FACTORS OF KNOWLEDGE SHARING: A LITERATURE REVIEW

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Abstract. *Since both academia and practitioners believe that knowledge sharing has become one of the critical ingredients for any organization to have competitive edge, knowing it with its totality is highly imperative. The purpose of this paper is to provide a more inclusive insight about various factors of knowledge sharing that has so far been discussed and empirically tested. A theoretical ground is provided in the introduction to provide strong justification for certain important factors so that the reader can get better idea of the initial concepts. Then, detail literature is reviewed to get better understanding of knowledge sharing itself and the factors affecting knowledge sharing from theoretical and empirical studies. The study is conducted with the help of collecting data from search engines such as Google scholar, papers published in renowned journals, conference proceedings and books. The results show that knowledge sharing factors such as shared goals, social network, social trust, subjective norms, attitude of employees, knowledge of the situation and perception of employees regarding situation play vital role in enhancing knowledge sharing behavior of the employees in an organization. This study has implications for both the researchers and practitioners.*

Keywords: *Competitive Advantages, Knowledge sharing, knowledge sharing factors*

1. Introduction

The extant literature is replete with discussion on knowledge management and its commonly known aspects (knowledge creation, compilation, dissemination/ sharing, & application). We posit that out of these four, knowledge sharing is the most sophisticated one as there is always fear of losing the ownership of something which is more delicate and once shared then it becomes hard to recognize the first owner. Because of this fact, the current study is restricted to

look into this aspect of knowledge management. To have more in-depth understanding, the study is further restricted to focus only on the direct effect of various variables on knowledge sharing; whereas, indirect relationships such as mediating and moderating have been excluded from the study scope.

Knowledge sharing plays a vital role in building collective knowledge, retaining the knowledge, increasing innovation, staying abreast of changes, and helping employees feel valued. And "an organization's ability to effectively leverage its knowledge is highly dependent on its people, who actually create, share, and use the knowledge" (Ipe, 2003, p. 341). For this purpose, a set of behaviors is required to actuate the knowledge sharing behavior of the employees of any organization (Chow & Chan, 2008). However, acceptability of a reality does not certify that the desired goal would be achieved. This requires active interaction among the employees, employing various techniques to convert individual knowledge into organizational knowledge (Alexandre, Martin, Li, Wentling, & Stuedemann, 2006; Nahapiet & Ghoshal, 1998) as it is very vital for the competitiveness of organizations. Organizations are required to motivate employees to be a part of this activity as employees have been found unwilling to participate in knowledge sharing (Du Plessis, 2007; Schmetz, 2002).

The importance and complexity of knowledge sharing, its barriers and factors that could improve it have widely been acclaimed (Alexandre, et al., 2006; Connelly & Kelloway, 2003; Donnelly, 2019; Endres & Chowdhury, 2019; Ho, 2009; Riege, 2005; Xue, 2017; Yu & Chu, 2007). The two theories—knowledge-based view of the firm (KBV) and resource-based theory (RBT)—have been given due weightage in knowledge sharing discussions (Woodworth & Marquis, 2014). In these discussions the commonly known factors like, information technology, organizational culture, employees' motivation, organizational structure and top management support, have been identified (Akosile & Olatokun, 2019; Alexandre, et al., 2006; C. J. Chen, Huang, & Hsiao, 2010; Koloniari, Vraimaki, & Fassoulis, 2019; Kwok & Gao, 2005). However, the effectiveness of these factors has always been acknowledged in the presence of strong social relationships (Cross, Parker, Prusak, & Borgatti, 2001; Lesser & Storck, 2001; Ramasamy, Goh, & Yeung, 2006).

However, both KBV and RBT are considered mechanical approaches to knowledge management and the same has been argued to have almost negligible relation with the willingness of the individuals that own it and the leadership that enables them to share it (Ishrat & Rahman, 2019). In other words, these studies have not brought under research discussion the theory of reasoned action (TRA) which purports that success, is critically affected by

mixture of both volition and leadership (Chow & Chan, 2008; Ishrat & Rahman, 2019; Ramasamy, et al., 2006; C. D. Wong, Wong, Hui, & Law, 2001). The central theme of these studies is that besides extrinsic rewards and organizational climate it is the high levels of social capital that makes the difference in terms of knowledge sharing. Researchers (e.g., Chow & Chan, 2008) through an empirical survey tested different social factors such as social network, social trust, shared goals combined with attitude and subjective norms with the objective to investigate their level of influence on knowledge sharing. The main limitations of these studies are: they have either contextual connotations (they have studied it from their cultural perspective) or wanting in conceptual wholesomeness. In other word, it has also to be noted that it is not only the theory of reasoned action (TRA) that could be the only driving force behind the decision, it is also the Attitude to Behavior Process model (knowledge of the situation and perception of employees) that affects employees' decision in knowledge sharing. Therefore, this study aims at providing literature review on different factors (i.e. Factors from social capital and TRA) along with two new variables (i.e. factors from attitude to behavior process model) (Fazio, 1986) effecting knowledge sharing behavior of employees, because they are integral part of the relationship.

Methodology

The literature review for the current study was done by searching different online databases such as Google Scholar and Springer (search engine). Various well reputed academics research journals such as FWU Journal of Social Sciences, Research in Business and Management, Academy of Management, International Journal of Management Review, Journal of Business Ethics, Journal of Business Ethics Quarterly and Business and Society Review were also included for the selection of research articles. To search the relevant literature key words and combination of words like knowledge management, knowledge creation, knowledge sharing, knowledge sharing, theory of reasoned action , social capital, attitude to behavior process model and certain factors effecting knowledge sharing, were used. In order to present systematic and detailed review, extant literature from 1970 to 2019 is covered. Since an extensive body of literature is available, it is not possible to include each and every published article in the aforementioned time period. Thus this study does not claim to provide any exhaustive review of the literature. To offer focused literature, only literature that has relevance with the theoretical framework is included.

2. Knowledge Sharing through Researchers' Gloss

Knowledge sharing is vital and critical area of research as it impacts an organization's potential for being competitive. Keeping its critical nature in mind, researchers have diversely defined it. According to Jackson, Chuang, Harden, and Jiang (2006), it is a "knowledge-centered activity". And with the help of this activity organizations exploit and capitalize on knowledge-based resources (E. F. Cabrera & Cabrera, 2005; Damodaran & Olphert, 2000; Davenport & Prusak, 1998; F.Cabrera & Cabrera, 2005).

The literature on knowledge management has used various terms for KS. The most commonly used term for KS is knowledge transfer (Awad & Ghaziri, 2007; Massa & Testa, 2009; Yahya & Goh, 2002). However, these terms stand for different aspects of knowledge in organization (Wang & Noe, 2010). Therefore, it will be good to discuss them individually so to distinguish them from one another. From knowledge transfer, researchers (e.g., Szulanski, Cappetta, & Jensen, 2004) mean movement of knowledge between different units, organizations, visions, etc. rather than among individuals. On the other hand, "knowledge sharing" refers to when employees provide knowledge to others and it also includes knowledge seeking when employees search or receive knowledge from others (A. Cabrera, Collins, & Salgado, 2006; Wang & Noe, 2010).

Researchers argue that knowledge transfer refers to the application of current knowledge from one person to another. It means that it takes place in one direction which gives an assumption that the owner is the exclusive source of knowledge. Whereas, knowledge sharing is considered as to be broader term than knowledge transfer which deals with the interactions, absorptions and invention of new knowledge which is believed to be in two directions and occurs between two or more individuals (Boyd, Ragsdell, & Oppenheim, 2007). Figure 1 represents very simple picture of two terms.

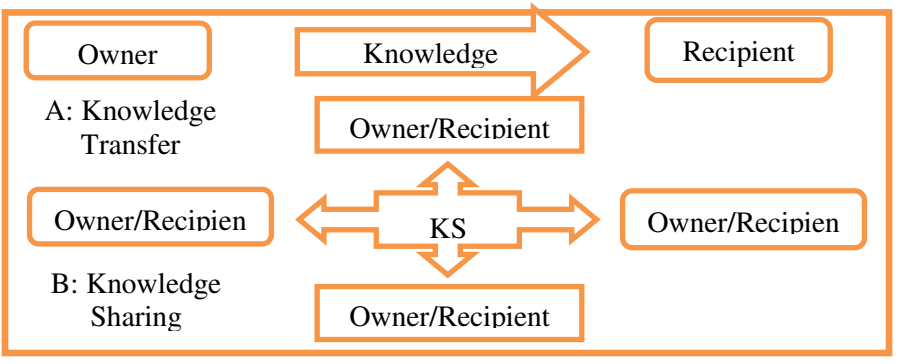

Figure 1 Difference between KS and knowledge transfer (Boyd, et al., 2007, p. 140)

However, the literature provides variety of definitions leading to different concepts of KS (Table 2). For instance, some definitions describe KS as activity (Jahani, Ramayah, & Effendi, 2011; T. T. Kim, Lee, Paek, & Lee, 2013; Lee, 2001). Others (e.g., Argote, McEvily, & Reagans, 2003; Van-den-Hooff & Ridder, 2004) view it as a process of sharing information from a person or group to others. Some believe it as a culture of sharing and exchanging information in an organization formally or among friends informally (Bartol & Srivastava, 2002; H.-F. Lin, 2007; Sohail & Daud, 2009; Svetlik, Stavrou-Costea, & Lin, 2007; Wang & Noe, 2010).

Table 1 *Definitions of Knowledge Sharing*

Author/s	Definition
Lee (2001, p. 324)	"Knowledge sharing as activities of transferring or disseminating knowledge from one person, group or organization to another".
Bartol and Srivastava (2002, p. 65)	"Knowledge sharing as individuals sharing organizationally relevant information, ideas, suggestions, and expertise with one another. The knowledge shared by individuals could be' explicit as well as tacit".
Argote, et al. (2003, p. 3)	It "is the process by which one unit is affected by the experience of another".
Van-den-Hooff and Ridder (2004, p. 118)	"Knowledge sharing is process where individuals mutually exchange their (implicit / Explicit) knowledge and jointly create new knowledge".
Lin (2007, p. 315)	"Knowledge sharing as a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization".
Svetlik, et al. (2007, p. 315)	KS is "a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization".
Sohail and Daud (2009, p. 129)	"Knowledge sharing is defined as exchanging experience, events, thought or understanding on anything (in general) with an expectation to gain more insights and understanding about something for temporary curiosity".
Wang and Noe (2010, p. 117)	"Knowledge sharing refers to the provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedures".
Jahani, et al.	"Knowledge sharing as activities of transferring or

(2011, p. 88)	disseminating knowledge from one person, group or organization to another".
Kim, et al. (2013, p. 687)	"KS is the activity by which information, skills, and insights are exchanged among organizational members"

In simple words "knowledge sharing is an activity through which knowledge (namely, information, skills, or expertise) is exchanged among people, friends, families, communities or organizations"[1]. As Kogut (1992) explains the difference in firms and markets is that of the sharing of individuals' knowledge within an organization i.e. organizations are considered social communities in which individual specially social expertise is transformed into practically useful goods and services by the application predefined organizational principles.

Most importantly, knowledge is considered to be a highly individualistic property and is embedded in specific social contexts (Fernie, Green, Weller, & Newcombe, 2003). And an organization's success is dependent on its ability to motivate and provide opportunities to its employees to share this individual property (Ipe, 2003). The four major factors identified here are: the knowledge itself; willingness/motivation to share; opportunities to share; and work environment. Besides this individualist aspect of knowledge it could be explicit as well which is formal and systematic and can easily be communicated (Nonaka, 1991). According to him the latter creates a "common cognitive ground" among employees to share the former. Therefore, both are important parts of organizational knowledge.

The literature provides different types of knowledge sharing process. For instance, Van-den-Hooff and De-Ridder (2004) classify this process into knowledge exchange and knowledge creation. Similarly, Lin (2007) refers KS as a medium of exchanging knowledge, information, skills and expertise among employees in an organization. Likewise, Chen et al (2010) point out that the process of KS consists of knowledge contribution, collection and utilization. In the view of Ipe (2003) KS process deals with the transmission and absorption of knowledge. From Davenport (1994) point of view, sharing implies a conscious act by a person who participates in the knowledge interchange even though he is not bound to do so.

[1] *(Wikipedia) Wikipedia. Knowledge sharing Retrieved 4th Jan, 2016, from* https://en.wikipedia.org/wiki/Knowledgesharing

Hendriks (1999) believes that knowledge sharing bridges two parties—the possessor of the knowledge and the receiver of the knowledge. Accordingly, KS serves as a linkage between two parties and also between individuals and organizations for achieving competitive advantage. Boland and Tenkasi (1995) are in agreement with him and conclude that knowledge sharing leads to organizational competitive advantage and successful production. For this purpose, knowledge creation requires "a process of mutual perspective taking where distinctive individual knowledge is exchanged, evaluated, and integrated with that of others in the organization" (p.358). Similarly, while analyzing knowledge, Huber (1991) finds it a combination of four concepts that deals with learning in organization—knowledge acquisition, distribution, interpretation and organizational memory. The researcher argues that knowledge sharing is related to the knowledge acquisition and its distribution. For Gupta and Govindarajan (2000) knowledge sharing includes knowledge search, its diffusion, receiving, and its absorption.

Besides, some researchers believe that KS process serves as opportunity of sharing knowledge from one person to another because sometime organizations without KS may not be successful though they keep highly qualified employees (Weiss, 1999). He further explains that KS comprises of somewhat two processes: knowledge collection and linkage of knowledge. The former process deals with the accumulation, loading and recording of knowledge, while the latter is related to knowledge hunting, searching for the source of knowledge and finding the needed knowledge. In the opinion of Jackson, et al. (2006) the process of KS from individuals perspective is, in which they contribute their skill, knowledge and information, and, from organization perspective through which shared knowledge serves for knowledge application leading to competitive advantage of the organization. It is commonly believed that knowledge sharing exploits and capitalizes the knowledge based resources with the help of sharing knowledge among individuals, within and across the teams (Damodaran & Olphert, 2000; Davenport & Prusak, 1998; F.Cabrera & Cabrera, 2005). Meanwhile, Reid (2003) describes KS as encompassing a knowledge vendor and knowledge consumer.

However, this study implies and agrees with the KS processes –knowledge contribution and knowledge collection, identified by Van Den Hooff and Ridder (2004). Several researchers have studied and empirically tested these two processes in different settings (Chen, et al., 2010; Kim, et al., 2013; Lin, 2007; Sohail & Daud, 2009; Teng & Song, 2011). The contribution of knowledge refers to the communication and exchange process of the information one owns with others (Sohail & Daud, 2009; Svetlik, et al., 2007;

Van-den-Hooff & Ridder, 2004). In the view of Bartol and Srivastava (2002), KS is related to sharing individuals ideas, skills, information with other persons. Similarly, knowledge donation from Cummings and Teng (2003) perspective deals with the successful transfer of knowledge from sender to the recipient. Wang and Noe (2010) argue that knowledge donation is related to provide solutions when there are differences in knowledge parameters among employees by providing a platform of common and shared knowledge. He states that if proper knowledge sharing does not take place in organization may cause many failures in completing tasks which will affect the competitive advantage in organizations.

Knowledge donation, by explanation is the willingness of the workers in organization to share their intellectual property-knowledge/experience with others (Ipe, 2003). However, it is impossible to share knowledge until one is willing to share it (Islam, 2010; Wang & Noe, 2010). On further explanation it is have been found dependent on the employees level of sharing knowledge with other in organization (Ipe, 2003). Besides, donation as the willingness of workers and level of sharing, Hendriks (1999) suggests that it deals with ownership of knowledge, and includes observing, communicating with them and facilitating them with proper information to enhance their own knowledge and efficiently solving their problems. Other researchers also agree with the concept of knowledge donation with Hendriks (1999) that it deals with the knowledge owner and the way it is communicated to solve others problems when required (Cummings & Teng, 2003; H.-F. Lin, 2007; Reid, 2003). Likewise, Boland Jr. and Tenkasi (1995) noted that personal knowledge is converted into group and organizational knowledge with the help of KS process. Thus, the organizations that establish such working environment that support the KS process and make the flow of information easy in that environment are likely to enhance their economic and other performances (Ipe, 2003; Jackson, et al., 2006; Krogh, 1998; Nonaka, Krogh, & Voelpel, 2006).

On the contrary, knowledge collection deals with the recipient perspective. It refers to the consultation of information seekers in view of getting response from the knowledge owners in the form of observations, interviews or other interactions (Van den Hooff & De Leeuw van Weenen, 2004). It deals with the acquisition and acceptance of knowledge from the available resources in the organization and from outsiders as well (Lin, 2007). It is argued that knowledge collection affects the eagerness of the knowledge seekers to seek, accept, acquire and absorb the knowledge from others in organization (Kim, et al., 2013). Thus knowledge collecting plays a key role in improving the performance of organizations because it enables organizations to handle, gather and provide knowledge in a more proficient way (Lin, 2007).

Therefore, it is accepted that these two processes play vital role in the organization learning which ultimately create an opportunity of organizational development via absorption capacity of the organization. While sharing provides easy access to the means of knowledge required for the betterment and development of the organization, it is the level of knowledge acceptance that provides opportunity for organizations' to create such knowledge (Nodari, Oliveira, & Maçada, 2016). It is clear from the literature that the processes of knowledge donation and collection are noticed by some researchers but still requires more attentions and expansion. Hence, This study, keeping in view the objectives, defines knowledge sharing as "a two-dimensional process", as stated by Van-den-Hooff and Leeuw-van-Weenen (2004) 'it is a process through which new knowledge is created by mutually exchanging the individual's (implicit / explicit) knowledge'.

3. Importance of Knowledge Sharing

It is obvious from the literature that knowledge sharing is one of the most important ingredients that plays vital role in the development of an organization (Lee, 2001; Nonaka & Takeuchi, 1995; Shin, 2004). While analyzing its role, researchers (e.g., Das & Van-de-Ven, 2000; Lee, 2001; Yassin, Salim, & Sahari, 2013) are of the opinion that KS as an important and key factor of KM processes in organizations. It is believed that knowledge held by an employee in an organization must be transferred to other workers for its proper utilization and effectiveness (Cabrera, et al., 2006). Sharing of knowledge leads to success, based upon the extent of sharing to which receivers obtain ownership of, the level of commitment to, and their satisfaction with this shared knowledge. Cummings and Teng (2003) believe that this causes value creation and vouchsafe organization with competitive edge. It is also argued that organizational effectiveness can easily be achieved via KM when KS is properly focused. However, knowledge sharing neither occurs by itself nor it is self-directed or self-creative. That is why it is argued that effective knowledge sharing, to some extent, depends on the capabilities of the employees and of management's intentions of managing the knowledge resources received through a linkage of interactions (Andrawina, Govindaraju, Samadhi, & Sudirman, 2008).

On further analysis it is evident that though knowledge sharing directly benefits the organization and employees, it also results in the creation of new knowledge which leads to innovation in organizations (Daud, Rahim, & Alimun, 2008; Nonaka, et al., 2006; Nonaka & Takeuchi, 1995). Many researchers emphasize on the importance of knowledge availability in an appropriate system whenever and whatever it is required in the organization

(Alavi & Leidner, 1999; Irma & Rajiv, 2010). It is believed that organizations can increase their skill, competence and value with the help of KS (Renzl, 2008).

While looking into the role of KS in affecting inter-organizational linkages, Hendriks (1999) argues that KS serves as a connector between the level of knowledge with workers and the level of organizations success in the form of competitive advantage. It is important because it creates opportunities for the maximization of organization abilities to meet those needs; in addition, it also provides solutions to organizational problems and improves upon its efficiencies that help organizations in gaining competitive advantage (Reid, 2003). This aspect of organization exhibits the primary aspect of successful project completion, especially for those greatly involved in innovation projects (Hansen, 1999). Similarly, it is considered as an indicator for measuring the performance and efficiency of an organization (Behery, 2008). By properly setting network for sharing knowledge organizations can get benefits of time reduction in producing products and delivering services (Alavi & Leidner, 2001; O'dell & Grayson, 1998). Extant literature recognizes employees motivation to share the knowledge by knowing that their knowledge sharing behavior is worth appreciation and will ease their work to achieve the organizational economic or competitive advantage (Lin, 2007).

Moreover, researchers claim that effective KS results in the cost reduction, risk and uncertainty minimization (Lin, 2007). It is argued that it helps employees to deal with complex problems and solutions which enable them to work with more care resulting in reducing the frequency of mistakes (Kharabsheh, 2007; Mughal, 2010; Reid, 2003). Likewise, it contributes in the establishment of organizational culture. Zucal (2016) provides five reasons to support KS as a key for successful organizational culture. He argues that it promotes employees input, builds accountability, helps to retain top talent, fosters creativity and eases the organizational pains. To support the importance of KS for organizations, Sethumadhavan (2007) exerts that it helps in fostering innovation by encouraging the free movement of ideas. He attributes a number of benefits like, market and customer understanding, development of product and services, identifying vision to support strategies, building competencies, reducing time for customer services and cost reduction with knowledge sharing. The results of all these benefits are: boosting of revenues and employee's retention in organizations.

Furthermore, many empirical studies have looked into diverse aspects of organizations that are affected by knowledge sharing. For instance researchers have found linkages between KS and social network (Chow & Chan, 2008; Hossain, Atkinson, Wigand, & Carlsson, 2012; Subramani & Rajagopalan,

2003), social trust (Abrams, Cross, Lesser, & Levin, 2003; Chow & Chan, 2008; Smith et al., 2006), shared goals (Daud, et al., 2008; Hislop, 2013) Daniel, Rob, 2002, attitude towards KS (I. Y. Chen & Chen, 2009; Kwok & Gao, 2005), subjective norms about KS (Bock & Kim, 2002; Ryu, Ho, & Han, 2003), individual perception of the KS (Chang & Chuang, 2011; Kwok & Gao, 2005) and individual's knowledge of the situation (Hendriks, 1999; Hsu, Ju, Yen, & Chang, 2007).

Keeping the role of knowledge sharing in organizations, it can easily be concluded that it has great bearings in educational institutions such as universities (Fullwood, Rowley, & Delbridge, 2013). It is also important in the sense that it is one of the factors that are employed in, for managing the information flow easily in education sectors. It helps in enhancing learning capacity both at individual and organizational level (Cheng, Ho, & Lau, 2009; Sizer, 2001). It is beyond debate that learning processes are greatly affected by the exchange of ideas, experience and opinions among faculties (Daud, et al., 2008). Studies conducted in Malaysia confirm that sharing of both explicit and implicit knowledge helps organization in enhancing its educational performance through exchanging the lessons, written materials, research projects and personal experiences (Cheng, et al., 2009; Zaqout & Abbas, 2012).

Because of the realization of the fact that knowledge sharing has many benefits, organizations invest considerable money and time to devise different knowledge management strategies. These strategies include the development of knowledge management systems (KMS) aims at facilitating the collection, storage, and distribution of knowledge (Wang & Noe, 2010). Despite this realization and thereby investing heavily in terms of time and money, researcher Babcock (2004) has estimated nearly $ 31.5 billion annual loss by Fortune 500 companies as a result of failing to share knowledge. According to researchers (Carter & Scarbrough, 2001; Voelpel, Dous, & Davenport, 2005) one of the main reasons of this failure is ignoring the critical nature of interpersonal and organizational contexts, coupled by individual characteristics that influence knowledge sharing. However, it is very easy to contend that management fails to manage knowledge sharing; in reality it is very hard to be satisfactorily successful in actuating it in the real business world. The validity of this claim can be easily be grasped by looking into the highly complex nature of knowledge sharing (Figure 2).

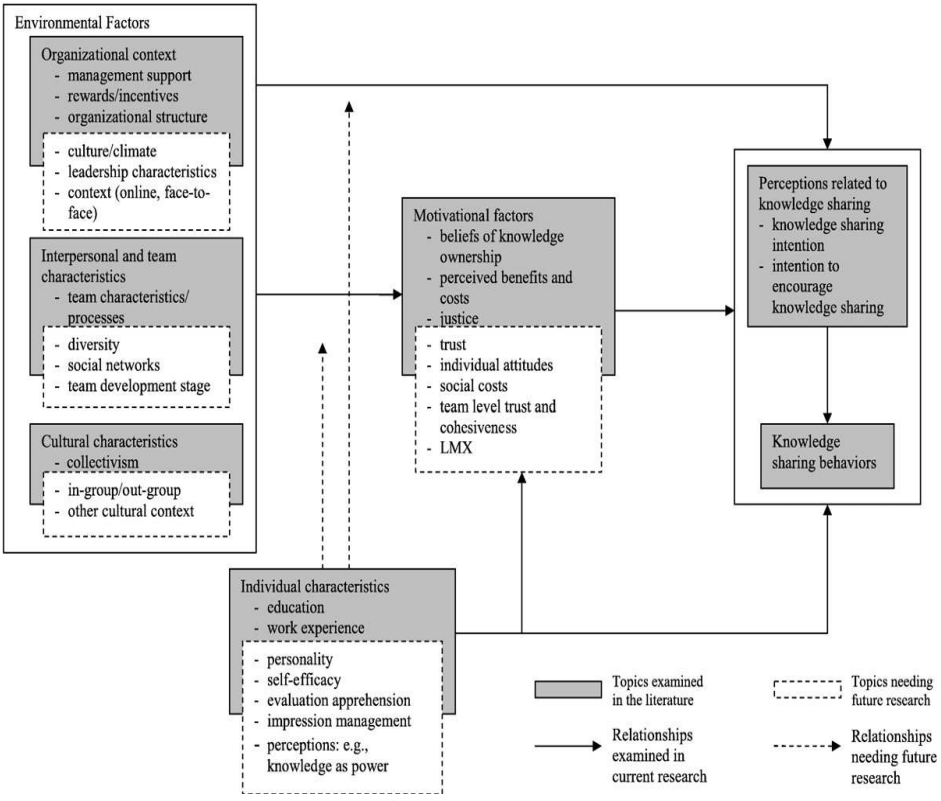

Figure 2 Knowledge Sharing Factors (Wang, Noe, 2010)

4. Knowledge Sharing Factors

No doubt knowledge sharing is vital for viability of any organization and at the same highly desired, it hardly occurs by default or in vacuum. There is a need of creating an enabling environment to actuate it. Correia (2011) describes KS enablers as a set or organizational conditions such as its design, managerial setups, technological infrastructures and culture that supports the knowledge sharing. In other words a sort of mechanism is needed that encourages employees' creation of new knowledge and exchange of it within the organization (Lin, 2007). Knowledge Sharing is referred to a process where employees mutually exchange/transfer their knowledge and together create new knowledge. As per KS process it supports the organizational members to acquire the knowledge and to disseminate it within organization (Van-den-Hooff & Ridder, 2004). Hence, it can be extracted from literature that KS leads to competitive advantage and enhanced organizational performance (Bartol & Srivastava, 2002; Ipe, 2003; Parekh, 2009).

Many researchers argue that KS enablers should be considered while studying and applying KM mechanisms (Wong, 2005). For instance, Kumar, Rose, & Rose (2012) explain that KS and various enablers of KS work together for the success of an organization. They contend that KM itself without these might not achieve the organizational objective of installing KM practices. It is believed that organizations face several difficulties in applying KM systems, including a lack of the commitment from senior management; absence of making knowledge operational; nonexistence of employee's motivation for sharing knowledge, acceptance, and adoption of best industry strategies; and lack of rewards and appreciation (Skyrme & Amidon, 1997). Additionally, researchers and practitioners believe that less contribution is made to relate and identify the importance of KS enablers in research. It is, therefore, believed that studies should be conducted to validate and expend studies on the same. They further suggest that due to tough market competition organizations should not ignore innovation as a decisive enabler for organizational success in the current telecommunication led world (Sáenz, Aramburu, & Blanco, 2012).

Existing literature provides a wide range of factors that affect KS practices. These factors may be summarized as: individual factors, organizational factors, and technological factors (Alexandre, et al., 2006; Barson et al., 2000; Cabrera, et al., 2006). Individual factors may include factors like trust, power, and social network; technological factors may include information technology systems; organizational factors may include leadership, reward system, and opportunities to share (Riege, 2005). In the view of Khan (2014) individuals serve as knowledge generators and knowledge receptors in the process of KS, whereas technological factors refer to the overall IT system including email, collaboration technologies, bulletin boards etc. He further elaborates that factors at organizational level refer to the organizational structures and these should be converted into process structures instead rigid structures focusing the library users rather than on libraries only.

The above list is by no means an exhaustive list. Others found that social networks, usability of IT systems, its friendliness, centralization, and reward systems based upon employee performance are significant variables that affect employee knowledge-sharing capabilities in public and private organizations (Soonhee Kim & Lee, 2006). Employee's motivation is only possible through an established KS culture that leads to trust among employees. To support the view, Kashif, Gleeson, and Aziz (2013) identify motivation, culture and trust as significant enablers of KS. They argue that employees should be motivated to share their knowledge within organization. Similarly, from cultural aspects, namely norms and values, have an impact on knowledge sharing within

organizations. Norms and values shape communication, verbal, formal and informal communications, guidelines, procedures, routines and the technology which ultimately impact knowledge sharing. Trust is believed to be the integral part of knowledge in KS. Researchers believe that culture plays key role in the establishment of KS practices (K. Y. Wong, 2005). Other studies conducted on knowledge sharing identify certain factors affecting KS. For instance, an empirical study conducted in Dubai Police Force, Seba, Rowley, and Delbridge (2012) identified that the major hurdles and challenges in sharing knowledge are the organizational structure, trust, leadership and time allocation.

Likewise, in a comparative study between 05 public and 05 private organizations conducted in South Korea by Kim and Lee (2005) reveals that structure of the organization, its culture, and information technology (IT) have significant effects on the KS capabilities of the employees. To support the applicability of IT, Cooper (2001) exerts that public sector organizations have started using state-of-the-art IT to support collaborative, knowledge oriented and communities for certain projects. A survey of 242 employees in Malaysian private sector organizations conducted by Hitam and Mahamad (2012) showed that implementation of IT and reward system enhanced the KS practices. Findings of another study revealed that barriers to KS at organizational level were inadequate IT system and lack of rewards system for employee's motivation. Whereas, strongest barriers at individual level were highlighted as "lack of time", "lack of interactions between employees" and lowest barrier as trust among them (Sandhu, Jain, & Ahmad, 2011).

When researchers talk about intrinsic motivation and willingness of employees, they are referring to a number of factors that affect them. Chow and Chan (2008), to some extent, have tried to present them in one model. In this model, they found that social network (SN) and shared goals (SG) are directly related to the subjective norms and attitude towards KS whereas, social trust (ST) is indirectly related to KS. Recently, Bautista and Bayang (2015) validate the findings of Chow and Chan(2008) and believe that SN, ST, and SG are significantly related to attitude, subjective norms and intentions towards KS (Figure 3). In addition, some researchers also argue that organizational participation alongwith SN, ST and SG helps in the esteblishment of trust among employees to share knowledge with each other (Coleman, 2005).

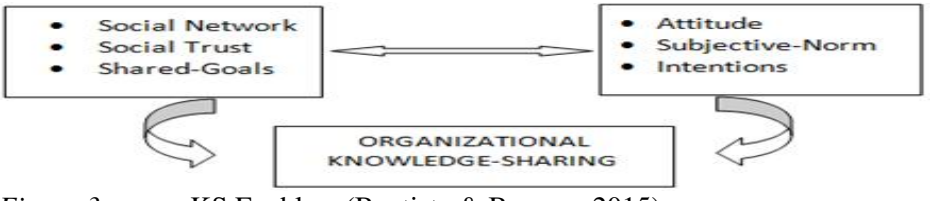

Figure 3 KS Enablers (Bautista & Bayang, 2015)

To extend the above model, in the view of Eaves (2014) factors such as motivation to share, opportunity to share, the type of knowledge, culture and nature of the employees are considered as important factors in knowledge sharing. In somewhat similar fashion, Nahapiet and Ghoshal (1998) have pinpointed three key factors named as norms, identification and trust contribute towards KS. Besides, when people believe that their experience and expertise can contribute towards improved work efficiency and upturn productivity, they will be more motivated to share knowledge with others (G.-W. Bock, Zmud, Kim, & Lee, 2005; Jarvenpaa & Staples, 2001; S. K. Shin, Ishman, & Sanders, 2007). Most importantly, it is argued that there is a distinction between different situations in which knowledge is exchanged among individuals with a purpose to apply existing knowledge to handle different situations for the creation of new ideas (Hendriks, 1999). A novel study by Bibi & Ali (2017) in the context of knowledge sharing behavior of employees of Pakistani Higher Education Sector reveals that job involvement, continuous commitments and job satisfaction are the most important factors and such Institutions should give due weightage for boosting the knowledge sharing behavior of employees.

The extent literature provides a deep and thorough insight of the various factors affecting knowledge sharing in an organization, but few still needs further attention. Keeping in mind the relative importance of some factors affecting knowledge sharing supported by extant literature, and has theoretical support are put for literature review in the current research. These factors are: social network, shared goals, social trust, and individual perception, individuals' knowledge of the situation, attitude and subjective norms are the most critical factors in the establishment of KS in an organization. Table 4 summarizes these factors with the extant literature. Thus, the scope of this study is limited only to these factors that are supposed to affect KS.

Table 2 *Factors Affecting Knowledge Sharing*

Researcher/s	**KS Factors**
Ajzen and Fishbein (1980)	Attitude of a person towards KS controls his or her intent towards his actual performance
Szulanski (1996)	Absorption capacity of the employees, Causal ambiguity – related to the factors in environment and situation, and hard relationship between knowledge contributor and knowledge receiving person are major barriers to share knowledge.
Cheng-Hua, Yuan-Duen, Wei, and Li-Ting (2007)	Social trust has a positive relationship with KS

Chow and Chan (2008)	Shared goals have a direct or indirect linkage with KS. There is a positive relation of shared goals and subjective norms and attitude towards KS.
Guo and Chen (2010)	Social network help to increases KS environment in organizations.
Davenport and Prusak (1998), and Khan (2014)	Individual's perception and awareness regarding KS plays vital role in the effective and efficient KS procedures.
Jolaee, Nor, Khani, and Yusoff (2014)	subjective norms are among important variables that greatly affect the KS intentions in academic structures

4.1 Social network and knowledge sharing

Social network is one of the factors that have a proven relationship with knowledge sharing. The validity of this relationship has been supported by various studies. For instance, Guo and Chen (2010) hold the opinion that social network (SN) is an interactive network composed of social contact of those people who mutually understand and recognize one another, which is akin to established relationship. Similarly, Krackhardt and Stern (1985) takes a wider picture of human relationship with one another and describe world as a network structure of societal actors and connections, connection is a channel of social sources, and actor find chance to exchange and make use of these sources through channel network. It is argued that information interchange and KS is based on a certain level of social network which encompasses the links between different individuals. These links can be categorized into four types: "friendship network, intelligence network, advisory network, trust network". Likewise, to be more specific about the friendship, an analysis conducted on the basis of social network shows that more friendship relations lead to higher efficiency of KS (Guo & Chen, 2010, p. 1716).

Similarly, in multi-division organizations, one division can learn from other division through divisional interactions and can acquire new knowledge developed by these divisions. This KS among divisions provide opportunities for mutual understanding and inter-divisional cooperation, which results in the creation of new knowledge (Tsai & Ghoshal, 1998). To elicit the importance of SN as an important factor in knowledge sharing, researchers argue that organizations that are able to maintain KS effectively between one section and another are more creative and more likely to sustain its productivity than those that are less proficient in knowledge sharing (Darr, Argote, & Epple, 1995). Similarly, others researchers have focused on internetwork; they remained attentive to a social network perspective where KS is explained largely by studying the individuals behavior to the social network in which the actors are

embedded (Reagans & McEvily, 2003). To make it more easy to understand, Kogut and Zander (1992) suggest that a ‘‘firm should be understood as a social community specializing in speed and efficiency in the creation and transfer of knowledge’’ (p.503). It has empirically been validated that there is significant relationship between the strength of social network and effective KS in an organization (Marouf, 2007).

It is argued that social networks greatly impact the behavioral intentions of human and it enhances knowledge sharing at both individual and organizational level. At individual level now a days communication has become easier via social networks technological tools such as twitter, LinkedIn, Face book, Skype, Viber, WhatsApp, and alike (Haque, Ahlan, & Razi, 2015). These tools play vital role in the establishment and maintenance of social networks among people. At organizational level, social network enables the high-acting knowledge workers to exchange most of the valued information with other people within their social circles (Iqbal et al., 2011). Besides, it is an important factor that stimulates the attitude of individuals towards sharing knowledge (Jolaee, et al., 2014). The role of SN as a positive and significance factor in molding human behavior towards KS has also been supported (Chennamaneni, 2007).

4.2 Social trust and knowledge sharing

To understand the complicated process of knowledge sharing social trust has its own distinctive position. Trust by definition is “the willingness of a party to be vulnerable to the actions of another party, with the expectation that the other will perform a particular action important to the trust or, irrespective of the ability to monitor or control that other party” (Liao, 2006, p. 229). This abstraction has been found having positive and significant relationship with tacit knowledge sharing (C.-P. Lin, 2007). For Hsu et al.(2007) trust is the collective name to “emotional bonds between individuals”, and is the predictor of knowledge sharing behavior, and has an indirect relationship with KS through self-efficacy. Similarly, Cheng-Hua, Yuan-Duen, Wei, & Li-Ting (2007) found that trust has a significant positive correlations with knowledge sharing. These views have support in the research by Chowdhury and Sanjib (2005). According to them, both “affect-based trust and cognition-based trust have significant positive correlation with knowledge sharing.

While researching the role of IT and online communication, many researchers suggest that greater level of trust is built through teamwork, and online communication affects task conflict, which as a result enhances the level of KS in organization (Ismail & Yusof, 2010). Similarly, Hung and Chuang (2009) exerts that trust within organization facilitates knowledge sharing

behavior among employees. Others expressing their ideas about trust as a knowledge sharing factor state that trust plays vital role in the establishment of KS behavior among employees which is positively and significantly related to KS Chow and Chan (2008). In simple words, there is wide rang consensus in recognizing the importance of trust as a key and crucial factor in sharing knowledge in an organization (Davenport & Prusak, 1998; Kramer, 1999; Nelson & Cooprider, 1996; O'dell & Grayson, 1998; Wathne, Roos, & Krogh, 1996; Zand, 1972).

4.3 Shared goals and knowledge sharing

Researchers and consultants hold that knowledge sharing is a somewhat reciprocal activity. This reciprocation becomes coherent if employees have common vision and goals which will help in gluing them in a successful relationship. Shared goals are defined as the "Goals that articulate what the teams stand for and their shared vision" (Global, 2017). If employees work in disarray, one can hardly think of opportunities where their individual tacit knowledge could find a channel for sharing with one another. It could be easily understood by an example that individuals with incomplete information usually provide incorrect feedback based upon their own assumptions while filling the blanks. Moreover, a team is not considered a team until it moves in the same direction and a team of individuals needs a common purpose to serve the need of the organizations. The existence of a coherent team appears to be instrumental in actuating KS. This coherence, in turn, can be achieved if the team members have some shared goals which would enable them to move towards to achieve the end (Larsen, 2005). And that is why there is a general consensus that management must establish a clear mission and goal to enhance the contribution of the employees to contribute in sharing knowledge happily (Yu & Chu, 2007) .

To make it more understandable, Chow and Chan (2008) explain that shared goals directly and indirectly affect the knowledge sharing behavior of the individuals. Their empirical findings revealed a positive relationship between shared goals and attitude towards knowledge sharing and subjective norms for sharing knowledge. These findings have been validated by recent research by Bautista and Bayang (2015). These researchers believe that shared goals facilitate knowledge sharing in an organization which helps in the establishment of trust culture, cooperation and participation in an organization. Findings of Bautista and Bayang (2015) disclose that SG are significantly related to knowledge sharing and supports subjective norms and intention to KS.

4.4 Individuals' perception and knowledge sharing

In the life of an individuals' perception plays a very great role in making decision. This perception differs from person to person; however, this perception is not always whimsical. It is defined as "the organization, identification, and interpretation of sensory information in order to represent and understand the presented information, or the environment" (Schacter, Gilbert, Wegner, & Hood, 2011) and " is the process of culmination of discovery" (Woodworth & Marquis, 2014, p. 421). There are certain factors that shape human perception. In that sense individual's perception about the necessity and exchange of information or teaching material plays important role in KS (Seonghee Kim & Ju, 2008). A study on factors affecting KS in the library of Dhaka Universities by Khan (2014) reveals that 91 percent individuals when asked for sharing knowledge perceived that users are friendly while sharing knowledge, 4.3 percent showed non friendliness of the users, and 4.3 were embarrassed to share knowledge. Similarly, researchers believe that multiple factors have contributed to the current "knowledge boom" and the most important one is sharing knowledge. Collectively, whatever the results are, it is individual perception of the reality that exists in the minds of the individuals (Davenport & Prusak, 1998). Empirical evidences supports that perceptions of information ownership play vital role in the knowledge sharing and have positive relationship with it (Jarvenpaa & Staples, 2001).

In addition, Wiewiora, Murphy, and Trigunarsyah (2010) opine that employee perceptions can stimulate the success of KS since it enhances the trust among workforce. Some researchers identify the types of perception such as Rahman (2011) believes that employees have six type of perception. These are: KS practices, the benefits, hindering factors, the activities, the technologies, and the motivation factors as perceived by the employees. To study them Hidayanto, Hapsari, Alfina, and Sucahyo (2013) conducted a study in Indonesian in IT consulting companies. They found that the most important factors involved in the establishment of KS system are dominant by the intrinsic aspects of the employees, rather than extrinsic aspects. These researchers conclude that it is highly essential that human perception must be known for evaluating the condition of KS in organization. The theory of planned behavior (TPB) elaborates that even in the presence of other variables such as attitude and subjective norms one should not ignore perceived behavioral control for evaluating the behavior of the employees (Ajzen, 1991).

4.5 Individuals' knowledge of the situation and knowledge sharing

Another important factor discussed in knowledge sharing enabler section is the knowledge of the situation in which knowledge is shared. Response to an external stimulus is something very common with all human beings. This"know-what," knowledge helps an individual as what action one needs to take. With this, the next higher level of knowledge is "know-how". It means knowing *how* to decide on an appropriate response to a stimulus. The next and the highest level of knowledge is "know-why" knowledge. All these complement one another and permit an individual employee to choose among the alternatives. This usually involves an understanding of underlying theory and/or a range of experiences that includes many instances of anomalies, interaction effects, and exceptions to the norms and conventional wisdom of an area (King, 2009). Extant literature suggests that "situated" means "in a physical setting" or simply "interactive" (Vera & Simon, 1993). In the words of Fracker (1988), situation awareness is defined as "the knowledge that results when attention is allocated to a zone of interest (i.e., the volumes of space that surround a pilot) at a level of abstraction" (p. 102). Likewise, Endsley (1988) view knowledge of the situation as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future" (p. 97).

To fully grasp the process of knowledge sharing, one needs to be well aware of the effect of various situations (Krishnananda, 1983). To explain it more easily, he equates it with the pressure of circumstances. He argues that human psychology may sometimes be surrounded by many things present in human mind at the time of sharing knowledge, some of which may be the sub-conscience. Therefore, in the determination of action, greater importance is given to the understanding and awareness of situation in which s/he is sharing the knowledge. Similarly, there are possibilities that sometimes situations of sharing knowledge are reciprocal, and the arrangements are different at the receiving end and delivering end (Khanna, Gulati, & Nohria, 1998). In addition, ignorance of situation as an important factor may lead to failures. For instance a study of more than 200 aviation calamities revealed that lack of situation awareness was identified as a leading factor of such mishaps (Härtel, Smith, & Prince, 1989).

Moreover, describing the requisition of situation knowledge, many accept that critical information is perceived via exploration and observation made by the individuals with a preset mind and certain expectations in an environment (Fracker, 1989). Similarly, Salas, Prince, Baker, and Shrestha (1995) treat situation awareness as a process based upon (state/goal), information

processing function and pre-existing knowledge (pre dispositions) as elicit in Figure 4.

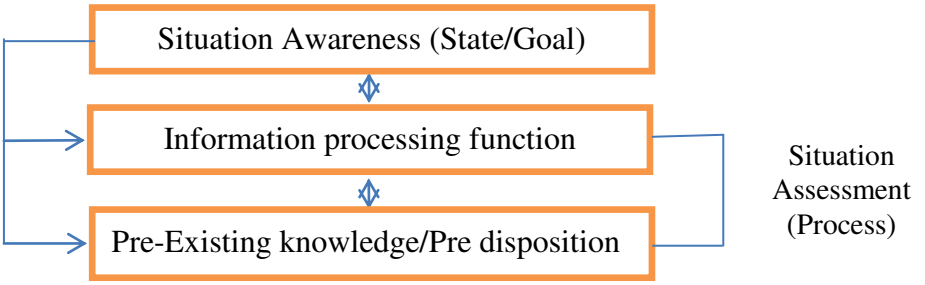

Figure 4 Individual Situation Awareness Model (Salas, et al., 1995, p. 126)

Situation awareness is a very important factor of KS. Szulanski (1996) identifies three types of barriers to share knowledge—the absorption capacity of the employees; the causal ambiguity (factors in environment and situation affecting knowledge interaction and responding in the process of KS); and the hard relationship between knowledge donor and receiver. This study is related to second barrier related to KS that is the factors present in the situation while sharing knowledge. As knowledge is a "subjective contextual construction", it is a continuum, social, and reflective process and a product of the situation in which it is situated (Weick, 1995). It is argued that in every situation a human performer is trying to identify and understand the situation by linking the situation with the perceptual model which results in the important indications leading to the awareness of the situation (Paulin & Suneson, 2012). To explore various aspects of situation development Endsley (2000) has employed the concept of situation awareness. He identifies the situation awareness at three levels—perception of the situation, understanding of the situation, and projection of the situation. It is suggested that the specific situation should be taken into consideration to verify the usefulness of content in any definition or knowledge (Paulin & Suneson, 2012).

4.6 Attitude towards knowledge sharing

In human action and inaction the role of attitude cannot be ignored. That is why it has also been given due attention in studying knowledge sharing. Attitude may be defined as a person's satisfactory and uncomplimentary evaluation of something or "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). Attitude towards a specific behavior is perceived as a person's assessment of that behavior when deciding to act upon it (Kim, Chun, & Song, 2009). It is considered to affect certain behaviors socially and has indirect

impact on the intention towards knowledge sharing (Haque, et al., 2015). Other researchers believe that attitude of a person towards sharing knowledge commands his or her intention towards his actual performance (Ajzen & Fishbein, 1980). Researchers are unanimous about attitude being an as important factor affecting knowledge sharing (Kuo & Young, 2008) (Tohidinia & Mosakhani, 2010).

If one wants to identify an individual's attitude toward knowledge sharing, the best way is to assess the belief of the individuals about KS (Ajzen & Fishbein, 1970). This apparent consequences of KS can effect attitude toward this behavior (Chiou, 1998). Other researchers argue that attitude may also act as a mediator between personal factors and intention to share knowledge (De Vries, Van den Hooff, & De Ridder, 2006). It is also believed that attitudes are extracted from the cognitive system and therefore potentially influence the intention to share knowledge (Yih-Tong Sun, Peter Scott, & L, 2005). To validate the relationship between attitude and knowledge sharing, Khan (2014) conducted a study in the library of Dhaka University and found that 82.6 percent respondents showed positive and confident attitude towards KS, 17 percent were enthusiastic to share knowledge, whereas none showed embarrassment or confusion towards KS. Similarly, a study on lawyers' attitude towards knowledge sharing by Olatokun and Nneamak (2013) also found that positive attitude towards KS leads to positive intention to share knowledge.

4.7 Subjective norms and knowledge sharing

By explanation, subjective norm is a normative belief without including motivation to comply. It is the perceived social pressure under which an individual behaves. Among many factors effecting knowledge sharing subjective norms have also been found instrumental. Subjective norm may be defined as "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991, p. 188). Subjective norms may be perceived as to the individual's perception of the expected behavior among special groups and in a certain condition (Ajzen & Fishbein, 1970). Researchers have explained subjective norms from various aspects. For instance, Lapinski and Rimal (2005) classify it in collective norms of persons' social network and of the society as a whole. They further classify these norms into two classes—injunctive and descriptive norms. Injunctive norms "refer to people's beliefs about what ought to be done" in certain circumstances; whereas, descriptive norms "refer to beliefs about what is actually done by most others in one's social group" (p. 130).

Norms play a very important social role. It is believed that norms define the mutual consent of community towards acceptable attitudes and behavior.

As institutions are also social entities, these norms greatly affect the KS intentions in academic infrastructure (Jolaee, et al., 2014; Skaik & Othman, 2014). To support SN to be important factor in sharing knowledge Tohidinia and Mosakhani (2010) opine that subjective norms are among the key factors that may influence the intention towards human behavior to share knowledge. Likewise, relationship of subjective norms with KS has been evidenced as significant in various studies (Lin & Lee, 2004; Ryu, et al., 2003). Similarly, for the acknowledge of individuals in their organization, subjective norms are considered important to support and form their intention for sharing knowledge (Sun & Scott, 2005). Likewise, Lapinski and Rimal (2005) identify that, social norms including subjective norms which have mixed effects on the human behavior which ultimately effects KS. Similarly, it is argued that attitude and subjective norms serve greatly on human behavior towards KS, as these together are considered predictive of behavior (Al-Swidi, Huque, Hafeez, & Shariff, 2014; Shih & Farn, 2008; Trafimow & Fishbein, 1994).

5. Conclusion

In conclusion, knowledge management has been considered as one of the main conditions for competitiveness of organizations in today's business environment. The knowledge creation, sharing, dissemination and application has become important for organizations to stay competitive. It was also observed that there is a need to contribute in the area of knowledge sharing in order to better understand its importance. Therefore, the current research has contributed to explore various factors effecting knowledge sharing in an organization .In addition, among many factors few factors with strong theoretical base (i.e. shared goals, social network, social trust, subjective norms , attitude of employees, perception of a situation and knowledge of a situation) were disused in detail. In future of the use knowledge management in organizations, they need to understand the consequences of knowledge management before applying.

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