The Times They are (Not?) A-Changing: Recent Trends of Knowledge Management Literature

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Abstract: After almost 3 decades, the literature on knowledge management (KM) has gained importance. Today, many journals and international conferences are explicitly oriented to KM research, and many others propose special issues or special tracks on KM. The increasing number of studies and publications raises the question of what direction KM research is taking. This paper aims to explore the current trends in KM research by providing an analysis of the literature. It is based on two sources of data: first, some existing reviews of the KM literature, with the goal to analyse if these studies converge towards consistent conclusions; second, the proceedings of a long-running and popular international Conference on KM (the European Conference on Knowledge Management), where a quantitative analysis was carried out to understand the main streams in this field of study. The overall picture is that of a field of study with a flourishing literature and lively debate, but that it is still struggling to define its "identity".

Keywords: literature review, research trends, scientific journals, scientific conferences

1. Introduction

Where is the research on knowledge management (KM) going to? For more than a decade, some scholars have been discussing if KM can have a good future as a managerial discipline or, conversely, if it has begun its downward spiral. Many shades of opinion and view have been expressed: some (Tombs, 2004) say that KM is simply dead, or at least it is seriously ill (Davenport, 2015); others affirm that it may suffer from a problem of recognition and sustainability, but that organizations always need ways of managing their knowledge properly (O'Leary, 2016)

Even in the worst case that KM is dying, the KM-related literature flourishes: lots of journals, international conferences, and book series have KM in their title; many others include special issues or tracks on KM. A recent global bibliometric analysis reveals that over 23055 academic papers on KM have been published from 1986 up to 2015 and are indexed in major scientific repositories such as Web of Science; and the annual production of new articles shows no sign of diminishing (Gaviria-Marin et al., 2019). So, the point here is not if KM research is coming to an end but, rather, what direction is it taking?

This paper aims to explore the recent trends of the KM literature, and is based on two sources of data. First, it examines some already published reviews of the KM literature. Indeed, as the reader will easily see, there are plenty of reviews. So, the goal is not to add a new one but, rather, to conduct a "meta-analysis" of these results to understand if all these studies tend to converge towards consistent conclusions, and to summarize the emerging views of the future of KM. Second, our paper exploits the long experience of the European Conference on Knowledge Management (ECKM) – a paradigmatic example of continuity in this field of study (it has now reached two decades of life, and still gathers hundreds of scholars and practitioners). A quantitative analysis of its proceedings can provide a view of the trends in this field of study. In particular, the paper analyses the proceedings of the last 5 editions of ECKM and compares these results with a similar study conducted in the recent past (Fteimi and Lehner, 2015).

2. A "meta-literature review"

As we mentioned, there are several literature reviews in the KM field. Indeed, the results of a search in the Scopus database using the terms "knowledge management" and "literature review" (or "knowledge management literature") in the title produced 82 results, which confirms that interest in the topic has been increasing over the years, and especially in the last few years (39 of the 82 reviews were published in the last four years). The oldest reviews date back to 2003 - about 10 years after the KM notion was first introduced (Prusak, 2001): Kakabadse et al. (2003) and Liao (2003) had provided taxonomies of the literature and the state-of-the art of this field.

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Given the recognized multidisciplinary nature of KM (Dwidedi et al., 2011; Wallace et al., 2011; Akhavan et al., 2016; González-Valiente et al., 2019), there will be reviews that do not consider the entire body of the KM literature but, instead, focus on specific topics, for example, the application of ICT solutions for KM, the role of KM in supply chain management, KM notions and practices in healthcare etc. Other (less frequent) topics include KM in SMEs, the relationship between KM and innovation, and the use of KM in specific industries. It is understandable that the authors tend to conduct literature reviews limited to specific aspects or areas: given the huge proliferation of papers about KM that can be found, reviews that are narrower in scope are also quicker to do and easier to understand. However, they can't offer a complete or at least a broad overview of the entire discipline and its evolution, and hence they are little useful for keeping track of its general streams.

Therefore, studies that consider KM papers of any kind – but are published in specific journals or presented at conferences specifically targeted to KM – can provide a more complete picture. On the one hand, these studies cover a wide range of topics and subjects of KM studies; whilst on the other hand, they consider papers that are published in KM journals or proceedings, so the risk of including papers that only marginally focus on KM is limited.

Let's first consider the reviews of three important KM journals. Ribière and Walter (2013) analysed the papers published in *Knowledge Management Research & Practice* (KMR&P) during the journal's first decade of life, 2003-2012. KMR&P was the first KM journal to be indexed by Web of Science in 2010 and it is also one of the top journals in the "global ranking of KM and Intellectual Capital Journals" elaborated by Serenko and Bontis (2017), as well as the third most productive journal in KM research in the business and management area (Gaviria-Marin et al., 2019). The authors collected the keywords of all the 235 articles published in that decade, and they counted their frequency of appearance. They found that the papers had 678 different keywords, 54 of which were mentioned in at least three papers. Table 1 shows the keywords occurring 10 times or more, where the "frequency" is calculated as the ratio between the number of occurrences of a keyword and the total number of papers. Leaving apart the two keywords *knowledge management* and *knowledge* (we will comment more on this later), it emerges that there is a great dispersion.

The first, fifth and sixth keywords refer to a KM process involving knowledge exchanges in some form or another. This confirms the findings of other studies that a lot of the early KM literature focused on the factors that favour or hinder exchanges of knowledge (Heisig, 2009; Hosein et al., 2009). As an authoritative expert of KM Spender (2015) argued, a great deal of KM was (and is, actually) mostly concerned with how to help organization mobilize their knowledge resources rather than, for example, how to create new ones.

Table 1: Ranking of KMR&P top keywords – 2003-2012 (from Ribière and Walter, 2013)

Rank	Keyword	Count	Frequency %
1	Knowledge sharing	50	21.3%
2	KM	41	17.4%
3	Case study	29	12.3%
4	Intellectual capital	23	9.8%
5	Knowledge creation	22	9.4%
6	Knowledge transfer	18	7.7%
7	KM practice	17	7.2%
7	Organizational learning	17	7.2%
7	KM strategy	17	7.2%
10	Tacit knowledge	16	6.8%
11	Communities of practice	13	5.5%
12	Innovation	11	4.7%
13	Ontology	10	4.3%

The third position of the keyword *case study* shows that, at least in the early years, research was mainly exploratory and aimed at investigating the applicability of notions and concepts that were substantially new at that time. This appears to be in line with the results of other studies (Handzic, 2015).

Among the top keywords, the presence of *intellectual capital* denotes its strong connection to the KM area. The two concepts are often considered closely interconnected by many scholars (Tzortzaki, and Mihiotis, 2014), although there are some studies that consider intellectual capital as a "theoretical ground" on which KM has been built (González-Valiente, 2019). The other keywords testify the practical (*KM practice,*

organisational learning, communities of practice) and strategic (*KM strategy, innovation*) orientation of many KM papers, as well as a recognition of the complex nature of its main objects (*tacit knowledge, ontology)*.

This study was substantially replicated five years later by Ramy et al. (2018), who analysed the papers published in KMR&P between the years 2003 and up to 2015. They considered 344 articles and, as can be expected, the keyword analysis produced substantially the same outcome as the previous one, and noteably *knowledge sharing* was confirmed in the first position. In addition, the leading countries in the field were counted, by considering the nationality or affiliation of the authors. The results of this analysis are illustrated in Table 2 and show a large prevalence of papers from North America, Western Europe and Australia.

Table 2: Country productivity: KMR&P publications (from Ramy et al., 2018)

Rank	Country	%
1	UK	12.7%
2	USA	12.0%
3	Spain	7.7%
4	Australia	7.7%
5	Italy	5.5%
6	France	5.1%
7	Canada	4.8%
8	Taiwan	4.1%
8	Germany	3.8%
10	Rest of the world	36.6%

Gaviria-Marin et al. (2018) performed a similar kind of investigation on the articles of another journal, the *Journal of Knowledge Management* (JKM). JKM was the second KM journal to be indexed in Web of Science, and it is placed on top of the list of KM journals compiled by Serenko and Bontis (2017). Today, JKM is the most productive journal in KM research in the business and management area (Gaviria-Marin et al., 2019). The study analysed a total of 1068 papers published between 1997 (foundational year) to 2016. It is, however, split into two different decades (with 415 and 653 papers respectively), which is very useful because it allows for the analysis of trends and comparisons with other studies. Counts of keyword occurrences in the two periods are shown in Tables 3 and 4.

Table 3: Top keywords occurrences in JKM 1997 -2006 (from Gaviria-Marin et al., 2018)

Rank	Keyword	Count	%
1	Knowledge management	238	57.3%
2	Innovation	36	8.7%
3	Intellectual capital	23	5.5%
4	Tacit knowledge	19	4.6%
5	Information	17	4.1%
5	Learning organizations	17	4.1%
5	Knowledge workers	17	4.1%
5	Learning	17	4.1%
9	Knowledge processes	15	3.6%
9	Management	15	3.6%
11	Information technology	14	3.4%
12	Organizational learning	14	3.4%
13	Competitive advantage	13	3.1%
14	Knowledge management systems	12	2.9%

By comparing the two tables, there are some similarities and differences. First, it can be noticed that the top keyword is still *knowledge management*. Others appear in both tables (e.g. *innovation*, *intellectual capital*, *tacit knowledge*, etc.) although in different positions. Also, in the first decade (1997-2006) there are more "generic" keywords, like for example *knowledge process*, where in the second decade (2007-2017) these tend to become more specific – *knowledge sharing, knowledge transfer, knowledge creation*. This may show that there has been a progressive development of the KM field, with better focussed studies that have been produced over time.

The top keywords of JKM are substantially aligned with those of KMR&P, with a slight difference regarding the appearance of keywords related to social capital, organizational culture and communications, which can be explained by a growing interest in social/organizational aspects of KM of submitters. Finally, Gaviria-Marin et

al. (2018) also analysed the geographical distribution of authors' affiliations (Table 5), which showed that the leading countries remained practically the same as KMR&P, with little differences in the top positions (i.e., a growing presence of US authors, and Hong Kong instead of Taiwan).

Table 4: Top keywords occurrences in JKM 2007 - 2016 (from Gaviria-Marin et al., 2018)

Rank	Keyword	Count	%
1	Knowledge management	405	62.0%
2	Knowledge sharing	127	19.4%
3	Knowledge transfer	85	13.0%
4	Innovation	60	9.2%
5	Knowledge creation	41	6.3%
6	Tacit knowledge	28	4.3%
7	Organizational culture	27	4.1%
8	Communication technologies	23	3.5%
8	Intellectual capital	23	3.5%
10	Knowledge management systems	21	3.2%
11	Social capital	20	3.1%
12	Organization	19	3.0%
13	Learning	19	3.0%
14	Knowledge organizations	17	2.7%

Table 5: JKM publications by countries

Rank	Country	%
1	USA	21.4%
2	UK	9.5%
3	Australia	9.2%
4	Spain	6.6%
5	China (Hong Kong)	4.4%
6	Italy	4.3%
7	Canada	4.2%
7	Germany	4.2%
9	France	3.6%
10	Rest of the world	32.6%

A third review, Alajmi and Alhaji (2018), examines 475 papers published in the *Journal of Information & Knowledge Management* (JI&KM) between 2002 and 2016. The Journal was founded in 2002, is indexed in Scopus, and is ranked seventh in the KM and IC journals list by Serenko and Bontis (2017). The results of the keyword counting are quite different. The top 5 keywords are: *knowledge management* (33.7%), *knowledge sharing* (9.5%), *organizational performance* (4.8%), *organizational culture* (4.6%), and *data mining* (4.6%). The geographical distribution of authors is different from the previous study (Table 6), which indicates that target readers and orientation of this journal are not the same as the other two. As a matter of fact, this journal refers to the computer science area, as confirmed by the classification made by Scopus and by Gaviria-Marin and colleagues who don't include it among the journals devoted to KM belonging to the business and management area.

Table 6: JI&KM publications by countries

Rank	Country	%
1	USA	21.0%
2	India	9.5%
3	Australia	8.2%
4	UK	7.6%
5	Malaysia	7.4%
6	Singapore	5.8%
7	Canada	5.5%
8	Kuwait	3.8%
9	Jordan	2.9%
10	Taiwan	2.7%
11	Rest of the world	25.6%

It is not only journals that provide a view of the KM literature, and it is interesting to mention reviews of the proceedings of KM conferences. Particularly, Fteimi and Lehner (2016) made an analysis of the proceedings of

the European Conference on Knowledge Management (ECKM) between 2006 and 2013. ECKM is one of the oldest Conferences on KM (it reached the 20th edition in 2019), and one of the most attended. Proceedings are indexed in both Scopus and Web of Science. Fteimi and Lehner's analysis considered 755 papers presented in eight years. Table 7 shows the outcome of the keyword count. It can be noted that results are not dissimilar from the other reviews.

Table 7: Top 15 ECKM keywords (from Fteimi and Lehner, 2016)

Rank	Keyword	Count	%
1	Knowledge management	278	36.8%
2	Knowledge sharing	83	11.0%
3	Knowledge	53	7.0%
4	Intellectual capital	47	6.2%
5	Knowledge transfer	44	5.8%
6	Innovation	36	4.8%
7	Community of practice	33	4.4%
8	Case study	28	3.7%
8	Small and medium sized enterprises	28	3.7%
10	Organizational learning	27	3.6%
11	Knowledge management systems	23	3.0%
12	Knowledge creation	22	2.9%
13	Tacit knowledge	21	2.8%
14	Ontology	16	2.1%
15	Social networks	14	1.9%

2.1 Comparisons and remarks

Although the reviews have some differences in terms of time span and method, here we propose a comparative analysis of their results. Table 8 puts together all the keyword rankings of the different investigations.

Based on this comparison, some remarks can be made.

- Generally speaking, keywords are (or should be) used to characterize a paper and to help a reader understand its core topic and focus. However, the top keyword (1st or 2nd place) is always KM. This is surprising, because it may be expected that authors submitting a paper to a KM journal or conference should not need to declare that they are doing some research in knowledge management – indeed, one would not expect to find the keyword physics in a journal of physics. It suggests that authors are not entirely convinced of the field of research they are doing, and feel the necessity to stress that again in the keywords. The same can be affirmed in the case of the keyword intellectual capital. An alternative explanation is that many submitters may not be specialists in KM and so, for them, it may not sound strange to add KM as a keyword (which, for them, is substantially a new topic). In substance, all this can be seen as a signal of immaturity in the field, which would also confirm the conclusions of previous studies (Serenko and Dumay, 2015; Tzortzaki and Mihiotis, 2014) and this may require further analysis for a confirmation.
- Some other generic keywords are also recurring in the top positions, for example, innovation or organizational learning. Being quite general, these keywords do not add more information for the reader, and appear to be another potential sign that the KM field still remains in an embryonic stage (Gaviria-Merino et al., 2019).
- Other more specific keywords signal that KM research has often been focussed on KM processes: indeed, keywords like knowledge sharing, creation, and transfer frequently appear. Technologies are also mentioned in the keywords (e.g. KM systems, communication technologies, data mining) although not as frequently as those related to organizational and social aspects. Indeed, while in its early beginnings a "hard" interpretation of KM prevailed (the KM field has often been strictly connected to the use of ICT and technological applications), it may appear that this has progressively changed over time, and social/organizational issues have gained more importance (which is confirmed also by the recent analysis of González-Valiente et al., 2019). In this regard, it should also be recalled that a substantial part of research on the use of information systems for KM is published on other journals (for example, those in the computer science area), while KMR&P, JKM and also ECKM are more oriented to business and management aspects.

- The only top keyword referring to the scientific methods adopted by researchers is case-study. This can be interpreted by the fact that many researchers don't feel the necessity to declare the methodology they are using in their research, and when they do that, a qualitative method (i.e. case study) prevails. This is also confirmed by others (Handzic, 2015)

Table 8: Comparative outline of the keyword counting – in italics: keywords recurring in at least 2 reviews; in bold: keywords recurring in at least 3 reviews

Rank	KMR&P	JKM	JIKMS	ECKM
1	**Knowledge sharing**	**KM**	**KM**	**KM**
2	**KM**	**Knowledge sharing**	**Knowledge sharing**	**Knowledge sharing**
3	*Case study*	**Knowledge transfer**	Organizational performance	Knowledge
4	**Intellectual capital**	**Innovation**	*Organizational culture*	**Intellectual capital**
5	**Knowledge creation**	**Knowledge creation**	Data mining	**Knowledge transfer**
6	**Knowledge transfer**	**Tacit knowledge**		**Innovation**
7	KM practice	*Organizational culture*		*Community of practice*
8	*Organizational learning*	Communication technologies		*Case study*
8	KM strategy	**Intellectual capital**		SMEs
10	**Tacit knowledge**	*KM systems*		*Organizational learning*
11	*Community of practice*	Social capital		*KM systems*
12	**Innovation**	Organization		**Knowledge creation**
13	*Ontology*	Learning		**Tacit knowledge**
14		Knowledge organizations		*Ontology*
15				Social networks

3. Recent trends: an analysis of ECKM proceedings

3.1 Method

This second part of the study consists of a fresh quantitative analysis that integrates with the reviews previously considered. The proceedings of the last 5 editions (excluding 2019) of the European Conference on Knowledge Management were scanned. The reasons for this choice are that a) ECKM is one of the most popular Conferences in the world specifically centred on KM; as mentioned, it has 2 decades of history, and is regularly attended by a couple of hundred academics and practitioners from all continents; b) the Proceedings are indexed in major article databases, particularly Scopus, which also provides an internal search engine which facilitates an analysis of contents; c) the analysis of conference proceedings makes it possible to have an updated overview of the recent trends, because usually papers in journals are written some time before being published (approximately one year) which is a significant time gap; and c) a comparison with the previous study by Fteimi and Lehner (2016), who used the Proceedings of the same Conference for a similar content analysis in the time span between 2006 and 2013, is possible and provides information about the trend of this literature. In short, the investigation was conducted in the following way:

- all Proceedings of the Conferences between 2014 and 2018 were retrieved from the Scopus database
- the Proceedings were scanned by means of the Scopus search engine: keywords and other general data of papers were counted
- the Results were analysed and classified (these are presented in the next subsection)

3.2 Results

In total, 722 papers were retrieved in the 2014-2018 proceedings. Table 9 shows the top contributors to the Conference. The overall scientific production of these people was examined. By considering the number of papers published in KM journals, their citations, and other citational indicators, it can be deduced that some of these authors are also among the most cited KM scientists. As a consequence, it can be argued that the ECKM proceedings are a good source for outlining the current state and the future of KM research.

Table 9: Most frequent presenters at ECKM (2014-2018) and comparison with other citational data (names only by initials

Contributor (only initials)	N° papers in ECKM 2014-2018	Scopus H-Index	Total papers in selected top KM journals* 2014-2018	Total Scopus citations in selected top KM journals* 2014-2018	Google scholar total citations 2014-2018
O.M.	12	7	3	11	1385
M.F.	11	18	4	57	N/A
E.A.	10	3	0	0	N/A
B.E.	9	12	13	128	712
P.L.	9	4	0	0	N/A
R.G.	9	9	3	27	630
V.M.	9	4	0	0	163
K.A.	8	17	11	136	1930
M.D.	8	2	0	0	89
T.E.	8	6	1	7	326
V.T.	8	2	0	0	N/A
C.JG.	7	20	11	86	2788
B.KJ.	6	6	1	0	192
D.S.	6	4	0	0	N/A
S.E.	6	12	10	102	498

* Journal of Knowledge Management, Knowledge Management Research & Practice, Knowledge and Process Management, VINE – Journal of Information and Knowledge Management Systems, Journal of Intellectual Capital

Table 10 summarizes the geographical distribution of authors' affiliation. As ECKM is a Conference typically hosted in Europe, the top contributors are European, but generally speaking the picture is not dissimilar to that characterizing KM journals, as analysed in section 3.

In total, 1948 authors' keywords were collected. Table 11 shows the number of occurrences and relative frequency. Also, temporal trends can be seen. Again, it can be noted that some general keywords still prevail (*KM*, *intellectual capital*, *innovation*, *knowledge, collaboration*). More specific keywords are still those referring to KM processes (*KM sharing, transfer, creation*); a new term (*big data*) has appeared which may be related to the growing interest for big data in the business community. Temporal trends show that the appearance of the majority of keywords is substantially stable over time, with the exception of *big data* (which recently appeared and is growing) and, partially, *communities of practice*.

Table 10: N° of papers by top countries of presenters

	2014	2015	2016	2017	2018	TOTAL	Yearly Average	Always present	ECKM Hosting country
Portugal	30	9	10	11	10	70	14.0	Y	2014
UK	18	14	9	14	10	65	13.0	Y	2016
Italy	6	20	10	9	9	54	10.8	Y	2018, 2015
Norway	11	4	11	10	10	46	9.2	Y	
Russia	5	7	7	7	14	40	8,0	Y	
Spain	12	2	3	15	3	35	7.0	Y	2017
USA	3	5	9	10	8	35	7,0	Y	
Czech Republic	6	6	8	8	4	32	6.4	Y	
Germany	4	4	9	11	3	31	6.2	Y	
Poland	6	3	5	8	8	30	6.0	Y	
Romania	5	7	6	8	3	29	5.8	Y	
Brazil	11	4	4	5	2	26	5.2	Y	
France	4	5	4	6	5	24	4.8	Y	
Canada	3	5	4	4	7	23	4.6	Y	

	2014	2015	2016	2017	2018	TOTAL	Yearly Average	Always present	ECKM Hosting country
Finland	2	3	4	8	5	22	4.4	Y	
Lithuania	8	2	1	0	8	19	4.8		
South Africa	2	2	5	2	4	15	3.0	Y	
Australia	3	0	4	3	3	13	3.3		
Ireland	0	2	6	3	2	13	3.3		
Austria	1	4	4	1	2	12	2.4	Y	

Table 11: Top keywords – 2014-2018

			N° of occurrences per year				
	N° of occurrences	Relative frequency* %	2014	2015	2016	2017	2018
Knowledge management	213	30.6%	45	45	36	37	50
Knowledge sharing	92	13.2%	20	21	15	15	21
Intellectual capital	61	6.1%	12	6	15	15	13
Innovation	45	5.7%	12	7	9	9	8
Knowledge transfer	43	6.2%	5	6	11	11	10
Small and medium enterprises	34	4.7%	8	4	6	7	9
Case study	23	4.2%	1	10	4	4	4
Knowledge creation	23	3.5%	7	6	4	3	3
Knowledge	22	3.5%	4	3	4	2	9
Tacit knowledge	21	3.9%	3	10	2	2	4
Organizational learning	20	4.6%	5	8	2	1	4
Big data	19	2.4%	7	8	2	2	0
Communities of practice	17	3.0%	4	4	5	3	1
Collaboration	17	2.5%	3	3	5	4	2
KM system	15	2.5%	7	2	0	1	5

* N° of occurrences of a keyword/Total N° of papers

Table 12 outlines the scientific methods/approaches that characterize the studies. Actually, only a fraction of authors tend to declare their approach explicitly in the keywords, therefore any conclusion that we can make is just an extrapolation of the existing data. Nevertheless, it appears that *theoretical/conceptual analysis*, *case study*, and *literature reviews* prevail, which may signal an exploratory goal of the major part of the literature.

However, quantitative methods and surveys (which, with regards concepts and definitions, generally require a more stable field to be applied properly) are also noteworthy.

Table 12: Research methods/approaches (explicitly declared in keywords)

Methods	Relative frequency*
Theoretical analysis, conceptual modelling	26.0%
Case study and related methods	25.0%
Literature review and analysis	11.5%
Other quantitative and computational methods	11.5%
Surveys and statistical analysis	9.6%
Other qualitative research	7.7%
Action research	2.9%
Other/unspecified approaches	5.8%

***** N° of keyword occurrences/total papers declaring at least a method

4. Trends in KM literature: ECKM past and present

In this section, we make a comparison with the results obtained by Fteimi and Lehner with their analogous analysis of the ECKM proceedings but in an earlier time span (2006-2013). This comparison, which takes into account the same community of KM researchers, can be very helpful in understanding the directions that KM research is taking. Table 13 compares the 15 top keywords. The arrows in the table connect the same keywords appearing in the two rankings, so it is possible to understand their trend: plain arrows indicate that the position is unchanged, dashed lines indicate an increasing trend, and dotted lines indicate a declining trend. Keywords in bold indicate that there are new words that did not appear among the top 15 of the earlier period, and keywords in italics are those that disappeared from the top 15 in recent times.

Table 13: Trends in keywords - ECKM

Rank	ECKM 2014-2018	ECKM 2006-2013
1	KM	KM
2	Knowledge sharing	Knowledge sharing
3	Intellectual capital	Knowledge
4	Innovation	Intellectual capital
5	Knowledge transfer	Knowledge transfer
6	SMEs	Innovation
7	Case study	Communities of practice
8	Knowledge creation	Case study
9	Knowledge	SMEs
10	Tacit knowledge	Organizational learning
11	Organizational learning	KM systems
12	**Big data**	Knowledge creation
13	Communities of practice	Tacit knowledge
14	**Collaboration**	*Ontology*
15	KM systems	*Social networks*

As can seen, there are no big changes. The top 15 keywords are substantially unchanged, with only 2 new terms (*big data* and *collaboration* - but appearing last in the list). Generic keywords (KM, intellectual capital, innovation, knowledge, KM systems) remain in top positions, with only *knowledge* and *KM systems* have a declining trend. The topic *communities of practice* has somewhat lost some appeal. *Knowledge creation* has a positive trend, which shows that processes of existing knowledge exchange (sharing, transfer) are still a core topic for researchers, but its *creation* is also becoming important. *Tacit knowledge* also demonstrates a growing interest by researchers, which is surprising considering that this topic has long been at the centre of analysis: and this may signal that the problem of managing tacit knowledge is largely unresolved and still attracts the attention of scholars. Also, the new wave of KM practices (based on organizational and social processes) and the upsurge of social media may be leading to a new interest in tacit knowledge management.

Table 14 reports the trends in research methods/approaches used in ECKM articles. The plain arrows mean the position is unchanged, the dashed line indicates an increasing trend and dotted lines indicate a declining trend.

Theoretical/conceptual analysis was and still is in first place: a sign that the research has long been struggling with a problem of concept definitions, classifications, modelling, etc. Literature review has also maintained a high position in the ranking. Case-studies has gained a higher position, now being ranked second, which not only is in line with the findings of other general reviews (Dwivedi et al., 2011; Wallace et al., 2011; Serenko e Dumay, 2015) but also confirms that KM can be considered an applied discipline that should have a practical impact (Serenko and Bontis, 2013), where a positivist perspective prevails (Dwivedi et al., 2011).

Table 14: Trends in research approach -ECKM

Rank	ECKM 2014-2018	ECKM 2006-2013
1	Theoretical analysis, conceptual modelling	Theoretical analysis, conceptual modelling
2	Case study and related methods	Surveys and statistical analysis
3	Literature review and analysis	Case study and related methods
4	Other quantitative and computational methods	Other qualitative research
5	Surveys and statistical analysis	Other/unspecified approaches
6	Other qualitative research	Literature review and analysis
7	Action research	Other quantitative and computational methods
8	Other/unspecified approaches	Action research

5. Conclusion

This meta-analysis of the literature provides some interesting insights that would be difficult to get from single reviews. A first point of interest is the prevalence of general terms as top keywords, and especially *knowledge management*. This is confirmed in all reviews and still persists over time. It can be a sign of immaturity of this field of study, because researchers still feel the necessity to declare that "they are studying KM" – even though this may sound obvious when they publish in a KM journal or conference. It is easy to argue that in established disciplines this doesn't happen (the term *physics* never appears among the paper keywords in a journal of physics, and *economics* would not be a keyword in an economics journal). A contributory reason for such generalised keywords may be that so many researchers that publish on KM do not, specialize in this field, so they feel oblliged to declare what they are studying.

Another interesting point is that terms referring to ICT applications and KM systems are relatively less frequent than keywords related to KM processes and organizational issues. This may mean that scholars that study ICT applications for KM tend to publish in journals of other areas (e.g. information systems, computer science), while KM-specific journals tend to attract scholars that specialize in business, management, or organizational sciences.

With regards to research methods or approaches, theoretical and conceptual modelling still prevails, with no change when compared with the recent past. This may mean that the KM field still needs the elaboration of concepts, theories, reference models, and classifications, or they are newly developed or derived (and adapted) from other fields. Indeed, there is a key issue here: a standard definition of knowledge, which is still difficult to find and to operationalize.

As for more KM-specific keywords, the main focus is on KM processes and particularly on the issue of mobilizing and exchanging already existing knowledge – which is a typical issue of KM practices and systems; recently, there has been a growing attention to knowledge creation, which opens new areas of study (e.g. managing innovations, learning processes, etc.).

On the whole, if we compare the present with the past, it may be said that there are few changes. This is an important point for research: because despite the fact that many scholars have underlined how important it is that KM gains a proper established recognition, a sort of "identity card" for all those who work in this field to clearly distinguish it from other areas, the literature still appears to struggle to achieve this. This may reinforce the opinion of those that see KM as a declining field. On the other hand, it is clear that the KM literature is very lively, and its multi-disciplinary nature attracts researchers specializing in different areas, in a context of open debate and cross-fertilization. In addition, technological advancements and managerial innovations also provide new ideas for studies of KM practices and applications. Therefore, an assumption that this field will decline may be misleading, but the direction that this field of study will follow largely depends on the ability and commitment of the many researchers that work in the area, and how they will operate in the future.

This study is not without limitations. In particular the analysis considered papers presented at only one specific conference that takes place annually in Europe. Also, to the best our knowledge, this conference is mostly attended by scholars belonging to the business and management area and only marginally to other fields (computer science, psychology, or general economics etc.). Furthermore, the analysis was limited to the

keywords, which leaves room for future studies to employ more sophisticated techniques such as a content analysis of abstracts (or entire texts), or author citations analysis.

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