countries, United States of America published in total 1,832 articles, United Kingdom 992, China 866, Taiwan 619, and Canada 447 articles. Besides, African countries have not published (e.g., Chad, Congo, and Eritrea) or published less than 10 papers (e.g., Botswana, Cameroon, Gabon, Namibia, Somalia, Sudan, and Zimbabwe). The limited use of information and communication technology, as well as the digital divide between the different countries, may be a reason behind such difference of contribution between African, American, and European countries.

Table 4 reports the organization's ranking based on the number of citations received by articles divided by the number of articles published. The University of Illinois published 39 articles and these articles have been cited 3,155 times, and thus obtained the highest value of citations per article (80.89), followed by the National University of Singapore who published 46 articles cited 2,817 times (61.23 average citations per article). This implies that these universities are the most impact-full universities in the KM filed. Among the 25 top institutions (in terms of average citations per paper), six are from Taiwan, three from Canada and UK, two from Singapore, Hong Kong, Malaysia, China and Iran and one from South Korea and United States. This distribution is almost in line with the distribution of the most prolific authors (Table 3).

Table 3. The 20 most prolific authors and related affiliations

Author	Citations	No. of papers	Average citations per article	Scopus h-index	Current affiliation as per Scopus database
Akhavan, Peyman	146	16	9.12	20	Malek Ashtar University of Technology, Tehran, Iran
Kianto, Aino	345	14	24.64	19	Lappeenrannan Teknillinen Yliopisto, Lappeenranta, Finland
Von Krogh, Georg	1,486	12	123.83	38	ETH Zürich, Zurich ZH, Switzerland
Lin, Hsiu-Fen	1,119	12	93.25	31	National Taiwan Ocean University, Keelung, Taiwan
Serenko, Alexander	455	12	37.91	30	University of Toronto, Toronto, Canada
Lin, Chieh-Peng	424	12	35.33	28	National Chiao Tung University Taiwan, Hsinchu, Taiwan
Bontis, Nick	367	12	30.58	43	McMaster University, DeGroote School of Business, Hamilton, Canada
Pedersen, Torben	602	11	54.72	27	Aalborg Universitet, Aalborg, Denmark
Liao, Shu-Hsien	485	11	44.09	28	Tamkang University, Tamsui, Taiwan
Lin, Binshan	249	11	22.63	41	Louisiana State University in Shreveport, Shreveport, United States
Li, Yuan	229	11	20.81	34	Tongji University, Shanghai, China
Esposito, Emilio	207	11	18.81	20	Università degli Studi di Napoli Federico II, Naples, Italy
Oliveira, Mírian	59	11	5.36	7	Instituto Superior de Economia e Gestão, Universidade de Lisboa, Lisbon, Portugal
Ooi, Keng-Boon	294	10	29.40	41	UCSI University, Kuala Lumpur, Malaysia
Chua, Alton Y.K.	237	10	23.70	28	Wee Kim Wee School of Communication and Information, Singapore
Cerchione, Roberto	203	10	20.30	15	Parthenope University of Naples, Naples, Italy
Mueller, Julia	429	9	47.36	9	Martin-Universität Halle-Wittenberg, Halle, Germany
Davison, Robert M.	330	9	36.66	33	City University of Hong Kong, Kowloon, Hong Kong
Tseng, Shu-Mei	261	9	29.00	13	I-Shou University, Dashu, Taiwan
Tsai, Ming-Tien	254	9	28.22	19	Institute of International Business No. 1, Tainan, Taiwan

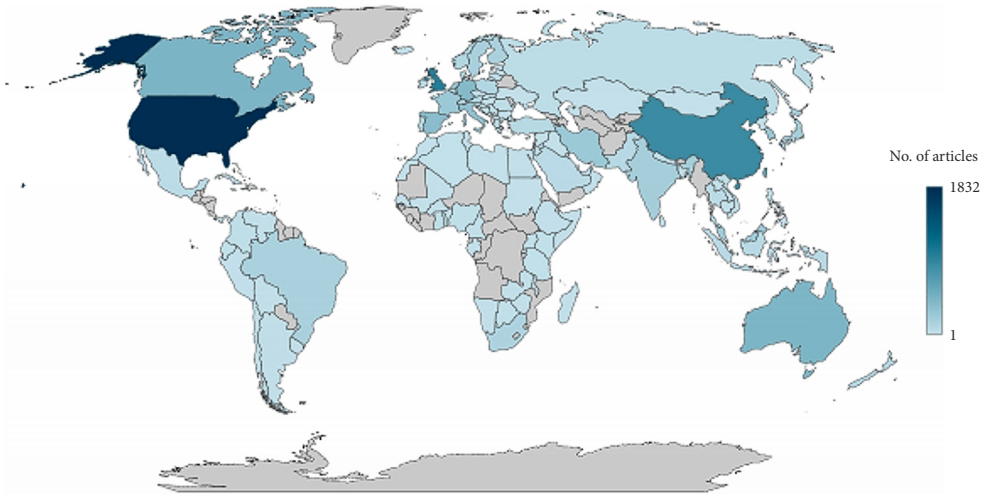

Figure 2. Geographical distribution of the KM papers

Table 4. Top 25 contributing institutions as per average citations per article

Rank	Institutions	Country	Number of Publications	Citations	Average citations per article	QS 2019
1	University of Illinois	United States	39	3,155	80.89	71
2	National University of Singapore	Singapore	46	2,817	61.23	11
3	National Central University	Taiwan	50	2,846	56.86	415
4	City University of Hong Kong	Hong Kong	66	3,712	56.24	55
5	Nanyang Technological University	Singapore	52	2,588	49.76	12
6	University of Toronto	Canada	58	2,864	49.37	28
7	University of Warwick	United Kingdom	35	1,590	45.42	54
8	University of Nottingham	United Kingdom	36	1,507	41.86	82
9	National Sun Yat-sen University	Taiwan	35	1,101	31.45	402
10	National Cheng Kung University	Taiwan	80	2,418	30.22	234
11	National Taiwan University	Taiwan	46	1,356	29.47	72
12	Hong Kong Polytechnic University	Hong Kong	52	1,460	28.07	106
13	University of Sheffield	United Kingdom	40	1,091	27.27	75

End of Table 4

Rank	Institutions	Country	Number of Publications	Citations	Average citations per article	QS 2019
14	McMaster University	Canada	37	902	24.37	146
15	Monash University	Malaysia	37	834	22.54	59
16	Seoul National University	South Korea	37	686	18.54	36
17	University of Alberta	Canada	37	682	18.43	109
18	National Taiwan University of Science and Technology	Taiwan	40	727	18.17	257
19	Chinese Academy of Sciences	China	40	671	16.75	–
20	National Chiao Tung University	Taiwan	41	651	15.87	208
21	Multimedia University	Malaysia	36	414	11.5	801–1000
22	Shanghai Jiao Tong University	China	38	417	10.97	59
23	University of Tehran	Iran	37	403	10.89	701–750
24	University of São Paulo	Brazil	36	346	9.61	–
25	Islamic Azad University	Iran	91	461	5.06	–

2.3. Citation analysis

The citations received by a paper indicates its impact and serves as quality indicator. Therefore, the highly cited papers demonstrate the greater contribution towards literature than less cited papers (Jiang et al., 2014). Citation analysis plays a crucial role in three main areas: 1) in investigating the relativeness of papers, institutions, and countries; 2) in serving as a metric of journal ranking; and 3) in exploring the intellectual formation of the domain. Table 5 reports the 25 papers with highest number of citations in WoS. "A dynamic theory of organizational knowledge creation" published in 1994 by Ikujiro Nonaka appeared as the most cited paper. This has been cited 6,453 times since 1994 (until 2019), and also has highest citations per year (258.12). "Knowledge management and knowledge management system: conceptual foundation and research issues" published in 2001 by Alavi M. and Leidner D. E. is the second most cited paper with 3,500 citations since 1996, and also has the second highest per year citations (194.44). Hence, these papers have given significant contributions to theory development in KM field.

The total number of citations received by each country indicates the impact of each country in the research domain. In Table 6 we summarize the top twenty cited countries. The United States of America emerges as the most cited country with 94,679 citations, followed by United Kingdom with 24,876 citations. As discussed in section 3.2, these two countries are also the highest contributors in terms of number of papers published.

Table 5. Most cited articles

#	TC	Title	Author(s)	Country of first author	Journal	Year	TC/Y
1	6453	A dynamic theory of organizational knowledge creation	Nonaka, I.	Japan	Organization Science	1994	258.12
2	3500	Review: Knowledge management and knowledge management system: conceptual foundation and research issues	Alavi, M., Leidner, D. E.	United States	MIS Quarterly	2001	194.44
3	2352	Prospering in dynamically-competitive environments: Organizational capability as knowledge integration	Grant, R. M.	United States	Organization Science	1996	102.26
4	2288	Towards principles for the design of ontologies used for knowledge sharing	Gruber, T. R.	United States	International Journal of Human-Based Studies	1995	95.33
5	2050	The knowledge-creating company	Nonaka, I.	United States	Harvard Business Review	1991	73.21
6	1906	Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation	Bathelt, H., Malmberg, A., Maskell, P.	Germany	Progress in Human Geography	2004	127.07
7	1820	Knowledge transfer in intraorganizational network: Effect of network position and absorptive capacity on business unit and performance	Tsai, W. P.	United States	Academy of Management Journal	2001	101.11
8	1678	The concept of "ba": Building a foundation for knowledge creation	Nonaka, I., Konno, N.	Japan	California Management Review	1998	79.90
9	1584	Behavioural intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climates	Bock, G. W., Zmudu, R. W., Kimm Y., Lee, J. N.	Singapore	MIS Quarterly	2005	113.14
10	1547	Creating and managing a high-performance knowledge-sharing network: The Toyota case	Dyer, J. H., Nobeoka, K.	United States	Strategic Management Journal	2000	81.42
11	1532	Social capital, networks, and knowledge transfer	Inkpen, A. C., Tsang, E. W. K.	Singapore	Academy of Management Review	2005	109.43
12	1507	Network structure and knowledge transfer: The effect of cohesion and range	Reagans, R., McEvily, B.	United States	Administrative Science Quarterly	2003	94.19
13	1497	Strategic alliances and interfirm knowledge transfer	Mowery, D. C., Oxley, J. E., Silverman, B. S.	United States/ Canada	Strategic Management Journal	1996	65.09

End of Table 5

#	TC	Title	Author(s)	Country of first author	Journal	Year	TC/Y
14	1453	Knowledge management: An organizational capabilities perspective	Gold, A. H., Malhotra, A., Segars, A. H.	United States	Journal of Management Information System	2001	78.78
15	1330	SECI, ba and leadership: A unified model of dynamic knowledge creation	Nonaka, I., Toyama, R., Konno, N.	Japan	Long Range Planning	2000	80.72
16	1301	Knowledge transfer: A basis for competitive advance in firms	Argote, L., Ingram, P.	United States	Organizational Behaviour and Human Decision Processes	2000	70.00
17	1222	Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms	Yli-Renko, H., Autio, E., Sapienza, H. J.	United States	Strategic Management Journal	2001	68.47
18	1175	The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer	Levin, D. Z., Cross, R.	United States	Management Science	2004	67.89
19	1172	Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories	Chiu, C. M., Hsu, M. H., Wang, Eric. T. G.	Taiwan	Decision Support System	2006	78.33
20	1131	Successful knowledge management projects	Davenport, T. H., De Long, D. W., Beers, M. C.	Austria	Sloan Management Review	1998	90.15
21	1056	In search of complementarity in innovation strategy: Internal R&D and external knowledge	Cassiman, B., Veugelers, R.	Spain/ Belgium	Management Science	2006	53.86
22	1017	Modularity, flexibility, and knowledge management in product and organization design	Sanchez, R., Mahoney, J. T.	Australia	Strategic Management Journal	1996	81.23
23	930	Ambiguity and the process of knowledge transfer in strategic alliances	Simonin, B. L.	United States	Strategic Management Journal	1999	44.22
24	842	Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination	Lee, H., Choi, B.	South Korea	Journal of Management Information Systems	2003	46.50
25	801	Knowledge sharing: A review and directions for future research.	Wang, S., Noe, R. A.	United States	Human Resource Management Review	2010	52.63

Note: TC – total citations; TC/Y – total citations/year.

Table 6. Top 20 most cited countries

Rank	Country	No. of documents	Rank	Country	Citations	Per document citations
1	United States	1882	1	United States	94679	50.31
2	United Kingdom	992	2	United Kingdom	24876	25.07
3	China	866	3	Taiwan	19329	31.23
4	Taiwan	619	4	China	14463	16.70
5	Canada	454	5	Canada	12301	27.09
6	Australia	428	6	Germany	9459	24.01
7	Germany	394	7	South Korea	8374	31.72
8	Spain	359	8	Spain	8114	22.60
9	Italy	324	9	France	7893	30.95
10	Netherlands	269	10	Singapore	7617	62.43
11	South Korea	264	11	Japan	6989	36.98
12	France	255	12	Netherlands	6918	25.72
13	Iran	244	13	Australia	6407	14.97
14	Malaysia	218	14	Sweden	5727	33.30
15	Japan	189	15	Denmark	5571	51.58
16	India	188	16	Finland	5333	33.12
17	Sweden	172	17	Italy	5281	16.30
18	Finland	161	18	Switzerland	4678	38.66
19	Brazil	160	19	Norway	2649	24.08
20	South Africa	126	20	Malaysia	2553	11.71

3. Science mapping

Science mapping is an approach based on the use of techniques aimed to build bibliometric maps that describe how specific disciplines and scientific domains are conceptually and intellectually related. Among the most commonly used techniques there are co-citation analysis and the keywords' co-occurrence. We used VOSviewer software to conduct network analyses for the following reasons: (1) it is an easy-to-use tool, (2) it allows to visualize large networks and present clearly the results, (3) it incorporates three types of visualizations: network visualization, overlay visualization, and density visualization, (4) it offers distance-based visualization in which the nodes' distance infers their relatedness (van Eck & Waltman, 2014), and (5) it helps in visualizing the outputs through various bibliometric metrics (Merigó et al., 2018).

3.1. Co-word analysis

Co-word analysis is a content analysis method that captures scientific maps of a field using the document's keywords. This aims to identify words with high frequencies to extract the

concept and co-occurrence relationship behind. We identified 19,489 unique keywords. With such large number, it is difficult to get a clear map of the most important keywords. According to Chai and Xiao (2012), only the most frequent keywords offer a deep understanding of key topics, and therefore, keywords should be limited. Thus, we use a threshold of at least 5 as a minimum co-occurrence frequency. As a result, 1,796 unique keywords meet this threshold and were used for the analysis.

Figure 3 represents a density view map of keywords. Three main colours can be easily figured out: green, yellow and warm red. Green reflects lower density keywords, yellow reflects medium density keywords, and warmer red reflects the highest density keywords representing the hot themes. As the distance increases from the centre of gravity, the colour automatically changes, demonstrating that they are far from hot themes and the integrated clusters will be changed to non-integrated ones. Results of the analysis reveal four well-separated subfields in KM research: "knowledge management" (middle left), "performance" (middle right), "innovation" (lower middle) and "knowledge sharing" (upper middle) (Figure 3). Meanwhile, "knowledge management", "performance", "innovation", "knowledge sharing", "management", "knowledge transfer", "model", "firm" and "impact", and "absorptive-capacity" emerge as main keywords with 2,032, 1,465, 1,244, 1,109, 1,085, 760, 719, 582, 581, and 553 occurrence frequency, respectively.

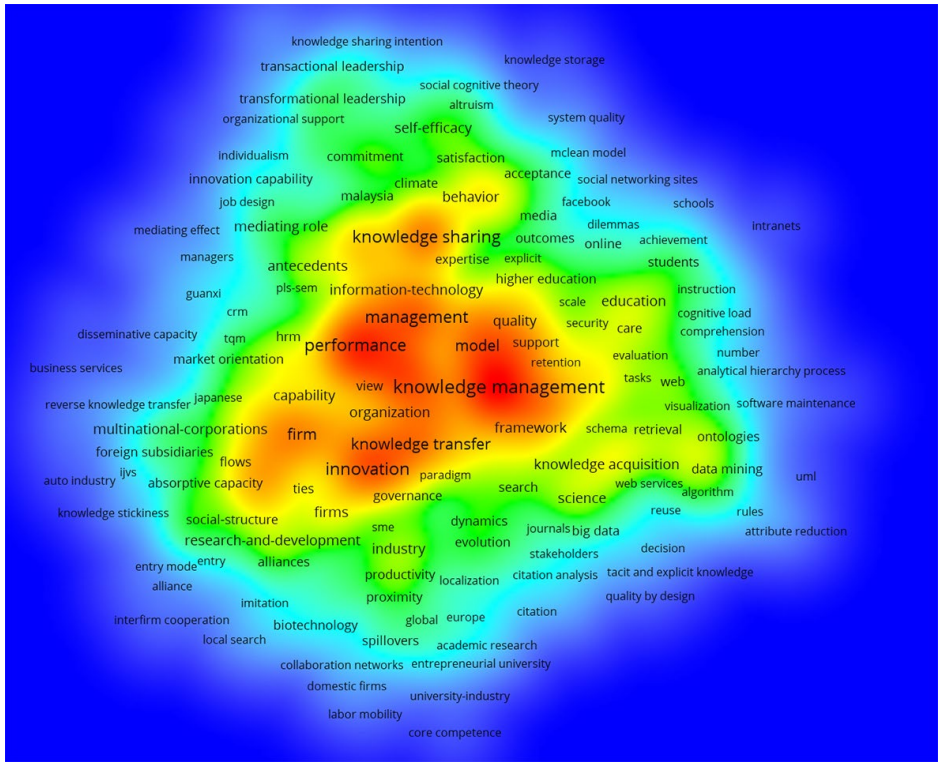

Figure 3. Co-word analysis of keywords: heat map

3.2. Co-citation analysis

Co-citation analysis was introduced by Small (1973) and, since then, it has gained great popularity in the bibliometric research. This evaluates the degree of correlation between papers or authors. Papers/authors are co-cited if they appear together in the reference list of other papers. Most often co-cited papers/authors represent similar research topics/interests that were mostly discussed in the literature.

3.2.1. Co-citation analysis of cited references

In this study, we had a dataset of 230,653 cited articles. According to McCain (1990), when the dataset is too large, it is possible to establish a threshold in terms of minimum number of citations received by papers to identify the most influential contributions in a given field. Considering 150 as the minimum number of citations of a cited reference, 77 papers meet this threshold and, therefore, they were included in the analysis (Table 7). Figure 3 shows the co-citation network structure of the cited references.

Table 7. Clustering resulting for the most cited references

Cluster 1 Knowledge sharing and knowledge sharing networks		Cluster 2 Knowledge creation, Organizational capabilities, innovation, and KM	
• Argote et al. (2000) • Argote and Ingram (2000) • Argote et al. (2003) • Cohen and Levinthal (1990) • Dyer and Singh (1998) • Dyer and Nobeoka (2000) • Gupta and Govindarajan (2000a) • Gupta and Govindarajan (2000b) • Hamel (1991) • Hansen (2002) • Inkpen and Tsang (2005) • Kogut and Zander (1992) • Kogut and Zander (1993) • Kogut and Zander (1996) • Lane and Lubatkin (1998) • Levin and Cross (2004)	• Mowery et al. (1996) • Nahapiet and Ghoshal (1998) • Powell et al. (1996) • Reagans and McEvily (2003) • Simonin (1999) • Szulanski (1996) • Szulanski (2000) • Tsai (2001) • Tsai and Ghoshal (1998) • Uzzi (1977) • Yli-renko et al. (2001) • Zahra and George (2002) • Zander and Kogut (1995)	• Alavi and Leidner (2001) • Barney (1991) • Brown and Duguid (1991) • Brown and Duguid (2001) • Cook and Brown (1999) • Davenport and Prusak (1998) • Davenport et al. (1998) • Gold et al. (2001) • Grant (1996) • Hansen (1999) • Huber (1991) • Lee and Choi (2003) • Leonard-Barton (1991) • March (1991)	• Nelson and Winter (1982) • Nonaka (1991) • Nonaka (1995). • Nonaka and Konno (1998) • Nonaka et al. (2000) • Polanyi (1966) • Spender (1996) • Teece et al. (1997) • Von Krogh (1998) • Wenger (1998) • Wernerfelt (1984) • Zack (1999)
Cluster 3 Barriers, motivations and stages of knowledge sharing			
• Bock et al. (2005) • Cabrera and Cabrera (2002) • Cabrera et al. (2006) • Cabrera and Cabrera (2005) • Chiu et al. (2006) • Cummings (2004) • Davenport and Klahr (1998) • De Long and Fahey (2000) • Hendriks (1999) • Hsu et al. (2007) • Ipe (2003)		• Kankanhalli et al. (2005) • Lin (2007a) • Lin (2007b) • McDermott and O'Dell (2001) • O'Dell and Grayson (1998) • Osterloh and Frey (2000) • Riege (2005) • Van Den Hooff and De Ridder (2004) • Wang and Noe (2010) • Wasko and Faraj (2000) • Wasko and Faraj (2005)	

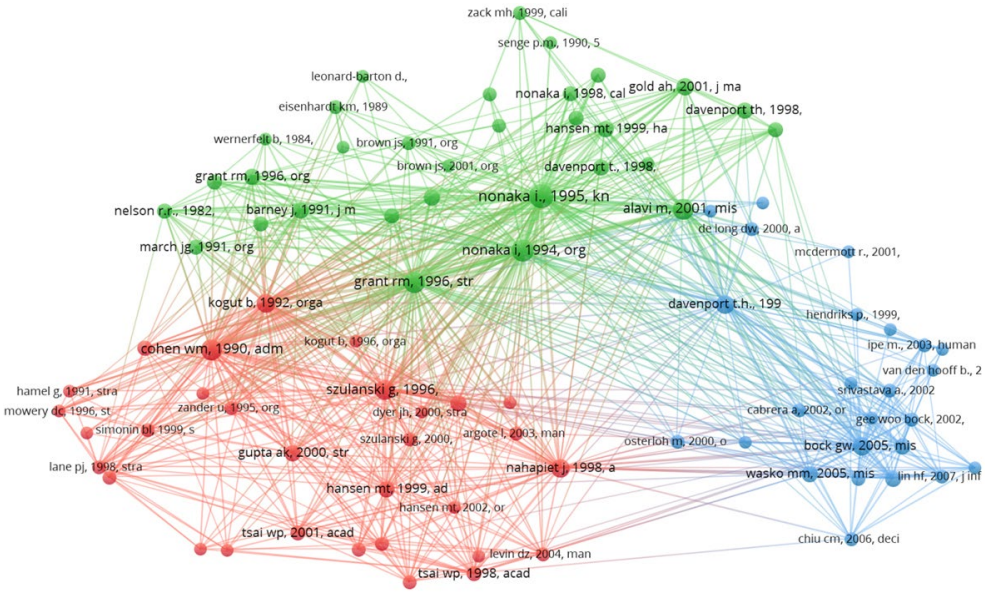

Figure 4. Articles' co-citation analysis

Figure 4 shows three different clusters depicting different topic areas and offering a direct view of the relationship among the papers. The first cluster includes red nodes. We named this cluster as "KM frameworks". The second cluster includes green nodes and has been defined as "Organizational capabilities, innovation, and KM". "*The knowledge-creating company: How Japanese companies create the dynamics of innovations*" published by Nonaka and Takeuchi (1995) and *"A dynamic theory of organizational knowledge creation"* published by Nonaka (1994) appeared as the most cited articles and they belong to this cluster. "*The knowledge-creating company: How Japanese companies create the dynamics of innovations*" published by Nonaka and Takeuchi (1995) and "*Toward a knowledge-based theory of the firm*" published by Grant (1996) emerge as secondly highly co-cited articles.

The last cluster includes blue nodes and has been named as "Barriers, motivations, and stages of knowledge sharing". Meanwhile, Cluster 1 (red cluster) includes papers related to knowledge sharing and knowledge sharing networks. Szulanski (2000) proposed a model that discusses the knowledge transfer stages and difficulties that firms face at different stages of the knowledge transfer process. Yli-renko et al. (2001) confirmed the mediating role of knowledge acquisition between social capital and the exploitation of knowledge. Hansen (2002) introduced the knowledge networks concept to explain effective knowledge sharing in multiunit companies. Powell et al. (1996) defined inter-organizational collaboration as a network of learning. Gupta and Govindarajan (2000b) analyzed the process of knowledge transfer, whereas Inkpen and Tsang (2005) evaluated how networks' social capital dimensions impact knowledge transfer. Likewise, Levin and Cross (2004) proposed and tested a framework for knowledge transfer. Lane and Lubatkin (1998) studied the role of a partner's knowledge and research networks in the inter-organizational learning context, whereas Mowery et al.

(1996) emphasized on the inter-firm knowledge sharing among strategic business partners. Nevertheless, the way how knowledge is shared depends upon the competence of the multinational organizations in transferring knowledge to other firms (Kogut & Zander, 1993), and the positive effect of interaction between absorptive capacity and network position on a firm's performance has utmost importance (Tsai, 2001). In the same vein, network range and the strength of network ties impact the knowledge transfer process (Reagans & McEvily, 2003). Furthermore, few researchers emphasized that firms should extend their dynamic learning capability beyond their knowledge creation networks to attain unique competitive edge (Dyer & Nobeoka, 2000). On the other hand, research also claimed that not all business partners are equally important for knowledge creation and transfer (Hamel, 1991). Also, the firms need to put more effort into identifying knowledge than in understanding how to create, retain and share knowledge (Argote et al., 2003). Kogut and Zander (1992) provided an overview of the relationship between the firm's knowledge, combinative capabilities, and the replication of technology.

Cluster 2 (green cluster) includes papers dealing with knowledge creation, organizational capabilities, innovation, and KM. Researchers have further established the relationships between different factors of KM (Lee & Choi, 2003). Nonaka (1994) emphasized that organizational knowledge creation is a wide-spread and dynamic concept whose effectiveness depends upon the balance between explicit and tacit knowledge. Meanwhile, few researchers reported explicit, tacit, individual and group knowledge as four sources of organizational knowledge creation (Cook & Brown, 1999; Brown & Duguid, 2001). Other researchers claimed organization culture and identity, routines, policies and systems, documents, and employees (Grant, 1996) cognitive and behavioral dimensions as multiple ways of knowledge creation (Huber, 1991). Similarly, a knowledge creation model is proposed including three components: SECI process, Ba (the shared context for knowledge creation), and knowledge assets (Nonaka et al., 2000). The organizations can obtain and share knowledge considering other means, comprising, declarative, causal, relational, and conditional (Zack, 1999). A disproportionate emphasis either on exploitation or exploration can hamper the business performance (March, 1991). Besides, Nonaka (1991) discussed the notion of "tacit" knowledge as well as valuable and subjective information that are difficult to create and share. Davenport and Prusak (1998) underlined the cultural and behavioral concerns and effective ways to incorporate information technology for KM. Evidence is also available that supports a positive link between information technology and organizational KM (Alavi & Leidner, 2001). Gold et al. (2001) reported the perspectives of effective KM under organizational capabilities. The literature further supported the relationships between work, learning, and innovation (Brown & Duguid, 1991), and established the association between different factors of KM (Lee & Choi, 2003).

Cluster 3 (blue cluster) includes paper dealing with barriers, motivations, and stages of knowledge sharing. Osterloh and Frey (2000) and Lin (2007a) explained the effect of different types of extrinsic and intrinsic motivations related to explicit and tacit knowledge sharing intentions. Similarly, extrinsic motivators, social-psychological drivers and organizational climate influence individuals' knowledge sharing intentions (Bock et al., 2005). However, the employees share their knowledge in the case when they consider that it will enhance their professional goodwill (Wasko & Faraj, 2005) as individual and organizational factors signifi-

cantly affect the willingness of the employees to collect and share knowledge and fosters the innovative capacity of firms (Lin, 2007b). On the other hand, Hsu et al. (2007) proposed a social cognitive theory-based framework that comprises knowledge exchange self-efficacy and outcome. Meanwhile, the research concluded that external knowledge sharing is more strongly related to performance in the case where workgroups are more structurally diverse (Cummings, 2004). Van den Hooff and van Weenen (2004) emphasized that to differentiate the different knowledge exchange processes, the levels of commitment and knowledge exchange, and modes of computer-mediated communication have immense importance to explain the relationship between commitment, knowledge exchange, and computer-mediated communication use. However, resource availability impacts electronic knowledge repositories usage for knowledge search mainly during the low task tacitness is low (Kankanhalli et al., 2005). Ipe (2003) highlighted the interconnection between the type of knowledge, sharing intention, sharing opportunities, and the work culture.

3.2.2. Co-citation analysis of authors

As co-citations of authors are concerned, there were a total of 121,322 different authors cited within the sample articles. We considered the threshold of 250 citations received by an author and only 75 met this condition (Table 8). This analysis reveals that "Nonaka and Grant" are two highly co-cited authors in the KM literature, which are further followed by "Nonaka and Davenport"; "Nonaka and Polanyi" and "Grant and Alavi". Figure 5 reports the authors' co-citation network. The analysis classified 75 researchers into 3 clusters: cluster 1 (red nodes), cluster 2 (green nodes), and cluster 3 (blue nodes). Meanwhile, the thickness of the link indicates the strength of co-citations ties.

Cluster 1 comprises researchers focusing on strategic alliances, organizational capabilities, and knowledge transfer. In this context, Robert M. Grant evaluates the coordination systems by which organizations integrate their employees' knowledge. Walter W. Powell's expertise is in inter-organizational collaborations to access and manage knowledge. Anil K. Gupta explores knowledge outflows from a subsidiary and knowledge inflows into a subsidiary and their related associations. David J. Teece analyses development of dynamic capabilities for knowledge management. Udo Zander's expertise concerns the transfer and imitation of the firm's capabilities. Linda Argote's expertise is in knowledge transfer and its mechanisms across organizations. Further, Cross Rob's expertise is in enhancing employees' capability to create and exchange knowledge in social networks. Bernard L. Simonin and David C. Mowery investigate the strategic process of knowledge transfer within strategic alliances. Ranjay Gulati focuses on social structure and strategic alliance formulation among patterns. Other researchers investigate inter-partner learning within a strategic alliance (Bruce Kogut; Gary Hamel and Andrew C. Inkpen; Peter J. Lane; Shaker A. Zahra). In addition, James G. March analyses mutual learning and knowledge sharing between members. Richard R. Nelson analyse the relationship between mutual trust, shared knowledge and information system performance.

Cluster 2 includes researchers specialized in knowledge creation and management practices. Spender John Christopher explores knowledge management processes inside and outside the organizational boundaries. Herbert A. Simon investigates the processes of acquisition

Table 8. Clustering resulting for the most cited authors

Cluster 1 Strategic alliance, organizational capabilities, and knowledge transfer		Cluster 2 Knowledge creation and management practices	
• Argote, I. • Barney, J. • Burt, R. S. • Cohen, W. M. • Cross, R. • Eisenhardt, K. M. • Grant, R. M. • Gulati, R. • Gupta, A. K. • Hamel, G. • Hansen, M. T. • Inkpen, A. C. • Kogut, B. • Lane, P. J.	• Levin, D. Z. • March, J. G. • Mowery, D. C. • Nahapiet, J. • Nelson, R. R. • Powell, W. W. • Reagans, R. • Simonin, B. L. • Szulanski, G. • Teece, D. J. • Tsai, W. P. • Uzzi, B. • Zahra, S. A. • Zander, U.	• Alavi, M. • Argyris, C. • Bontis, N. • Brown, J. S. • Draft, R. L. • Davenport, T. H. • Drucker, P. F. • Holsapple, C. W. • Huber, G. P. • Lave, J. • Liebowitz, J. • Mcdermott, R. • Nonaka, I., • O'Dell, C. • Orlikowski, W. J.	• Polanyi, M. • Prahalad, C. K. • Senge, P. M. • Serenko, A. • Simon, H. A. • Spender, J. C • Sveiby, K. E. • Tiwana, A. • Tsoukas, H. • Von Krogh, G. • Weick, K. E. • Wenger, E. • Wiig, K. M. • Yin, R. K. • Zack, M. H.
Cluster 3 Factors affect knowledge transfer and organizational performance			
• Amabile, T. M. • Ardichvili, A. • Bock, G. W. • Cabrera, A.	• Chen, C. J. • Chin, W. W. • Darroch, J. • Foss, N. J.	• Gold, A. H. • Jarvenpaa, S. L. • Kankanhalli, A. • Liao, S. H.	• Lin, H. F. • Srivastava, A. • Van den Hoof, B. • Wang, S. • Wasko, M. M.

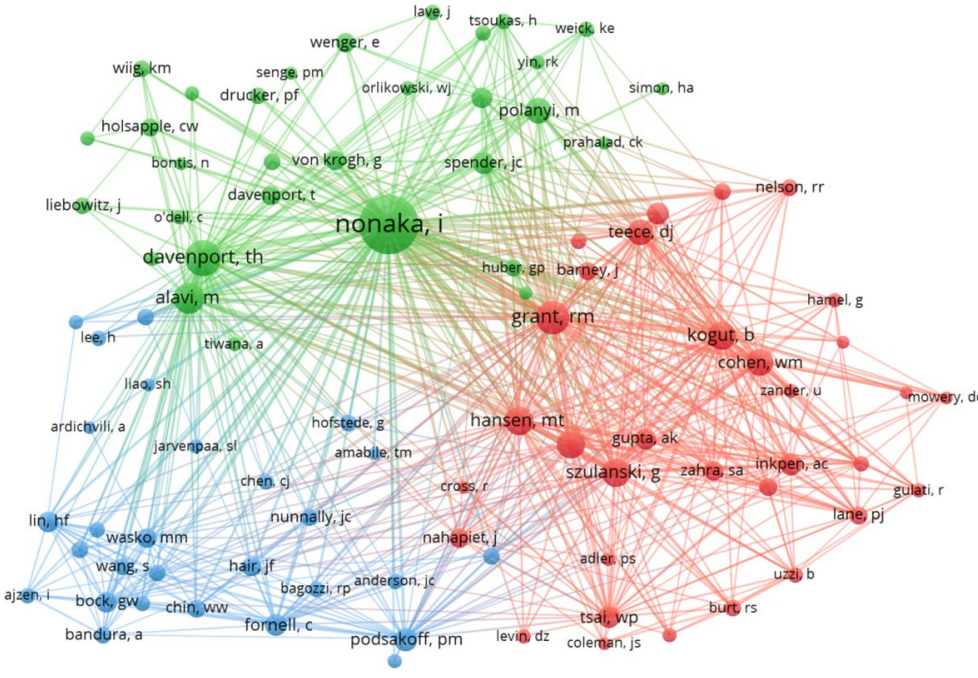

Figure 5. Authors' co-citation analysis

and integration of external knowledge of the employees. Meanwhile, Michael Polanyi focuses on the key role of tacit knowledge as a source of all types of knowledge. Ikujiro Nonaka and Haridimos Tsoukas examine the knowledge creation process through the mutual conversion of tacit and explicit knowledge and visionary leadership. Jean Lave and Etienne Wenger highlight the key role of participation in social practices as a knowledge creation practice. Thomas H. Davenport expertise is in knowledge capturing, managing customer knowledge and its reuse. Few researchers investigate how a collaborative environment motivates the employees to learn (Karl-Erik Sveiby) and accordingly improves their productivity (Peter F. Drucker). Likewise, Alexander Serenko investigates the relationship between intellectual capital and KM, whereas Holsapple C.W. underlines the necessity of managerial and environmental factors for knowledge creation and successful KM. Prahalad C.K demonstrates the importance of core competencies (e.g., collective knowledge of the company about skills, technologies, and new markets) for effective KM. Maryam Alavi and George P. Huber propose a decision support system for knowledge creation, distribution, information interpretation and application of knowledge in organizational, and KM research issues. Georg von Krogh focus the attention on the role of leadership and communal resources in knowledge creation and sharing processes. Chris Argyris discusses KM theories related to action and learning. Further, in this cluster, Likewise, Jay Liebowitz propose to measure intellectual capital through KM metrics.

Cluster 3 involves researchers investigating the factors affecting knowledge transfer and organizational performance. In this line, Chung-Jen Chen investigates the impact of human capital, organizational capital, relational capital, and knowledge sharing. Sirkka L. Jarvenpaa focuses on reporting the impact of organizational information ownership, propensity to share information, task interdependence, computer comfort, and characteristics related to computer-based information to use collaborative electronic media for knowledge creation and sharing. Meanwhile, Alexandre Ardichvili explores the role of online learning, KM and knowledge sharing in virtual communities. Cabrera Ángel studies knowledge-sharing dilemmas and determinants of individual engagement in knowledge sharing. Li-Fen Liao illustrates the influence of managers' social power and mutual trust on employees' knowledge-sharing behaviour. In this cluster, other researchers depict the impact of rewards systems, leadership (Srivastava Abhishek), and behavioural intention on knowledge sharing (Gee-Woo Bock). On the other hand, Atreyi Kankanhalli highlights the factors affecting electronic knowledge repositories usage for knowledge seeking. Further, Nicolai J. Foss illustrates the role of internal knowledge, network knowledge, and cluster knowledge on knowledge transfer, and Andrew H. Gold examines the impact of knowledge infrastructure capability and knowledge process capability on organizational performance. Jenny Darroch developed measures of KM behaviours, and implementation of the same to foster innovation and organizational performance.

Discussion, implications and conclusions

This paper conducts a bibliometric overview of KM literature using the WoS database. The paper also visualizes the bibliometric networks for citations, keywords, and co-authorship patterns. There have been a good number of papers published in the KM domain over the years, many of them in the last decade. However, despite few good studies on KM have been

reported in the last few years, a detailed bibliometric and network analysis to systematically and objectively recognize principal contributions, authors and growing research clusters have not been performed yet. This paper contributes to the body of knowledge by providing a comprehensive overview of KM literature in this way.

From the analysis, it can be concluded that research on KM has attained increasing attention and emerges as a popular research field. Totally 8,721 papers on KM were collected and analysed using bibliometric and network analysis. The papers over the time indicate that 6,413 papers published between 2008 and 2019 represent 73.53% of total identified papers. Meanwhile, all the most cited articles are published before 2010. This is not surprising as the field started growing. The research works published in the last 5–6 years have not had the opportunity to receive as much pull as citations have yet to accumulate.

As journals' contribution is concerned, 2,353 journals have contributed to a total of 8,721 articles. The top 25 journals together contributed with 1,930 papers representing the 22.13% of total identified papers. Journal of Knowledge Management and Knowledge Management Research & Practiceare the two top journals in terms of papers published, whereas Journal of Knowledge Managementand Strategic Management Journal are the two top-cited journals.

The United States and United Kingdom are the most productive continents. Besides, the contribution of South Africa and Asian is quite less. The University of Illinois and National University of Singaporetook the leading position of organizations in average citations per article. Analysis proved an important approach to highlight hotspot research areas. The results confirm four hotspots, namely, knowledge management, performance, innovation, and knowledge sharing.

This study gives a noteworthy contribution to the body-of-knowledge on KM while broadening prior reviews (Kuah & Wong, 2011; Asrar & Anwar, 2016; Cerchione et al., 2020) in different ways. First, the present study applies bibliometric and network approaches to uncover the most influential articles, scholars, institutions, and countries as per the number of articles published and citations. Second, it proposes three clusters of co-cited articles namely knowledge sharing and knowledge sharing networks, knowledge creation, organizational capabilities, innovation and KM, and barriers, motivations and stages of knowledge sharing. Third, it proposed three clusters of co-cited authors such as strategic alliance, organizational capabilities and knowledge transfer, knowledge creation and management practices, and factors affecting knowledge transfer and organizational performance. Fourth, the study supports researchers to underline the most influential articles. Fifth, the findings can assist the industries and governments to identify the main research and development centres working in the field of KM for research projects. Sixth, editors organizing special and regular issues on the topic can invite leading authors and institutions. Finally, compared to prior qualitative literature reviews, the present study offers a more rigorous, updated, and detailed outline of research on KM. This study builds on and extends the previous contributions offering a broader framework for guiding scholars approaching KM from diverse perspectives and more meaningful viewpoints. The clustering of co-citations based articles will guide the scholars to identify the research gaps and further purse the research to enrich the KM literature. Scholars working on KM domain may easily recognize the researchers, research institutions and countries paying attention in the KM areas. Thus, interested scholars can

perform joint research projects, share their ideas and results as well as apply for academic positions to further investigate the mentioned field.

As the managerial contribution is concerned, the present study offers opportunities to the practitioners and organizations engaged in KM. The study further provides managers with diverse outlooks that enable them to enjoy the benefits of KM in their work. The bibliometric information about the KM literature has immense value for managers as it enables them to spot the KM expertise globally. Accordingly, the research projects on KM can be developed considering this information.

Although this article significantly contributes to the field of KM, nevertheless this study is not without limitations. Few journals on the KM are not yet covered by WoS. Hence, several other major databases can be considered (e.g., Scopus, EBSCO and Google Scholar) in their future research. Second, we included only research articles and review articles; therefore, the inclusion of other types of documents may lead toward different conclusions. Thirdly, we performed the co-citation analysis using network analysis and VOSviewer software. However, other methods and software may be used, such as Gephi. Lastly, the bibliometric analysis in the present study focuses on the general themes of KM processes, and not restricted to KM up to particular topic. Therefore, in future, it would be interesting to provide the bibliometric overview of KM literature analysing the logical intersection with crucial topics affecting the industrial environment (e.g., sustainability, circular economy, and Industry 4.0).

Author contributions

Authors equally contributed to the paper.

Disclosure statement

No disclosure statements and conflicts of interest have to be declared.

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