

Empirical Investigation of Knowledge Sharing Obstacles in Education Sector of Pakistan

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ABSTRACT: *Tacit knowledge represents a key dimension in the concepts of knowledge management. This study explores the important factors relating to the sharing of tacit knowledge. The scope of the study was the education sector as knowledge is shared in class room environment on regular basis. Most of this sharing depends on the tacit dimension of knowledge held by the teachers. Researchers have found a number of factors acting as barriers and obstacles in the tacit knowledge sharing process. This study was aimed at identifying those barriers and reviewing their relationship to tacit knowledge sharing in the class room environment. All respondents accepted that there are many factors that resist tacit knowledge sharing activity in class room environment. There are several obstacles in sharing knowledge in class room environment. This situation can be improved by handling barriers like language, perception, time friendly interactions and discussions and organizational culture.*

Keywords: Tacit Knowledge sharing, Obstacles, Knowledge Management, Education sector

The concepts of Knowledge management have emerged over the years and have earned the reputation of a field of study, especially in the 21st century where competitiveness is the only source of survival. Knowledge has been regarded as a key asset and organizations are focusing on developing activities and processes to create, acquire and transfer knowledge among organizational members for effective organizational performance and growth.

Bhatt (1998) describes that knowledge management is a process to create, validate, present, distribute, and apply knowledge. Organizations learn, reflect, unlearn, and relearn through these five phases in knowledge management, which are usually essential to build, maintain, and replenish the core-competencies of the organizations.

Literature Review

Although we find different classifications of the term knowledge such as the world famous Tacit-Explicit dimension of knowledge by Nonaka & Takeuchi (1990) and rather delicate classification of knowledge by Collins (1993), it can be established that the Tacit vs. explicit and micro vs. macro dimensions of knowledge generates five classes of knowledge: 'embrained', 'embodied', 'uncultured', 'encoded', and 'embedded' knowledge. Blacker (1995) used these to define the various 'shapes and forms' of knowledge within organizations.

Embrained Knowledge (individual-explicit) represent the conceptual skills and cognitive dimension of the individual. This knowledge is mainly symbolic, abstract, or theoretical. For instance 'knowledge and understanding' about the established truths and laws of nature, entail this category. Nonaka's (1994) concept of 'knowledge of rationality' explains that such knowledge is rational, logical, and deductive. Embrained knowledge can be used and applied to different situations because it is mostly shared knowledge and can be transferred easily.

Embodied knowledge (tacit-individual) is individual knowledge relating to actions; this knowledge is practical in nature Polanyi (1962; 1966). Nonaka (1994) adopted the term 'knowledge of experience' to define that such type of knowledge is created through hands-on-experience or through a common notion known as 'learning-by-doing'. Embodied knowledge encompasses practical experience (doing) whereas; embrained knowledge depends on theoretical reasoning ('knowing'). Embodied knowledge is also situation specific; it is 'specific knowledge' which can prove useful only when a problem is there (Barley, 1996).

Encultured Knowledge is shared understandings of a certain group of people. It is reflected through cultural norm and beliefs. Such understandings are developed through socialization and language hence likely to be open for negotiations.

Encoded knowledge (collective-explicit) is knowledge put across by symbols, signs, and codes. Such knowledge is codified and stored in prescribed standard procedures, formulas, formal described rules and regulations. It is more like a public general knowledge which is available to the whole organization for use and understanding. For example, knowledge has been codified for an accounting officer using a spreadsheet template on his computer to analyze a certain client's performance, (Bonoar and Revang, 1993: 204).

Embedded knowledge resides in the organization in collective form of tacit knowledge, reflected in systematic routine operations and practices. Badaracco (1991) defines this form of knowledge as coupled with the complicated social structure and relationship among team members, which is difficult to articulate and transfer. It resides in organization's 'communities-of practice', as referred by Brown and Duguid (1991) to denote learning that is interactive in nature and constructed on social grounds. Nelson's and winter's (1982) idea of 'routines' also reflects how a major portion operational knowledge is embedded in the particular system practices and social structures. Embedded knowledge is dynamic and organic; it is constantly evolving and supports complex interaction pattern when written rules are not available.

Tacit Dimension of Knowledge: Knowledge is classified in a number of dimensions such as explicit, implicit, and tacit. This means that "we know more than we can tell". Research studies of various disciplines defines tacit knowledge as personal, experience based, difficult to fully articulate, contextual in nature, specific to a person's job, being held knowingly or unknowingly, difficult to transfer, and have the ability to become explicit knowledge and vice versa (Gourlay, 2002, 2004).

Polanyi (Polanyi, 1966) referred to tacit knowledge as a person's background knowledge used in attempts to understand and clarify something presented to him. Therefore, this form of knowledge holds an emotional as well as a cultural dimension. It may be thought of as intuition and impressions.

Tacit knowledge also termed as silent knowledge is defined as "being understood without being openly expressed" or knowledge difficult to define in words. Tacit knowledge is routine, requiring little time or effort

and supports to identify how organizations make decisions and how they affect the collective behavior of all members. Tacit knowledge is highly personal, subjective, and informal in nature and can be contingent to what others say (Sternberg, 1997). Therefore, this knowledge cannot be found in any observable form like manuals, books databases, or files.

Tacit knowledge is also complex or technical reflecting the mental models, values, beliefs, understandings, perceptions, judgments, and interpretations. Moreover it is reflected when a person develops a mastery over specific a field demonstrates skills like a master craftsmen.

Difficulties for Tacit Knowledge Sharing: The ratio of tacit knowledge being transformed to explicit information is growing. The ability to handle codified knowledge has become crucial for the firm (Nielsen and Lundvall, 2007).

Social interactions provide best support for fostering tacit knowledge (Nonaka and Takeuchi, 1995). Despite deliberate efforts of the organization to manage, sharing knowledge among organizational members takes place to some extent. Knowledge is shared everytime when a worker asks his senior of colleague how to handle a work related problem and the other persons provides help (Chua, 2003). Knowledge sharing is most important for effective knowledge management.

A major goal of KM research and practice identify the best ways for facilitating knowledge sharing among organizational members effectively (Desouza, 2003). Knowledge sharing is viewed as behavior sets for knowledge sharing consisting of various elements such as actors, content, organizational context, appropriate media, and social environment (Lee and Suliman, 2002).

Recently, many researchers have referred to knowledge as an organization's most important resource because it is part of the complex routines, operations and considered as intangible assets that are hard to reproduce (Wasko and Faraj, 2005). The management literature depicts that leadership, especially from middle management is the key for effective knowledge sharing environment (Gottschalk, 2006).

Lee and Suliman (2002) suggested model of sharing knowledge which includes five factors: the actors participants in the activity, the attributes of knowledge being shared, the channel used to communicate, the organizational dimensions and the environment. Ruggles (1998) by investigating 431 US and European organizations explored that one of the most important requirements for effective sharing of knowledge is

culture of the organization (54%), Hierarchical structure of the organization (28%), information and communication technologies (22%), rewards and incentive system (19%), and employee turnover (8%).

Researchers have found that there are strong prospects to develop a knowledge sharing culture within organizations. This is possible by subordination of knowledge in the Organization's business strategy and by modifying behaviors of employees for enhanced willingness to share knowledge (Lee and Choi, 2003). Smith (2005) further exclaimed that everyday social interactions either formal or informal help form individual opinions and insight. It is difficult to change these mindsets and many well planned KM initiatives have not been successful due to unfavorable employee beliefs.

Successful companies in the new era are those capable of acquiring knowledge and leveraging it for others. Siemen's sale team in Malaysia, for example, was able to secure a large telecommunication contract primarily because of the knowledge experience and gained by their peers in Denmark (Chua, 2003).

Hypothesis Development

The difficulties in sharing tacit knowledge are associated to perception and language as well as time (Herrgard, 2000). Perception and language are considered the main difficulties in sharing tacit knowledge.

Tacit knowledge exists in non verbal form which represents a difficult challenge (Lin and Lee, 2006). It is difficult for people to convey what they know. Tacitness of knowledge is a function of increase in experience and deeper understanding that leads to even greater problems in capturing such knowledge. The resulting problem can be increased difficulty to convey tacit knowledge. Companies must open up the communication channels through organizations (Chua, 2003).

Perception is identified as cognitive process of identifying stimuli, organizing the data and explaining the obtained information" (Gilcrest, 1980). The problem here is that people are not aware of their true potential of acquiring knowledge and the full range of knowledge they hold (Polanyi, 1958). The intuitive dimension is harder to express (Herrgard, 2000). This kind of knowledge is a natural part of our personality or perception. Just as we are normally not conscious of our heart beats similarly we may not be conscious about the tacit knowledge we hold (Polanyi, 1958). Time also adds to the challenge for tacit knowledge sharing. Sharing of Knowledge needs a lot of time considering either for

individual and organizations (Bennett and Gabriel, 1999). Tacit-ness in an individual's work can only be developed when one not only experiences and have considerable time to reflect on these experiences. In today's fast moving business routines time for reflection is limited. New employees get insufficient time for introduction and same is the case for currently employed who are also on tight schedules. Pressure to meet deadlines and fewer employment opportunities today results in a situation where employees are not willing to devote needed time to acquire tacit-ness in their knowledge. This suggests the first three hypotheses:

Hypothesis No. 01

H₀= specific group of key respondents **disagree** with the statement that "language is a barrier in sharing tacit knowledge."

H₁= specific group of key respondents **agree** with the statement that "language is a barrier in sharing tacit knowledge"

Hypothesis No. 02

H₀= specific group of key respondents **disagree** with the statement that "perception is a problem in sharing tacit knowledge"

H₁ = Specific group of key respondents **agree** with the statement that "perception is a problem in sharing tacit knowledge".

Hypothesis No. 03

H₀= People believe that "time is not an obstacle in sharing tacit knowledge."

H₁= Group of key respondents **disbelieve** that "time is not an obstacle in sharing tacit knowledge".

The most significant factor is weak relationship between the two important factor of knowledge sharing, the knowledge holder and the recipient of knowledge. In the absence of a strong personal tie that ensures listening to and willing to help others, knowledge sharing is discouraged (Chua, 2003).

Social activities and employee networks serves as useful tools for motivating staff to not only share but also exchange knowledge with one another. Social networking, mentorship, events, indoor and outdoor group activities, and face-face interactions are part of such activities having strong personal contact (Herrgard, 2000).

One good example of network application is "Knowledge cafes", where employees gather for discussion on common interest topics. Such interactions results in a positive reinforcement by positive appraisal and appreciation the senior managers, colleagues and

juniors. This creates strong interpersonal relationships (Yang, 2004). This proposes the following hypotheses:

Hypothesis No. 04

H₀= People believe that "friendly interaction/discussion will have a **negative** effect in the tacit knowledge sharing attitude."

H₁= People believe that "friendly interaction/discussion will have a **positive** effect in the tacit knowledge sharing attitude.

Organizational culture is the most frequently cited factor supporting knowledge sharing (Yang and Chen, 2007). Long and Fahey (2000) found that there are four different ways in which culture affects KM supportive behaviors. Organizational culture is thought to be critical enabler of effective knowledge sharing activities (Lin, 2007). According to McDermott and O'Dell (2001), in a knowledge sharing supportive culture, employees share their insights and understanding because they see feel like it not because they are expected to do that as part of their job descriptions.

Most of the well organized KM initiatives have not been successful due to divergent employee beliefs (Lin, 2007), Due to the fact that it is difficult to control and apply knowledge sharing practices, organizations need to identify methods to encourage employees to share their insights and opinions with their team members. If the KM system does not match with the expectations of the users, then the users will stop using the system at the same time this will result in failure to improve organization's performance (Kim et al., 2007). In contrast to this, a user friendly, easily accessible and reliable KM system results in productivity increase in the process and outcomes of users' creation, sharing, and utilization of knowledge.

An effective reward and incentive system would serve as a strong tool for involving members of the organization in creating and sharing high quality knowledge. Moreover, several researchers argued and provided much empirical evidence on the usefulness of rewards in facilitating KM such as learning motivation and knowledge sharing intents (Bock and Kim, 2002). Intents to share knowledge cannot be obtained just by putting in some KM system, it the contrary it requires a deeper motivation to share knowledge on a regular basis (Pan and Scarbrough, 1998).

As the expectancy theory (Vroom, 1964) suggests that the better the consequences perceived to be following an action, the more people are encouraged to perform that action. According to the organizational behavior perspective, extrinsic motivation (rewards) has proved to have significant positive impact on active participation

of workers. It has been established that extrinsic motivation like financial incentives and appreciation and recognition can encourage knowledge sharing (Lin, 2007). Employee extrinsic motivation to share knowledge is an outcome belief that is typically based on employee perceptions of the value of association with knowledge exchange. This suggests the following hypotheses:

Hypothesis No. 05

H₀= People disbelieve that “the level of supporting organizational culture will increase tacit knowledge sharing.”

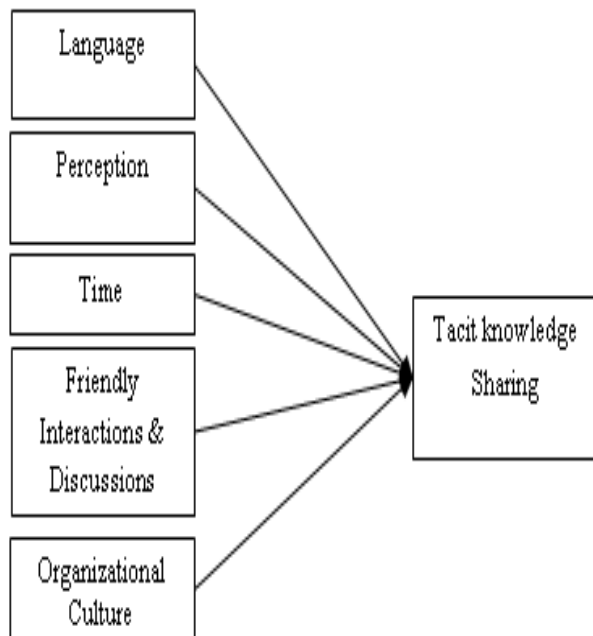
H₁= People believe that “the level of supporting organizational culture will increase tacit knowledge sharing.”

The overall model for the tacit knowledge sharing with the key factors associated is as follows:

Research Methodology

Sample and Procedure: The population of the present study is the lecturers and assistant professors of various public sector universities and a private sector educational institution. A questionnaire is used for this purpose. A total of 70 structured questionnaires are randomly distributed among the above mentioned randomly selected organizations. Out of 70 questionnaires 55 are returned. The response rate is 78.5 %.

Study Design:



Research Findings

Respondent’s Characteristics: The total no. of respondents was 55 including 56.4% male and 43.6% female respondents. The age distribution included 36.4% respondents were from age group of 20-30 years. Out of total 55 respondents 60% respondents were having more than 5 years experience. 34.5% respondents were from GC University Faisalabad and 30.9% were from Punjab College Faisalabad. 63.6% respondents claimed that their institutions have spent less than one year in utilization of knowledge management systems as exhibited in Table - 01.

Demographic Information Table: 01

		Count	Column N %
GENDER	MALE	31	56.4
	FEMALE	24	43.6
AGE	20-30	20	36.4
	31-40	5	9.1
	41-50	19	34.5
	<50	11	20.0
EXPERIENCE	>1	0	.0
	1-2 year	1	1.8
	2-3 year	7	12.7
	3-4 year	14	25.5
	5 & above	33	60.0
NO. OF EMPLOYEE	> than 200	3	5.5
	200-300	4	7.3
	300-400	8	14.5
	400-500	12	21.8
	<500	28	50.9
INSTITUTION	UAF	10	18.2
	NTU	9	16.4
	GCUF	19	34.5
	PGC	17	30.9
KMS UTILIZATION	> than 1	35	63.6
	1-2 year	17	30.9
	2-3 year	1	1.8
	3-4 year	0	.0
	4-5 year	1	1.8
	< than 5 year	1	1.8

Descriptive Statistics Table: 02

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Language as barrier in TK	55	1.67	3.33	5.00	4.375	.48455	.235

Table above describes the result of descriptive statistics which is calculated through SPSS. Here the total no. of observations is 55 for the said research problem, which includes the sample of both male and female. The mean value of the targeted set of questions for addressing the hypothesis of “language is a barrier or not in sharing tacit knowledge” is 4.357 for the collective set of question 07, 08, and 09 respectively for the measurement of addressed problem statement. The maximum and minimum value is from 5 to 3.33 respectively with a range of 1.67. The mean value indicates that response is stretch out between agree and extremely agree which is stated likert scale in the present study. These results indicate that that most of people have respond in this likert scale categories. The value of standard deviation is .48 which quite low in the stated results indicating the very low level of deviation in the mean value. The value of the variance is .235 which is just sum squared deviation from the mean / average value of available sample form the population size. So from the above stated results researchers have rejected the null hypothesis and have accepted the alternate which states that “language is a barrier in sharing tacit knowledge”.

Descriptive Statistics Table: 03

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Per. as barrier in TK sharing	55	3.00	2.00	5.00	3.8848	.58520	.342

Table 03 described the significant outcomes of present research by considering the perception either as the key barrier or not in tacit knowledge sharing. The said issue has been addressed by asking the question 11, 12, 13 from the key respondents. Here the mean value is 3.8848 which indicate that the group of targeted respondents from the overall population have a response in concerning the natural and agree on the stated likert scale. The minimum and maximum value is 2 and 5 respectively with a range of 3 indicating that people are quite agree with the statement that perception is a barrier in the tacit knowledge sharing. So we have rejected the null and accepted the alternative hypothesis.

Descriptive Statistics Table: 04

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Time as barrier to TK sharing	55	1.67	3.33	5.00	4.375	.48455	.235

The third addressed problem “whether time is a barrier in tacit knowledge sharing or not” is measured through the questions 13, 14, and 15 from the key respondents. Table above described the descriptive outcomes of the stated problem which indicates that respondents are quite natural and strongly agree with the time as a key obstacle in tacit knowledge sharing. Here the mean value is 4.357 which specify that through these set of questions time must be considered while sharing the tacit Knowledge. So from the stated outcomes researchers have rejected the null and accepted the alternative hypothesis that group of key respondents **disbelieve** that “there is no time obstacle in sharing tacit knowledge”.

Descriptive Statistics Table: 05

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Friendly Interaction and TK sharing	55	3.00	2.00	5.00	4.375	.58463	.342

Descriptive Statistics Table: 06

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Org. culture and TK sharing	55	3.33	1.67	5.00	3.375	1.10564	1.222

Table 04 and 05 demonstrate the descriptive statistics outcome of the study. Here the outcome is with a mean value of 4.357 of the stated problem friendly interaction/ discussions will have/ or not a positive/negative effect in the tacit knowledge sharing in table 04. The stated value make it quite obvious that key respondents are agree and strongly agree that there is strong positive outcome in tacit knowledge sharing with friendly meeting/ discussion.

The last stated research problem with the hypothesis that “the level of supporting organizational culture will either increase/ decrease tacit knowledge sharing” has been addressed with the same procedure. Table 05 stated the outcomes for the said research hypothesis. The mean value of 3.357 indicates that people are quite agreed with the statement that supporting organizational culture will increase the sharing of tacit knowledge sharing. So from the above stated results researchers have rejected the null hypothesis and have accepted the alternative.

Reliability analysis: Reliability of the research is considered in an attempt to determine the research instrument, so that the author can assure that the collected data is valid and reliable. Reliability of the research is measured by Cronbach’s alpha which is the most common form of reliability coefficient, and the

alpha should be 0.70 or higher in order to retain the reliability (Ghauri and Gronhaug, 2002). In this research the reliability coefficient alpha is 0.725 (Table- 07). Hence, alpha is higher than 0.7, therefore, the questionnaire is appropriate for using in the survey (Cronbach's alpha statistics can be seen in the table-7).

Reliability Statistics Table: 07

Cronbach's Alpha	N of Items
.725	8

Almost all respondents agreed that TK sharing is a problem. The survey results highlighted many barriers in TK sharing and different respondents gave different responses to each barrier. Almost all respondent strongly agreed that language serves as a major barrier in TK sharing. Perception of the sender as well as the receiver plays an important role in sharing tacit knowledge. Most respondents agreed to importance of perception. Almost all respondents agreed that lack of friendly meetings and poor social interaction resists knowledge sharing.

Most of the responses of the survey suggest that Organizational culture is vital to TK sharing, as culture promotes knowledge sharing among organizational members. Similarly availability of time is also agreed to be a barrier for TK sharing where most respondents strongly agreed. Many respondents agreed that rewards are also crucial to either discourage or encourage sharing tacit knowledge.

Conclusion

Tacit knowledge sharing is an important issue for the education sector especially by teacher in the class room environment. Most of the respondent of the study acknowledged that tacit knowledge sharing is a complex phenomenon and requires a great deal of effort and willingness to be shared with others. All teachers also accepted that there are many factors that resist tacit knowledge sharing activity in class room environment. This is the kind of problem a teacher faces all the time. There are several obstacles in sharing knowledge in class room environment. This situation can be improved by handling barriers like language, perception, time friendly interactions and discussions and organizational culture. Improving TK sharing will result in successful implementation of knowledge management practices in the education sector especially in the class room environment. This research is confined to the responses of teachers only and the researcher has intentionally ignored the input of students in studying the same variables. Further studies can be conducted in the same

dimension and students can also be included in the research.

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