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The Relationship between Organizational Culture and Knowledge Management

(A Case Study: Isfahan University)

Mohsen Allameh^a, Mohsen Zamani^b, Sayyed Mohammad Reza Davoodi^{a,b}^aManagement Dep., University of Isfahan, Isfahan, Iran (Islamic republic of)^bManagement Dep., University of Isfahan, Isfahan, Iran (Islamic republic of)^{a,b}Management Dep. Dehaghan Islamic Azad University, Isfahan, Iran (Islamic republic of)

Abstract

Today knowledge is considered as a valuable key in competition. Not only it is known as the foundation for stable development, but also it is the source of keeping competitive nature of an organization which is an advantage for the organization. The two fold role of culture, both as the main obstacle and also as the empowering factor in knowledge management activities, makes the importance of this factor double in efficient managing of knowledge management processes.

The present article is examining any kind of relationship between different kinds of organizational culture and different dimension of knowledge management. In order to analyze differences between different organizational cultures, the proposed conceptual framework by Comeron and Quinn has been used here. In this article the relationship between four kinds of organizational culture which are group, developmental, hierarchical and logical (market) culture and six dimensions of knowledge management has been examined.

This project is applied in nature and the methodology which has been used is correlationnal-descriptive; it is categorized as field study.

For analyzing the findings of the research and accepting or rejecting the proposed hypothesis, statistical techniques like step by step regression as well as pearson correlationnal coefficienal has been used. The results indicated that there is a meaningful relationship (about 99%) between different kinds of organizational culture and six dimensions of knowledge management.

Key words: Organizational Culture, Knowledge Management, University of Isfahan, Iran.

Introduction

In the body of available literature about knowledge management, the concept of "culture" has been used repeatedly. This concept is mostly presented in expressions like "knowledge-sharing culture" or "knowledge culture". Although other expressions like "organizational culture", "organizational climate" or "national culture" are also propounded. (Ardichvili 2006, Bock 2005, Lopes 2004 , Park 2004).

"Knowledge culture" is one of the specific branches of organizational culture. It is indication of an organizational life method which uses people in the process of creation and exchange of information. Moreover it uses its own as well as other's knowledge to accomplish organizational goals and attain success. (Oliver and Kandadi ,2006). There are many other facets of culture which are remained untouched and they are good sources for further inquiry for researchers.

It is believed that culture affects behaviors which are related to knowledge, people, groups, organizational departments and the whole organization, moreover it has critical influence on deciding about when, where and with whom a kind of knowledge should be exchanged. (King,2007). Organizational culture is considered as the most influential factor in knowledge management and organizational learning. (Jans and Prasamphanich ,2003). Based on an experimental research which was conducted by Ernest and Young Institute on 431 European and American organizations, indicated that organizational culture is the main obstacle in knowledge transfer. (Ruggles ,1988), In fact it is located at the top of a list of obstacles in knowledge management. In theoretical studies, cultural obstacles are also among two main factors which impede the total performance of knowledge management values (McCann and Buckner,2004). Thus culture is an important as well as complicated issue in knowledge management. Pan and Scarbrouch have studied the performance of successful methods of knowledge management from the social-technique perspective. That research was based on the experimental examination of knowledge exchange processes in an International Institute. The approach used by this institute was based on applying organizational culture to become sure about the accomplishment of the organization's mission in knowledge management processes. This case shows that most of the added value which was gained through technical changes via knowledge management was not the result of the used technology, rather it was the result of the new organizational managing roles and also the people who used this technology in the most efficient manner. These two researchers concluded that knowledge management systems go beyond technology; organizational culture in which new roles are defined has the critical role in knowledge creation

Briefly reviewing the related literature indicated that the presence of a specific culture in an organization is necessary for effective performance of knowledge management processes. All these studies stress on the point that, efficient culture is a culture which emphasizes on knowledge exchange, trust in interactions and creativity such a knowledge would be successful in performing management processes. (Lawson, 2003). One of the basic issues proposed in articles related to knowledge management is people's tendency in organizations for meaningful participation in knowledge management projects. Meanwhile knowledge sharing which means people's tendency for transmitting their personal knowledge to others who are mostly unknown to them, is of great importance. (Gilbert and Krouse,2002). Motivating people which means producing motivation and knowledge sharing tendency , is different among different people. (King and Marks,2008).

- Individuals' belief structure
- Structured values (accepted values, rules, customs and values) such structured units are called culture.

Organizational Culture

The convergent theories about organizational culture claim that, there is a unified consolidate culture in an organization which is distinguished as something which provides constancy between cultural factors (fundamental suppositions, values, artifacts (cultural manifestations)) among people and different units. (Schein ,2004). Suppositions or fundamental beliefs are indicative of explanations and interpretation which people would use them to understand truths around themselves and make these truths more tang able and understandable for themselves. As people in an organization decide to expose problems and use opportunities, these suppositions would be formulated, afterwards they would be transmitted to other members of the organization. When we can say that a specific culture has emerged when, all members of an organization believe these suppositions and beliefs. Values are more observable indications of fundamental beliefs, as they show some norms of the society and such norms would consequently define rules based on which people would interact. (Delong and Fahey ,2000).

Values would formulate a basis for social control in an organization due to their identification of accepted behaviors. Artifacts (cultural manifestation) are considered as the most obvious aspects of a culture. One of the cultural products related to the knowledge management is open knowledge base in an organization which stands as the symbol of values and fundamental cultural suppositions of that organization. Researchers believe that there exist a unified cultural unit which is considered as a unit or a powerful norm which makes the structure of an organization coherent; it is able to join and coordinate potentially differing parts of an organization. (Meyerson and Martin ,1987)

Four Different Cultures

Based on Comeron and Quinn's (1999) theoretical framework about competitive values, four distinctive kinds of culture can be identified: (table 1)

- 1) Group (tribal) culture
- 2) Developmental culture (adhocracy)
- 3) Hierarchical culture
- 4) Market (logical) culture

1) Group (tribal) culture: In family culture emphasis is put on the internal concentration as well as flexibility. Valuable aspects of this culture are team work, freedom, participation and extension of the personal. Organization is emphasizing on developing a human work environment in which personnel participation, commitment and loyalty are distinguished.

2) Developmental culture: The emphasis of this culture is on the external concentration and flexibility. Compatibility, flexibility and creativity are among the main values of this culture. This kind of culture exist within expert organizations which has temporal group works and are formed to accomplish tasks which need high levels of technology and also the task in uncertain and ambiguous.

Risk taking personality and also ability to predict are of great importance in this kind of culture.

3) Hierarchical culture: It emphasizes on internal concentration and constancy. Its main values consist of constancy, efficiency and predictability. This kind of culture is found in organizations which have hierarchical formal places for work or are managed by official formal rules and processes.

4) Market (logical or reasonable) culture:

In market culture, external concentration and constancy are emphasized comparative nature, accomplishing goods and productivity are among its central values. An organization which is formed based on this culture is after competition with other rival organizations, also with concentration on customers in trying to return its money. (table 1)

Table 1: Comeron and Quinn's model,1999

	Internal concentration	External concentration
Flexibility	Group	Developmental
Constancy	Hierarchical	Market

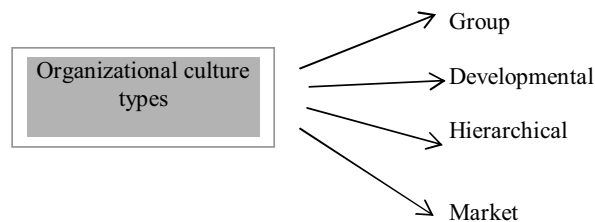


Figure1. Organizational Culture Types(Comeron and Quinn's model,1999)

Knowledge Management:

Based on the classification made by experts in the field of job, 1980 decade was named quality movement decade (emphasizing on using mental power of personnel to achieve better quality), 1990 was named Re-engineering decade (using technology to improve work process and diminish costs), finally 2000 is known as knowledge management decade.

Knowledge is the mental aspect of saved ideas, realities, concepts, data and techniques in human memory. Its source is human mind and it is based on the information which is obtained through experience, beliefs and personal values. It is transformable in association with decisions and actions and would become mature and fruitful.

Two persons' knowledge which receive the same information is not identical. (Due to the increasing importance of knowledge in the age of knowledge economy, organizations inevitably have to be attentive about concepts like creativity, innovation entrepreneurship, gaining sustainable, competitive advantage. Issues of knowledge production and knowledge processing has challenged organization in the current time.

Knowledge management is a set of processes for understanding and applying knowledge strategic resources in an organization. It is a structured approach which proposes methods for recognition, assessment, organizing storing and applying knowledge in order to meet the needs and aims of the organization. (Davenport and Marchard, 1999).

Knowledge management is a process by which organizations are able to detect, select, organize, distribute and transmit vital information and experiences which would be used in activities like problem resolution, dynamic learning, strategic programming and decision making. (Gupta ,2000).

Today knowledge management is considered as the main source of competitiveness. This does not mean that in the present competitive world, knowledge management can not be used for gaining competitive advantage, accomplishing goals and being creative, but decisively it can be claimed that today knowledge management skills could be used for entering inventiveness in organizations.

In modern economy, knowledge is the source of economical, industrial developments and other traditional factors like land, workforce and money are standing at subsequent levels of importance (druker,1993).

Knowledge Management Cycle

Knowledge management is a continues process. It causes to knowledge increase in a cyclical manner. Management cycle is divided in to expressions with shared consequent points, from 3 to 8 which is shown in table 2.

Table 2. Knowledge Management Processes

Processes	Theorist
1- Creation and Sourcing 2- Compilation and Transformation 3- Dissemination 4- Application and Value Realization	Wiig (1993)
1- Knowledge Acquisition 2- Knowledge Organization 3- Knowledge Dissemination 4- Knowledge Application	Parikh (2001)
1-Create Knowledge 2-Capture Knowledge 3-Organize Knowledge 4-Transfer Knowledge 5- Use Knowledge	Horwitch and Armacost (2002)

In the present study cycle of knowledge management is categorized into six different processes by combining and adjusting three above mentioned theories. These process are on fallows:

1) Knowledge creation: Organizations have conscious effort from both inside and outside to examine and define appropriate knowledge and resources. In another word, it is possible to create new knowledge by finding new ways which personnel have found for doing tasks, or find new knowledge from outside sources.

2) Knowledge capture: New knowledge is known as valuable and appropriate way for satisfying contemporary and future needs. Keeping knowledge is a logical way which simplifies the process of gaining, extracting and distributing knowledge.

3) Knowledge organization: New knowledge is organized and refined by filtering it in order to provide a comprehensive list of beneficial aspects of knowledge in relation to different products and services. Knowledge is located within a context and lines, thus it could be searched, examined and saved.

4) Knowledge storage: Modern knowledge is saved in a way that people in an organization have access to it. Database management and data saving technology can help to the process.

5) Knowledge dissemination: Based on the specific needs of the users, in an efficient suitable manner knowledge should be distributed. Moreover it is shared with applicable tools to make it understandable for all users.

6) Knowledge application: Knowledge is used in a context in which users can learn and also produce new knowledge. In learning process there must be analysis and critical assessment of ideas plans and knowledge. According to, knowledge management literature, an organization must move toward active managing of its knowledge, to integrate this process to its overall strategic management framework.

The Relationship between Culture and Knowledge Management

Culture can affect knowledge management in different ways. As knowledge and its related findings can penetrate into culture, organizational culture is also affected by knowledge management. The logic behind cultural knowledge management is that presupposed specific values of an organization can result in favorable as well as unfavorable behavior and also resulting knowledge management processing. For example positive aspiration and motivation for exchanging knowledge, dominance of a good content in an organization and reciprocal trust between, personal would affect knowledge management in a positive way. On the other hand negative competition and unwillingness for sharing knowledge are among factors which affect knowledge management adversely. The result of the one of the most recent studies indicated that this is not true in all organization. (King and Marks, 2008).

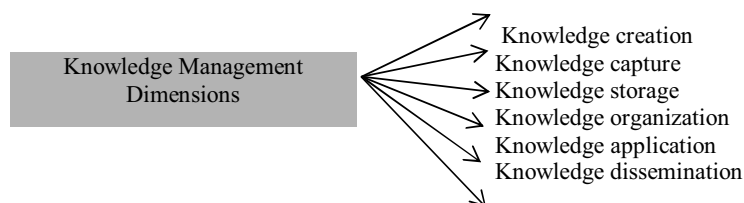


Figure2: Knowledge Management Dimensions

The Effect of Organizational Culture on Knowledge Management

Two researchers believe that organizational culture (organizational subcultures) could affect knowledge management in four different ways (DeLong and Fahey, 2000).

1. Supposed culture which indicate the most important kind of knowledge.
2. Culture in interpersonal and organizational relations act as a mediator variable.

3. Culture set the scene, for social interaction (reciprocal relationship between members of an organization.

4. Culture formulates needed processes for modern knowledge production and selection.

Suppositions exist in the essence of culture as the central element in evidently one of the most important of such suppositions is related to organizational knowledge. The second way in which culture can affect knowledge management is related to regulation and permanent use.

There is a question here that who does possess the knowledge, an individual or an organization. Sometimes knowledge is formal but most of the time it has formal and implicational nature with consequential behaviors in organization. The issue of possession depends on the people's viewpoint about the possession of their personal knowledge. The crucial role of trust and confidence is evident here. So that accepted norms also play an important role in relations between different responsible units in organizations for strengthening or weakening culture of knowledge. For example Gold *Et.al.* concluded that organizations which show more supportive and open value tendencies have more potentials to show behaviors which would result in knowledge creation. Two other researchers also studied university personnel. They found that shared organizational values would affect personnel's perception of knowledge possession. (Jarvenpaa and Staples ,2001). The third way by which organizational culture affects knowledge management is related to the role of culture in creating a basis for social interaction. Reflection of such a role can be observed in issues such as standard methods about goal, abundance and time duration of meetings, appropriateness of using electronic mail for contacting managers, bosses and supervisors. Culture also formulates some processes for knowledge production and selection. Personnel's perception of organization's view about defeats and mistakes are among important factors of this role. In some organizations mistakes which could be explained and justified logically are accepted or even welcomed, but in other organizations only one mistake or defeat (even unintended and low cost) can terminate in dismissal of an employee.

It is clear that risk taking and new knowledge creation depend on organizational view. In spite of strong beliefs about chief effects of organizational culture on knowledge management studies about organizational factors about behaviors related to knowledge have shown paradoxical results about norms which reinforce knowledge transference in organizations (Huber, 2001). In fact appropriate culture can provide the situation for appropriate knowledge management in an organization (Luin and Mullin ,1996). Therefore each research about the effect of culture on knowledge management should concentrate on the most eminent affecting factors on knowledge management. Although four above mentioned problems are emphasizing the effect of organizational culture on knowledge management but knowledge management would also affect organizational culture, because suppositions, values and cultural artifacts are all among major affecting factors on new knowledge. Production (King ,2007). Organizational culture would be structured when the beneficences of a new method is proved.

Research Hypotheses

The aim of the present study is to investigate the relationship between organizational culture and knowledge management in Isfahan university. In this research the relationship between four different kinds of organizational culture, namely group, developmental, market and hierarchical culture and knowledge management is examined.

More over this research specifically will consider the effect of different kinds of cultures on different aspects of knowledge management which consist of knowledge creation, knowledge capture, knowledge organization, knowledge storage, knowledge dissemination and knowledge application . For doing so four secondary (subordinate) research hypotheses as well as one major research hypothesis is proposed:

Major Research Hypothesis

There is relationship between organizational culture and knowledge management in Isfahan university.

Secondary Research Hypotheses

There is relationship group culture and knowledge management in Isfahan university.

There is relationship between developmental culture and knowledge management in Isfahan university.

There is relationship between market culture and knowledge management in Isfahan university.

There is relationship between hierarchical culture and knowledge management in Isfahan university.

Research Methodology

This study is applied, correlational descriptive research and is categorized as field study. To collect related literature, the related books, articles and journals were consulted as data collection procedure and analyzing the collected data, two kinds of questionnaires has been used. The first is Comeron and Queen's (1999) questionnaire about organizational culture types and the second of one is lassen's (2003) questionnaire about knowledge management dimensions. Each questionnaire contained 24 questions. Subjects answered the relevant questions based on a 5 staged Likert scale. Using Cronbach's alpha coefficient the first questionnaire has 95.8% of constancy and the second has 94.9%. This shows that measuring tools have high levels of constancy.

Isfahan university staff formed the population of this study which were randomly selected. The whole population was about 430 among which 109 were randomly selected. The relevant information about level of education, age, sex and years of service is as fallows:

Education: 23% have diploma (25 persons), 62% have BA degree (68 person) and 15% MA (16 person).

SEX: 64% (70 person) female and 36% (39 person) were male participants.

Age: 37% was under 30 year old (40 person), 47% between 30-40 years old (51 person) and 16% more than 40 years old (18 person).

Years of service: 24% of participants have less than 5 years of record of service (26 person), 26% between 5-10 years (28 person) and 16% between 10-15 years (18 person), 23% between 15-20 years (25 person) and 11% more than 20 years (12 person).

In this study for the purpose of analyzing the collected data, SPSS software was used. Also descriptive statistics (percentage, frequency, mean, standard deviation) was used to test research question inferential statistics like variance test, pearson correlation coefficient and regression test were used.

Ranking Different Organizational Cultures and Knowledge Management Aspects among Isfahan University Staff

The result of ranking different organizational culture from the view point of Isfahan university staff is presented in table 3.

Table3.Comparison the mean of organizational culture types

Questions (first questionnaire)	Average	Organization culture
21,17, 13, 9, 5, 1	2.90	Group culture
22, 18, 14, 10, 6, 2	2.81	Developmental culture
23, 19, 15, 11, 7, 3	2.93	Hierarchical culture
24, 20, 16, 12, 8, 4	2.91	Market culture

According to table number 7 the most powerful culture was hierarchical then market culture and on the other hand the least powerful was developmental culture.

The results related to ranking different aspects of knowledge management in Isfahan university form the view point of the staff is represented in table 4.

Table4.Comparison the mean of knowledge management dimensions

Questions	Average	Aspects of knowledge management
4-1	2.88	Knowledge creation
8-5	2.79	Knowledge capture
12-9	2.72	Knowledge organization
16-13	2.97	Knowledge storage
20-17	2.95	Knowledge dissemination
24-21	2.82	Knowledge application

According table 8 knowledge capture has most and knowledge organization has the least importance in Isfahan university.

Testing Research Hypotheses

In this section we are going to test the related research hypotheses with making use of the collected data and related statistical methods. The obtained results from pearson's correlation, coefficient for different research hypotheses in table 5-9.

Table5. Correlation Coefficient between Group Culture and Different Aspects of Knowledge Management

		Knowledge creation	Knowledge capture	Knowledge organization	Knowledge storage	Knowledge dissemination	Knowledge application	Knowledge management	Conclusion
Group culture	R	0.825	0.828	0.839	0.617	0.840	0.630	0.833	Acceptance of first hypothesis
	Sign	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	n	108	108	108	105	109	103	108	
	r ²	68	69	70	38	71	40	69	

According to table 5 it can be claimed that with 99% level the first research is accepted, implying that there is relationship between group culture and aspects of knowledge management. Based on coefficient for the most shared variance is related to knowledge dissemination and the least is related to knowledge storage.

Table6. Correlation Coefficient between Developmental Culture and Different Aspects of Knowledge Management

		Knowledge creation	Knowledge capture	Knowledge organization	Knowledge storage	Knowledge dissemination	Knowledge application	Knowledge management	Conclusion
Developmental culture	R	0.802	0.849	0.834	0.609	0.849	0.612	0.797	Acceptance of second hypothesis
	Sign	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	n	108	108	108	105	109	103	108	
	r ²	64	72	70	37	72	38	63	

According to table 6 it can be claimed that 99% there is relationship between developmental culture and aspects of knowledge management. Which shows that second research hypothesis is confirmed. Based on the results the most level of shared variance is related to knowledge capture and knowledge dissemination and the least is related to knowledge storage.

Table7. Correlation Coefficient between Market Culture and Different Aspects of Knowledge Management

		Knowledge creation	Knowledge capture	Knowledge organization	Knowledge storage	Knowledge dissemination	Knowledge application	Knowledge management	Conclusion
Market culture	R	0.752	0.849	0.834	0.609	0.849	0.612	0.800	Acceptance of third hypothesis
	Sign	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	n	108	108	108	105	109	103	108	

	r^2	56	72	69	37	72	38	64	
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According to table 7, 99% there is relationship between market culture and aspects of knowledge management, thus the third research hypothesis is accepted. Based on identifying coefficient, the most percentage of shared variance is related to knowledge capture and knowledge dissemination and the least is related to knowledge storage.

Table8. Correlation Coefficient between Hierarchical Culture and Aspects of Knowledge Management

		Knowledge creation	Knowledge capture	Knowledge organization	Knowledge storage	Knowledge dissemination	Knowledge application	Knowledge management	Conclusion
Hierarchical culture	R	0.746	0.822	0.852	0.605	0.844	0.618	0.777	Acceptance of fourth hypothesis
	Sig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	n	108	108	108	105	109	103	108	
	r^2	56	67	72	37	71	38	60	

According to table 8, the fourth research hypothesis which was based on the relationship between hierarchical culture and aspect of knowledge management is 99% accepted. Based on coefficient of the most shared variance is related to knowledge organization and the least in related to knowledge storage.

Table9. Correlation Coefficient between Organizational Culture and Aspects of Knowledge Management

		Knowledge creation	Knowledge capture	Knowledge organization	Knowledge storage	Knowledge dissemination	Knowledge application	Knowledge management	Conclusion
Organizational culture	R	0.828	0.888	0.887	0.657	0.887	0.657	0.850	Acceptance of main hypothesis
	Sig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	n	108	108	108	105	109	103	108	
	r^2	68	79	78	43	78	43	72	

According to table 9, 99% the main research hypothesis which was based on the relationship between organizational culture and different aspects of knowledge management is accepted. The most percentage of shared variance is related to knowledge capture and the least is related to knowledge storage and knowledge application.

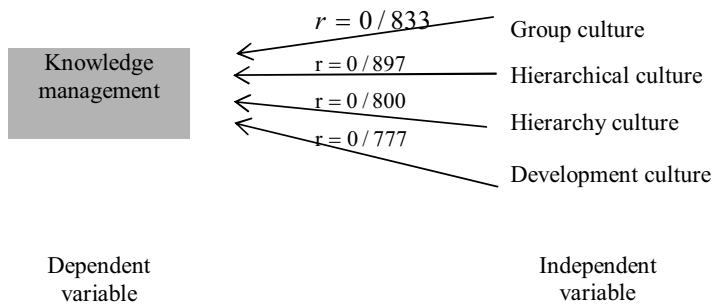


Figure3: The Relationships between Variables

Conclusion

Today by means of knowledge management a set of processes for conception and application of strategic knowledge resources in organization can be created. On the other hand, culture can affect knowledge management in different ways. As knowledge and its related findings can penetrate into culture, organizational culture is also affected by knowledge management. In general, researches have shown that culture can affect knowledge management in different ways. In the present study the concept of organizational culture and knowledge management and the relationship between them was examined, then with the application of the proposed model the extent of relationship between four different kinds of organizational culture (group culture, developmental culture, hierarchical culture and logical (market) culture) and six dimensions of knowledge management (knowledge creation, knowledge capture, knowledge organization, knowledge storage, knowledge dissemination and knowledge application) in Isfahan university was evaluated.

For doing so after data collection procedures and analyzing them by appropriate statistical techniques the dominant situation in Isfahan university was examined.

Results indicated that the dominant culture in Isfahan university is hierarchical and among different aspects of knowledge management knowledge storage has gained more attention than other dimensions.

Moreover, this research shows that 99%, there is a significant relationship between different organizational culture and dimensions of knowledge management due to the point that group culture and logical culture more than two other kinds of culture would prepare the ground for knowledge management, therefore preparing the situation for moving from hierarchical culture toward these two types of culture can be advent of creating, capture, organizing, storage, dissemination and application of knowledge in Isfahan university.

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