The Emerging Topics on Knowledge Sharing in the Field of Business and Management: A Bibliometric Analysis Based on Web of Science

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Abstract
The primary objective of this study is to critically analyze the research conducted on knowledge sharing over the past decade. Additionally, this paper aims to identify and explore emerging areas of interest within this domain, including ethical leadership, work climate, and personal beliefs. It adopts a meticulous bibliometric approach, following strict procedures. 1190 journal papers about knowledge sharing from January 2013 to April 2023 based on the Web of Science (WOS) database were analyzed using VOS viewer software. This comprehensive review examines publication volume, trends, country distribution, leading journals, cited organizations, key authors, and related topics in the field. The results indicate that knowledge sharing is an emerging topic of great importance, warranting further study. This research provides a valuable basis for future scholars interested in investigating knowledge sharing. By identifying gaps and shedding light on key dimensions, it serves as a catalyst for advancing knowledge in this area.

Keywords: Knowledge Sharing, Bibliometric Analysis, Web of Science Database, Vos Viewer Software, Emerging Topics

Introduction
The competitiveness of an organization is intricately linked to the efficiency and success of its knowledge management (KM) practices (Riege, 2005). The effectiveness of knowledge management within an organization hinges significantly on the motivation and willingness of employees to actively participate in knowledge sharing (KS) initiatives (Gagné, 2009). KS is important for organizations because it can promote firm innovation and performance. Within the framework of KM, a set of processes is employed to govern the generation, dissemination, and utilization of knowledge in order to advance organizational objectives.
Among these processes, KS takes center stage and has been extensively investigated in existing literature. KS is defined as "the act of making knowledge available to others within the organization" (Ipe, 2003, p. 341). Given its significance, numerous studies have explored the factors influencing KS across different contexts (De Almeida et al., 2016; Goswami & Agrawal, 2023; Han et al., 2022). However, these research efforts remain insufficient, as only a limited number of businesses have effectively encouraged knowledge sharing among their staff (Lekhawipat, Wei, & Lin, 2018). A systematic review conducted by Castaneda and Cuellar (2020) affirms that research on knowledge sharing continues to be a central and burgeoning area of academic inquiry.

As the significance of KS, an increasing number of scholars have undertaken research in this field, making it imperative to review the existing literature. Within the current body of literature, several researchers have already endeavored to review knowledge management and knowledge sharing. For instance, Ahmad and Karim (2019) conducted a systematic review to synthesize the findings of earlier studies on the impacts of knowledge sharing within organizations. Farooq (2022) performed a bibliometric study analyzing knowledge management articles published between 1988 and 2021 in journals indexed in the Scopus database. Nevertheless, upon thorough exploration of various databases, it becomes apparent that there have been relatively few review articles focusing specifically on knowledge sharing in the past three years, and a dearth of bibliometric reviews altogether.

Apart from above, it is worth noting that certain aspects affecting employees' KS behavior have received limited attention in empirical studies, as highlighted by esteemed academic scholars. These overlooked factors include the roles of leadership (Bavik et al., 2018; Haider et al., 2022; Nonaka et al., 2006), personal beliefs (Anand et al., 2020; Castaneda & Durán, 2018; Weinberg, 2015), and the work climate (Ahmad & Karim, 2019).

Given the substantial volume of publications on knowledge sharing in recent years, there exists an urgent need for a comprehensive review article to consolidate and summarize the existing knowledge in this domain, as well as to delineate future research directions. Such an article would serve as a valuable resource to guide subsequent studies and shed light on emerging trends and perspectives in the field of knowledge sharing.

This bibliometric analysis aims to elucidate the evolution of literature and contribute to the advancement of related research in the field. The primary contributions of this study encompass the following: (1) provide a comprehensive bibliometric review of the scholarly literature pertaining to knowledge sharing; (2) conduct an in-depth analysis of the seldom explored variables that are closely associated with the research topic. These variables encompass ethical leadership, personal beliefs, and work climate. (3) Give directions to future research. The subsequent sections of this paper are structured as follows: The research methodology section presents the approach employed in this bibliometric analysis. This is followed by the presentation of the results, which provide an overview of the identified trends and patterns in the literature. The discussion section critically examines and interprets the findings. Subsequently, the paper concludes with a section encompassing the conclusions drawn from the analysis, as well as an exploration of the limitations encountered in the study. Finally, suggestions for future research directions are proposed.

Research Methodology

Pritchard (1969) introduced bibliometric analysis as a technique that employs mathematical and statistical methods to examine textual communication, facilitating a comprehensive understanding of the nature and progression of a specific field of study. In
bibliometric analysis, academic publications are subjected to quantitative analysis utilizing mathematical and statistical models to identify indicators of scientific activity and research accomplishments (Zyoud et al., 2015). The value of bibliometric analysis has experienced a recent surge as it provides precise and detailed information on a particular subject Van Eck & Waltman (2017), particularly within the realm of business research (Khan et al., 2021; Kumar et al., 2021). Its applications are manifold and include understanding the framework of a given subject, identifying emerging trends, assessing the effectiveness of articles and journals, recognizing patterns of collaboration, and exploring research components (Donthu et al., 2021; Verma & Gustafsson, 2020).

Bibliometric analysis proves invaluable in unraveling and documenting the cumulative scientific knowledge and evolutionary intricacies of well-established domains, allowing for the systematic interpretation of vast amounts of unstructured data in a rigorous manner. Hence, meticulously conducted bibliometric research lays a robust foundation for advancing an area of study in novel and noteworthy directions (Donthu et al., 2021). Consequently, bibliometric studies enable readers to comprehend current developments within the field, discern historical patterns, and strategize for future investigations (Durieux & Gevenois, 2010).

**Database Selection**

The initial step in conducting a bibliometric analysis entails identifying the databases that align with the research objectives. Numerous databases serve as reliable data sources, including WOS, Scopus, Google Scholar, among others. In this study, WOS was selected for the following reasons:

Firstly, WOS enjoys widespread recognition and credibility. It stands as one of the most extensively utilized bibliographic databases and is acknowledged as a reputable source of scholarly information. The database encompasses high-quality content spanning diverse disciplines and subject areas.

Secondly, the data provided by WOS exhibits a high level of quality. WOS is renowned for its meticulous data curation, encompassing precise citation information, author affiliations, and funding sources. Researchers can rely on the accuracy and reliability of the data obtained from WOS.

Thirdly, WOS offers comprehensive coverage. With over 13,000 scholarly journals at its disposal, WOS serves as an expansive repository of academic literature. Additionally, it incorporates conference proceedings, books, and patents, further enhancing its scope and utility for comprehensive research.

By opting for WOS, this research aims to leverage the database's established reputation, high-quality data, and comprehensive coverage to facilitate a robust and comprehensive bibliometric analysis.

**Scope of the Research**

The scope of this bibliometric analysis is specifically confined to studies pertaining to knowledge sharing within the domain of business and management, as derived from the WOS database. Furthermore, the analysis focuses solely on journal articles published within the last decade, spanning from January 2013 to April 2023. This time frame allows for a contemporary examination of the literature, capturing the most recent developments and insights within the field.
Search Criteria

When conducting the article search, specific criteria were applied as follows: Firstly, the inclusion criterion required that the articles' titles contained the term "knowledge sharing." Secondly, the search was limited to articles published within the timeframe from January 2013 to April 2023. Thirdly, the search was restricted to journals to ensure a focused analysis. Fourthly, the articles were further narrowed down based on the categories provided by WOS, specifically within the field of business and management. Consequently, a total of 1190 articles were retrieved that met these criteria.

Measurement

In various research domains, VOS viewer has been widely employed as a bibliometric software tool for conducting bibliometric mapping analyses (Pan et al., 2018). In this study, the VOS viewer software was utilized to analyze the literature due to its capability to explore the interconnections among highly cited authors, author collaborations, international cooperation, institutional affiliations, keywords, and related knowledge (Hoppen & Vanz, 2016). Moreover, this software enables the creation of spatial network maps by employing a matrix that visualizes numerous co-authorship and co-occurrence relationships, facilitating cluster analysis (Van Eck & Waltman, 2010).

Results

The yearly output of articles, growth trends, and country distribution in the field of KS based on the WOS database

From January 2013 to April 2023, the total number of papers was 1190, the number was very large. First, the papers were aggregated by year to observe trends in the number of articles published. Then, the papers were aggregated by country to examine the differences in the number of publications between countries.

Figure 1. The annual and cumulative numbers of papers
Figure 1 depicts the annual publication count of KS-related articles, totaling 1190 publications. Notably, there has been a consistent upward trajectory in the number of articles published over the past decade. In 2013, a total of 43 papers were published, and this figure steadily increased each year, reaching 182 papers in 2022. The growth trend was particularly pronounced between 2017, with 74 papers, and 2021, with 195 papers, representing a remarkable 2.6-fold increase over a span of four years. Although slight decreases were observed in certain individual years compared to the previous year (e.g., a decrease of 1 article in 2017 and a decrease of 13 articles in 2022), these minor fluctuations did not impact the overall upward trajectory. It is worth noting that the data for 2013 only accounted for the period from January to April, resulting in a lower count of 35 articles. This consistent upward trend suggests that knowledge sharing remains a rapidly evolving and pertinent topic in the field.

Table 1
Top 10 countries with the highest citations about KS

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Country</th>
<th>Number of documents</th>
<th>Citations</th>
<th>Average citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>290</td>
<td>7356</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>USA</td>
<td>181</td>
<td>5977</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>England</td>
<td>103</td>
<td>2279</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>Australia</td>
<td>91</td>
<td>2164</td>
<td>24</td>
</tr>
<tr>
<td>5</td>
<td>Italy</td>
<td>64</td>
<td>1709</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>South Korea</td>
<td>61</td>
<td>1689</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>Canada</td>
<td>48</td>
<td>1331</td>
<td>28</td>
</tr>
<tr>
<td>8</td>
<td>France</td>
<td>36</td>
<td>1208</td>
<td>34</td>
</tr>
<tr>
<td>9</td>
<td>India</td>
<td>71</td>
<td>1174</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>Vietnam</td>
<td>57</td>
<td>1117</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1002</td>
<td>26004</td>
<td>26</td>
</tr>
</tbody>
</table>

Table 1 provides a comprehensive summary of the top 10 countries with the highest citations in the field of KS. Remarkably, these top 10 countries collectively contribute to 84.2% of the total number of published articles. Analysis of the table reveals that among the top 10 countries, 7 are classified as developed countries (namely the USA, England, Australia, Italy, South Korea, Canada, and France), while the remaining 3 are categorized as developing countries (China, India, and Vietnam). Notably, the total number of published papers in developed countries amounts to 584, whereas developing countries account for 418 papers. Of these 418 papers from developing countries, a significant majority of 290 papers originate from China, constituting 69.4% of the total.

Despite a greater overall number of articles being published in developed countries, it is noteworthy that China, as a developing country, holds the top position. With a remarkable count of 290 articles, China surpasses the second-ranked country, the USA, by 109 articles. Furthermore, the USA's count of 181 articles also surpasses the third-ranked country, England, by a margin of 78 articles.

When examining the average citation count per journal article among the top 10 countries, it is observed that the overall average stands at 26 citations. Notably, this average is lower than 26 for all three developing countries. Among the top 10 countries, the USA and
France exhibit the highest average number of citations per paper, with values of 33 and 34 respectively.

**Analysis of influential journals having the highest citation impact in KS-related research based on the WOS database**

The analysis of journal citations yields valuable insights for aspiring authors when selecting appropriate journals. Based on data processed using the VOS viewer software, a total of 1,190 articles were sourced from 298 distinct journals. Notably, Table 2 showcases the top 10 highly cited journals, collectively accounting for 28.9% of the overall article count, with a cumulative production of 344 articles.

Topping the list, the Journal of Knowledge Management boasts an impressive 195 articles and 6,659 citations, constituting 16.4% of all articles. This remarkable figure surpasses the second-ranked journal, Information & Management, by 182 articles and 5,678 citations. Furthermore, the citations for articles within the Journal of Knowledge Management exceed the combined total of the other nine journals. These findings undeniably position the Journal of Knowledge Management as the foremost publication in its field, highlighting its exceptional quality.

It is evident from Table 2 that the Journal of Knowledge Management reigns supreme in the related domain, signaling its status as a leading journal. The articles published in this journal consistently exhibit high quality and possess the distinction of being indexed by SSCI.

Of particular interest is the Journal of Organizational Behavior, which exhibits a relatively modest publication count. Nonetheless, its average citation count of 103 far exceeds that of other journals, standing at a remarkable 2.86 times the overall average citation count of 36. It is noteworthy that this exceptional performance in citations sets the Journal of Organizational Behavior apart from its peers.

Despite the Journal of Knowledge Management's prominent position in terms of both publication count and citations, surpassing other journals by a considerable margin, its average citation count remains relatively modest. With an average of only 34 citations, it falls even below the average citation count of the top ten journals. This disparity between the publication count and average citation count indicates that while the Journal of Knowledge Management has a robust presence in terms of quantity, the individual articles within it may not consistently attract high citation rates.
Table 2

**Top 10 journals having the highest citation impact on KS**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Journal Name</th>
<th>Documents</th>
<th>Citations</th>
<th>Average citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Journal of Knowledge Management</td>
<td>195</td>
<td>6659</td>
<td>34</td>
</tr>
<tr>
<td>2</td>
<td>Information &amp; Management</td>
<td>13</td>
<td>981</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>Journal of Business Research</td>
<td>23</td>
<td>939</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>Knowledge Management Research &amp; Practice</td>
<td>60</td>
<td>878</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Management Decision</td>
<td>11</td>
<td>693</td>
<td>63</td>
</tr>
<tr>
<td>6</td>
<td>Journal of Organizational Behavior</td>
<td>5</td>
<td>515</td>
<td>103</td>
</tr>
<tr>
<td>7</td>
<td>International Journal of Contemporary Hospitality</td>
<td>14</td>
<td>484</td>
<td>35</td>
</tr>
<tr>
<td>8</td>
<td>Industrial Marketing Management</td>
<td>9</td>
<td>447</td>
<td>50</td>
</tr>
<tr>
<td>9</td>
<td>International Journal of Project Management</td>
<td>8</td>
<td>447</td>
<td>56</td>
</tr>
<tr>
<td>10</td>
<td>Human Resource Management</td>
<td>6</td>
<td>411</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>344</strong></td>
<td><strong>12454</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

**Analysis organizations have the highest citation impact on KS research based on the WOS database**

The research encompassed a total of 1,461 organizations, with 88 organizations meeting the minimum document threshold of 5. Table 3 provides an overview of the top 10 organizations that garnered the highest citations. These institutions collectively contributed 116 publications, accounting for 9.7% of the entire body of literature. The top ten organizations span seven countries, showcasing a diverse geographic distribution. Six organizations are situated in five developed countries (South Korea, Denmark, Finland, Australia, and New Zealand), while four organizations are located in two developing countries (China and Vietnam).

Among the top ten organizations, three are in China and two in South Korea. Notably, the highest-ranked institution, Hunan University, is located in China. Importantly, all ten organizations listed in Table 3 are universities, emphasizing the significance of universities in academic world.

A closer examination of Table 3 reveals that the average citation count among the top ten organizations stands at 42. Notably, three of these organizations boast an average citation count exceeding 50, serving as a testament to their high academic standing. Conversely, only one organization exhibits an average citation count below 30, suggesting a comparatively lower level of scholarly impact.
Table 3
*Top 10 organizations having the highest citation impact on KS*

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Organization</th>
<th>Nation</th>
<th>Documents</th>
<th>Citations</th>
<th>Average citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hunan University</td>
<td>China</td>
<td>16</td>
<td>728</td>
<td>46</td>
</tr>
<tr>
<td>2</td>
<td>Hanoi University</td>
<td>Vietnam</td>
<td>16</td>
<td>640</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Seoul National University</td>
<td>South Korea</td>
<td>16</td>
<td>527</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>Copenhagen Business School</td>
<td>Denmark</td>
<td>9</td>
<td>523</td>
<td>58</td>
</tr>
<tr>
<td>5</td>
<td>Lappeenranta University of Technology</td>
<td>Finland</td>
<td>9</td>
<td>509</td>
<td>56</td>
</tr>
<tr>
<td>6</td>
<td>University of Newcastle</td>
<td>Australia</td>
<td>14</td>
<td>488</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>Hong Kong Polytechnic University</td>
<td>China</td>
<td>10</td>
<td>441</td>
<td>44</td>
</tr>
<tr>
<td>8</td>
<td>The University of Auckland</td>
<td>New Zealand</td>
<td>7</td>
<td>426</td>
<td>61</td>
</tr>
<tr>
<td>9</td>
<td>City University of Hong Kong</td>
<td>China</td>
<td>12</td>
<td>322</td>
<td>27</td>
</tr>
<tr>
<td>10</td>
<td>Yonsei University</td>
<td>South Korea</td>
<td>7</td>
<td>290</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>116</td>
<td>4894</td>
<td>42</td>
</tr>
</tbody>
</table>

Analysis of the pioneer authors in the field of KS that have the most citations based on the WOS database

Utilizing the powerful visualization tool VOS viewer, the authors conducted an analysis of highly cited authors within the dataset. In total, 2,889 authors were involved in the composition of the 1,190 articles under examination. Among them, 18 authors met the criterion that required a minimum document count of 5. Notably, Table 4 presents a summary of the top 10 authors who have garnered the highest citation counts.

Drawing insights from Table 4, it becomes evident that the majority of authors hail from developed countries, with only two authors originating from developing countries, specifically Vietnam and China. South Korea stands as the sole country represented by two authors. However, it is crucial to highlight that the top-ranked author hails from the United States. With a remarkable nine articles accumulating a citation count of 524, this author boasts an average citation count of 58.

Upon examining the average citation count of the top ten authors, it stands at 37. Interestingly, while the top-ranked author, Lei Hui, exhibits an average citation count of 58, the average citation count of Husted Kenneth, who possesses five articles with 422 citations, surpasses even that, reaching an impressive 84. This figure represents a significant 26-point increase compared to the top-ranked author. Notably, a total of four authors boast an average citation count exceeding 37, namely Husted Kenneth, Lei Hui, Popa Simona, and Le Phong Ba.
Table 4  
**Top 10 authors having the highest citation impact on KS**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Names of Authors</th>
<th>Nationality</th>
<th>Documents</th>
<th>Citations</th>
<th>Average citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lei, Hui</td>
<td>USA</td>
<td>9</td>
<td>524</td>
<td>58</td>
</tr>
<tr>
<td>2</td>
<td>Le, Phong Ba</td>
<td>Vietnam</td>
<td>12</td>
<td>506</td>
<td>42</td>
</tr>
<tr>
<td>3</td>
<td>Husted, Kenneth</td>
<td>New Zealand</td>
<td>5</td>
<td>422</td>
<td>84</td>
</tr>
<tr>
<td>4</td>
<td>Yun, Seokhwa</td>
<td>South Korea</td>
<td>12</td>
<td>398</td>
<td>33</td>
</tr>
<tr>
<td>5</td>
<td>Kim, Seckyoung</td>
<td>South Korea</td>
<td>12</td>
<td>393</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>Malik, Ashish</td>
<td>Australia</td>
<td>10</td>
<td>264</td>
<td>26</td>
</tr>
<tr>
<td>7</td>
<td>LinChieh-peng</td>
<td>China</td>
<td>10</td>
<td>260</td>
<td>26</td>
</tr>
<tr>
<td>8</td>
<td>Popa, Simona</td>
<td>Spain</td>
<td>5</td>
<td>242</td>
<td>48</td>
</tr>
<tr>
<td>9</td>
<td>Pedersen, Torben</td>
<td>Denmark</td>
<td>6</td>
<td>209</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>Oliveira, Mirian</td>
<td>Portugal</td>
<td>12</td>
<td>194</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>93</strong></td>
<td><strong>3412</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

**Topic words and emerging topics in KS**

One of the primary objectives of this research is to conduct a thematic analysis of 1,190 knowledge sharing (KS) papers by utilizing keyword co-occurrence. The authors employed the VOS viewer software to generate a keyword map, enabling the identification of relevant study fields in which these KS papers have had a significant impact. The aim was to organize these fields in a systematic manner.

To achieve this, the authors set a minimum threshold of 9 occurrences for each keyword. The analysis revealed 61 keywords that met this criterion, as depicted in Figure 2. Figure 2 provides valuable insights into the most recurrent topics within the field of knowledge sharing. It is apparent that this field is characterized by several significant nodes that represent key phrases or topics. Notably, the top ten topics identified are knowledge management, trust, innovation, social capital, transformational leadership, tacit knowledge, social media, tacit knowledge sharing, organizational culture, and motivation. These topics serve as focal points within the domain of knowledge sharing, indicating their substantial influence and relevance in academic discourse.
Furthermore, it is important to acknowledge that while certain nodes in the keyword map may appear small, they represent themes that are currently in an evolving stage and warrant attention. One such example is ethical leadership, which occupies a relatively small area within a low-density region. This suggests that although it has been explored by some researchers, there is still a need for further in-depth investigation in this area.

To delve deeper into the relationship between ethical leadership and KS, the authors conducted a focused search by combining the keywords "ethical leadership" and "KS". This process resulted in the generation of a VOS map, which is presented in Figure 3.
When considering Figures 2 and 3 collectively, an interesting observation emerges regarding the prominence of ethical leadership. In Figure 2, ethical leadership appears relatively small, indicating that although there has been some research conducted in this area, it has not been extensively explored or thoroughly examined.

However, in Figure 3, ethical leadership exhibits a relatively larger presence, suggesting a heightened focus on this topic when examined in conjunction with KS. This comparison implies that while previous scholars have touched upon ethical leadership, further comprehensive and in-depth investigations are required to fully understand its nuances and implications within the context of KS.

The domains of personal beliefs and work climate have been relatively neglected in academic research, despite their significance and potential for further investigation (Anand, Centobelli, & Cerchione, 2020; Castaneda & Durán, 2018; Weinberg, 2015; Ahmad & Karim, 2019). In order to explore the correlation between these domains and KS, the authors have employed the keywords "personal belief" or "work climate" in conjunction with "KS," resulting in the creation of keyword maps depicted in Figure 4 and Figure 5.

Figure 4. Topics about personal belief and KS
The examination of Figure 4 and Figure 5 reveals a notable scarcity of research on the subjects of personal beliefs and work climate, indicating a significant gap in the existing literature. While Figure 4 exhibits certain topics connected to personal beliefs, such as shared beliefs and organizational culture, indicating some level of scholarly interest in related domains, a dearth of extensive research persists. Similarly, Figure 5 depicts the emergence of organizational climate and innovation climate suggesting the necessity for further investigation and studies in these interconnected areas.

**Discussion**

In order to gain a comprehensive understanding of KS within the domain of management and business, a rigorous bibliometric analysis was conducted for this study. The analysis encompassed 1,190 articles sourced from the WOS database. The study aimed to provide valuable insights into the bibliometric analysis of KS within the field of business and management, covering the period from January 2013 to April 2023.

With the objective of identifying prevailing concerns and research trends, this study offers a comprehensive summary of the existing body of literature pertaining to KS. By analyzing and synthesizing prior studies, this research contributes to a deeper understanding of the landscape of KS research in the field of business and management.

This paper sheds light on an interesting trend in research on KS in recent years. Prior to 2017, there was a modest increase in research activity in this field. However, a significant surge in research on KS was observed after 2017, particularly from 2017 to 2021. During this four-year period, the number of publications experienced a noteworthy rise, increasing from 74 to 195. This represents an increase of 121 publications and demonstrates a substantial
growth of 2.6 times the number of publications in 2021 compared to 2017. Although the number of publications in 2022 is slightly lower than that of 2021, the difference is not statistically significant, with only a decrease of 13 articles. This indicates a sustained level of research activity in KS, even though there was a minor decline in the following year. This growing trend in recent years underscores the increasing attention and scholarly focus on the topic of knowledge sharing, solidifying its position as a prominent and highly researched subject in the academic realm.

Among the top ten countries in terms of the number of cited papers, a notable pattern emerges: seven of them are developed countries, while three are developing countries. This disparity suggests that KS is more extensively explored and studied in developed countries compared to their developing counterparts. Although a developing country, China holds the top ranking in terms of the number of publications. However, it is important to note that the average number of citations is higher among developed countries, particularly in the case of the United States and France. This indicates that papers originating from developed countries generally possess higher quality and scholarly impact. Conversely, the average citation count of the three developing countries falls below the overall average citation count of the top ten countries, which stands at 26. This observation suggests that articles originating from developing countries tend to exhibit comparatively lower quality when compared to those from developed countries. Nevertheless, the fact that China attains the first position by a significant margin in terms of publication count signifies that Chinese scholars are actively engaged in KS research and have already achieved noteworthy advancements in the field.

The analysis of the 1,190 articles revealed that they were distributed across 298 different journals. Notably, the Journal of Knowledge Management emerged as the leading journal in the field of KS, surpassing other journals in terms of both article count and citations. This journal demonstrates remarkable superiority with over six times the number of citations and 15 times the number of published articles compared to the second-ranked journal, Information & Management. Moreover, it is worth highlighting the outstanding performance of the Journal of Organizational Behavior. Despite featuring only five articles, this journal boasts an impressive citation count of 515, averaging at 103 citations per article. This figure significantly surpasses the average citation counts observed in other journals, reaffirming the high quality and scholarly impact of the Journal of Organizational Behavior. Similarly, the Information & Management journal exhibited commendable performance, with an average citation count of 75 across its 13 articles, accumulating a total of 981 citations. These figures further emphasize the scholarly significance and influence of articles published in this journal.

Taken together, these findings underscore the importance of both the Journal of Knowledge Management and the Journal of Organizational Behavior, as well as the Information & Management journal, in contributing to the academic discourse surrounding knowledge sharing.

The analysis of the 1,190 articles also revealed the involvement of a diverse range of 1,461 institutions. Notably, the top 10 institutions accounted for the production of 116 articles, highlighting their significant contributions to the field of KS. Among these top institutions, three were based in China (Hunan University, Hong Kong Polytechnic University, and City University of Hong Kong), while two hailed from Korea (Seoul National University and Yonsei University). Although most of the institutions represented were from developed countries, it is worth noting that the top two institutions on the list were from developing countries (China and Vietnam). This recognition underscores the growing level of research conducted in the field of KS within developing countries. China, in particular, emerges as a
noteworthy presence in the analysis. Not only does it claim the top-ranked institution, but it also boasts three institutions within the top ten rankings simultaneously. This impressive representation signifies the depth and breadth of research conducted by Chinese institutions in the field of KS.

Based on the analysis conducted using VOS viewer software, the 1,190 articles included in this study were authored by a diverse group of 2,889 individuals. This study specifically emphasizes the top ten most cited authors. Notably, the majority of these authors hail from developed countries, with only two representing developing countries (China and Vietnam). This observation suggests that KS is more extensively explored by authors from developed countries, particularly highlighted by the presence of the top-ranked author from the United States. Furthermore, it is noteworthy that two authors from Korea also secured a position in the top ten list. This finding indicates a distinct focus on KS research among Korean authors, who have made significant contributions and garnered substantial citations in the field. Overall, this analysis reinforces the conclusion that KS is predominantly studied by authors from developed countries, with a notable presence from the United States and Korea. This reflects the heightened scholarly attention and expertise in KS research within these regions.

Our study not only sheds light on the key topics in the field of KS but also identifies emerging research directions. Notably, we have identified several vital areas of focus, including knowledge management, trust, innovation, social capital, transformational leadership, tacit knowledge, social media, tacit knowledge sharing, organizational culture, and motivation. These topics represent the central themes within the KS domain, attracting significant scholarly attention and exploration. In addition to these prominent topics, our analysis also reveals the presence of emerging areas that warrant further investigation. One such area is ethical leadership, which although located in a less dense region, exhibits promising potential for in-depth study and exploration. Some other topics like personal beliefs and work climate are the topics rarely researched and need further study. These topics represent an evolving research direction, deserving of greater attention and comprehensive investigation within the context of KS. By highlighting these vital topics and emerging research directions, our study contributes to the understanding of knowledge management and KS, providing a foundation for future investigations and scholarly endeavors in these areas.

Conclusions, Limitations, and Future Research

Recently, there has been a notable increase in academic interest in KS, particularly since 2017, as indicated by the growing number of articles published in that period according to the WOS database. To gain insights into the prevailing concerns and research trends, this study provides a comprehensive overview of the existing body of literature on KS. It incorporates historical data, an analysis of the current landscape, and predictions for future developments in the field of knowledge sharing.

Overall, KS is an emerging and dynamic topic that holds great significance for scholarly inquiry. Furthermore, our study highlights the emerging research area of ethical leadership, personal beliefs and work climate which are closely linked to KS and warrants further investigation. As for related fields of research, while developed countries receive more intensive attention, it is noteworthy that certain developing countries, such as China and Vietnam, have also made remarkable progress in the study of KS. Additionally, it is important to recognize the Journal of Knowledge Management as the premier journal in this field, known for its high-quality publications. This recognition underscores the journal's significance as a reputable source for KS research.
It is important to note, however, that this research has certain limitations. Firstly, the focus was limited to articles published in the WOS database, thus excluding other sources. Additionally, the issue of homonymic authors with the same name posed a challenge. Moreover, the timeframe considered for this study spanned from January 2013 to April 2023. Lastly, it is important to acknowledge that the literature review primarily encompassed English-language publications.

For future studies, researchers are encouraged to consider conducting bibliometric analyses utilizing databases such as Google Scholar and Scopus, which may provide more comprehensive insights into this field. Furthermore, researchers can delve deeper into the literature exploring the relationship between knowledge sharing and other key variables. Additionally, future investigations could explore articles spanning a longer time period and encompassing a broader range of languages to uncover potential new findings.

In summary, while KS remains an emerging and worthy topic of study, it is important to acknowledge the limitations of this research. The recommendations for future studies aim to address these limitations and pave the way for more robust and comprehensive analyses in the field of knowledge sharing.

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Declaration of Interest Statement

The authors report there are no competing interests to declare.

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