Full Length Research Paper

A case study on the relation of organizational culture and knowledge management practices (knowledge creation)

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Nowadays, following many studies carried out on the importance of intellectual capital, it has been broadly taken into account as a vital capital by organizations implementing knowledge management consequently. Nevertheless, knowledge management on which underlying organizational culture has an extremely huge impact has been implemented by organizations often with the impact being underestimated which may as a result, even lead off to a failure. Knowledge creation is, as a matter of fact, one of the knowledge management dimensions of great value, which can be found in almost all models. The present study investigates the predicting role of culture attributes (trust, open leadership climate, learning from failure and culture of altruism) with reference to knowledge management practice (knowledge creation). The study was carried out on 150 employees of Saipa Malleable Company in Iran at different managerial positions. They were administered questionnaires including Organizational culture scale (OCS) and knowledge management practices scale (KMPS). Multiple regression analysis results revealed that OCS significantly predicts knowledge management practices. Furthermore, ANOVA showed significant difference with reference to levels of managerial positions and knowledge management process. Study limitation, future research and implications are discussed.

Key words: Knowledge creation, knowledge management practices, organizational culture, Saipa Malleable Company.

INTRODUCTION

Knowledge management has emerged as one of the most important area in management practices and is established as a basic resource for firms and economies. Knowledge management is regarded as collection, distribution and efficient use of knowledge resources. It is a process of knowledge creation, validation, presentation, distribution and evaluation. Knowledge management according to Bounfour (2003) is a set of procedures, infrastructures and technical and managerial tools, designed towards creating, sharing, leveraging information and knowledge within and across organiza-

tions. Knowledge management is a systematic and integrative process of coordinating organization wide activities of acquiring, creating, storing, sharing, diffusing and deploying knowledge by individuals and groups, in pursuit of organizational goals.

Knowledge management is a multi dimensional construct with a large number of interrelated attributes. However, its three components or attributes that are commonly found in the literature are: knowledge acquisition or adaptation, knowledge dissemination or sharing and responsiveness to knowledge or knowledge use. The knowledge management practices in the organizations depend on some prerequisites.

As attractive as KM is for enhancing an organization's operations, many commonly agree that there is an important precondition. Davenport (1997) says that two

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thirds of a firm's KM efforts should focus upon organizational and cultural issues. Rifkin (1996) quotes Bob Buckman as saying "What has happened here [successful use of KM at Buckman Laboratories] is 90% culture change. You have to change the way you relate to one another. If you can not do that, you will not succeed." Mizumori (1998) reports "the greatest challenge to implementing effective knowledge management is to transition knowledge hoarders into knowledge sharers." One of the important pre-condition for effective knowledge management is organizational culture. Thus, one needs to understand what the culture of the firm is, and one needs to understand whether or not this culture will enable KM or hinder KM.

Organizations do not operate in a social vacuum but are influenced by the socio-cultural context (Hofstede, 2001); hence, the organizational culture has also been considered as form of organizational capital (Camerer and Versalainen, 1988). Organizational culture consisting of behavior, action, and values that people in an organization is expected to share and follow. Organizational culture as a concept is also considered to be key element in managing organizational change and renewal, a sort of glue that bonds the social structure of an organization together.

Knowledge management is a rather new phenomenon and is in the initial stages of its exploration. In order to develop new knowledge and use the knowledge which already exists within organizations, it seems essential to create an atmosphere of trust and security to encourage innovation, experimentation and risk taking (Lopez et al., 2004). Although, some of the large multinational firms, local institutions, development sector organizations, public and private departments and the financial institutions are working on knowledge management, still, the concept is localized to a few information system wizards within these organizations (Khilji, 2001). There is a lack of empirical evidence about what are the specific cultural variables that support knowledge management processes and help in development of knowledge culture (Oliver and Kandadi, 2006).

Furthermore, an excessive focus on technical issues rather than social aspects, results in poor knowledge management practices or altogether failure to comply the practices in the organizations. Specifically, there is lack of empirical evidence about what are the specific cultural variables that support knowledge management processes and help in development of knowledge culture (Oliver and Kandadi, 2006). Consequently, this necessitates understanding the success and failure of knowledge management within organizations by identifying and assessing the preconditions that are necessary to flourish the endeavor.

The present study provides a test of the value of organizational knowledge management in a Malleable Saipa Company which produces cars casting parts and will provide empirical evidence to the prevailing practices by identifying the specific cultural attributes that inhibit or support knowledge management processes. The main focus of the present study has been to examine the predicting role or effects of trust, open leadership climate, learning from failure, and culture of altruism (organizational culture attributes) with regard to knowledge creation (dimension of knowledge management practices). Additionally, the proposed study explores the role of management hierarchical levels with reference to knowledge management practices.

LITERATURE REVIEW

Knowledge management

There are several definitions and constructs of the term 'knowledge' and its importance for the firms. Kogut and Zander (1992) for instance, describe knowledge as an embedded resource of the firm (Birkinshaw et al., 2002). KM first appeared in industries and functional areas that basically sell knowledge - professional services, pharmaceuticals, research, and development functions - in the late 1980s and 1990s. It is now quickly moving into other industries, including manufacturing, financial services, government and military organizations, and even non-government organizations (NGOs) (Grover and Davenport, 2001). Many organizations are increasingly viewed as knowledge-based enterprises in which, formal KM is essential. Being typically tied to organizational objectives, KM is rapidly becoming an integral business activity for organizations as they realize that competitiveness pivots around the effective management of knowledge (Grover and Davenport, 2001).

Researchers from different disciplines have given different categories of knowledge. Academic literature presents two perspectives of knowledge, the cognitive and the constructionist point of view. Another categorization is the ontological dimension, that is, individual and collective knowledge; and epistemological dimension, that is, explicit and tacit knowledge.

Standards Australia (2003) defines knowledge managements as, "the design, review and implementation of both social and technological processes to improve the application of knowledge, in the collective interest of stake holders". Nonaka (2007) prefers to call knowledge management knowledge-based management, connecting people to people and people to information to create competitive advantage. Knowledge management is more of a human resource management exercise than a technology based discipline. It is not merely a state of the art technology used to improve efficiency of the knowledge. Rather, it is an exercise about how people can be motivated, best utilize their knowledge, experiences and enhance the creativity by using state of the art technology.

A number of researchers on knowledge management

have focused on specific processes and activities within knowledge management. Lee et al. (2005) introduced the knowledge circulation process that can be determined by knowledge creation, knowledge accumulation, knowledge sharing, knowledge utilization and knowledge internalization. Researchers like Thomas et al. (2001) have discussed four critical stages of management of a firm's knowledge. These include knowledge creation and acquisition, knowledge transfer, interpretation of the knowledge to serve organization goals, and application of knowledge to achieve organizational goals. Darroch (2003) has elicited knowledge creation and acquisition, knowledge dissemination and responsiveness to knowledge as main components of knowledge management practice.

Knowledge creation deals with a variety of knowledge, whether tacit or explicit and is accelerated by encouraging synergistic interrelations of individuals from diverse back grounds" (Lee et al., 2005). Nonaka (1994) cites dynamic organizations as the ones that not only process information but also create information and knowledge. Through interaction with environments, organizations absorb information, convert these into knowledge and combine it with their experience, values and rules. Nonaka postulates that organizational knowledge creation can be viewed as an upward spiral process, starting at the individual level moving up to the collective (group) level and then to the organizational level, sometimes reaching out to the inter-organizational level.

Gold et al. (2001) empirically proved that effective knowledge management was the result of knowledge infrastructure, that is, technology structure, culture and knowledge process architecture. Knowledge creation depends on individual performing activities through which tacit and explicit knowledge is shared and combined for refinement of activities and development of knowledge (Adenfelt and Lagerstrom, 2006).

Culture

Workforce diversity in globalized business reflects a multitude of cultural and ethnic backgrounds, and shared values that blur potentially sharp cultural differences. The cultural differences from country to country necessitate aligning corresponding differences in management practices. Resultantly, the success or failure of knowledge management within organizations depends on culture, an emerging pre-requisite for effective knowledge management.

Deshpande and Webster (1989) define organizational culture as the set of shared values that help organizational members understand organizational functioning and thus guide their thinking and behavior. Researchers argued that culture is a complex system of norms and values that is shaped over time and affects the types and variance of organizational processes and behaviors (Barney, 1986).

Organizational culture as a concept is considered to be a key element of managing organizational change and renewal (Pettigrew, 1990). Thus, culture is a sort of glue that bonds the social structure of an organization together. Hofstede (1991) called culture the "software of the mind". In the competitive environment, the organizations have to change its culture in order to survive, otherwise, it may even be counterproductive (Jex, 2003).

Many scholars and practitioners (Lopez et al., 2004; Kulkarni et al., 2007) believe that an organizational culture that is supportive and or adaptive can enable the successful implementation of knowledge management technologies as well as practices.

Trust can be described as maintenance of mutual belief with each other based on intention and behavior (Lee and Choi, 2003; Davenport et al., 1998; Andersson and Westterlind, 1999; Chua and Lam, 2005; Allee, 1997). A culture of altruism can be mentioned with regards to collaboration without compensation (Andersson and Westterlind, 1999; Davenport and Prusak, 1998).

Open leadership climate can be known as an open discussion about vision, strategy and procedures and supporting of improvement and democratic leadership style (Chung et al., 2005; Davenport et al., 1998; Taylor and Wright, 2004; Andersson and Westterlind, 1999; Forcadell and Cuadamillas, 2002; Brand, 1998; Allee, 1997). Learning from failure is said to be openly discussing about mistakes and its causes (Taylor and Wright, 2004; Soliman and Spooner, 2000; Brand, 1998).

METHODOLOGY

Sample

In order to determine the number of sample, we use Morgan Table. Malleable Saipa Company has 1081 employees. According to Morgan Table, for this Company, 285 questionnaires were distributed and from this, 150 questionnaires were answered. The sample included 12% participants from senior management level, while there were 32 and 56% from middle and lower levels, respectively.

Instrument

This study uses 2 questionnaires: organizational culture scale (OCS) and knowledge management practice scale (KMPS). The initial questionnaire which represents the activities carried out in an OCS and KMPS has been sent to 6 experts who work on knowledge management in different industries. The experts were asked to specify the relations between questions and factors in the form of 1) unrelated 2) relatively related and 3) related. The CVR was calculated for each question individually and as a result, the questions with CVR less than 5% were removed.

As mentioned earlier, critical success factors affecting KM readiness were extracted from literature reviews and questionnaire-based surveys. Further, their reliability or internal consistency was assessed by Cronbach's alpha. It was observed that consistency was above 0.8 (0.86), higher than the 0.7 threshold normally

Table 1. Readiness scores of the firm.

Factor	Items	Score	Readiness
Organizational culture scale (OCS)	Trust	3.5	High
	Open leadership climate	3.8	High
	Learning from failure	4.1	High
	Culture of altruism	3.9	High

Table 2. Correlation matrix of variables (N =150).

	Variable	I	II	III	IV	V
I	Learning from failure	0.76				
II	Open leadership climate	0.35*	0.63			
III	Culture of altruism	0.35*	0.42*	0.85		
IV	Trust	0.41*	0.48*	0.34*	0.77	
V	Knowledge creation	0.3*	0.41*	0.25*	0.42*	0.74

*$p<0.001$.

considered as minimum (Nunnally, 1978).

Organizational culture scale (OCS) by Mohammadi et al. (2009) measured the four attributes of organizational culture. The OCS in current study consists of 17-items; 5 for trust, 4 each for open leadership climate, learning of failure and culture of altruism. The scale was rated on 5-point Likert-type scale, with 5 indicating "strongly agree" to 1 indicating "strongly disagree".

An average score is calculated for each factor. Based on Ruikar et al. (2006), an average score greater than or equal to zero and less than 2.5 is weak, indicating that several aspects (within a category) need urgent attention to achieve readiness in KM culture, whereas, an average score greater than or equal to 2.5 and less than 3.5 is medium, indicating that certain aspects (within a category) need attention to achieve readiness in knowledge management culture; and, an average score greater than or equal to 3.5 is high, indicating that the firm has adequate readiness and maturity in the KM culture and therefore has knowledge management-readiness in culture aspect.

The knowledge management process scale was adapted to measure knowledge management process by Lee et al. (2005). This version consisted of 29-items questionnaire that measure the five dimensions of knowledge management processes; however, in the present study, 5 items measuring the knowledge creation was used. The items were rated on a 5 point Likert type scale, ranging from (1) strongly disagree to (5) strongly agree. The internal consistency reliability estimates for the knowledge creation dimension of KMPS was 0.78.

RESULTS AND DISCUSSION

As seen in Table 1, the firm's state of OSC factor is excellent. All measures of this factor are greater than 3.5 (even greater than 4.7) indicating that the firm has adequate readiness and maturity to implement knowledge management in Malleable Saipa organization.

Correlation matrix of all variables along with alpha coefficient values was calculated in order to establish the validity and reliabilities of the instruments (Table 2).

In order to verify the direct/predicting effect of organiza-

tional culture attributes (learning from failure, open leadership climate, culture of altruism and trust) on knowledge creation process, multiple regression (enter method) was computed. In Table 3, the value of R² explains 23.5% of the variance in the scores for knowledge creation accounted for by the cultural dimensions (F= 63.33, p <0.001). The regression results partially support the hypothesis, as significant contribution to the knowledge creation is made by learning from failure (β = 0.12, p <0.001), Trust (β = 0.21, p <0.001) and open leadership climate (β = 0.25, p <0.001), while culture of altruism has not shown significant impact.

Table 4 shows that the mean knowledge creation scores of the respondents from senior level is 27.72 (SD=3.45), whereas mean knowledge creation score for middle and lower level management is 25.49 (SD = 4.21) and 25.84 (SD = 4.17), respectively.

The effect of management levels on knowledge management process reveal that the senior management levels are significantly different from middle and lower levels in the way they create knowledge. The possible explanation can be that middle managers perform the role of linking pins in organizations taking directives from the top management and forwarding to the operational managers. The senior and lower managers are more involved in planning and execution of decision and handling of information respectively, hence, they are more involved in knowledge processing than the middle managers.

Conclusion

In this study, multiple regression analysis results revealed that learning from failure, trust and culture of altruism

Table 3. Multiple regression analyses for learning from failure, trust, culture of altruism and open leadership climate on knowledge creation (N=150).

Model	Variable	B	SE	β	t	p
I	Constant	15.03	0.85		18.69	0.000
II	Learning from failure	0.18	0.05	0.12	3.51	0.000
	Trust	0.21	0.04	0.21	6.2	0.000
	Culture of altruism	0.04	0.04	0.05	1.61	0.115
	Open leadership climate	0.35	0.05	0.25	6.29	0.0000
	R^2			0.238		
	ΔR^2			0.235		
	F			63.33*		
	df			(4,808)		

*p <0.001.

Table 4. One-way analysis of variance (ANOVA) of Management levels for score on knowledge creation (N=150).

Variable	Management levels						
	Senior (n=18)		Middle (n=48)		Lower (n=84)		
	M	SD	M	SD	M	SD	F
Knowledge creation	27.72	3.45	25.49	4.21	25.84	4.17	6.82*

significantly predict knowledge management practices. Furthermore, ANOVA showed significant difference with reference to levels of managerial positions and knowledge management process.

The present study is one of the pioneer works on the subject in Iran organizational context, provides evidence, suggesting the importance and contributing to the existing body of universal knowledge in areas of organizational culture and knowledge management.

The findings of the research help knowledge management researchers as well as practitioners develop a better understanding of the role of organizational culture and successful implementation of knowledge management process. Management, while designing and developing strategies, policies and training manuals, may provide necessary guidelines to understand the issues of knowledge management and culture.

The findings of this study provide an initial understanding and pave the way for further research in this area. The future research could replicate and extend this research to enrich and enhance these preliminary findings in our context by exploring it in different organizational settings. Furthermore, the future research may focus on other important areas of organizational culture (autonomy, power sharing, expertise and mentoring) and knowledge management process attributes (knowledge capitalization, sharing, transformation and capturing).

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