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MANAGEMENT | RESEARCH ARTICLE

A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges

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Abstract: This study aims to highlight and summarize the possible antecedents and factors that facilitate or impede knowledge management and knowledge sharing in organizations. A meta-review of 64 articles for the years 2010–2015 has been conducted. It includes both quantitative and qualitative studies related to antecedents and barriers to knowledge management and knowledge sharing. Cooperation bias was the most frequent limitation in most studies included in this meta-review as the respondents were likely to over-estimate their participation in knowledge management (KM) and knowledge sharing (KS). Future studies of knowledge management and knowledge sharing can be focused on exploring the same issues in developing countries in different sectors. Relationship of knowledge sharing and transfer can be further explored with social media, organizational politics, and communication in the organizations. The result of meta-review will generate nomothetic knowledge implications by scrutinizing the antecedents and barriers to knowledge sharing and transfer.

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PUBLIC INTEREST STATEMENT

Managing knowledge in an organization is as significant as other assets are managed. In this competitive era, knowledge management is a crucial factor that is necessary for an organization to achieve success. Managers around the globe are striving hard to share and transfer knowledge within and outside the domain of their organizations. Despite increasing interest and trends in knowledge management and knowledge sharing, organizations face certain issues and challenges. This study examines relevant antecedents and barriers of knowledge sharing and transfer from 2010 to 2015. It involves review of numerous research publications, highlighting emerging views and trends in the area of knowledge management and knowledge sharing in various sectors and disciplines around the world.

Subjects: Business, Management and Accounting; Leadership; School Leadership, Management & Administration; Work & Organizational Psychology

Keywords: knowledge management; knowledge sharing; antecedents; trends

1. Introduction

Knowledge is lifeblood of an organization and it has been identified as a crucial element for the survival of organizations in today's dynamic and competitive era. Therefore, it implies that managing knowledge is as important for an organization as other assets are managed. In order to be successful and relish competitive advantage, organizations heavily depend on knowledge that has become a resource and critical success factor for the organizations (Grant, 1996; Nahapiet & Ghoshal, 1998; Yi, 2009). The reason of increased importance of knowledge lies in the fact that effective management of knowledge in an organization brings many positive outcomes that lift the organization to the horizon of success. Literature shows that knowledge is the most important antecedent for continuous innovation and success (Drucker, 1999; Kogut & Zander, 1992; Nonaka & Takeuchi, 1995). Perks of being a knowledge-intensive organization does not end here, as effective and wise utilization of knowledge accumulated from tarn of knowledge residing in an organization also results in an amplified productivity, increased performance, and improved innovation capability (Cummings, 2004; Lin, 2007; Mesmer-Magnus & DeChurch, 2009). Therefore, knowledge management is as important as other assets and resources for the survival and success of the organization.

Knowledge that is not well managed and shared corrodes easily. Especially, the tacit knowledge that resides in the minds of people accumulated over time must be shared. Among other processes of knowledge management, knowledge sharing has been identified as the most vital one. As identified by Witherspoon, Bergner, Cockrell, and Stone (2013), knowledge sharing is a building block for the success of the organization and it is being adopted as a survival strategy. HR professional has neglected knowledge sharing for many years; however, with the passage of time, particularly in 2000, they came to realize the importance of knowledge management. Since then, knowledge management and its processes became the foci of HR field (Blankenship & Ruona, 2009; Gourlay, 2001). Knowledge sharing can be defined as the transference of knowledge among individuals, groups, teams, departments, and organizations (Crossan, Lane, & White, 1999; Ipe, 2003).

There are many factors that affect knowledge-sharing behaviors, i.e. personal characteristics of the knowledge bearer, as well as the characteristics of groups and organization tend to affect the behavior toward knowledge sharing. Different researchers have identified and explained various antecedents to knowledge-sharing behavior. For example, personal characteristics of the individual sharer might include demographic variables (such as age and gender) that tend to influence the individuals' knowledge-sharing behavior (Constant, Kiesler, & Sproull, 1994). Similarly, certain inherent qualities of the individuals (Cabrera, Collins, & Salgado, 2006) and their attitude toward knowledge sharing (Bock & Kim, 2002) are some important precursors of knowledge-sharing behaviors. Furthermore, certain group and organizational characteristics might include top management support (Connelly & Kevin Kelloway, 2003), organizational culture, and values and norms (Bock, Zmud, Kim, & Lee, 2005; David & Fahey, 2000; McKinnon, Harrison, Chow, & Wu, 2003). On the other hand, Baker, Leenders, Gabbay, Kratzer, and Van Engelen (2006) and Sawng, Kim, and Han (2006) came up with the notion that the characteristics and norms of a team tend to influence the knowledge-sharing behavior.

In order to gain access in the global market, or to avail the opportunity of unique expertise, organizations often establish subsidiaries around the globe (Argote, Ingram, Levine, & Moreland, 2000). Knowledge as a strategic resource of a firm must be transferred across the borders to the subsidiaries, so that it could be used effectively as a competitive tool. Transfer of knowledge is also influenced by a number of factors, mainly trust (Simonin, 1999); the difference in culture of subsidiary; and parent company might hinder the successful transfer of knowledge (Bhagat, Kedia, Harveston, & Triandis, 2002; Javidan, Stahl, Brodbeck, & Wilderom, 2005).

The purpose of this paper is to uncover the issues in knowledge sharing and transfer, particularly investigating the antecedents and barriers to knowledge sharing and knowledge transfer across various industries and countries. This way, the author scrutinized the research work done by various authors and researchers on knowledge sharing and knowledge transfer over the past six years. Through such examination, the issues, trends, and antecedents of knowledge sharing and knowledge transfer will be examined. In addition, the possible antecedents and factors that impede or promote knowledge sharing and knowledge transfer are identified. Moreover, what could possibly be done in order to eliminate the barriers and address the challenges of knowledge sharing and knowledge transfer has been discussed. This study will generate nomothetic knowledge implications by scrutinizing the antecedents and barriers to KS and knowledge transfer and it will be helpful to the practitioners and researchers to understand the most common barriers and antecedents across different cultures, contexts, and disciplines.

2. Methodology

This study employs meta-review to serve the purpose because meta-analytical approach is based on nomothetic knowledge, as it provides generalized observations, or principles on the basis of a large number of studies, previously conducted with different methods and metrics in some common effect size measures.

A peer-reviewed journal namely "Journal of Knowledge Management" has been selected in order to search for the required research publications. This journal has been chosen on assumption that it is enriched with the core knowledge about knowledge management. All the issues of the selected journal have been searched. In this regard, the articles from 2010 vol. 14 No. 1 to volume to 2015 vol. 19 No. 3 have been searched. All types of articles, qualitative and empirical, were included to get a comprehensive picture of the literature regarding barriers and enablers of knowledge sharing and transfer. Articles containing the key words of "knowledge sharing" or "knowledge transfer" were selected. This process resulted in the accumulation of 102 articles. Though the emphasis was on the key words of articles, the topics of the articles were not ignored. Such articles, which specifically addressed the barriers or enablers of knowledge sharing and transfer, were also included in the search.

In the screening phase, every article was read and judged based on the inclusion criterion, as the focus of the study was knowledge management and knowledge-sharing issues, challenges, and trends. For an article to be included in the study, knowledge management and transfer were the core concepts of the research objective focusing on the barriers and enablers of knowledge sharing and transfer. Furthermore, in some selected articles, the concept of knowledge sharing and transfer was studied in an entirely different perspective, which did not match the theme of the current study. For instance, an article was excluded from this study due to its focus on the system of knowledge transfer rather than the issues or enablers of knowledge transfer. In this regard, many articles were excluded from this study. In short, only those articles were included in this study which were published between 2010 and 2015 and demonstrated some sort of antecedents, issues, challenges, or trends in knowledge management or knowledge sharing. Thus, 64 articles met the inclusion criterion for this study. All the selected articles were organized in a structured matrix with the author's name, year of publication, title of the article, variables included in the study, issues in knowledge sharing and knowledge transfer, key research findings, trends, country of origin, and the sector or type of industry in which the study was conducted. The summary of main findings can be seen in Table 1.

3. Discussion

With the growing importance of knowledge management in organization, facilitation of tacit knowledge sharing among individuals (which is usually centered on sharing experiences, skills, and know-how) had been a topic of interest for organizations (Taylor, 2007). However, sharing and transfer of knowledge is a challenge because of the unstructured nature of the tacit knowledge and many barriers that hinder the successful flow of knowledge. Previous research has elaborated many factors in the form of enablers, facilitators, motivators, inhibitors, barriers, and deterrents, which have a profound effect on the tacit knowledge-sharing behavior of individuals (Joia & Lemos, 2010; Li, 2010).

Table 1. Summary of meta-review for knowledge management and knowledge sharing

Authors	Year	Issues	Trends	Country
McNichols	2010	Barriers in knowledge transfer processes from Baby boomers generation to Generation X	The strategies, processes, and methods to transfer knowledge can be helpful for organizational leaders to bridge the generation gap; Leaders should develop sensitivity to diversity, enhancing open communication and understanding the strengths and benefits of multigenerational workforce.	USA
Holste and Fields	2010	Impact of affective- and cognitive-based trust of co-workers on professionals willingness to share and use tacit knowledge	Leaders should make investments to develop types of trusts in the organization. Knowledge management efforts should include a finer view of social networking of employees that affect knowledge transfer and management processes.	USA
Ajmal, Helo, and Kekäle	2010	Barriers to KM initiatives include: familiarity, coordination, incentives, authority, system, and culture.	Management should provide appropriate incentives to employees to engage them in KM initiatives. An appropriate management system should be organized Proper coordination must prevail among employees who are familiar with the objectives and methods of KM. Culture of mutual trust and assistance	Finland
Gururajan and Fink	2010	Heavy workload, diverse work agendas, and elder age impede the transfer of knowledge. Not compensated well for mentoring activities. Need of ability to receive knowledge. Lack of discussion boards, rapid technological change, and lack of resources	teaching loads and expectations can be reduced to improve the transfer of knowledge. Compensation of senior staff and mentoring of junior staff can significantly improve transfer of knowledge. Academics have to understand how ICT contributes to the transfer of knowledge. Electronic discussion forum can increase knowledge levels. Social Interaction encourages knowledge regeneration.	Not known
Niu	2010	Relationship between a firm industrial cluster involvement, trust, and knowledge obtaining	Firms need to concentrate on the degree of industrial cluster involvement desired and focus their knowledge-obtaining activities and trusting relationships among clustering firms appropriately. It is important to consider that the nature of the cluster involvement, the particular type of trust, and source of obtaining knowledge.	USA, China, Taiwan, Sweden
Li	2010	Cross-cultural knowledge sharing online	Online sharing of knowledge in different organizations with different cultural mix.	America & China
Chen, Sun, and McQueen	2010	Knowledge transfer across different countries and diverse cultural contexts	Additional study in different organizations and varying cultural contexts.	USA, China & Canada
Gururajan and Fink	2010	Impact of attitude on transfer of knowledge	Replication of current study in different universities and departments. Identification of moderating variables and their effects. Refinement of roles of attitude in knowledge transfer.	Australia
Zhou, Siu, and Wang	2010	Social tie content and knowledge transfer	Use of social network by senior members to transfer knowledge and its difference from junior employees. Estimate pooling technique.	China
Lilleoere and Holme Hansen	2011	Knowledge sharing Barriers and Enablers	Manager should be aware of the diversity of the professionals regarding knowledge sharing and barriers. Managers should emphasize on the value of synergism of knowledge-sharing enablers. Location of R&D employees should be considered because of social embedded tacit knowledge.	Denmark
Teng and Song	2011	Voluntary and Solicited Knowledge Sharing	Knowledge sharing has been regarded as singular concept and voluntary KS is a proactive form of KS. Managers should understand the role of voluntary and solicited KS. KM practitioners should cultivate such culture that develops trust among employees and recognizes them for taking knowledge initiatives.	USA
Al-Adaileh and Al-Atawi	2011	Organizational cultural attributes impact on the knowledge exchange-Either culture of STC support or hinders knowledge exchange	For successful KM initiatives, cultural attributes should be considered. KE can be enhanced by promoting a culture of teamwork, involvement, rewards system, and information flow. In future, organizational performance can be measured by considering KE and cultural attributes.	Saudi Arabia

(*Continued*)

Table 1. (*Continued*)

Authors	Year	Issues	Trends	Country
Jeon, Kim, and Koh	2011	Socio-psychological factors affecting knowledge sharing attitude of CoP members. Individual, social, and organizational factors affecting attitude and intentions to share knowledge. Difference between formal and informal CoPs with reference to effects of such factors	Intrinsic motivation is more critical for knowledge sharing in spontaneous setting. Knowledge contribution of employees should be recognized through rewards. To create intentions for knowledge sharing, positive recognition of members' capabilities and KS norms should be supported.	Korea
Xue, Bradley, and Liang	2011	Impact of team climate and empowering leadership on employees knowledge-sharing behavior	Cultivating a nurturing team environment. Empowering leadership skills to be emphasized. Appropriate training programs.	
Suppiah and Singh Sandhu	2011	Past studies emphasized only on the macro view of knowledge constructs Organizational culture's impact on tact knowledge-sharing behavior		Malaysia
Miao, Choe and Song	2011	Organizational Factors affecting subsidiary knowledge transfer to parent companies and peer subsidiaries		South Korea
Seba, Rowley, and Delbridge	2012	Challenges faced by Middle East organizations in knowledge sharing	Arab culture and Police force culture.	Dubai (Middle east)
van den Hooff, Schouten and Simonovski	2012	Influence of emotions on the attitude toward knowledge sharing and knowledge-sharing intentions	Influence of positive and negative emotions on knowledge sharing can be studied. Study knowledge sharing in more realistic setting (Laboratory Experiment).	Dutch
Martín-Pérez, Martín-Cruz, and Estrada-Vaquero	2012	How much authority should be delegated? Which reward system should be used to motivate employees to share knowledge?	-Design mechanisms to convert tacit knowledge into explicit knowledge. Create organizational memory. Create a platform for the inter-organizational exchange of knowledge.	Spain
Mueller	2012	Cross-boundary knowledge sharing, cultural values, and manifestation influence knowledge sharing between project teams		Austria
Casimir, Ngee Keith Ng, and Liou Paul Cheng	2012	Role of IT usage of knowledge sharing in intention behavior relationship		Malaysia
Kim, Newby-Bennett, and Song	2012	Externally imposed institutional pressure and knowledge sharing	Accreditation Agency.	Midwest United States
Vuori and Okkonen	2012	What motivates and demotivates people from sharing knowledge through an intra-organizational social media platform?	Affordance of social media platform.	Finland
Casimir, Lee, and Loon	2012	Perceived cost of knowledge sharing, affective commitment, and trust	Role of certain organizational barriers in KS. Organizational culture, virtual teams, and trust in absence of face-to-face interaction.	Not known
Jones and Mahon	2012	High-velocity/turbulent environment		USA
Husted, Michailova, Minbaeva, and Pedersen	2012	Hoarding knowledge, rejecting external knowledge, and attitude toward mistakes	Governance of knowledge sharing among individuals.	Denmark
Blomkvist	2012	Formal control mechanisms and subsidiary's willingness to transfer knowledge	Knowledge transfer and subsidiary performance (innovation capability and output), capturing adoption and use of transferred knowledge among subsidiaries, and control mechanism as a moderator of knowledge transfer barriers.	Europe, Asia, Australia and the United States
Ghobadi, and D'Ambra	2012	Competition and cooperation in cross-functional teams	Antecedents and factors of creating cross-functional cooperative and competitive behaviors.	Australia

(*Continued*)

Table 1. (*Continued*)

Authors	Year	Issues	Trends	Country
McAdam, Moffett, and Peng	2012	Critical cultural studies focusing on particular aspects of knowledge sharing in Chinese organizations	KM models, tools, and techniques in the Chinese context.	China
Fong Boh, Nguyen, and Xu	2013	Perception of individuals about the headquarters and influence on the transfer of knowledge		Vietnam Norway
Fullwood, Rowley, and Delbridge	2013	Attitude and intentions toward knowledge sharing and related factors	Development of intelligence and other useful-related approaches to capitalize the extant culture in universities	UK
Nakano, Muniz, and Dias Batista	2013	Unstructured work environment and tacit knowledge sharing	Less automated production line. Quantitative study.	Brazil
Huang, Chiu, and Lu	2013	Insufficient motivation for repatriates to share knowledge	Effects of task-level, firm-level, and external environment characteristics. Use database of repatriates for future study.	Taiwan
Mura, Lettieri, Radaelli, and Spiller	2013	Employees' engagement in knowledge sharing and innovative behavior	Addition of further variables to the extant model. Future study can be generalized by focusing on health care. Sample size could be increased.	Italy
Kang and Kim	2013	Embedded resources of social capital and knowledge transfer	External ties of network survey. Longitudinal study of multiple waves of survey.	South Korea
Fang, Yang, and Hsu	2013	Relationship between knowledge characteristic, knowledge barriers, knowledge governance mechanism, and inter-organizational knowledge transfer.	Strategies for effective inter-organizational knowledge transfer.	Not known
Peng	2013	Territoriality and hiding knowledge.	Tacit and explicit knowledge hiding. Using experimental design and other scales.	Shanghai
Pangil and Moi Chan	2014	Effectiveness of virtual teams	Effect of the factors that affect team effectiveness in general can affect the virtual team effectiveness.	Malaysia
Filieri and Alguezaui	2014	Role of structural social capital in knowledge transfer and innovation at interpersonal, inter-unit, and inter-firm levels.		Unknown
Rusly, Yih-Tong Sun, and Corner	2014	Employees' unpreparedness to share knowledge. Change readiness	External factors and type of agent's relationship and its impact on knowledge-sharing process. Influence of change readiness on other processes of knowledge management.	
Durmusoglu, Jacobs, Zamantili Nayir, Khilji, and Wang	2014	Limited study of reward system in the knowledge-sharing context	Influence of culture and rewards on the mechanism of knowledge sharing.	Multiple industries in different countries
Jasimuddin, Connell, and Klein	2014	Determinants of knowledge transfer mechanism selection	Comparisons of the constructs of interest in different organizations. Quantitative study.	UK
Ma, Huang, Wu, Dong, and Qi	2014	Collectivist culture and challenges to the universality of knowledge management sharing theories		China
Rathi, Given, and Forcier	2014	Inter-organizational partnership and knowledge sharing	Additional partnership types. Structural characteristics of partnership types. Overlapping of inter- and intra-organizational sharing practices. Role played by board of directors in structures and knowledge sharing between NPOs.	Canada & Australia
Li, Chang, Lin, and Ma	2014	Lack of diverse cultural characteristics	Cultural dimensions' influencing factors on other dimensions of knowledge transfer performance.	Unknown
Ferreira Peralta and Francisca Saldanha	2014	Role of trust propensity in KS	Individual differences and their role in the relationship of KCC and knowledge sharing. Transmission, absorptive capacity, and sharing of tacit and explicit knowledge.	US
Kyoon Yoo	2014	Relationship between perceived knowledge quality and knowledge sharing. Innovativeness, substructures of perceived knowledge quality,	Dynamics of PKQ Repository-based knowledge quality. Factors affecting the substructures of PKQ.	USA

(*Continued*)

Table 1. (*Continued*)

Authors	Year	Issues	Trends	Country
Ranjbarfard, Aghdasi, López-Sáez, and Emilio Navas López	2014	KM barriers' effect on the district phases of knowledge management processes.	Inter-organizational knowledge barriers. Solution to overcome knowledge barriers. Relationship between knowledge-sharing barriers and global teams.	Iran
Del Giudice, Della Peruta, and Maggioni	2015	Use and diffusion of knowledge-sharing technologies in the private transport sector	Impact of diffusion of knowledge technologies on customer relationship management. Factors influencing the diffusion of knowledge-sharing technologies in community of practice.	Naples
Cavaliere and Lombardi	2015	Behaviors of subsidiary's employees in knowledge sharing. Role of different types of cultures in KM processes	Organizational design and knowledge flow. Applying findings on home market. Intra-organizational knowledge-sharing processes. Moderating effect of other variables on the linkage between knowledge sharing and organizational culture.	Italy
Zhang and Jiang	2015	Knowledge-sharing behavior and recipient role	A more comprehensive understanding of the characteristics of knowledge recipient. Process of knowledge-sharing patterns' development.	Not known
Lin and Lo	2015	CBM & RBM	Additional antecedents to an individual knowledge sharing.	Taiwan
Coradi, Heinzen and Boutellier	2015	Co-location R&D units in multi-space environment	Assessing quantity and quality of communication.	
Ranucci and Souder	2015	Tacit knowledge transfer in Mergers and acquisitions		USA
Qureshi and Evans	2015	Deterrents of knowledge sharing and ripple effects	Factors hindering knowledge-sharing practices in pharmaceutical industry. Ripple effects as a result of lack of knowledge sharing.	Australia

The purpose of this study is to examine the trends, issues, and challenges that hinder knowledge sharing and transfer in the organizations. In this regard, the antecedents as well as the deterrents to knowledge sharing and transfer are discussed in detail.

The careful examination of the selected 63 research publications revealed numerous antecedents and barriers to knowledge sharing and knowledge transfer. For example, trust has been proved as the most important determinant of knowledge sharing and transfer. By carefully analyzing the research publication in the period of 2010–2015, trust emerged as the most significant factor that was studied frequently in the year 2010. In later years, along with trust, many other factors were studied, which were likely to affect the mechanism of knowledge sharing and transfer in the organizations. In 2011, Xue, Bradley, and Liang revealed in their research findings that trust in the team climate tends to affect the knowledge-sharing behavior of individuals, both externally and internally. Team climate of interpersonal trust internally affects the subjective attitude of individuals, which governs the knowledge-sharing behavior, and externally in the form of social pressure and facilitation from the team leader. In 2012, there was an increasing trend of studies centering trust as an element of knowledge sharing and knowledge transfer. When it comes to transferring knowledge in a multinational organization with its subsidiary located far away in a different culture, it becomes challenging. Yet, with the greater amount of trust, knowledge transfer becomes easy (Fong Boh, Nguyen, & Xu, 2013). If the trust is mutually held in the cultural values of the subsidiary and headquarter, it becomes easy to transfer knowledge from the headquarter to the subsidiary. In subsequent years, trust was studied as an important factor that can impede or facilitate knowledge sharing and transfer. Interpersonal trust enables knowledge sharing in the organization, particularly when it comes to sharing tacit knowledge (Holste & Fields, 2010).

Importance of reward system and motivation can be realized from the fact that these variables had been studied extensively from 2010 to 2015 and are associated with knowledge sharing and transfer. Jeon, Kim, and Koh (2011) pointed out that both extrinsic and intrinsic motivation have a positive influence on the knowledge-sharing attitude of the individuals, which in turn governs their

behavior toward knowledge sharing and transfer. When individuals are not motivated to share knowledge and there is no reward for them, they tend to hide the knowledge they possess and do not reveal or share it with others. Subsequent studies on factors relating to knowledge sharing and transfer confirm that the presence of rewards and motivation facilitates knowledge sharing and transfer, while the absence of rewards and motivation hinders the sharing and transfer of knowledge. In multinational organizations, repatriates are an important source of knowledge and it is thereby necessary that they must be motivated and rewarded for sharing their knowledge. Therefore, there must be appropriate formal and informal knowledge-sharing mechanisms to motivate the repatriates for sufficient knowledge sharing and transfer in the organization. When reward is integrated into the culture of the organization, then, it strongly encourages the individuals to share knowledge. Research findings of (Durmusoglu, Jacobs, Zamantili Nayir, Khilji, & Wang, 2014) revealed that knowledge is gained in the organization when the rewards are linked with the organizational culture. Moreover, when an organization rewards for sharing knowledge in an organization, individuals are motivated to share knowledge, and in turn, they learn from each other, thereby resulting in organizational learning. Research to date emphasizes the importance of rewards and motivation for knowledge sharing and transfer by clarifying the lack of rewards and motivation as barriers to knowledge sharing and transfer. Extrinsic and intrinsic motivation are not only antecedents to knowledge sharing, but also predictors of knowledge-sharing behaviors (Tangaraja, Mohd Rasdi, Ismail, & Abu Samah, 2015). Therefore, in order to facilitate knowledge sharing, organizations should develop an appropriate reward system, as well as sufficient motivation.

Organizational structure tends to affect the transfer of tacit knowledge in the organization. If the relationship network of the professionals is designed to facilitate individuals to locate those who know what, then transfer of knowledge becomes easy in the organization (O'Dell & Grayson, 1998; Szulanski, 1996). Even if the structure of the organization is hierarchical, but it permits the people to access each other when they require desired knowledge, the hierarchical structure does not hinder the transfer of knowledge (Fahey & Prusak, 1998).

Importance of organizational structure in successful transfer of knowledge can be characterized from the fact that contemporary research on knowledge sharing and transfer has emphasized organizational structure as important factor that facilitates or impedes the transfer of knowledge in the organization. Research studies conducted during the time span 2010 to date emphasized the importance of organizational structure.

Social relations motivate individuals in an organization to act in such a way to benefit each other. Inkpen and Tsang (2005) are of the view: when individuals develop friendly relations with each other in an organization, there are more chances of knowledge transfer. Often such exchange of knowledge occurs in the organization through face-to-face communication and social capital. The role of social relationships in knowledge exchange has been a topic of intense debate in 2010. Key research findings of the publications in 2010 indicate that there exists a positive relationship between knowledge sharing and social relations or networks of individuals in the organization. However, research findings of Zhou, Siu, and Wang (2010) reflected that interpersonal trust and network ties are related to each other. Extending this notion, it can be presumed that in order to facilitate knowledge sharing and transfer, network ties among individuals should be established, which can be possible in the presence of interpersonal trust. However, in subsequent years, the relationship of social relations with knowledge exchange has been studied varyingly. Ghobadi and D'Ambra (2012) revealed in their research findings that cooperative interpersonal relationships tend to affect the knowledge-sharing behaviors significantly. Later, in 2013, Fullwood, Rowley, and Delbridge (2013) and Titi Amayah (2013) identified that social interaction and healthy social relationships among colleagues act as knowledge-sharing enablers.

Li, Chang, Lin, and Ma (2014) explained that tie strength, network centrality, and density of the network tend to affect the knowledge transfer process, in context of different cultures. Granovetter (1985) defined tie strength as the intimacy and frequency of interaction in a relationship between

two parties. Network centrality refers to the ration of actual number of relationships of individuals in a group to the maximum possible number of relationships in a network. On the other hand, network centrality means the intensity of attention or focus received by an individual in a relationship in relation to other members in a network (Granovetter, 1985).

Culture has been identified as one of the most important factor that enables or impedes knowledge sharing and transfer. Culture refers to a system of beliefs rooted in the society and expressed through the behavior of the people and organizations (McDermott & O'Dell, 2001). Culture as a significant variable has been studied predominantly in the last five years in relation to knowledge sharing and transfer. Clan culture is found to have a positive impact on the tacit knowledge-sharing behavior of the individuals (Suppiah & Singh Sandhu, 2011). Clan culture refers to the culture that promotes employees to share about them. There is prevalence of team work and programs for employees' involvement, a high commitment of employees to colleagues, and organization and corporate commitment to the employees'.

Culture acts as an antecedent to knowledge sharing, for example, innovative, community, and bureaucratic cultures tend to have a positive effect on the knowledge-sharing behaviors (Cavaliere & Lombardi, 2015). An innovative culture emphasizes on the creativity and entrepreneurship and it necessitates the organization to look for new opportunities in the industry (Deshpande, Farley, & Webster, 1993). Innovative culture enhances the employees' creativity, thereby enabling them to generate solutions and share knowledge, regarding those solutions with others. Bureaucratic culture, which focuses on following rules and procedures strictly, is found to have a positive relation with knowledge-sharing behavior of the employees. Deshpande et al. (1993) explained community culture as a culture where the entire focus is on cohesiveness of employees, rather than achieving financial and market share goals. Employees participate in decision-making and their satisfaction is top priority.

Knowledge-centered culture has been identified as an important antecedent to knowledge sharing in individuals with high levels of trust propensity (Ferreira Peralta & Francisca Saldanha, 2014). Knowledge-centered culture can be defined as a set of organizational values, norms, and beliefs on the basis of which the employees create, share, and apply knowledge in the organization. Knowledge-centered culture has been identified as a critical success factor of knowledge management practices (Ajmal, Helo, & Kekäle, 2010; Alavi & Leidner, 2001; Janz & Prasarnphanich, 2003).

Openness to change has been studied extensively in the Arabian context and has been identified as an important cultural attribute that facilitates knowledge exchange (Al-Adaileh & Al-Atawi, 2011). Basically, openness to change is having a high absorptive capacity and it also refers to the recognition of the need for change and thereby adopting change to enhance performance. Openness facilitates good communication in an organization (Magnier-Watanabe, 2011). Good communication along with a climate of trust, openness, and sense of collegiality helps in the creation of an engaging environment that facilitates tacit knowledge sharing (Nakano, Muniz, & Dias Batista, 2013). Openness has been studied in relation to knowledge sharing and transfer in the context of cultural attributes or elements. Although openness to change has not been studied extensively in the extant literature, it has a significant role in facilitating knowledge sharing and knowledge transfer.

Communication, as an enabler of knowledge sharing and transfer, has been studied extensively in the last six years, and it still holds value as a topic of debate among various researchers. Communication not only promotes voluntary knowledge-sharing behavior (Teng & Song, 2011), but it also increases the transfer of knowledge from one subsidiary to another (Miao, Choe, & Song, 2011). Communication has also been studied as an important variable with respect to knowledge transfer in high turbulent environment, as well as in the context of cross-functional teams (Jones & Mahon, 2012; Ghobadi & D'Ambra, 2012). Communication is found to be closely associated with the workspace structure, as knowledge-sharing practices of employees rely on the proximity which subsequently affects the communication of the employees (Coradi, Heinzen, & Boutellier, 2015).

Sometimes, individuals in an organization possess knowledge, but they tend to hide that knowledge. Although few extensive studies have been conducted in the past six years in the context of knowledge sharing and psychological ownership, psychological ownership has been identified as the most related variable of knowledge hiding (Peng, 2013). Psychological ownership refers to the belief of an individual that he/she has ownership rights to the object in question. Willingness to share knowledge is found to have a positive relationship with the psychological ownership of the person because it is assumed that the benefits achieved as a result of knowledge sharing are centered to the expert person (Constant et al., 1994; McLure Wasko & Faraj, 2000; Pierce, Rubenfeld, & Morgan, 1991).

Individual's willingness and eagerness to share knowledge have remained a topic of interest for researchers in the last six years. Review of the publications of 2010 and 2012 shows that knowledge sharing and transfer have been discussed in the context of individual's willingness to share knowledge. van den Hooff, Schouten, and Simonovski (2012) revealed in their research findings that the willingness to share knowledge depends on the emotions as well as the empathy of the sharer. This in turn affects his/her intentions to share knowledge with other individuals. Similarly, in case of multinational organizations, the willingness of the subsidiary to transfer knowledge to the headquarter has a significant effect on the process of knowledge transfer (Blomkvist, 2012). But those individuals who are willing to share and transfer knowledge must be recognized fairly through extrinsic and intrinsic rewards (McNichols, 2010).

Information technology has been identified as a major knowledge-sharing enabler (Mitchell, 2003). The role of information technology in knowledge sharing and transfer has become more significant with the passage of time because of the advancement in technologies. Song (2001) has identified various knowledge-sharing mediums related to the use of information technology like the use of intranet, emails, database, websites, bulletin boards, and electronic forums that effectively facilitate sharing and transfer of knowledge in and outside the organization. In subsequent years, many researchers have contributed in exploring the role of information technology in knowledge sharing and transfer. With the advancement in technology, many other tools of IT have been introduced, such as social media and web 2.0 technologies. Panahi, Watson, and Partridge (2013) highlighted the importance of social web tools in tacit knowledge-sharing behaviors. Similarly, web 2.0 technologies like blogs, wikis, and IM promote enterprise communication and facilitate enterprise knowledge sharing (Zhao & Chen, 2013). Social media is (Twitter) also found to facilitate both formal and informal knowledge sharing in organizations (Rathi, Given, & Forcier, 2014).

Top management support has been recognized as an important enabler of knowledge sharing. This variable relating to knowledge sharing has been studied extensively by researchers in the context of knowledge sharing. If the publications regarding knowledge sharing and transfer are scrutinized, it can be inferred that top management support has been studied and identified as a motivator or enabler of knowledge sharing (Cavaliere & Lombardi, 2015; McNichols, 2010; Titi Amayah, 2013). Support of the top management is found to have a strong effect on the behaviors of knowledge collecting and donating (Cavaliere & Lombardi, 2015).

Leadership plays a significant role in promoting knowledge sharing and transfer in the organization. A leader is responsible to develop trust among employees and motivate them to share and transfer their knowledge. Rivera-Vazquez, Ortiz-Fournier, and Rogelio Flores (2009) are of the view that managers act as a cultural barrier to knowledge sharing between employees. Leader promotes knowledge-sharing behavior in the organization through necessary measures. Leadership has been identified as an important enabler of knowledge sharing and transfer in the organization. Xue, et al. (2011) studied the concept of empowering leadership in relation with knowledge sharing. Their research findings revealed that empowering leadership significantly affects the knowledge-sharing behaviors of the individuals. Arnold, Arad, Rhoades, and Drasgow (2000) introduced five dimensions of empowering leadership that consist of leading by example, coaching, participative decision-making, showing concern for employees, and informing. Organizational structure, which is also a relating

factor to knowledge sharing and transfer, has an impact on leadership (Kim, Newby-Bennett, & Song, 2012).

Deterrent to knowledge sharing are the obstacles that hinder the creation of the new knowledge in an organization (Lilleoere & Holme Hansen, 2011). Previous research findings have revealed numerous barriers to knowledge sharing and transfer in an organization. Off all the barriers that hinder knowledge sharing in the organization, lack of trust has been proved to be the most important and extensively studied barrier that prevents knowledge sharing. Research findings of various studies conducted in 2010 on knowledge sharing and transfer revealed that lack of trust among individuals is the biggest barrier that inhibits sharing of knowledge with others in the organization. Interpersonal distrust hinders inter- and intra-organizational knowledge sharing. In addition to trust, motivation (extrinsic and intrinsic) and rewards affect the knowledge-sharing behaviors of the individuals. Lack of incentives and rewards systems can hinder knowledge sharing and transfer. Similarly, provision of motivation plays an important role for the knowledge sharer. Adequate motivation in the form of recognition, praise, and financial rewards encourages the knowledge sharer to share knowledge with his/her colleagues (Gururajan & Fink, 2010). Similarly, lack of fair compensation could impede the transfer of knowledge in the organization. The study by (Huang, Chiu, & Lu, 2013) highlighted that the absence of sufficient motivation to repatriates acts as a barrier in knowledge sharing and transfer.

Organizational culture has been recognized as a significant barrier to knowledge sharing by many researchers and leaders (David & Fahey, 2000). It acts as an obstacle to knowledge sharing and transfer in the organization. In this regard, Hofstede and Hofstede's (2005) cultural dimensions have been studied extensively in relation to knowledge sharing and transfer across diverse cultures. Power distance (PD) refers to the degree to which the individuals in a society accept lack of equality in an organization. A high power distance reflects culture, where a tribal system hinders the upward mobility. There is non-symmetrical relationship between the individual who provides and receives knowledge. Power and wealth are not distributed evenly and leaders are not questioned. Individualism/collectivism is the degree to which an individual considers him/her as a part of group or as a single individual. In a high collectivist culture, ties among the individuals are strong and individuals consider them as a part of the group. On the other hand, in a high individualistic culture, individuals have loose or weak ties among them. There is a prevalence of self-interest in a high individualistic culture.

Uncertainty avoidance, as a third dimension of culture, refers to the degree to which the individuals are hesitant to embrace ambiguity and uncertainty. In a high uncertainty avoidance culture, individuals are risk-averse and tend to show low acceptance toward strict laws, rules, policies, and regulations. Masculinity/Femininity refers to the degree to which individuals are willing to promote social values. In a culture of high masculinity, dependence of the traditional power prevails. There is less care for social welfare. These cultural dimensions have been studied extensively in China. Major research findings have proved that a culture of high power distance, low individualism, higher masculinity, and high uncertainty avoidance acts as a barrier toward knowledge sharing and transfer in Chinese organizations, as it prevents individuals from risk-taking and experimentation (McAdam, Moffett, & Peng, 2012).

When it comes to transferring knowledge across a dissimilar culture, openness to diversity comes into play. According to the research findings of Fong Boh et al. (2013), openness to diversity and multicultural workforce enables the employees to learn and transfer knowledge from the headquarter of the organization to subsidiaries. On the contrary, there has been an intense debate among researchers and some have identified openness to diversity as a barrier to knowledge transfer. They proposed that a high degree of cultural diversity hinders successful transfer of knowledge and results in worse performance of employees (Palich & Gomez-Mejia, 1999; Puck, Rygl, & Kittler, 2007). Likewise, when employees have less openness to diversity, they avoid knowledge sharing and

transfer. Furthermore, lack of communication in an organization has been identified as a barrier to knowledge sharing and transfer (Chen, Sun, & McQueen, 2010).

When there is lack of time and workload is heavy, sharing and transfer of knowledge become difficult. This has been verified by many researchers. Qureshi and Evans (2015) are of the view that time pressure acts as a deterrent to knowledge sharing. Because of increased competition, work pressure has also increased, which makes it difficult for the individuals to allocate time to get engaged in knowledge-sharing activities.

Researchers have identified heavy workload as the major reason for having limited or no time for knowledge sharing. Heavy workload acts as a barrier to knowledge sharing and transfer. This variable has been studied broadly as a barrier to knowledge sharing and transfer in 2010. Gururajan and Fink (2010) in their research findings proved that heavy workload in the organization prohibits individuals to transfer knowledge within an organization.

Lack of technology hinders the successful sharing and transfer of knowledge, which confirms it as a barrier. Ranjbarfard, Aghdasi, López-Sáez, and Emilio Navas López (2014) in their research findings declared lack of technical support as a barrier to knowledge generation, storage, distribution, and application along with organizational learning. High cost of knowledge sharing and limitation of IT has proved as a deterrent to knowledge sharing in the organization (Qureshi & Evans, 2015). They further explained that, despite the barriers to knowledge sharing, there is a desire in individuals to share knowledge and learn from each other. Insufficient support of top management and presence of poor leadership also hinder the successful sharing and transfer of knowledge in an organization. As identified by McNichols (2010), lack of top management support acts as a barrier to knowledge sharing and transfer. Furthermore, poor leadership on the other hand acts as a barrier to knowledge sharing and transfer (Qureshi & Evans, 2015). On the contrary, Ma, Huang, Wu, Dong, and Qi (2014) studied knowledge sharing in collectivist culture in China. Their research findings revealed that leadership style has no effect on knowledge sharing in China.

Lack of organizational commitment acts as a barrier in knowledge sharing and transfer in the organization. Organizational commitment can be defined as a power which induces individuals to stay with their employing organization (SamGnanakkan, 2010). There are three components of organizational commitment known as affective, normative, and continuance commitments.

Meyer and Herscovitch (2001) are of the view that an employee can go through all types of commitments during his/her tenure in an organization at capricious degrees. Affective commitment can be defined as the degree to which an individual is emotionally attached to his/her employer organization. Affective commitment also predicts that, to what extent, an individual identifies himself with the organization and gets involved in it (Newman & Sheikh, 2012). They further explained that individuals, who develop high levels of affective commitment, generate positive feelings for their organization, and they find it hard to leave. SamGnanakkan (2010) defined normative commitment as a degree to which employees feel obliged to the organization; continuance commitment, on the other hand, is related to individual's emphasis on perceived or calculated costs related to the employing organization (SamGnanakkan, 2010).

Organizational commitment has been studied as a mediating variable in the relation between knowledge-sharing predictors and knowledge sharing (Tangaraja et al., 2015); whereas, in another study, the relation between affective commitment and knowledge sharing is moderated by affective trust.

Similarly, lack of absorptive capacity has been identified as a barrier to knowledge sharing and transfer. Absorptive capacity can be defined as the ability of an individual to exploit the external sources of knowledge (Cohen & Levinthal, 1990). Absorptive capacity depends, in a great deal, on the previous related knowledge. Absorptive capacity is related to the receiver of the knowledge;

(Gururajan & Fink, 2010) discussed the relation of absorptive capacity with the use of ICT (information and communication technology). They found that, through effective deployment of ICT, absorptive capacity can be enhanced, which as a result will facilitate knowledge transfer in the organization.

Other barriers relating to knowledge sharing are change in technology, lack of discussion boards, lack of resources, etc. (Gururajan & Fink, 2010). Uniqueness of knowledge has been studied as a significant related variable of partial knowledge sharing (Ford & Staples, 2010). Lack of an appropriate system and absence of coordination have been identified as barriers to knowledge sharing (Ajmal et al., 2010). Lack of attention and appreciation and fear of being foolish have been identified as substantial knowledge-sharing barriers (Lilleoere & Holme Hansen, 2011). Ambiguity in the content and context of knowledge, along with the uncertainty, acts as barrier to knowledge transfer (Fang, Yang, & Hsu, 2013). Degree of tacitness has been identified as a significant barrier to knowledge sharing over social web tools (Panahi et al., 2013). Furthermore, lack of socialization among colleagues acts as a barrier to knowledge sharing (Qureshi & Evans, 2015).

4. Future directions

Knowledge management is an emerging concept, especially in developing countries. There is still much to study about knowledge management and its processes. Managing and sharing knowledge are essential for an organization in order to survive in a globally competitive environment. The result of this study has shown that knowledge sharing and transfer face challenges and issues in the form of certain barriers that hinder the successful sharing and transfer of knowledge. Yet, there are other factors that facilitate the sharing and transfer of knowledge within the organization, and as well as around the globe. Regardless of the contribution of numerous authors on knowledge sharing and transfer, there's still much to be explored. Knowledge sharing and transfer have been studied mostly in developed countries; studies in the same context can be conducted in developing countries. At the same time, there are little evidences of research regarding knowledge sharing and transfer in the education sector; therefore, this sector can be explored further. Hofstede and Hofstede's (2005) cultural dimensions in relation to knowledge sharing and transfer have been studied extensively in the Chinese cultural context; these cultural dimensions can be studied in different cultural contexts. The role of affective and cognitive trust in sharing and transferring knowledge can be explored further. With the advent of new technology, social media and web 2.0 technological tools are common. The role of social media and web 2.0 technological tools can be explored in promoting knowledge sharing and transfer. Online knowledge sharing and transfer in different cultural contexts and organizations can be studied.

Knowledge sharing and transfer across hierarchical levels in an organization can be explored. In this regard, the impact of organizational politics on knowledge sharing and transfer can be revealed. Attitude and behaviors of knowledge sharers and receivers can be studied particularly in a political environment.

What problems an organization is likely to face if knowledge is not shared or transferred within organization and its subsidiaries, across the globe, can be studied in detail. The impact of national culture can be studied in the context of knowledge sharing and transfer. Knowledge sharing and transfer also depend on the individual characteristics of the knowledge sharer and receiver. This concept can be investigated further. Communication is assumed to be the facilitator of knowledge sharing and transfer (Nakano et al., 2013). However, communication quality and quantity that are necessary to facilitate knowledge sharing and transfer can be studied. Furthermore, various formal and informal communication tools, at organizational level, can be investigated.

5. Conclusion

This systematic review attempts to provide the evidence base concerning knowledge sharing and knowledge management in organizational settings. Knowledge management and knowledge sharing have been the area of attraction for scholars and practitioners across many disciplines. The study

highlighted the obvious gap in literature about knowledge-sharing practices in developing countries. The available literature mainly focuses on knowledge management practices in relation to different work-related outcomes, and lack in its development, process mechanism, and implementation. Based on the review, it is evident that knowledge management and sharing are the most significant areas for future research. However, the nature and method of such processes will vary from organization to organization to meet the potential challenges. Therefore, a detailed and considerable research needs to be done in this direction. This study supports the view that knowledge management and knowledge-sharing practices will demonstrate a significant advantage for organizations, especially in developing countries where resources are limited. The process of developing informal relationships subsequently promotes employee learning processes that impact organizational performance and innovation. Thus, the organizations should pay considerable attention to develop strategies for developing and implanting knowledge-based activities.

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