

# The pattern of knowledge sharing in organization with social interaction approach: a case study in the research department of national Iranian oil engineering and construction company

Seyed Mehdi Alvani<sup>1</sup>, Qanbar M. Elyasi<sup>2</sup>, Yousef Vakili<sup>3</sup>

<sup>1</sup>Public Administration, University of Allameh Tabataba'i, Iran; <sup>2</sup>Faculty of Entrepreneurship, University of Tehran, Iran;

<sup>3</sup>Public Administration, University of Tehran, Iran

## Abstract

The aim of this study was to provide the pattern of knowledge sharing in organization with social interaction approach. This is an applied, and descriptive-correlational research. The population consisted of senior experts and executive managers of the research department of national Iranian oil engineering and Construction Company. Thirty subjects were selected purposefully who directly involved in the project of knowledge sharing in organization. For data collection, the questionnaire and for data analysis the regression and structural equation modeling were used. The findings indicated that knowledge sharing activities, including sender, recipient, organizational context, and knowledge sharing mechanisms have a significant positive correlation with the function of knowledge sharing; furthermore, the co-existence of knowledge sharing dimensions and their suitability facilitate knowledge sharing in organization. Finally, knowledge sharing is the culture of knowledge-based interactions and appropriate approach for knowledge sharing refers to social interaction approach.

**Keywords:** Knowledge, Knowledge sharing, Social interaction, Performance of knowledge sharing.

## Introduction

In recent years, knowledge is converted to the valuable source for growth and sustainable competitive advantage of organizations, especially organizations competing in an uncertain environment (Wasko and Faraj, 2005:35) and employees are

the most important source in this turbulent environment because they are source of knowledge and knowledge is on their mind (Hisyam and Choudrie, 2004:128). Knowledge is the only valuable source in the current economy and knowledge workers are the main power source of the future society (Huang, Wei and Chang, 2007: 607). This has led, in recent years, the academics and practitioners to pay special attention to knowledge management in organization. Knowledge management is the process of creating, sharing and applying knowledge to improve organizational performance (Kakabadse & Kakabadse and Kouzmin, 2003:78). According to some scholars, acquisition of competitive advantage is not only depends on the ability of companies in identifying and acquisition of knowledge, but also depends on their ability in sharing and utilization of knowledge (Rege, 2007:48). Today, the knowledge sharing activities are discussed more than other activities in knowledge management. In fact, there is a lot of knowledge in organization, but its existence is not a guarantee for its utilization (Bratianu and Orzea, 2010:107). Knowledge sharing is essentially a process of social interaction for the exchange of knowledge (Gupta and Govindarajan, 2000). Researches on sharing (e.g., Fahey, 2000; Gupta and Govindarajan, 2001; Jensen and Szulanski, 2004) show that the process of sharing and transferring knowledge is not an easy task and there are many barriers facing to the organization (Rege, 2007:48). Literature review of knowledge management shows that there are different approaches to this issue in the organization that can be divided into two approaches of human-centered (social) and technology-driven. Technology-based approaches (eg, cognitive model and net-

**Corresponding author:** Yousef Vakili, Public Administration, University of Tehran, Iran. E-mail: usef\_vakili@yahoo.com.

work model) are based on Information Technology that encompasses a wide spectrum of processes and operational procedures that are designed for protection and management of knowledge based processes of organization (Jung-Chi, 2006: 106). Since the creation, application and sharing of knowledge requires the knowledge to be interpreted, reproduced, and adjusted, based on the specific context, the ability of technology-driven approach in this field is limited and questionable (Kakabadse Kouzmin, 2003: 84). The appropriate approach for creation, application and sharing of knowledge refers to social interaction approach. Social interaction approach indicates that creating and sharing of knowledge and its mechanisms have a social nature resulting from the interaction between individuals among organizations (through meetings and group discussions). Social interaction approach has a high capacity to pay attention to knowledge sharing because the knowledge sharing refers to the culture of knowledge based interaction which includes implicit and explicit knowledge exchange, experiences and skills of employees among the organizational units or entire organizations (Jung-Chi, 2006: 106).

Regarding the positive results of knowledge sharing, in many countries, especially industrialized countries, many efforts have been made to implement the knowledge sharing, but regarding its emerging nature in Iran, little practical experience is available in this area. These experiments involve large costs for the organization. Therefore, the existence of systems and models for effective knowledge sharing is essential in a relevant organization. Therefore, this important principle should be considered in organization till the effort and related costs will lead to value creation. Hence, the objective of this research is to identify a suitable model for knowledge sharing. Indeed, this study seeks to answer this question "What are the effective patterns of knowledge sharing with social interaction approach in organization?"

## Literature review

### *Knowledge Sharing*

Sharing knowledge is a combination of knowledge and sharing (Kim, 2011:9). Knowledge is a combination of experience, values, contextual information and experts' insight that provides a framework for evaluating and integrating new experiences and information (Al-Alawi and et al., 2007:22).

Nonaka and Taguchi divide knowledge into two categories: explicit and tacit (Nonaka and Taguchi, 1995). Sources of knowledge can be compared with the mountains of floating ice. Structured and explicit knowledge is the visible part of the iceberg that can be systematically stored and transferred to individuals. Under the surface of water is the invisible part of the iceberg that points to the tacit knowledge resources. Tacit knowledge is in people's minds and is obtained through individuals' internal processes like experience, reflection, internalization, or personal talent. Therefore, sharing and acquisition of this sector of source is difficult (Hisyam and Choudrie, 2004:128). The other definition is sharing. Knowledge sharing has broader concept than simple transmission of knowledge, because knowledge sharing is a process or social interaction for the exchange of knowledge (Gupta and Govindarajan, 2000); knowledge sharing is knowledge exchange between individuals. On the other hand, knowledge sharing has the narrower concept of knowledge management which includes creation, transfer and sharing of knowledge. Knowledge sharing means the exchange of technical knowledge, expertise, judgment, and lessons learned among staff through formal or informal networks. Sharing knowledge is an activity that involves the transfer of knowledge, whether explicit or tacit, from a person, group or organization to other person, group or organization (Zawawi et al., 2011:61). Therefore, the main aim of any knowledge sharing processes is the successful transmission of knowledge from a source to a receiver, and the success of knowledge sharing is referred to the degree of restoration and re-creation of knowledge at the receiver (Cummings, 2003:35). There are different patterns for knowledge sharing issue including quantum, social interaction, networking, cognitive, and philosophical and everyone has its own approach to the knowledge sharing. This research framework is based on social interaction approach. The social interaction approach is one of the oldest patterns of knowledge management that have been considered again in contemporary organizations. The Social interaction patterns are shaped by historical and social perspective. The social interaction approach express that all knowledge is the result of thinking that is circulating in the community. Furthermore, there is no basis for the universality of knowledge except Forum consensus. In social interaction approach, community

members through the interaction in social organization, share their knowledge resources. This approach expresses that knowledge can not be separated from action. The social interaction approach expresses that knowledge can not be kept in the database or manually, it can only be kept in “living” form. Therefore, it needs to actors with relevant tacit knowledge and expertise that work together, reproduce the knowledge and apply the knowledge based on the local conditions. In social approach, knowledge management is shaped based on personal relationships, respect, and trust. This pattern suggests that a sense of oneness and interaction causes unity and closeness of the organization members and informally causes people to be attracted to each other and a social link to be established between them so in case of problems, solve them through interaction between themselves and group discussions. In this case, the relationship between individuals is more informal and based on the cooperation rather than the formal contracts. Furthermore, in this model, the characteristics of the working groups should include features such as

self-organization, continuous learning, and informal exchanges are discussed. Knowledge is created in the thinking that is circulating in a community where there is a common language, and trust allows the exploitation of revelation (Kakabadse et al, 2003:83—84). Investigation the empowerment knowledge sharing is discussed below.

### *Knowledge sharing Enablers*

An empowerment organizational knowledge sharing includes the features: the Knowledge Receiver, the Knowledge Sender, Knowledge Sharing Mechanisms, Context of organization and ultimately the Performance of Knowledge Sharing is considered.

### *Knowledge receiver*

Factors related to the receiver, including absorptive and learning capacity, motivation of the receiver, the receiver’s view of the credibility of the knowledge source and intellectual and behavioral characteristics influence the success of knowledge sharing (Table 1).

**Table 1. Conceptual dimensions of research: Knowledge receiver**

Dimension	Concept	Element	Contributors	
Knowledge Recipient	Absorptive and learning capacity		Narteh(2008), Feghali (2008); Gupta and Govindarajan (2000); Szulanski (1996)	
	motivation		Szulanski (1996); Gupta and Govindarajan(2000); Szulanski 1996; Chang (2008)	
	credibility of the knowledge source		Kakabadse and Kouzmin (2003), Szulanski (1996); Chang (2008)	
	intellectual and behavioral characteristics (Kakabadse and Kouzmin (2003), Szulanski (1996); Chang (2008))	Commitment		Lin (2008)
		Trust		Renzel(2006)
		Altruism		Batson et al (2002); Davenport & Prusak (1998).
compatibility			Renzel(2006)	

Absorptive and learning capacity of knowledge receptor is an important factor influencing on successfulness of knowledge sharing (Szulanski, 1996; Minbaeva, 2007; Chang, 2008). Receiver may not be able to exploit knowledge resources, namely he dose not have the knowledge absorption capacity. Knowledge transfer is only effective when the transferred knowledge is learned (Szulanski, 1996:31). Individuals’ absorptive capacity is influenced by the experience and competence of the knowledge recipient (Narteh, 2008; Feghali, 2008). Another factor related to the recipient is the credibility of the source from knowledge receiver prespective (Kakabadse

and Kouzmin, 2003) that it can act as a facilitator in knowledge sharing (Durisin, 2002:775—786; Simard, 2000: 15). A specialist and reliable source compared to other individuals most likely have influence on the recipient’s behavior; this means that if the knowledge source is not understood as a reliable and aware source, transfer of knowledge from that source will be more difficult (Szulanski, 1996:31). Gupta and Govindarajan 2000; Szulanski 1995 also concluded that knowledge receivers’ motivation is a kind of factors influencing on the success of knowledge sharing that indicate the motivational state of receiver for acquisition of knowl-

edge (Becker and Knudsen, 2006:34). When receiver knows the transferred knowledge valuable, new and innovative, has more motivation for its transmission. Additionally, understanding the basic opportunities associated with the knowledge and receiver's ability to maintain and foster the transmitted knowledge, leads to his motivation in the next steps (Kakabadse and Kouzmin, 2003). Finally, it should be noted that cultural and behavioral characteristics of receptors affects on the knowledge sharing. The cultural and behavioral factors that lead to knowledge sharing in organization include commitment, trust, altruism, and compatibility. Knowledge sharing occurs easily to the extent that these factors become higher in knowledge receiver. Organizational commitment refers to the interest feeling that an individual has toward a particular organization and this belonging sense has more intensity compared to other individuals (Lin, 2008:1511). Trust can be determined as maintaining mutual faith with respect to each other based on intentions and behavior. Trust in management means that employees believe the organizational objective achievement and leaders and also believe the organizational acts is useful for employees. Many people's motivation in knowledge sharing is because of their interest to the scientific discipline and degree of altruism. Hence, knowledge

teaching in this way is a form of knowledge transmission based on altruism (Davenport & Prusak, 1991, 66). Altruism is a motivation that increases the welfare of one or more persons other than the individual oneself (Batson et al., 2002). Finally, individuals with high consistency (kind, lenient, ready to serve, polite, generous, vogue and helpful) have more possibility to transfer knowledge by them. They are altruistic, compassionate and willing to help others and mostly seek cooperation rather than the competition with each other. Sharing and dissemination of knowledge is as a result of the cooperation and collaboration with the workplace and agreement in personal relationships with colleagues and supervisors (Renzel and Matzler, 2007:8).

Hypothesis 1: What is the effect of the receiver's dimension on knowledge sharing performance?

### *Source (Sender) of knowledge*

Szulanski (1996) and Minbaeva (2007) stated that some of the barriers to sharing knowledge is about the source (sender) of knowledge that among these obstacles can be pointed to the source credibility, motivation of sender and knowledge sharing capacity by knowledge source (Spraggon and Bodolica, 2012:1274). Table 2 shows the conceptual dimensions of the knowledge sender.

**Table 2. Conceptual dimensions of research: Knowledge sender**

Dimension	Concept	Element	Contributors	
Knowledge	motivation		Szulanski (1996); Gupta and Govindarajan(2000); Szulanski 1996; Chang (2008)	
	credibility of the knowledge source		Kakabadse and Kouzmin (2003), Szulanski (1996); Chang (2008)	
	intellectual and behavioral characteristics (Kakabadse and Kouzmin (2003), Szulanski (1996); Chang (2008))	Commitment		Lin (2008)
		Trust		Renzel(2006)
		Altruism		Batson et al (2002); Davenport & Prusak (1998).
	compatibility		Renzel(2006)	

Some researchers (Gupta and Govindarajan, 2000; Osterloh and Frey, 2000) consider the source knowledge motivation as a factor in facilitating knowledge sharing. When the knowledge transmitter does not show his enthusiasm to express and transfer knowledge, the individuals and teams that have invested their resources to develop a specific competence, do not have the motivation and willingness to share knowledge and because of losing knowledge property fear (power), do not allocate the time and required resources for its delivery (Spraggon and Bodolica, 2012:1274,

Szulanski, 1996:31). On the other hand, cultural and behavioral characteristics of knowledge transmitter is an important factor in knowledge sharing. Individuals with personal backgrounds interact and communicate with others. This issue can affect on their mental patterns of knowledge. Transmitter and receiver must have the same understanding of the transferred knowledge, and this is related to the proportion between the transmitter and receiver (Narteh, 2008). Another factor of knowledge giving is the capabilities and expertise and its education/teaching capacity (Argote, Ingram

et al., 2000). This capacity can be influenced by age, knowledge complexity, experience of knowledge transfer and intention of individual in knowledge transfer. Understanding and transferring of complex knowledges has more difficulties because of their more components and complexity. Experience due to the effect that has on learning cycle, can assist the individual in knowledge transferring (Feghali, 2008).

Hypothesis 2: What is the effect of the transmitter's dimension on knowledge sharing performance?

### *Knowledge sharing mechanisms*

Another set of factors that influence on knowledge sharing, knowledge dissemination mechanisms including coaching, Mentoring, electronic devices of knowledge sharing, formal sessions and informal meetings to exchange knowledge and experience, and performance feedback system. Table 3 shows the conceptual dimensions of the knowledge sharing mechanisms.

**Table 3. Table of conceptual research: Knowledge sharing mechanisms**

Dimensions	Concept	Researcher
Knowledge Sharing Mechanisms	Coaching	Nonaka (1994); Donnelly (2008)
	Mentoring	Donnelly(2008); Parent et al. (2007)
	Electronic devices of Knowledge Sharing	Davenport, De Long, and Beers (1998); O'Dell & Grayson(1998); Gupta and Govindarajan (2000)
	Informal Meetings to exchange knowledge and experience	MohammadiEliyasi, Q.(2008); Spraggon&Bodolica(2008); Parent et al.,(2007); Abou-Zeid (2002)
	Performance Feedback System	Feghali,2008; Narteh,2008.
	Group Discussion	MohammadiEliyasi, Q.(2008) ; Abou-Zeid (2002)

Information technology is one of the most powerful instruments of knowledge sharing. Implementation of knowledge management in the context of information technology in the organization can provide a suitable environment for easy sharing (Davenport, De Long, and Beers 1998). There are several and effective technologies for sharing knowledge in organization (Bolisani and Scarso, 1999:141). Mechanisms of knowledge transfer include electronic data interchange, electronic mail, groupware and video conferencing (Fei, Chen and Chen, 2009: 335).Information technology is not an excellent facilitator for the transmission and distribution of information and will not be an appropriate alternative for interaction, communication and enrichment learning that lies in interpersonal conversations. According to O'Dell and Garrison incentives and barriers of knowledge sharing is not technical because tacit knowledge is too complex and experimental and it can not be captured electronically (O'Dell and Grayson, 1998). So, face to face method (formal meetings) (Spraggon and Bodolica, 2008), networks and informal interactions (Parent et al., 2007), educational seminar and workshops, knowledge transfer of experts groups and discussion group (Abou-Zeid, 2002:35) are more useful for communication and knowledge sharing. Performance feedback system is knowledge

transfer mechanisms too. Knowledge transfer process will be complete since the knowledge receiver can apply it in practice. Application of knowledge, provide feedback that determines the effectiveness extent of knowledge transfer process (Fghali, 2008; Narteh, 2008). Finally, according to Donnelly (2008), Coaching and Mentoring include the main mechanism of the dissemination of knowledge in organization. In fact, mentoring is a mutual learning process where by mentor transfer his knowledge, experience and advice to the other side and teach under the friendly circumstance and personal approach and understanding and without implementing pressure. Coaching is a process in which the individual works to trainer and actually mental involvement of instructoris on the job performance of the opposite side. In fact, mental involvement of instructor is the defined duty and performance of career but about mentoring this involvement is about how to think and understand and mentality of opposite side (Starceovich, 2009).

Hypothesis 3: What is the effect of the knowledge sharing mechanism on knowledge sharing performance?

### *Contex of knowledge Sharing*

Some of the contextual factors affecting knowledge sharing include motivational sys-



tems, and commitment and support of organizational management and the policies and organizational objectives which are reviewed

below. Table 4 shows the conceptual dimensions of organizational Context of knowledge sharing.

**Table 4. Conceptual dimensions of organizational background of knowledge sharing**

Dimensions	Concepts	Researcher
Knowledge Sharing Mechanisms	Policies and Organizational Objectives	Hung (2008); Mangier-Watanabe and Senoo (2008)
	Commitment and Support of Management	Caroline Simard (2000)
	Motivational Systems	Burisin (2002); Bartol&Srivastava (2002); Riege (2005)

Decision-making for sharing or not sharing the knowledge is influenced by motivational system (monetary rewards and incentives) (Riege, 2005). But, it should be noted that the organizational rewards are only temporary incentives for knowledge sharing (Zawawi and et al, 2011:63). Sharing and distribution of knowledge should be protected by organizational culture and reward systems and this reward systems (whether material and or spiritual incentives such as promotion of career) can be given to them based on the activities and discussed people. On the other hand, the successful transfer and sharing knowledge process consist of coordinating the efforts about the daily and regular process of knowledge recipients unit. Therefore, commitment and support of management has the utmost importance in knowledge transfer. In order to create changes, the organization management must be committed to these changes. Management roles must foster and share knowledge and like an intellectual leader play its role (Simard, 2000: 24). Finally, the existence of a flexible organizational structure, and flexible working groups and networks inorganization increase knowledge transfer. Appropriate communication and existance of trust culture between employees accelerate and facilitate tacit knowledge transfer. As a result, management should pay particular attention to the utilization of tacit knowledge transfer in organization. Knowledge management is a long-term and vital activity for organization and organization should consider the knowledge sharing as a long term goal and determines how knowledge production, dissemination and application strategies can be integrated and coordinated with business strategy, in order to knowledge sharing be implemented in organization (Hung, 2008: 85–90).

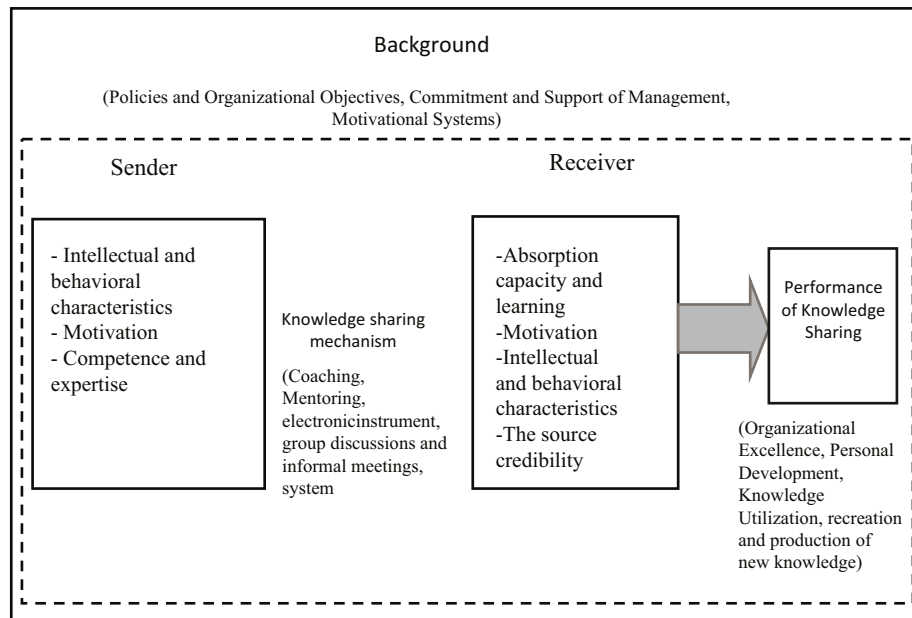
Hypothesis 4: What is the effect of the knowledge sharing background on performance of knowledge sharing?

#### *Performance of knowledge sharing*

In this research, performance of knowledge sharing is defined as recreating and generating new knowledge, application of knowledge, personal development and organizational excellence. Performance of knowledge sharing dimensions including “reinventing and effective generating of new knowledge” that requires the availability of intended knowledge packages for the recipient until the growth and development factor receive and convert and match it with their needs. As a result, instead of using the knowledge reinventing concept to achieve a degree of success in its sharing, dealing with internalization of knowledge by receiver is an important issue (Kakabadse and Kouzmin, 2003). On the other hand, knowledge transfer process includes knowledge transfer from sender to receiver and consequently “Application of Knowledge” in receiver’s company. Knowledge transition process will be completed when the knowledge recipient can apply in practice; namely, apply knowledge in production of superior and innovative products (Feghali, 2008; Narteh, 2008). Finally, some studies have shown that the management and knowledge sharing effect on “individual and organizational performance” affect (Kim, 2010:2). Effective distribution of knowledge among people will lead to development of individuals and their personal skills (Engström, 2003:41). Knowledge sharing affects on the performance and effectiveness of the organization (Kim, 2010:2), and improves its efficiency. Finally, if the knowledge sharing is well-managed in the organization, it will improve the quality of work and decision-making

skills, problem solving skills, and problem solving performance (Zawawi and et al., 2011: 56–57). The authors have used the conceptual framework of the European Quality Award and its components based on the systematical approach in social communication system for presenting the knowledge sharing pattern with social approach.

Totally, knowledge sharing dimensions including sender and receiver of knowledge, organizational context, and knowledge sharing mechanisms effect on performance of knowledge sharing and can play the obstacle or facilitator role in knowledge sharing. Figure 1 shows the analytical model of knowledge dissemination in organization.



**Figure 1. An analytical model of knowledge dissemination in organization.**

## Methodology

This study has two objectives. First, in terms of design, the knowledge sharing pattern is a developmental type of research, namely in this research a pattern is presented for knowledge sharing, and secondly, because it was used in practice, it refers to a type of applied research. In terms of data collection, descriptive research methods is a correlational type in which the required information was collected by questionnaire. The questionnaire consists of 73 items that resulted from the original dimensions of pattern. Thus, the 5 original dimensions of pattern

(recipient, sender, background, mechanisms and performance of knowledge sharing) are divided into the relevant dimensions and each of these dimensions are divided into the indicators. In addition, in designing final pattern and questionnaire, the experts' idea and interviews have been applied. For measuring validity, the teachers' idea and the view of a group of experts are used and their opinions on the questions and variables, and the overall structure of the questionnaire and for modifying questionnaire was used. Cronbach's alpha was used to assess the reliability of the questionnaire. Table 5 shows the Cronbach's Alpha of knowledge sharing.

**Table 5. Cronbach's alpha of knowledge sharing**

Dimension	Knowledge Sender	Knowledge receiver	Context of knowledge sharing	Mechanism of knowledge sharing	Performance of knowledge sharing	Total
Items of questions	9	21	13	18	11	73
Cronbach's alpha	0947	0954	0976	0967	0995	0989

The population consisted of senior experts and executive managers of the research department of national Iranian oil engineering and Construction Company that in the knowledge sharing project was implemented in terms of special software that was especially designed and implemented in national engineering organization and 30 subjects were selected purposefully as sample. This software is designed by computer specialists of the mentioned organization for registration of knowledge and finally for its sharing. Senior managers who are directly associated with the knowledge sharing project, have assisted in completing this research. The regression and structural equation modeling are used for data analysis and evaluation of relationship among variables.

## Findings

The results of the statistics show that 56.7 percent of employees, according to the demographic information of the respondents, were male and 43.3% of the respondents were female. The results of descriptive statistics for demographic data of employee indicated that 56.7% of respondents were male and 43.3% of respondents were female. 60% of respondents have M.A. degree (the majority of the

respondents), 30% BA, and 10% have PhD. Additionally, 53.3% of respondents had work experience of 5 to 15 years (majority), 26% with working experience of under 5 years 20% had work experience of 25 to 15 years. To evaluate the research hypotheses, regression is used. As can be seen, the knowledge recipient of  $AdjR^2=0.67$  explain the variance of knowledge sharing performance. Variance analysis has the significance level of 0.000 and  $F=46.632$ . Behavioral characteristics ( $\beta=0.76$ ), learning ability ( $\beta=0.70$ ), motivation of recipient ( $\beta=0.79$ ) as component of knowledge receptor has a significant and positive correlation with the knowledge sharing.

According to Table 6, respectively, after receiving the knowledge, by determinants rate 0.67, Knowledge sharing mechanisms (0.61), the transmitter of knowledge (0.59) and organizational context (0.57) explain the variance of performance of knowledge sharing in Oil Company. This shows that the performance of knowledge sharing is influenced by a set of factors that the simultaneous existence of these factors are essential to improve the performance of knowledge sharing. Table 6 briefly shows the impact of knowledge transmitter, organizational context and knowledge sharing mechanisms and components of each dimension with performance of knowledge sharing.

**Table 6: Standard and non-standard regression coefficients of components included in the model**

Sig.	F	t	$\beta$	Adjusted R Square	R Square	R	Constant	Independent variable	Dependent variable
0.000	60.88	7.80	0.83	0.67	0.685	0.83	1.237	Knowledge Receiver	Knowledge performance
0.001	37.47	6.12	0.73	0.56	0.57	0.73	3.25	Behavioral characteristics	
0.000	27.42	5.24	0.70	0.48	0.49	0.70	2.91	Learning ability	
0.020	46.17	6.79	0.79	0.62	0.62	0.79	2.99	motivation of recipient	
0.000	43.30	6.58	0.78	0.59	0.61	0.78	1.019	Knowledge Sender	
0.002	35.69	0.75	0.75	0.54	0.56	0.75	3.14	Behavioral Characteristics	
0.004	33.33	0.74	0.74	0.53	0.54	0.74	2.39	Expertise	
0.000	29.05	0.71	0.71	0.49	0.51	0.71	2.67	Motivation of Sender	
0.000	40.33	6.351	0.77	0.57	0.59	0.77	0.835	Organizational Context	
0.003	49.55	7.03	0.79	0.626	0.639	0.79	2.77	Organizational Politics	
0.000	22.79	4.77	0.67	0.429	0.449	0.67	2.28	Managerial Support	
0.004	30.64	5.54	0.73	0.505	0.523	0.73	1.87	Motivational System	
0.000	46.64	6.831	0.79	0.61	0.62	0.79	0.482	Sharing Mechanisms	
0.005	21.03	4.59	0.65	0.41	0.43	0.65	1.77	Coaching	
0.020	25.55	5.05	0.69	0.46	0.48	0.69	1.99	Mentoring	
0.000	18.20	4.27	0.63	0.37	0.39	0.63	2.41	Electronic Instrument	
0.030	32.05	5.66	0.73	0.52	0.53	0.73	2.59	Formal Meeting	
0.002	45.70	6.76	0.79	0.61	0.62	0.79	2.34	Feedback	
0.030	28.13	5.30	0.71	0.48	0.50	0.71	2.80	Group Discussions	

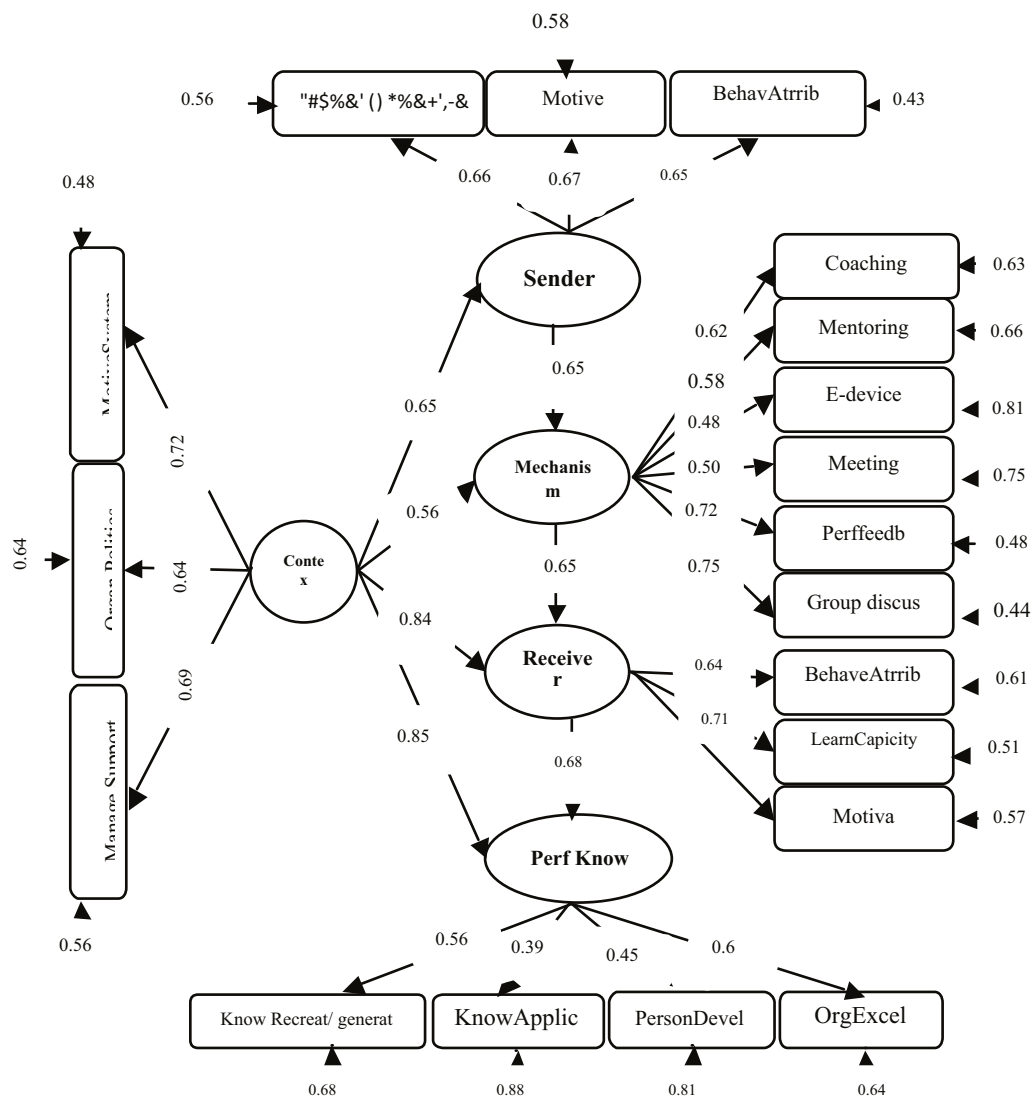


In Table 7, the direct and indirect effects of predictor variables and whole variables on the dependent variable of knowledge sharing performance are shown. In the mentioned table, the direct effect of the standardized coefficient exists, in which the change in the variable X leads

to the change in variable Y. The indirect effect of each variable is equal to multiple of path coefficient of all variables of a path leading to the mentioned dependent variable. Total effect also indicates the sum of the direct and indirect effects of each variable.

**Table 7. Direct and indirect effect of predictor variables on the dependent variables**

Dependent variable	Predictor variable	Direct effect	Indirect effect	Total effect
Sender	Organizational context	0.65	-	0.65
knowledge Sharing Mechanisam	Organizational context	0.55	-	0.55
Receiver	Organizational context	0.84	-	0.84
Performance of knowledge sharing	Organizational context	0.85	-	0.85
Performance of knowledge sharin	Sender of knowledge	-	0.46	0.462
	Knowledge Sharing Mechanisam	-	0.52	0.525
	Receiver of Knowledge	0.73	-	0.73



Chi-square=807.91, DF =55, P-value=0.00000, RMSER=0.066!

**Figure 2: Structural equation model of knowledge sharing in organizations**

Figure 2 shows the significant relationship between transmitter, knowledge sharing mechanism, receiver knowledge performance and the estimated amount of load factor for this relationship. These values show the scores of predicted factor (knowledge performance). According to the overall fit indices it could be said that the model has appropriate fit. The chi-square amount of model with freedom degrees of 55 is equal to 807.91. Accordingly, the ratio of chi-square to freedom degrees of model is 07.1 indicating that the model's fit is acceptable. RMSEA= 0.066; P-value = 0.000; GFI = 0.90; CFI = 0.94; NFI = 0.9; NNFI=0. 93.

Organizational context affected on performance of knowledge sharing circle. As seen in Table 7, the organizational context has a direct and significant impact on sender and receiver of knowledge, mechanisms of knowledge, performance of knowledge sharing. In other words, organizational context has the effect of 0.65 on transmitter of knowledge and 0.84 on receiver and 0.55 on knowledge sharing mechanism.

Finally, the organizational context and knowledge receiver have direct effects on the performance of knowledge sharing in organizations. Knowledge recipient has an impact of 0.73; and the organizational context has an impact about 0.85 on the performance of knowledge sharing in organizations. In addition, the sender and knowledge sharing mechanisms have significant and indirect effects on performance of knowledge sharing. In other words, the sender through the paths of knowledge sharing mechanisms and knowledge receiver, has an impact about 0.462 on the performance of knowledge sharing in the organization. Also, knowledge sharing mechanisms has an indirect effect about 0.525 on performance of knowledge sharing.

## Conclusions and Discussion

This study was conducted with the aim of designing an effective knowledge sharing pattern with the social interaction approach in the organization. Research findings indicated that dimensions of knowledge sharing including receiver and transmitter of knowledge, knowledge sharing background, and knowledge sharing mechanisms have significant and positive effect on performance of knowledge sharing. In fact, dimensions of knowledge sharing in the form of concentrated and altogether affect on performance of knowledge sharing and if these dimensions become favorable, knowl-

edge sharing can occur more easily in organizations. The research findings indicate that a significant and positive correlation between dimensions of knowledge transmitter and performance of knowledge sharing. Transmitter's motivation improvement leads to improvement of the credibility of source of knowledge, distribution capacity of source of knowledge and performance of knowledge sharing. The findings of this study are consistent with findings of previous research (Szulanski, 1996). They stated that some of the barriers to knowledge transfer are relevant to the source of knowledge (the transmitter) that about these barriers can be pointed to the source credibility, motivation and knowledge distribution capacity by the source of knowledge. The results of this study indicate that a significant and positive relationship between the knowledge receiver and performance of knowledge sharing in organizations and has the highest degree of influence among the knowledge sharing dimensions.

In this regard, Cummings (2003) discovered that the knowledge receiver dimensions influence on the successfulness of knowledge sharing. According to him, learning and absorption capacity and receiver's motivation, credibility rate of source of knowledge in receiver's view and intellectual and behavioral characteristics, are some of factors that improve and facilitate knowledge sharing. Background of knowledge sharing (including motivational systems, commitment and support of organization management, policy and organizational goals) also has a positive and significant relationship with the performance of knowledge sharing. The results of this study confirm the findings of previous studies (Simard, 2000). Sharing and distribution of knowledge must be protected by organizational culture and reward systems and these reward systems can be tailored with activities and discussed people whether the physical or spiritual reinforcements like job promotion. Simard (2003) argues that management should strengthen knowledge networks between employees and departments, strengthen the trust structure to encourage risk taking and improve innovation and like a thought leaders play his role (Simard, 2000). Finally, these findings suggest that the knowledge sharing mechanisms (mentoring, Coaching, electronic devices, formal sessions and informal meetings to exchange knowledge and experience, and performance feedback system) have positive and significant correlation with performance of knowledge sharing in the organization. These findings confirm the findings of some researchers (Fei, Chen and Chen, 2009)

who found that the electronic data interchange, electronic mail, video conferencing and groupware are mechanisms of knowledge sharing. Moreover, some researchers also paid attention to other mechanisms of knowledge sharing that were considered in this study, and believe that the formal sessions (Spraggon&Bodolica, 2008), seminars and educational workshops, discussion groups and knowledge transfer of expert groups (Bou-Zeid, 2002:35) and mentoring, Coaching (Donnelly, 2008) are regarded as the tools for communication and knowledge sharing within the organization. In general, favorable conditions and existence of knowledge sharing disseminations (knowledge receiver, the transmitter of knowledge, background of knowledge sharing, knowledge sharing mechanisms) assist to improve the performance of knowledge sharing. The main point of this study is that the face-to-face interaction, informal networks, encounters, seminars and group discussion, receiver and transmitter's motivation and their expertise is essential in transmitting and acquiring knowledge, trust between them and their commitment to the organization for knowledge sharing. Actually, knowledge sharing is a social issue, namely knowledge sharing is the culture of knowledge-based interactions that involve the tacit and explicit knowledge exchange, experiences and skills of employees among the organizational units or in the entire organization. Therefore, organizations should pay more attention to the social dimensions of knowledge sharing cycle until it successfully occurs in the organization.

### Practical suggestions

First, organization should pay serious attention to the status and role of transmitter in successfulness of knowledge sharing program and system and attempts to identify the strengths and weaknesses of the knowledge sender and manages them well. Moreover, organizations that are interested in knowledge sharing pay serious attention to this issue. Although this finding of the study is only the outcome of calculation of an organization, from this perspective, the required accuracy is done. In addition, the investigated organizations should consider the components of motivation, capabilities and expertise and intellectual and behavioral characteristics of knowledge transmitter and reinforce and well manage them.

2. Due to the crucial role of knowledge receiver and research results based on its positive rela-

tionship with performance of knowledge sharing, other organizations must be studied by considering the recipient dimension (learning and absorption capacity, motivation, mental and behavioral characteristics) and review their strengths and weaknesses, strengths and improve them.

3. To improve and increase the performance of knowledge sharing, the background of knowledge sharing and its disseminations (political and organizational goals, commitment and support of management, incentive systems) must be reinforced. Reinforcement can strengthen the encouragement policies of knowledge sharing, determine the specific targets by the organization in this regard, existence of formal programs and paying serious attention to the subject of knowledge sharing and the same strategies, existence of motivational systems either financial or non-financial can be helpful for management in this way.

4. Management should pay attention to the strengths and weaknesses of knowledge sharing mechanisms and its different types (mentoring, Coaching, electronic devices, group discussions, formal meetings and performance feedback system) and select appropriate mechanisms for activities and improve them to promote the performance of knowledge sharing.

5. It is suggested that the high-ranking officials in companies benefit from knowledge management and professionally utilize the knowledge sharing for the products and services and optimize them in order to spread the culture of knowledge sharing and promoting in organizations and in this regard that can benefit from the knowledge sharing mechanisms tailored to their knowledge type and at the same time, they can use the motivational system to encourage their employees.

### References

- Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007). Organizational culture and knowledge sharing: critical success factors, *Journal of Knowledge Management*, 11 (2), 22–42
- Argote, L. & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms, *Organizational Behavior and Human Decision Processes*, 82 (10), 150–169.
- Batson, C. D., Ahmad, N., & Tsang, J. A. (2002). Four motives for community involvement. *Journal of Social Issues*, 58 (3), 429–445.

- Becker M. C. & Knudsen M. P. (2006). Intra and Inter-Organizational Knowledge Transfer Processes: Identifying the Missing Links, *DRU-ID Working Paper* No. 06—32.
- Bolisani, E. & E. Scarso (1999). Information Technology Management: a Knowledge Based Perspective, *Technovation*, 19 (4), 209—217.
- Constantin, B. & Ivona, O. (2010). Tacit Knowledge Sharing in Organizational Knowledge Dynamics, *Proceedings of the 8th International Conference on Intellectual Capital, Knowledge Management & Organizational Learning –ICICKM* held at The Institute for Knowledge and Innovation Southeast Asia (IKI-SEA) Bangkok University, Bangkok, Thailand 27—28 October 2011. Edited By Susana Rodrigues.
- Cummings, J. (2003). *Knowledge sharing review of the literature*, The World Bank Operations Evaluation Department.
- Davenport, T. H. & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*, Boston: Harvard Business School Press.
- Davenport, T. H., D. W. De Long, & M. C. Beers. (1998). Successful knowledge management projects, *Solan Management Review*, 39 (2), 43—58.
- Davenport, T., & Prusak, L. (2000). *Working Knowledge — How Organizations Manage What They Know*, Boston: Harvard Business School Press.
- De Long, D. & Fahey, L. (2000). Diagnosing cultural barriers Chang DR, Cho H. Organizational memory influences new product success. *Journal of Business Research*, 61 (1), 13—24.
- Donnelly, R. (2008). The management of consultancy knowledge: An internationally comparative analysis, *Journal of Knowledge Management*, 3.
- Engstr m, E. J. (2003). Sharing Knowledge Through Mentoring, ([www.ispi.org](http://www.ispi.org)) *Performance Improvement*, 8.
- Elyasi, M. Q. (2008). Pattern of effective sharing of knowledge in Iranian organizations, entrepreneurship faculty at Tehran University, Knowledge management, translated by Rahman Seresht, H., Tehran, Sapko Press.
- Feghali, T., & El-Den, J. (2008). Knowledge transformation among virtually-cooperating group members, *Journal of Knowledge Management*, 1.
- Fei J, Chen S, & Chen S. L. (2009). Organizational knowledge base and knowledge transfer in the shipping industry. *Electronic Journal of Knowledge Management*, 7 (30), 325—340.
- Filieri, R. & Alguezaui S. (2009). Intra-Firm Knowledge Sharing Barriers: State of the Art *Proceedings of ECKM 2009 The 10th European Conference on Knowledge Management* Held at the Università Degli Studi Di Padova, Vicenza, Italy 3—4 September 2009.
- Gupta, A. K. & Govindarajan, V. (2000). Knowledge flows within multinational corporations, *Strategic Management Journal*, 21 (4), 473—496.
- Haldin-Herrgard, T. (2000). Difficulties in diffusion of tacit knowledge in organizations, *Journal of Intellectual Capital*, 1 (40), 357—365.
- Hisyam, Mohamad & Choudrie, Selamat, Jyoti, (2004). The diffusion of tacit knowledge and its implications on information systems: the role of meta-abilities, *Journal of Knowledge Management*, 8 (2), 128—139.
- Huang, C. M. & Chang, H. Ch. & Henderson, S. (2008). Knowledge Transfer Barriers Between Research and Development and Marketing Groups Within Taiwanese Small- and Medium-Sized Enterprise High-Technology *New Product Development Teams, Human Factors and Ergonomics in Manufacturing*, 18 (6), 621—657.
- Huang, Nen-Ting, Chiu-Chi Wei, & Wei-Kou Chang, (2007). Knowledge management: modeling the knowledge diffusion in community of practice, *Kybernetes*, 36 (5), 607—621.
- Hung, Richard. Lok, Peter. Ya-Hui Lien, Bella. & Wu, Chi-Min (2008). Factors influencing organizational knowledge transfer: implication for corporate performance, *Journal of Knowledge Management*, 3.
- Jung-Chi, P. (2006). An empirical study of the relationship between knowledge sharing and IS/IT strategic planning (ISSP), *Management Decision*, 44, 105—122.
- Kakabadse & Andrew Kakabadse & Nada Kouzmin, Alexander (2003). Reviewing the knowledge management literature towards a taxonomy, *Journal of Knowledge Management*, 4.
- Kim, D. (2011). *The Effects of Knowledge Sharing on Program Performance: Influences on CPS Program Performance*, Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Public Administration and Public Affairs
- Lin, W.-B. (2008). *The exploration factors of affecting knowledge sharing — the case of Taiwan's high tech industry, Expert systems with applications*.
- Magnier-Watanabe R., & Senoo D. (2008). Organizational characteristics as prescriptive factors of

- knowledge management initiatives, *Journal of Knowledge Management*, 12 (1), 21–36.
- Minbaeva D. (2007). Knowledge transfer in multinational corporations. *Management International Review*, 47 (4), 567–93.
- Narteh, B. (2008). Knowledge transfer in developed-developing country interfirm collaborations: a conceptual framework, *Journal of Knowledge Management*, 1.
- O'Dell, C., & Grayson, C.J. (1998). If only we knew what we know: identification and transfer of internal best practices, *California Management Review*, 40 (3), 154–174
- O'Dell, C. (2004). *Introduction to the Executive's Role in Knowledge Management*, published by American Productivity & Quality Center.
- Parent R, Roy M, & St-Jacques D.A. (2007). Systems-based dynamic knowledge transfer capacity model. *Journal of Knowledge Management*, 11 (6), 81–93.
- Renzel, B. (2006). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation, *Omega (the International Journal of Management Science)*, 36.
- Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider, *Journal of Knowledge Management*, 9 (30), 18–35.
- Riege, A. (2007). Actions to overcome knowledge transfer barriers in MNCs, *Journal of Knowledge Management*, 11 (1), 48–67.
- Simard, C. & Rice, R. (2000). *The Practice Gap: Barriers to the Diffusion of Best Practice*, School of Communication, Information and Library Studies Rutgers University of New Jersey.
- Spraggon, M. & Bodolica V. (2012). A multidimensional taxonomy of intra-firm knowledge transfer processes, *Journal of Business Research*, 65, 1273–1282.
- Srivastava, V. (2011). Why are Workers Resistant to Sharing Knowledge? *Proceedings of the 8th International Conference on Intellectual Capital, Knowledge Management & Organizational Learning – ICICKM 2011* held at The Institute for Knowledge and Innovation Southeast Asia (IKI-SEA) Bangkok University, Bangkok, Thailand 27–28 October 2011.
- Szulanski, G. (1996). Exploring internal stickiness: impediments to the transfer of best practice within the firm, *Strategic Management Journal*, 17 (winter special issue), 27–43
- Wasko, Molly McLure; FarajSamer (2005), Why Should I Share? Examining Social Capital and knowledge Contribution in Electronic Networks of practice, *MIS Quarterly*, 29 (1), 35–53.
- Zawawi, A.A., Zaherawati Z., NurZafifa K, Nazni N., MohdZoolHilmie M.S., Natrah M.J., & NurulShahida A.N. (2011). The Study of Barrier Factors in Knowledge Sharing: A Case Study in Public University, *Management Science*, 5 (10), 59–70.