Original Research

A Systematic Review and Synthesis of Empirical Research on "Knowledge Leadership": A New Insight in the Field of Knowledge Management

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Abstract

This paper aims to synthesize findings drawn from studies on knowledge leadership to identify the key trend of research in the knowledge management literature over the past two decades. A systematic literature review was performed over a data set of 149 related studies published in the international journals indexed by the WoS, SCOPUS, ProQuest, Google Scholar, Emerald Insight, and Elsevier databases between 2001 and 2021. The findings conceptualized the nature of "knowledge leadership" and revealed six core themes focusing on multiple leadership styles, knowledge leadership for learning, effective KM leadership, leader-member exchange, and customer knowledge leadership. Additionally, the content analysis revealed the importance of knowledge leaders being more transformational, distributed, empowering, and visionary. It has been widely reported that transformational leadership is a significant driver of knowledge management practices in the organization. This study provides an integrated picture of effective knowledge leadership for managers and practitioners that significantly depends on a paradigm shift from hierarchical structures and traditional models of leadership to

the use of shared, distributed, and networking leadership. Given this increasing interest in studying the role of leadership in KM, it is interesting to investigate the research trend of knowledge leadership in the KM literature.

Keywords: Knowledge Leadership, Knowledge Management, Leadership Styles, Literature Systematization.

Introduction

The field of knowledge management (KM) has emphasized employee knowledge acquisition, technology, processes, organizational structure, and the creation and usage of intellectual assets (Dalkir, 2017; Cavaleri, Seivert & Lee, 2005). That said, accumulating research highlights the crucial role of knowledge leadership in effective KM initiatives. This research track points out the need to shift from a management view of knowledge to a dynamic and innovative leadership view (Skyrme, 2000; Bencsik, 2017; Amidon & Macnamara, 2004). Thus, knowledge leaders must play a key role in helping organizations cope with the challenges they face from expanding knowledge and knowledge systems (Kuznetsova, 2016).

From a leadership perspective, it is critical to ensure that KM investments promote a collaborative culture that encourages knowledge-sharing, resulting in better decision-making and innovation (Anantatmula, 2008). Therefore, knowledge development has an inner focus on creating knowledge and improving its quality. To align the KM strategy with the business strategy, knowledge leaders need to integrate their understanding of various organizational components—its people, processes, and systems— with KM systems and create supportive workplace environments for knowledge development (Cavaleri et al., 2005). In contrast with KM, which advocates custodianship, even control, and a concentration on managing existing resources, knowledge leadership, as Skyrme (2000) suggests, is about the continuous development of information resources, individual skills, and learning networks. According to Chiu, Chang & Lee (2015), effective organizational learning and innovation require appropriate management methods and skills and better leadership performance. Thus, the ability of companies to be innovative is related to effective leadership as it helps shape a collaborative culture and promotes knowledge-sharing interactions (Dalkir, 2017).

Knowledge-oriented leadership influences all major KM processes (Naqshbandi & Jasimuddin, 2018). It has attracted the attention of scholars as a new approach to leadership that is a construct in predicting KM behaviors and innovation (Naqshbandi & Jasimuddin, 2018; Shamim, Cang, & Yu, 2019) and a core success factor in organizations to meet challenges in efficiency gains, open innovation, sustainable competitive advantage, promoting organizational knowledge, organizational performance, organizational effectiveness, organizational learning, organizational culture, providing insights and information, and KM (Chiu et al., 2015; Naqshbandi & Jasimuddin, 2018; Nazari & Tabesh, 2017). Thus, leaders must actively participate in knowledge creation, sharing, dissemination, preservation, and application (Dalkir, 2017).

Although knowledge leadership is not yet a popular term and lacks consensus on its definition, there is a general agreement that it extends well beyond KM (Cooper, 2013). Many scholars emphasized the role of knowledge leaders and their qualities and skills for effective KM activities. Recently, some scholars focused on the relationship between leadership and organizational learning culture using systematic reviews (Pellegrini, Ciampi, Marzi & Orlando 2020; Do & Mai, 2020; Xie, 2019). Thus, in response to increasing global interest in leadership

in the knowledge management field, this review's essential contribution synthesizes a range of empirical evidence related to knowledge leadership. More specifically, these questions guided the study:

1. How have scholars conceptualized "knowledge leadership" in the literature?

2. What are the trends and patterns in publications on knowledge leadership in the literature?

3. What are the most common methodologies used by scholars in empirical studies?

4. What are the most common research foci and effective knowledge leadership styles derived from a lexical and content analysis of reviewed studies?

Materials and Methods

In reviewing the literature on knowledge leadership, we conducted a descriptive and quantitative systematic literature review (Hallinger, 2013) to comprehensively identify, appraise, and synthesize all the relevant studies. We adopted the following procedure: (1) planning the review, including its protocol, (2) data collection to search and select the relevant studies systematically, and (3) analysis of the literature and synthesis of the research findings by thematically clustering the literature relevant to our research questions (Xiao & Watson, 2019). This section describes the methods used to construct our review database, extract information from individual documents, and analyze data drawn from the database.

A. Identifying sources for the review

We conducted an "exhaustive search" (Hallinger, 2013) of the complete English-language studies on KM and leadership, regardless of source type or date of publication. Databases included Scopus, Web of Science, ProQuest, Google Scholar, Emerald Insight, and Elsevier. The keywords that guided the search were '*Knowledge leadership'; 'Knowledge management and leadership'; 'Knowledge, learning and leadership'; 'Knowledge and leadership'; 'Leading knowledge processing'; 'Knowledge leader'; 'Learning and knowledge leadership'*.

The following criteria guided our search: (1) Studies published on the scope of leadership and knowledge management in organizations/enterprises/industries/firms, excluding studies in the context of education, educational institutions, and higher education, (2) an open-ended search without any time restrictions, (3) Empirical papers included qualitative, mixed-method, empirical, and case studies, excluding the conceptual or commentary papers. The review selection process, adapted from Moher, Liberati, Tetzlaff, Altman & PRISMA Group (2009), is illustrated in the PRISMA flow chart in Figure 1. Finally, we started our analysis with a total of 149 literature records.
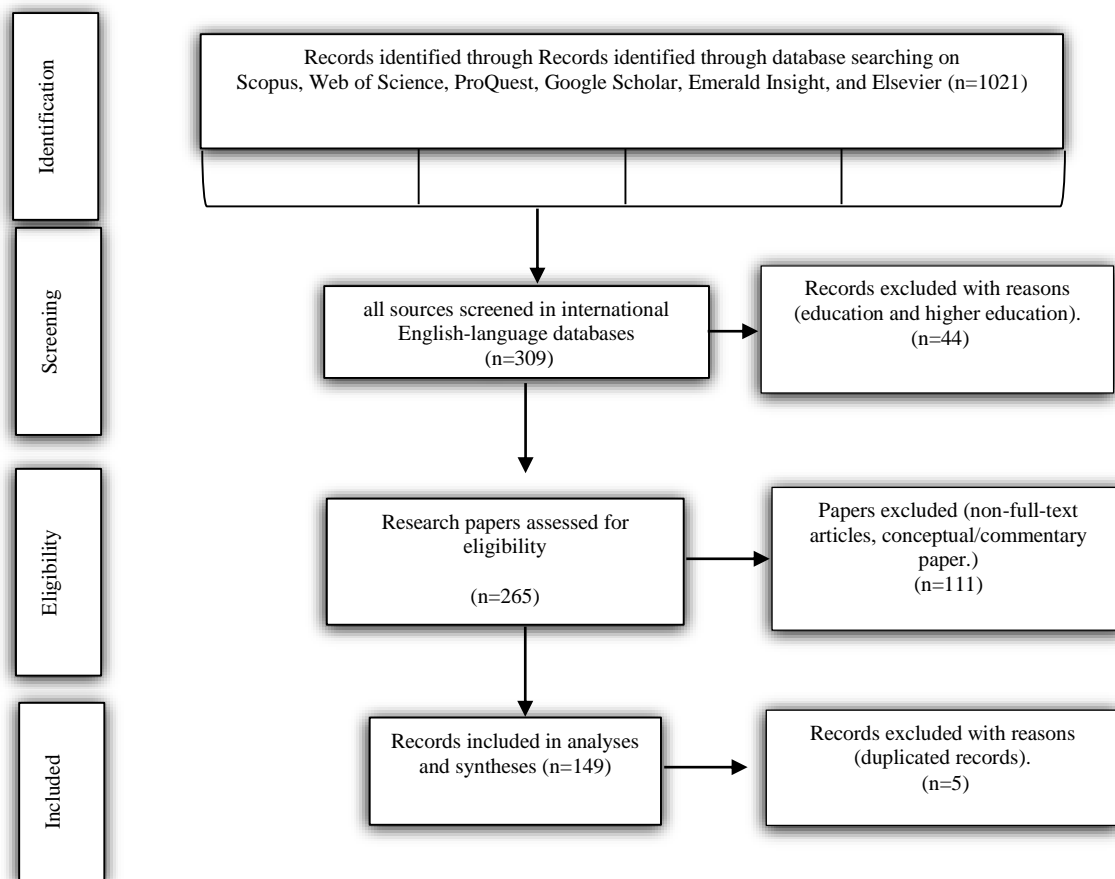
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│               │          │   Records identified through Records identified through       │
│Identification │          │   database searching on Scopus, Web of Science, ProQuest,     │
│               │          │   Google Scholar, Emerald Insight, and Elsevier (n=1021)      │
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│  Screening    │          │ international English-    │ ───> │ (education and higher         │
│               │          │ language databases        │      │ education).                   │
│               │          │ (n=309)                   │      │ (n=44)                        │
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│               │          │ Research papers assessed │      │ Papers excluded (non-full-text│
│  Eligibility  │          │ for eligibility           │ ───> │ articles, conceptual/commentary│
│               │          │ (n=265)                   │      │ paper.) (n=111)               │
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│               │          │ Records included in       │      │ Records excluded with reasons │
│  Included     │          │ analyses and syntheses    │ ───> │ (duplicated records).         │
│               │          │ (n=149)                   │      │ (n=5)                         │
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Figure 1. PRISMA flow diagram detailing steps in the identification and screening of sources

B. Data extraction and analysis

Data extracted from the articles were entered into a "research analysis template", designed in an MS Excel spreadsheet to collect and summarize information of each study. Our analysis consisted of both qualitative and quantitative inquiry. First, data analysis employed descriptive statistics to synthesize the results to describe trends and patterns of knowledge production in the scope of KM and leadership. We employed the "vote-counting" method (Hallinger, 2013) to summarize the results. Second, we used the content analysis method to extract and explore the methods, purposes, key topics, and theoretical models of knowledge leadership in the reviewed documents. Also, the content analysis enables us to understand the related research trends in-depth. The authors engaged line-by-line to extract the features of each study (the title of the article, the author(s), journal, study year, publication volume, country, and subject area), the theoretical and methodological details relating to each paper including research foci, variables, research questions, conceptual model, research method (i.e., qualitative, quantitative, mixed-method), sample, data analysis methods, and findings. All were extracted and coded immediately.

Results

This section presents the descriptive and content analysis results answering the research questions.

(1) **How have scholars conceptualized "knowledge leadership" in the literature?**

To address the first research question, the preliminary definition of this concept is provided in Table 1. We highlighted the knowledge leader's roles, skills, and attributes. We also expanded on the literature to support each in the following subsections.

Table 1
The concept of knowledge leadership and knowledge leader's roles, skills, and attributes

Concept Knowledge leadership	A social influence process aims to develop pragmatic knowledge and involves energizing and facilitating knowledge creation, sharing, and application through creating learning communities and mobilizing knowledge flows and networks. Thus, individuals construct together through social interaction rather than emanating from a single leader. This concept of knowledge leadership is based on a techno-socio-cognitive theory, especially relational leadership.
Knowledge leader' roles	Strategic Visionary, Motivator, Coach, Mentor, Communicator, Collaborator, Change Agent, Coach, Model, Learning Facilitator, Learner, Educator, Supporter, and a Technologist
Knowledge leaders' skills	• Converting learning experience into knowledge as a competitive advantage; • Directing and encouraging the culture of knowledge transferring and sharing; • Developing mutual learning through communities of practice and learning networks; • Providing strategic visions and executing strategies to support the business's values and goals.
Knowledge leader' attributes	Empathy, Creativity, Wisdom, Reaction to Crises, Independence, Initiative, Reliability, Innovative, Competitive, Patience, Ethics, Humility, Trust and Trustworthiness, and Resilience.

A. Concept of knowledge leadership

In the KM literature, the term 'knowledge leadership' remained nascent before its advancement in leadership (Cooper, 2013). Many claim that knowledge leadership is to understanding the true nature of leadership. Although the traditional literature on leadership is based on traits, styles, contingencies, and "new" models of a leader-follower relationship, we still do not understand the essential nature of leadership as a relationship (Cunliffe & Eriksen, 2011). Early work in leadership was primarily a derivative of leadership psychology. Lately, however, this emphasis on a strong inner motor of leaders' traits, cognitions, and styles has been challenged (Cunliffe & Eriksen, 2011; Fairhurst & Connaughton, 2014; Horlings, Collinge & Gibney; 2017). Contemporary leadership theories propound ways of theorizing and implementing leadership that differ from the traditional heroic, periphery, and content views, including phenomenologically-informed work aesthetic and semiotic approaches, psychoanalytically-driven approaches, discursive perspectives, and gender-based approaches and critical perspectives (Cunliffe & Eriksen, 2011).

Analyzing the literature on new models and ideals of leadership, Crevani, Lindgren & Packendorff (2008) portrayed two related streams: (1) shared leadership and (2) leadership as collectively constructed. Shared leadership focuses on organizing individuals' practical everyday experiences rather than formal organizational arrangements. More specifically,

knowledge leadership focuses on three central aspects: basic leadership elements (communication and motivation), relational strategies, and means of realizing effective knowledge management (Zhang & Guo, 2019; Zhang & Sun, 2020). Therefore, knowledge leadership is a relational process between leaders and followers in a relationship-based context. Knowledge leaders usually adopt relational strategies to foster a cooperative and trust-oriented relational context (Zhang & Cheng, 2015).

To further understand the multifarious meanings of relational leadership, we should distinguish between post-positivist and social constructionist views. Post-positivists focused on supervisor-subordinate communication behaviors, effective leadership communication from afar, and further LMX theorizing. While constructionists heavily weighted toward discourse, meaning, and reflexivity. Increasingly, analysts label ''relational leading'' to emphasize dialogue over monologue (Fairhurst & Connaughton, 2014). Relational and discursive leadership processes, such as responsiveness and dialogue, enhance mutual participation and shape the leader/co-worker relationship discourse rather than an individual phenomenon (Hamrin, Johansson & Jahn, 2016). Cunliffe and Eriksen (2011) similarly demonstrated that decentralization, co-decision-making, and team-leadership, specifically delegation, reduce the span of control and dispersion of power and contribute to a communicative coordination model.

The social route to knowledge leadership is achieved using teams, learning communities, and knowledge transfer practices from within and outside the organization (Lakshman, 2008). Many contemporary relational leadership theories employ an entitative ontology and relational epistemology, where leaders are managers of networks and relational mechanisms, users of linguistic routines and/or resources, and facilitators of collaborative practices (Cunliffe & Eriksen, 2011). Horlings et al. (2017) proposed a conceptualization of relational knowledge leadership, prioritizing enabling and guiding a more fluid-relational interaction and collaboration between a broader range of individuals, institutions, firms, and other community-level groups.

Relational leaders see communication not as an expression of something pre-conceived but as emerging and open, as a way of working out what is meaningful and possible (Cunliffe & Eriksen, 2011). From this perspective, a key feature of knowledge leadership, thus, is the conditioning and mobilization of learning, creativity, and knowledge flows (Horlings et al., 2017). Therefore, Knowledge leadership is a social process focused on the social influence process through which leaders coordinate with their followers to achieve a mutual goal (Zhang & Cheng, 2015; Bohl, 2019). Balancing the technological and socio-cognitive knowledge networks and channelizing them for optimum effectiveness is another critical feature of knowledge leadership (Lakshman, 2008).

In line with the leadership literature, knowledge leadership is defined as the art and science of leading a knowledge-based organization and developing pragmatic knowledge (Cavaleri et al., 2005). Pragmatically, knowledge leadership is defined as any attitude or action which stimulates new and essential knowledge by creating, sharing and using it in ways that will ultimately lead to thinking and collective outcomes (Mabey & Nicholds, 2015; Naqshbandi & Jasimuddin, 2018; Nazari & Tabesh, 2017). More specifically, it is conceptualized as a role and ability of organizational leaders to create conditions that could leverage vast amounts of information to generate value and facilitate KM as an ongoing process (Massaro & Moro, 2011; Cheng, Wu & Hu 2017; Seitz, 2018).

B. Knowledge leaders' roles

The term "knowledge leader" typically defines the role of chief knowledge officer, chief learning officer, knowledge manager, knowledge facilitator, the catalyst for a knowledge-sharing culture, and facilitator of knowledge transfer and storage (Garrity, 2010; Zhang & Guo, 2019). A review of knowledge leaders' roles identified the following as the most recurrent: strategic visionary, motivator, coach, mentor, communicator, collaborator, change agent, model, facilitator of learning, learner, educator, supporter, and technologist (Croteau & Dfouni, 2008; Garrity, 2010; Ferinia, 2015; Zhang & Cheng, 2015). Also, knowledge leaders encourage learning through challenge and intellectual stimulation, institutionalizing learning through providing incentives and training (Williams, 2012).

The most important role of a knowledge leader is to provide a strategic vision that inspires others to accept change, agree on a common purpose, collaborate, and participate in the journey forward (Garrity, 2010; Williams, 2012). Bertoldi, Giachino, Rossotto & Bitbol-Saba (2018) added the roles of motivating, communicating, and giving direction to support the company's values and future objectives.

The strategic leader's vision and identification of opportunities are key elements to successfully implementing KM practices. Without the support and drive from the strategic leader, KM initiatives generally result in failed IT experiments. Moreover, a knowledge leader as a motivator, coach, and mentor influences cultural and organizational change roles in the human relations model, aiming to foster social capital and stimulate their followers to share knowledge (Zhang & Cheng, 2015; Ferinia, 2015). A knowledge leader as a communicative leader is also defined as someone who engages employees in dialogue, actively shares and seeks feedback, practices participative decision-making, and is perceived as open and involved (Johansson, Miller & Hamrin, 2014). More specifically, a knowledge leader as a change agent is "the one who indicates how to go" and strongly influences how the company adapts to changes (Bertoldi et al., 2018).

Furthermore, Croteau and Dfouni (2008) found that the most important KM leaders' roles are fostering a knowledge-sharing culture, facilitating knowledge-sharing among staff, and convincing senior management of KM's benefits. As a learning leader, a knowledge leader clarifies the direction of development, creates a climate that promotes learning, supports learning processes at both individual and group levels, and supports professional development and collective responsibility at work (Viitala, 2004; Bozdoğan, 2013). Thus, considering the relational approach, knowledge leaders are expected to adopt relational strategies emphasizing openness to experience, cooperation, and trust in support of information and KM (Zhang & Guo, 2019).

C. Knowledge leaders' skills

It has been argued that knowledge leadership directly affect the sustainable competitive advantage (Banmairuroy, Kritjaroen & Homsombat, 2022), and an essential element of becoming a knowledge leader is to be able to provide the vision, energy effectively, and enthusiasm to create the knowledge culture and embed knowledge transfer in processes (Ferinia, 2015; Vashdi, Levitats & Grimland, 2019). Their roles are to design self-organizing and organic initiatives that energize knowledge creation and innovation of KM practices and to develop mutual learning, reflective practice, knowledge, and learning networks (Zhang & Cheng, 2015; Horlings et al., 2017; Seitz, 2018). Horlings et al. (2017) suggested that the most

critical skills for knowledge leaders are networking, conditioning, and mobilization of learning and innovation by drawing together learning. Thus, communication has great importance concerning whether leaders can realize a human-centered leadership style or not (Bencsik, 2017).

D. Knowledge leaders' attributes

To accomplish these roles and functions, knowledge leaders need a wide range of attributes and characteristics, were the most cited are empathy, creativity, wisdom, reaction to crises, independence, initiative skills, reliability, innovation, competitiveness, patience, ethics, humility, trust and trustworthiness, and resilience. Those enable knowledge leaders to understand the system, processes, and people and shape them into a cohesive and functional whole (Garrity, 2010; Seitz, 2018; Croteau & Dfouni, 2008; Ferinia, 2015). Most emergent features are 'soft' attributes, which highlight the dominance of human-centered leadership attitudes (Bencsik, 2017). From a network perspective, the trust between a network's members and the tools of control implemented within the network, can affect the development of knowledge leadership. Garrity (2010) also found that competent and trustworthy leaders, applying learning and facilitation skills while encouraging workforce conversation and dialogue, will be better able to maintain organizational support and customer attention in matters of concern to their organizations.

(2) What are the trends and patterns in publications on knowledge leadership in the literature?

After covering the first research question, this part will address the second research question. We will look at the trend of publication by year, the field of study, and geographic distribution.

A. Distribution of publications by year

Our search identified 149 related studies published from 2001 to the end of 2021. The year-wise distribution of publications on "knowledge leadership" is shown in Figure 2. The analysis of "the year of publication" indicates a sharp uptick from 2016 to 2021 (50%). Notably, from 2011 publications rose slightly, and the highest number of papers published in this period was in 2018.
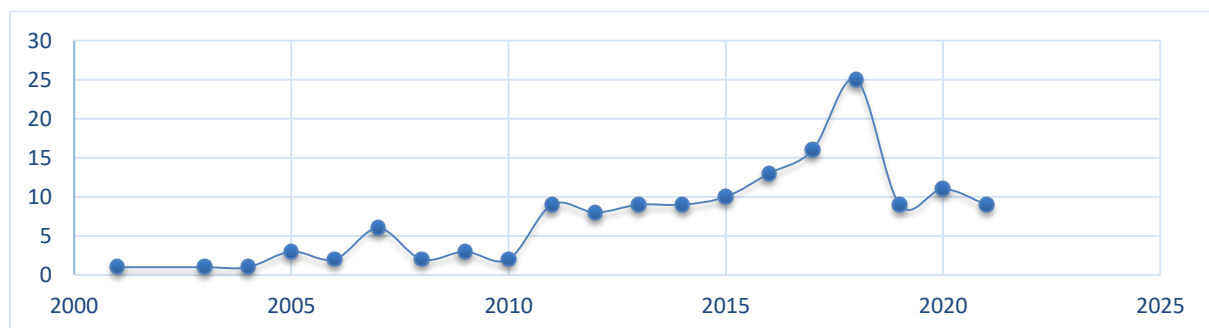

Figure 2: The volume of publication of the research on knowledge leadership over time, 2001-2021

B. Journal and geographical analysis

Among the 149 related studies in our dataset, 130 out of the 149 publications were journal

papers (87.24%), 11 were conference proceedings (7.4%), 6 were book chapters (4%), and 2 were thesis (1.34%). Among those, the earliest empirical study was published in the Journal of Leadership and Organization Development by Politis (2001), who quantitatively examined the relationship of leadership styles to KM. To further understand the research trend on knowledge leadership, we identified the journals that published the most papers on the subject. Figure 3 presents our categorization of these journals based on specialization (13 categories) and five-year spans. Given the interdisciplinary nature of knowledge leadership, related research has been published in various journals (n = 57). The results revealed that study had been published chiefly in the fields of Organization Leadership and Management (28%); Knowledge Management and Organizational Learning (24%); Economics and Business Management (18%); Human Resource Management (8%); and Computer Science and Information Technology (7%).
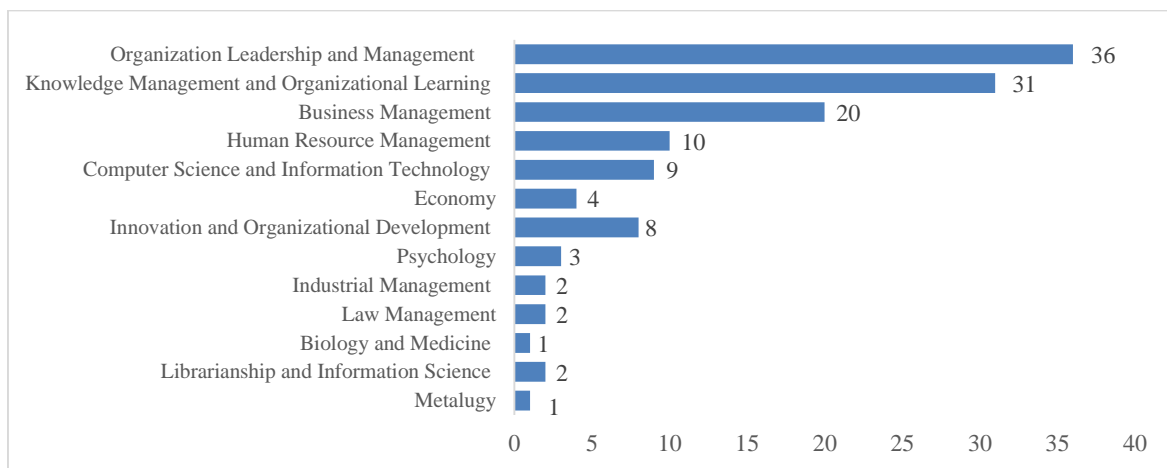
Figure 3: The volume of publications by field of study

As for the geographical distribution, the 136 reviewed studies were conducted in 35 countries and multinational corporations. This implies a rising global interest in studying knowledge leadership. Most studies were conducted in South East Asia with 70 papers (Figure 4), then followed by Europe (19), USA (17), Middle East (18), Australasia (5), Multinational (4), and Africa (3). Among countries, the most frequent research context is China (22), followed by the USA (15) and Taiwan (11).
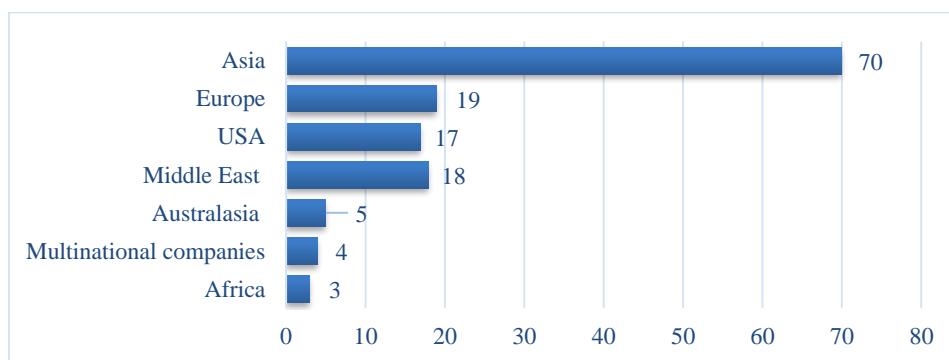

Figure 4: Geographical distribution of conducted research

(3) **What are the most common methodologies used by scholars in empirical studies?**
Our analysis also sought to track the research methods employed in the empirical papers.

The vast majority used quantitative methods (77%). Around 13% used qualitative methods, in which case studies were the most frequent method among qualitative studies (11 of 20 papers). Only one study utilized a mixed-method, and six publications adopted a systematic review (see Figure 5). It should be noted that we differentiated systematic reviews from the theoretical and literature review category since those studies focused on certain numbers of papers from specific periods and systematically analyzed them to answer their research question(s). Therefore, not surprisingly, the quantitative approach was the most used research method.
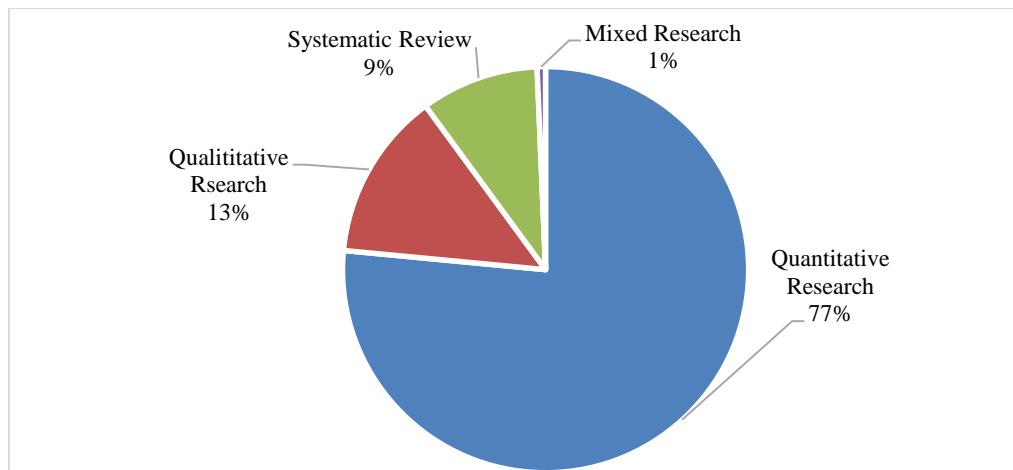
Figure 5: Distribution of empirical studies by research approach

(4) **What are the most common research foci and effective knowledge leadership styles derived from a lexical and content analysis of reviewed studies?**

As for the content analysis, we grouped all of these papers into six categories by extracting the main topical foci. The most prevalent studies focused on KM's 'leadership styles' (82 of 149; 57%). The 'knowledge leadership' for learning (19%), 'Leader-Member Exchange' (11%), and Effective KM Leadership (13%), also received considerable attention among scholars (see Figure 6).

Out of the publications focusing on leadership styles, 41 papers (50%) provided evidence supporting that transformational leadership| has a significant effect on KM practices. After transformational leadership, distributed leadership (24%), empowering leadership (13%), and visionary leadership (5%) were the most studied among other leadership styles. Studies focusing on servant leadership (4%), ethical leadership (3%), and authentic leadership (1%) were few. The detailed results will be presented and discussed in the following section, first focusing on leadership styles and then on the other themes.
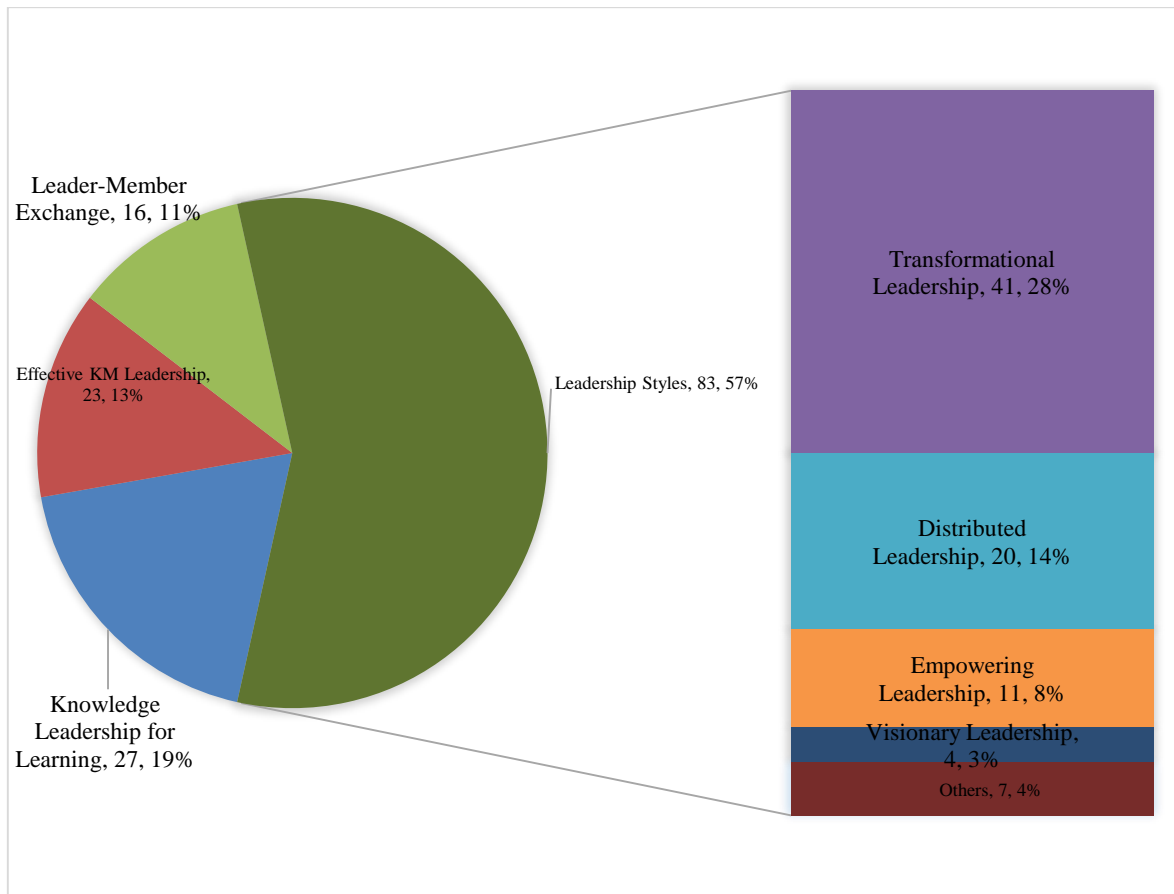
Figure 6: Distribution of studies according to the categories

A. Effective knowledge leadership styles
I. Transformational Leadership

As the most studied leadership style, many scholars confirmed that transformational leadership is a significant driver of organizational learning and the KM process (Al Amiri, Rahima & Ahmed 2020; Park & Kim, 2018; Mittal & Dhar, 2015; Chang, Chao, Chang & Chi, 2018; Kim & Park, 2020; Lakshman & Rai, 2021; Yadav, Choudhary & Jain, 2019; Lei, Gui & Le, 2021; Do & Mai, 2020; Xie, 2020). It is also a significant predictor of knowledge usage (Merlo, 2016), knowledge workers' psychological capital, work engagement (Li, Castaño & Li, 2018), creative self-efficacy, and employee creativity (Mittal & Dhar, 2015). Moreover, transformational leadership is vital for psychological empowerment, organizational commitment, citizenship behaviors (Han, Seo, Yoon & Yoon, 2016), and job performance (Ugwu, 2019). The transformational leadership components were related to developing followers' ability (i.e., vision and intellectual stimulation) and creating the opportunity to share knowledge (Vashdi et al., 2019). Furthermore, transformational leadership has a direct influence on employees' day-to-day involvement in the KM process, such as acquiring, transferring, and applying knowledge (Birasnav, Albufalasa & Bader, 2013). Therefore, transformational leaders affect employees' perceptions of human capital benefits by involving them in the KM process, establishing a collaborative culture, and encouraging communication (ibid). Simply said, transformational leaders foster an organizational climate for knowledge sharing (Kim & Park, 2020; Park & Kim, 2018). Specifically, social support was found to moderate the mediated path of employee engagement between transformational leadership and

knowledge collecting and donating behavior (Yadav et al., 2019).

As reported by Do and Mai (2020), multiple leadership styles have been identified to ameliorate organizational learning processes, levels, and capabilities. However, transformational leadership is a dominant style linked to organizational learning in different contexts. Accordingly, a knowledge-oriented leader mainly acts as a role model with a transformational leadership perspective, promotes learning by encouraging employees in intellectual aspects, institutionalizes learning via motivation and courses, encourages employees to use their intellectual background, and promotes a pro-learning culture (Gürlek & Çemberci, 2020).

More specifically, some scholars highlighted the significant relationship between transformational and transactional leadership regarding KM practices (Al Amiri et al., 2020; Gürlek & Çemberci, 2020; Vashdi et al., 2019). Meanwhile, Scholars have argued that transformational leadership has stronger effects on knowledge workers than transactional leadership (Birasnav et al., 2013; Masa'deh, Almajali, Obeidat, Aqqad & Tarhini, 2016; Berraies & Bchini, 2019; Li et al., 2018). For example, Birasnav et al. (2013) noted that transformational leadership has strong positive effects on the KM process and organizational performance after controlling for transactional leadership effects. Together, transformational and transactional behaviors of leaders affect various employee groups differently; transformational leadership is more significant for creators and administrators, while transactional leadership is more significant for groups with mixed experience (Girdauskienė & Savanevičienė, 2012). It has been argued that knowledge workers managed through only transactional leadership may not be able to show the expected level of creativity. On the other hand, transactional leaders encourage the application of knowledge through knowledge behavior-based rewarding and management by exceptions to promote knowledge behavior (Gürlek & Çemberci, 2020; Shamim et al., 2019).

II. Distributed Leadership

Relational knowledge leadership is a dominant approach in recent KM literature. Leaders enable and guide interaction and collaboration among various individuals, institutions, firms, and community-level groups (Horlings et al., 2017). Thus, leaders' communication skills are vital to creating networked strategic communities that promote knowledge integration or transformation (Kodama, 2007) and to supporting interaction processes in communities of practice. Therefore, knowledge leaders are facilitators of networks, relational mechanisms, and collaborative practices, and their communication aims to work out what is meaningful and possible (Cunliffe & Eriksen, 2011). In their case studies, Horlings et al. (2017) found that relational leadership is confronted with three types of tensions: (1) Collaborative versus hierarchical knowledge leadership, (2) Relational versus territorial knowledge leadership, (3) Open versus bounded time frames.

Knowledge leadership allows employees to participate in decision-making and enables effective KM through fluid communication. Participatory and shared leadership is positively associated with high levels of employee engagement in KM activities (Lee, Lee & Park 2014; Han et al., 2018). Shared leadership positively influences coordination activities, goal commitment, and knowledge sharing, affecting team performance (Han et al., 2018). Distributive leadership flourishes better under teams with collective values and relevant qualifications that are interdependent, coordinated, and aligned, and a higher distributed

leadership within teams will lead to better information exchange and integration, decision-making, and team performance (Iles & Feng 2011).

Therefore, trust is core for effective group communications and personal interactions. Trust is essential for knowledge sharing and acquisition (Koohang, Paliszkiewicz & Goluchowski, 2017). Notably, sharing knowledge as a voluntary behavior in the context of communities needs to integrate justice, organizational support, and citizenship behaviors (Ye, Feng & Fung, 2010). Leadership styles that promote human interaction by successively breaking down barriers to communication and cooperation and encouraging participative decision-making processes are essential for effective KM (Politis, 2001; Zhang & Guo, 2019).

III. Empowering Leadership

The third most frequent leadership style is empowering leadership. Leaders' consulting and delegating behaviors are important to effective KM practices (Matic & Konja, 2012). Some scholars argue that empowering leadership facilitates knowledge sharing, which results in high team performance and increases the absorptive capacity of the team (Lee et al., 2014; Nazari & Tabesh, 2017). Nazari and Tabesh (2017) found that knowledge leadership accounts for 41% of the variance of employee empowerment. More specifically, the development of professional skills and innovative culture can be notably promoted through the mediating effect of supportive leadership. The effects of knowledge-oriented leadership on employees' self-efficacy and work attitudes regarding KM behaviors were also affirmed (Shamim et al., 2019). More significantly, the findings demonstrate that the relationship between empowering leadership and knowledge sharing becomes strong with high distributive and procedural justice (Bhatti, Akram, Bhatti, Riaz & Syed, 2021).

IV. Visionary Leadership

The KM strategy must align with the business strategy, and managers are expected to incorporate KM into their vision and mission to compete in the knowledge economy effectively. Scholars argued that the strategic dimension of leadership contributes to the success of KM practices. Effective leadership is vital for achieving superior organizational performance, and being a successful leader is to be visionary and a motivator, enabler, facilitator, and mentor (Najmi, Kadir & Kadir, 2018). Taylor, Cornelius and Colvin (2014) found that visionary leadership with high skills positively influences perceived organizational effectiveness. Zhou, Zhao, Tian, Zhang & Chen (2018) likewise found that visionary leadership is positively associated with employee creativity, and the relationship is positively mediated by employee knowledge-sharing; So, employee "learning goal" orientation strengthens the relationship between visionary leadership and employee knowledge-sharing. Indeed, where there is a high level of learning orientation, visionary leadership has a stronger positive effect on knowledge sharing, whereas when employees have a high performance-avoid orientation, the relationship between visionary leadership and knowledge-sharing is weakened. As noted by Yi (2019), there are main approaches that a leader needs to use to foster a culture of knowledge sharing: to set the mission, short-term, middle-term, and long-term goals, and objectives of fostering a culture of knowledge sharing.

B. Knowledge Leadership for learning

Effective KM is facilitated by an organizational culture that supports learning and

knowledge sharing (Viitala, 2004; Janson & McQueen, 2007; Al Dari, Jabeen & Papastathopoulos, 2018; Zhang & Cheng, 2015; Williams, 2012; Asadnezhad, Kordi & Jafar, 2021). As Mahmud (2020) reported, there is also a significant and direct role of learning culture in applying knowledge. Thus, knowledge leaders should act as enablers of learning and knowledge sharing through building a collaborative culture and technological know-how (Menkhoff, Chay, Evers & Loh, 2007). According to Viitala (2004), the most central dimensions of KM are orienteering learning, creating a supportive climate for education, and supporting the learning process at the group and individual levels. Thus, leadership needs to focus on four primary areas - promoting a common purpose, developing a collaborative culture, facilitating multi-disciplinary teamwork, and developing learning and KM strategies. The most effective leadership approach to undertaking these roles is predominantly collaborative and dispersed but may need to reflect the hierarchical imperatives of performance and accountability (Williams, 2012).

Leaders should balance the "locus of learning" from internal and external sources and facilitate mind-shifts (collaboration and communication paradigms underlying relationship and networking processes) (Janson & McQueen, 2007). Also, leaders should enhance knowledge sharing for solving problems, increasing opportunities, and improving workforce productivity (Al Dari et al., 2018). Zhang and Cheng (2015) asserted the mediating role of social capital in the relationship between knowledge leadership and knowledge sharing. Therefore, knowledge leaders with excellent skills generate, utilize, and maintain social capital to motivate others to share knowledge. The lack of systemic thinking and the absence of team exchange are essential barriers to knowledge sharing (de Melo, de Almeida, Silva, de Souza, Brandão & Moraes, 2013). Direct interaction between managers is the best tacit knowledge-sharing method (Manaf, 2016). According to Chiu et al. (2015), knowledge leadership moderates employee learning, motivation, and creativity. Men and Jia (2021) found that knowledge-oriented leadership is positively associated with team creativity, mediated by team learning.

C. **Leader-Member Exchange (LMX)**

Similar to servant leadership, LMX emphasizes the interaction between leaders and their followers, which is often determined by initial testing; development of mutual trust; and development of a mutual commitment to goals (Xie, 2019), especially through significantly affecting knowledge worker satisfaction and productivity, ultimately improving organizational performance (Sahibzada, Xu, Afshan & Khalid, 2021). A leader's feedback greatly influences employee knowledge-sharing behaviors and effective knowledge transfer (Sarti, 2018; Cheng, 2017). Effective feedback supports innovative work behaviors (Bin Saeed, Afsar, Shahjeha & Imad Shah, 2019) and promotes the successful implementation of KM processes (Koohang et al., 2017). When members feel recognized and supported, they are more willing to share information, cooperate, and work with team members to achieve collective goals (Sarti, 2018). Jain, Srivastava & Owens (2014) also highlighted the effect of a leader's network centrality on the relationship between LMX and resource accessibility. At this point, Jiang, Motohashi, Liu & Zhang (2021) found that LMX moderates the positive relation between knowledge-oriented leadership and knowledge integration. Therefore, managers are advised not to rely on traditional managerial tools and methods. Managers should work to develop high-quality LMX relationships with their subordinates, as this can enhance social interaction among employees and facilitate more effective knowledge transfer (Cheng, 2017). Xia, Yan, Zhang & Chen

(2019) also highlighted an inverted U-shaped relationship between knowledge leadership and knowledge hiding, and this was significantly pronounced among employees with high psychological ownership. As Yin, Ma, Yu, Jia & Liao (2019) argued, psychological safety fully mediated the impact of intellectual stimulation on knowledge sharing, and team efficacy fully mediated the effects of inspirational motivation on knowledge sharing.

D. Effective KM Leadership

Research has confirmed that knowledge-oriented leadership establishes the eligibility conditions for improving KM capacity and exploitative and exploratory innovations (Berraies & Bchini, 2019; Gürlek & Çemberci, 2020; Naqshband & Jasimuddin, 2018; Rehman & Iqbal, 2020; Zia, 2020). Lakshman and Rai (2021) found the relationship between unit-level knowledge leadership and organizational innovation mediated by unit-level knowledge sharing. Work by Lakshman (2016) also asserted the powerful influence of knowledge leadership behaviors on group-level innovation, which subsequently impacts business performance.

Furthermore, some studies have found evidence of the influential and active role of leaders in KM in addition to knowledge creation, knowledge transfer, storage, and application practices, which in turn, flourish innovation performance and then sustainable competitive advantage (Banmairuroy et al., 2022; De Jong & Den Hartog, 2007). Therefore, leaders influence employees' innovative behavior through deliberate actions to stimulate idea generation and application and support more general and daily behavior (De Jong & Den Hartog, 2007). Moreover, Ferinia (2015) found that a visionary leader as a motivator, communicator, change agent, coach, mentor, model, and facilitator of learning can increase organizational productivity. Therefore, context, competence, culture, communities, conversation, communication, and coaching are aspects of effective knowledge leadership (Amidon & Macnamara, 2004). Moreover, Guo, Zhang, Huo & Xi (2019) asserted that knowledge leadership positively moderates the relationship between cognitive conflict and innovation. This moderating effect is directly or indirectly revealed by the dual mediating roles of task-related information/knowledge elaboration and affective conflict.

Discussion

In this paper, the findings demonstrated an increasing pattern in relevant publications. This surge has been exponential since 2011, and each year afterward reaches a new peak. This trend indicates a scholarly focus on the subject, where some even claimed that the concept of leadership in the knowledge economy era is nothing but "knowledge leadership". There is no reason to anticipate a continuous rise in this area of research, especially since the new workplace is increasingly dependent on big data, technology and software advancements, artificial intelligence solutions, and embedded knowledge in employees and networks, all vital for innovation and sustaining a competitive advantage. In other words, the scholarly work growing focus on knowledge leadership reflects the knowledge-intensive reality of the contemporary nature of work. Authors were found to be dispersed, and publishing journals were from various disciplines, reflecting the field's multidisciplinary nature.

Moreover, geographical distribution reflects the global rise of interest. Remarkably, most studies were conducted in South East Asia in addition to China, Korea, India, Pakistan, and Taiwan. Our results, consistent with Do and Mai (2020), revealed that scholars widely used quantitative methods, reflecting the dominant positivism in the literature on KM. That said,

there is a loss of opportunity to advance our knowledge further using different qualitative and mixed methods. New research approaches may discover how leadership influences learning in unique contexts (Xie, 2019).

The content analysis of reviewed studies proposed a conceptual framework to define the concept of knowledge leadership with a techno-socio-cognitive and relational approach. Thus, knowledge leadership can be defined as a social influence process that aims to develop pragmatic knowledge and involves energizing and facilitating knowledge creation, sharing, and application through creating learning communities and mobilizing knowledge flows and networks. To this end, knowledge leaders are expected to play multi-roles such as strategic visionary, motivator, coach, mentor, communicator, collaborator, change agent, coach, model, learning facilitator, learner, educator, supporter, and technologist leader. Playing these roles requires skills such as converting learning experience into knowledge as a competitive advantage, directing and encouraging the culture of knowledge transferring and sharing, developing mutual learning through communities of practice and learning networks, and providing strategic visions and leading strategies to support the business's values and goals. Finally, effective knowledge leaders need empathy, creativity, wisdom, reaction to crises, independence, initiative, reliability, innovation, competitiveness, patience, ethics, humility, trust and trustworthiness, and resilience to be successful.

Moreover, the results indicated that publications present the role of various leadership styles and models in KM. As previously noted, this study highlighted the importance of knowledge leaders being transformational, participative, empowering, and visionary. However, scholars widely reported the leadership role of transformational leaders as the dominant knowledge leadership style. It also emphasized their role in facilitating learning and supporting networks and the innovation process. The themes also reflect the vitality of knowledge-creation and innovation, which have a significant human aspect, in addition to its technological one. It is not an exaggeration to claim that the shift from knowledge management (control) paradigm to a more "knowledge leadership" and "knowledge development" (integrated) paradigm is a major, if not the most important, ingredient for organizational success.

That said, the literature focuses on some leadership styles while not on others, is an opportunity for development. Most significantly, the rise of ethical concerns, mass customization, and social responsibility, among others, suggests a lost opportunity not further to emphasize specific topics under knowledge leadership. For example, the impact of ethical and authentic leadership styles could be further studied within this emerging research area. Moreover, the focus was on the organizations, but including external factors in the studies will provide an all-inclusive approach (customers, suppliers, strategic alliances, environment, and the societal factors at large).

This study has some limitations. First, the results of this review were limited to the peer-reviewed publications from journals, conferences, book chapters, and thesis/dissertations excluded the theoretical and conceptual literature; however, we tried to review them to conceptualize the concept of 'knowledge leadership'. Second, publications in the field of education and higher education were excluded. Because of the multidisciplinary nature of "knowledge leadership", research in educational systems might be argued to be applicable. The third limitation was our decision to focus on the descriptive pattern of knowledge production rather than employing co-citation analysis and bibliographic coupling techniques to analyze the publications dataset.

This research also has useful theoretical and practical implications for redirecting knowledge production on 'knowledge leadership' in the literature of KM. First, from a theoretical perspective, this review extended and supported previous literature on leadership by integrating a wide-ranging review of the empirical evidence related to knowledge leadership to establish a conceptual framework of knowledge leadership linking with the various variables in the conceptualization of this construct in the KM literature. From a practical perspective, this paper suggests an integrated picture of effective knowledge leadership for managers and practitioners that enormously depends on a paradigm shift from hierarchical structures and traditional models of leadership to the use of shared, distributed, and networking leadership. Therefore, it will be fruitful for practitioners to understand the new approaches and models of leadership for effectively managing knowledge.

Conclusion

Moreover, several recommendations for future research are given that provide a platform for future studies. First, the current literature shows the relationship between transformational leadership and KM practices, while it lacks comparisons between this style and other styles of knowledge leadership identified in this study, such as distributed, empowering, and visionary leadership styles. Second, the conceptual framework proposed in this review can be used to guide more extensive studies by future scholars because the variety of approaches to the concept of leadership caused definitional confusion. Third, future research is needed to use more qualitative methods because they may provide new insights about some emerging knowledge leadership types.

The current review was limited in several ways, and these limitations should be considered when interpreting the results. The first limitation can be attributed to the review of studies published in international journals. Thus, the scholarly studies published in a language other than English were excluded. A final limitation involves the variety of the keywords under investigation. Although we conducted an extensive search of comprehensive databases in the field of KM, there were still instances where we could not retrieve the full text of articles.

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