

Assessing Knowledge Creation and the Effects of Institutional Culture on it (the Case: University of Isfahan)

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Abstract

Today, one of the most important functions of universities is to create knowledge in order to fulfill the needs of the society and promote the status of knowledge and the quality of instruction through it. Generally, it can be said that intellectuality is the most important and the most valuable property of educational centers such as universities and is the main key to development. Naturally, for the materialization of knowledge creation in universities as one the most important issues of the third millennium, there are different factors at work and among these factors, institutional culture and its effects on knowledge creation have been investigated in this study. The population of this study included all the faculty members of the University of Isfahan (476 cases) of whom 142 cases were selected based on Cochran formula. A questionnaire was used for data collection and the method employed in this study was survey. For analyzing data and testing the hypotheses, both descriptive statistics (Percentage, frequency, mean, standard deviation) and inferential statistics (Pearson r and regression) were used. The findings reveal that institutional culture has effects on the amount of knowledge creation of the faculty members and among the variables, "orientation towards social behavior" which is one of the dimensions of institutional culture, has had the most effects on knowledge creation. Accordingly, revised coefficient of determination reveals that 20% of the variance of the dependent variable (knowledge creation) has been due to variables functioning on regression model. The rest of the variance is due to other variables not investigated in this study.

Keywords: institutional culture, knowledge creation, socialization, externalization, combination, internalization

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Introduction

In the last decade, many places of the world have emphasized knowledge specially because international institutes and governments have emphasized the important role of universities in creating a knowledge – based society (Bonaccorsi, Daraio , 2007). They believe that knowledge is the engine of intellectual development and therefore, those countries will be more successful in the third millennium, that are more intellectually-oriented and pay more attention to the issue of knowledge.

Nowadays, acquiring knowledge only through work is not enough and the knowledge that is created in organizations like universities should be shared by colleagues in order for all persons to do their jobs better throughout the organization, and in this way, the organization can obtain to the necessary dynamism.

Those organizations which are able to employ the whole intelligence (group intelligence) of their employees and use the knowledge of all their members are more innovative, more efficient and more effective.

Knowledge and other forms of mental capital are the tacit capital and resources of an organization. The organizations which have more knowledge are able to adapt their traditional and old-fashioned resources and capabilities to the new and distinct methods and in this way, they can make more efficient universities.

Knowledge creation depends on different factors such as organizational culture (Parent , et al. 2000). There fore, one factor influencing knowledge creation in universities is

organizational culture. Many scholars define organizational culture as "a system of common inferences or common understanding that members have of a specific organization".

That organizational culture, in which creative and critical thinking is a value, is an important factor for knowledge creation. Creating appropriate culture and using knowledge management and information technology lead the organization towards efficiency and effectiveness (Snowden, 2000:237-265).

In management discussions, the competition issue is generally formed based on the access to information. The important point is that administrators have to encourage knowledge creation in their organizations in order not to lag behind other competitive organizations and

universities are not exceptions. Actually, universities, which are the major guardians of knowledge creation, should attempt to be the sources of providing knowledge for other organizations. Therefore, today we can witness the increasing growth of the significance of knowledge and learning in social systems because, according to peter Draker, knowledge is the base of competition in the society.

Today, universities are the most important centers of knowledge creation and educating professional people. According to UNESCO, the most important mission and duty of universities is knowledge creation (Buargue, 2004).

The existing evidence indicates that in universities across Iran, knowledge creation has not been considered seriously (Dorri and Talebnejad, 2008). Therefore, the main question is that "How

is the level of knowledge creation in the University of Isfahan (as one of the main universities of Iran) and what are the effects of organizational culture on the process of knowledge creation?" In order to answer this question, in this paper, the concepts of organizational culture and knowledge creation have been investigated.

Knowledge

Knowledge is defined as the information combined with process, experience, interpretation and feedback. (Davenport, DeLong and Beers, 1998). Knowledge is a dynamic combination of experiences, values, subject information and professional information which provides a framework for evaluating and acquiring new experiences and information in a coherent and integrated manner. This knowledge flows within the organization (Polanyi, 1966; Alvani, Nategh and Farahi, 2007). In Nonaka and Takeuchi's (1995) view, knowledge is the process of human departure from subjective, biased beliefs towards reality.

An organization includes schematic and content knowledge. The sources of schematic knowledge encompass bases or infrastructures, organizational culture, goals and strategies of the organization. The sources of content knowledge, however, encompass the preservation of the knowledge of the human resources of the organization that is usually stored in computers or books (Joshi, 1998).

In describing organizational knowledge, Lang introduces man as the main element of knowledge creation. Through circulation and transfer (in an informal way) knowledge is created among those who share common interests and remains in the

organization. Thus, it can be said that knowledge creation and its application is the result of the activities and efforts of members in integrated groups. Organizational knowledge is created by interactions among technology, skills and people in an organization and includes implicit and explicit knowledge (Nonaka and Takeuchi, 1995; Polanyi, 1996; Alvani, Nategh and Farahi, 2007).

Kinds of knowledge

A) Explicit Knowledge: It is an organized knowledge with a fixed content which can be codified, compiled and transmitted by using information technology. Examples of this type of knowledge can be found in databases and directories in organizations (Alvani, Nategh and Farahi, 2007). Nonaka and other authors like Hall and Anderiani believe that explicit knowledge is a kind of knowledge which can be codified and therefore it can be easily transmitted, processed, communicated and stored in databases. This kind of knowledge can be formulated and distributed among the members of the organization in the form of a formula or directory.

Instructions, rules and principles, procedures, regulations and guidelines which are easily transferable among the members of the organization are all different types of explicit knowledge (Allameh and Teimoori, 2007: 123-152).

B) Implicit knowledge:

Implicit knowledge is the opposite of explicit knowledge. This knowledge is personal, cognitive and context-dependent and is placed in a person's mind, behavior and perception. Values, beliefs, insight, and inspirations of people are examples of

this kind of knowledge in organizations. These definitions of organizational knowledge indicate the importance of the "person" and "the interactions between people" in the creation and application of organizational knowledge. (Alvani , Natagh and Farahi, 2007). Implicit knowledge is personal. It is acquired by sharing experiences, observation and imitation and is rooted in behaviors, methods, commitments, values and emotions of individuals; it is not codified, and can not be transmitted with a code. Implicit and explicit knowledge complement each other; this means that, for creating knowledge both of them are necessary. For this reason, what is called knowledge is created by the interaction between implicit and explicit knowledge and not by one of them in isolation from the other (Allameh & Teimoori; 2007; 123- 152). Generally, implicit knowledge is internal and can not be formally formulated. But, explicit knowledge can be demonstrated in words, sentences, and statements, and can be codified (Nonaka, 1994).

Organizational Knowledge Creation

Organizational knowledge creation has been proposed by Nonaka, et al. who proposed four themes and dimensions for it as processes which play central roles between implicit and explicit knowledge and their interactions lead to knowledge creation: 1. Socialization (implicit to implicit), 2. Externalization (implicit to explicit), 3. Combination (explicit to explicit), 4. Internalization (explicit to implicit).

1. Socialization: In socialization, a kind of implicit knowledge is created that is the result of informal interactions. In such cases, colleagues spend a lot of time together and share their

experiences. It happens in an environment which belongs to them and it is possible that they hold such meetings out of their work places as well (Schulze and Martin, 2008). In socialization, implicit knowledge is accumulated and transferred (Choi and Lee, 2002). Therefore, socialization happens when we transfer the implicit knowledge in our own minds to implicit knowledge in other's minds, and share our thinking patterns with others. In socialization, there is close relationship between the two persons and accordingly, the implicit knowledge appears in their minds through mental participation. Sometimes, a person is able to transfer his/ her implicit knowledge to another person directly. This transfer is done through observation, imitation, and action based on those observations. Therefore, it can be said that the person has been socialized to that knowledge. This kind of knowledge creation is a rather limited form of knowledge creation. This kind of activity is achieved via instruction of teacher to student, participation in conferences or simply through interactions between employees in their work breaks. Through instruction of teacher to students, the pupil learns the skills from his / her instructor, but neither the teacher nor the students are able to acquire any systematic and organized knowledge in the realm of their professional discipline and because it is not explicit, it can not be distributed among the whole members of the organization (Allameh & Teimoori, 2007: 123-152).

2. Externalization

In externalization, the interactions of implicit knowledge are clearly codified, therefore, the interactions are more formal (Schulze & Martin , 2008). Externalization of knowledge is an activity which releases the created knowledge in the social environment (knowledge creation is for external

uses). In externalization, there are creative dialogues, analogical and inferential thoughts, using metaphors and exchanging information (Choi and Lee, 2002).

The transformation of implicit knowledge to explicit knowledge is usually done clearly through implicit statements. Externalization is a meticulous process which effectively transfers the accumulated knowledge from implicit perception to formulated perception. Writing an essay or documentation of manager's and employee's experiences are examples of the process of externalization of knowledge. In this process, implicit knowledge is transformed to explicit knowledge and mental, non-written knowledge is transformed to modern, written knowledge. Therefore, it can be said that the new, acquired knowledge is useful for all people, namely, the knowledge, which is inside us and in our mind and is not transferable to all can be used by all people in a codified way. When a person is able to explicate his/her implicit knowledge of his professional field, this knowledge is changed into explicit knowledge and in this way, the possibility for the development, exchange and distribution of this knowledge is provided. A person can provide other people with his/her knowledge in the form of systematic, organized material (seminars, workshops). (Allameh & Teimoori , 2007: 123-152).

3. Combination: In combination, the relation between the previous kinds of knowledge is held. In this stage, compilation, edition, sorting, synthesizing and combining the existing knowledge and finally separating the new knowledge happen (Schulze & Martin, 2008). In this stage, acquiring and integrating syntheses, processing them and distributing them happen.

Combination occurs when there is exchange between two types of explicit knowledge. In this process, scientific texts , databases and statistical banks which are all among the explicit knowledge are added together and develop. This kind of knowledge exchange leads to growth and increase of explicit knowledge (Allameh & Teimoori ,2007: 123-152).

4. Internalization: In this stage, operationalizing explicit knowledge, objectifying, and the required transformations which are kept as implicit knowledge happen. The results of this stage can be considered in scientific activities as instructions (Schulze and Martin , 2008). Compared with externalization, it can be said that in internalization, there is projection in some way but there is a kind of continuity and recursion as well (Holsapple & Singh, 2001).

Internalization results in achieving personal experiences, motivation and the ability to experiment for the person (Choi & Lee, 2002). Therefore, internalization is the result of changing explicit knowledge to implicit knowledge. Here, by using his/her own capabilities and creativity, studying scientific material or hearing scientific viewpoints, the person creates new knowledge which although is not easily transferable to others, is reflected in their behavior. Internalization is a developing process and transforms the acquired knowledge from formulated perception into implicit perception continuously and broadly—when the explicit knowledge is distributed through the organization, the employees start internalizing it. It means that they use this knowledge for enrichment, development, and reframing their implicit knowledge (Allameh and Teimoori, 2007: 123- 152). The transformation of explicit knowledge into implicit knowledge makes the employees able to incorporate that knowledge into

their responses and behaviors in a way that they can use it while facing different situations or problems.

Nonak, et al. stated that all above – mentioned factors are related together and they are not distinct processes and there is no priority in the way they have been mentioned above. This classification is only for the purpose of understanding the complicated process of knowledge creation (Sculze & Martin, 2008). Figure 1. shows the schematic dimensions of knowledge creation.

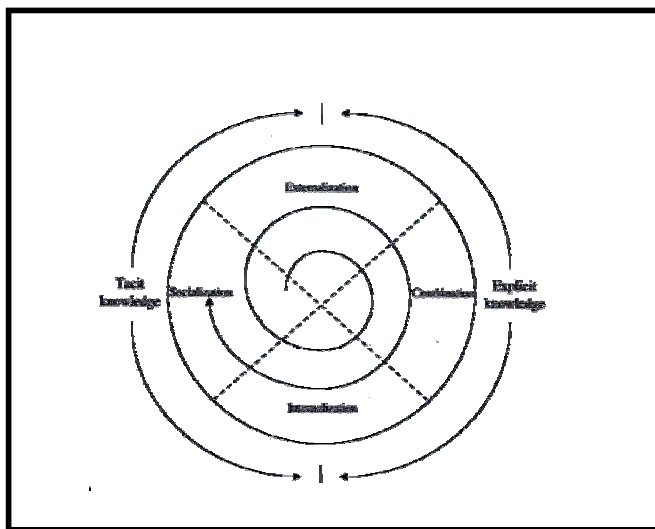


Figure 1: The process of knowledge creation (choi & Lee, 2002: 177)

Organizational culture

More than 20 years ago, the concept of organizational culture was proposed in management sciences (Maeder, 2007: 70). Scientists paid a great deal of attention to organizational culture in 1980s for two major reasons:

- 1) the effects of investments of Japanese in world markets and
- 2) the failure of systems, structures and strategies.

This means that the success of the Japanese in global markets on the one hand and the failure of organizational strategies on the other, in 1980s made the scientists aware of the fact that they

should pay more attention to the issue of organizational culture. Organizational culture attempts to answer moral questions: Are people reliable or not? Are they willing to improve? Do they have the ability to increase their understanding of what is right and what is wrong? In other levels, questions about reality and honesty are asked: Is whatever people usually say real? Are a person's opinions better than another's?

Therefore, in this case, the person's moral perspective and the obligatory structural paradigm are considered. In the first case, the individuals or the moral agents have purposeful behaviors and the organizations work with these intentions and these intentions and purposes vary from organization to organization. In the second case, it can be said that with regard to structural constraints and their obligations, people are not completely free but they should observe structural obligations (Walton, 2008).

Organizational culture is employed in management sciences to a great extent but there is no consensus about its definition. Hofstede declares that a holistic organizational culture, influenced by history, is related to anthropological and social concepts and has special delicacy and stability (Baumgartne, 2006). Louise believes that organizational culture is related to a set of common perceptions and understandings used for organizing interactions which employs language and other symbolic devices for expressing these common understandings (Sardari, 2004: 46). Organizational culture encompasses common values, beliefs, and norms which relate the members together within an organization (Huener, 2001).

It can be concluded from these definitions that organizational culture encompasses a set of values, beliefs, inferences and thought patterns which are common to all members of an organization (Pourkazami and Navaii, 2007:49).

Organizational culture appears because of interactions between internal and external environments (Baumgartne, 2006). Apparently although organizational culture has different elements and various dimensions, all authorities agree that most organizations have common for harmonizing human actions. These assumptions are related to values and common norms, similar understanding of symbols, similar methods for interpretation and similar rules for communication applied in social organizations (Schein, 1997:70).

Peter and Rotterman's research(1982) indicates that successful and dominant organizations have strong and positive cultures because strong and positive culture leads to enhancing the level of participation among staff, an increase in agreement on strategies and an increase in profits. According to Schein (1990), the necessary and appropriate function in management includes skillful encountering with organizational culture. Also, Wallace and Weese's research (1955) confirms the fact that administrators should spend all their energy on developing a strong organizational culture in order to make the organization more effective (Asadi and Rahavi, 2004:30). Therefore, we agree with Byron(2001) who says the success or failure of any organization is rooted in its organizational culture (Ghodsi, 2006:96). Now, we can agree with Hofstede (1990) who believes that culture is the software of mind and has a great effect on organization (Brocklehurst, 2008), therefore, it can be said that like all societies, our society has its own complications and it is necessary for it to

adapt to the rapid changes of the organizations in contemporary times. This fact requires that we pay enough attention to the issue of organizational culture although it seems that it has been ignored in some organizations (Asadi, 2001).

A Review on Conducted Researches Concerning Relationship between Organizational Culture and Knowledge Creation

Several studies have been done on organizational culture and its impact on knowledge creation. In most researches, organizational culture has been somewhat considered as factors affective on knowledge creation; so that in this respect Zanjireh-Chi & Rabbani in their paper titled "An Approach to Knowledge Creation" have proposed that there are difficulties in the way to create knowledge, inter alia, organizational culture which always resist to knowledge transfer much more than other organizational resources [Zanjireh-Chi & Rabbani, 2008].

In their research on the knowledge conversion process/organizational culture ratio in Ferdowsi University of Mashhad utilizing main components of Nonaka, Ikujiro theory; i.e. socialization, externalization, combination and internalization, Gholizadeh Rezvan et al. (2005) studied the position of knowledge management and examined the role and importance of organizational culture in the realization of effective knowledge management. Data analysis showed that internalization in the field of knowledge management held the highest position which was followed by socialization, externalization and combination, respectively. Also, according to obtained results, there is a significant relationship between organizational culture and

internalization, externalization and combination. However organizational culture was not significantly not related with socialization [Gholizadeh Rezvan, Shaabani Varki and Mortazavi, 2005].

Lemon and Sahota study that dealt with organizational culture as feedback resource of knowledge, it was concluded that organizational culture plays a key role in the enrichment and updating of organizational knowledge. They argue that this issue becomes even more important in competitive environments [Lemon and Sahota, 2004: Abstract].

In a survey concerning the role of organizational culture in Enterprise Resource Planning (ERP); Jones, Cline and Ryan (2006) came to the conclusion that there is significant relationship between organizational culture and knowledge sharing among organization staffs [Jones, Cline and Ryan, 2006:1].

Generally, regarding the literature on organizational culture and knowledge creation, the following hypothesis can be formulated:

There is a relationship between "organizational culture and its dimensions" and "knowledge creation and its dimensions".

Methodology: [population, sample, method of sampling, instrument, the method of data collection, and data analysis]

The population of this study included all faculty members of the University of Isfahan (476 cases). Of which 142 cases were selected based on Cochran's formula. The method of sampling was simple random sampling.

$$n = \frac{Nt^2s^2}{Nd^2 + t^2s^2} = \frac{476 \times 1.96^2 \times .13}{[(476 \times 0.5^2) + (1.96^2 \times .13)]} \approx 141$$

A questionnaire was used and for both dependent and independent variables, a Lickert scale was employed. In order to guarantee the face validity and the content validity of the questionnaire, professionals opinion was obtained. For assessing the reliability of factors related to different dimensions of different variables, cronbach alpha was calculated. The results of reliability coefficients revealed that the internal reliability of different factors was acceptable. Even the results of reliability coefficients related to different dimensions of knowledge creation in this study have been higher than the reliability coefficients of schulze and Martin's (2008) study (see Table 1.)

This study is an applied research. It means that our purpose for undertaking this research was developing applied knowledge in a specific

subject (the relationship between organizational culture and knowledge creation). The method of study was survey, meaning that the distribution of the characteristics of the population has been considered and the purpose has been to explain the present situation and identify the relationship between variables. Among the characteristics of this method, modeling, drawing causal models, the ability to generalize findings, the direction of their correlation can be mentioned.

The required data were collected by trained interviewers through direct meetings with the selected cases using descriptive one – variable, two – variables, and multi – variable, methods taking into consideration the points such as the levels of assessing variables. Finally, the data was analyzed using the SPSS.

Table 1. Reliability coefficients of organizational culture and knowledge creation

Variable	Dimensions		N	Reliability coefficient of each dimension	Total reliability coefficient
Organizational culture	Organizational identity		6	0.61	0.865
	Group commitment		4	0.61	
	Stability and social system		3	0.61	
	Giving direction to social behavior		5	0.70	
Knowledge creation	The comparison of reliability coefficients		Reliability coefficients in present study	Reliability coefficients in schulze and Martin,2008: 1749	0.90
	Socialization	5	0.85	0.83	
	Externalization	4	0.84	0.78	
	Combination	4	0.90	0.71	
	Internalization	4	0.81	0.74	

Data analysis

A) Descriptive analysis

Knowledge creation

Based on the results of the study, it can be said that the amount of socialization was not acceptable and most cases of the sample received scores lower than the mean; in other words, the amount of interactions among faculty members of the same department or different departments was rather low (Table 3).

According to the faculty members' opinions, there were no discussion and serious dialogues on scientific needs among professors, and they have little interest in expressing the details of scientific reports. It means that the amount of externalization, as one of the dimensions of knowledge creation, was very low (Table 2).

However, systematizing, applying, and organizing the acquired knowledge is frequently observed among the faculty members; in other words, the combination dimension was very important to them (Table 2).

Devoting enough time to functions of scientific skills, methods of knowledge creation, and evaluating theoretical ideas in the realm of internalization were all very important to the faculty members too (Table 2).

Finally, it can be concluded that the scores of faculty members in "socialization" and "externalization" have not been optimal while their scores in "combination" and "internalization" have been optimal and acceptable. By integrating these four dimensions of knowledge creation, it can be concluded that taken together, the amount of knowledge creation among the faculty members was not optimal (figure 1. & Table 3).

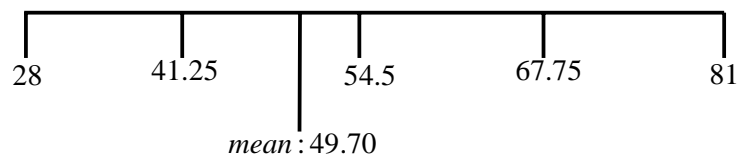


Figure 1. Knowledge creation

Table 2. The percent ages of variables related to knowledge creation and its dimensions

Dimensions of knowledge creation		never	seldom	sometimes	rather high	always	No answer	total
Socialization	The extent of personal interactions with your colleagues for discussing ideas, solutions and scientific proposals	1.4	23.9	45.8	26.1	2.8	0	100
	The number of intellectual collaboration meetings with the colleagues of the same department based on pre – planned schedule	14.8	31.7	36.6	15.5	1.4	0	100
	The extent of scientific interactions with members of other departments	19	49.3	25.4	4.9	1.4	0	100
	The number of intellectual collaboration meeting with faculty members of other universities based on pre – planned schedule	26.8	45.8	22.5	4.2	0.7	0	100
	The extent of faculty members' efforts for reacting consensus about proposals, solutions and scientific ideas	12	35.2	35.2	16.9	0.7	0	100
Externalization	Investigating faculty member's opinions regarding the scientific needs of society	8.5	26.7	45.1	18.3	1.4	0	100
	Discussing with qualified people regarding scientific innovations	4.2	19	42.3	32.4	2.1	0	100
	Consulting with qualified people about scientific needs of society	3.5	19	38.7	35.2	3.5	0	100
	Detailed description of scientific reports	2.8	21.1	42.3	29.6	4.2	0	100
Combination	Documentation obtained scientific knowledge	2.8	21.1	35.9	34.5	5.6	0	100
	Applying obtained knowledge in relation to the scientific needs of society	4.2	19.7	43	27.5	5.6	0	10
	Systematizing obtained knowledge in relation to the creation of new and appropriate ideas	3.5	16.2	42.3	39.4	5.6	0	100
	Organizing and distributing the newly – achieved insights with regard to scientific needs.	4.2	20.4	41.5	28.9	4.6	0	100
Internalization	Spending enough time experimenting for functions of new scientific skills	7	21.1	49.3	19.7	2.8	0	100
	Spending enough time experimenting for operationalizing their own scientific thoughts for answering scientific needs of society	7	20.4	37.3	38	3.5	0	100
	Spending enough time experimenting for the methods of creating suitable ideas	2.8	19.7	41.5	32.4	3.5	0	100
	Spending enough time with trial and error for assessing their own theoretical knowledge about the scientific needs of society	4.2	16.2	40.1	33.1	6.3	0	100

Table 3. statistics related to knowledge creation variable

	Mean	Standard deviation	Skewedness	max	min	range	N
Socialization	12.47	3.41	.3	25		19	142
Externalization	12.14	2.86	.2	19	5	14	142
Combination	12.59	3.15	-0.145	20	4	16	142
Internalization	12.48	2.86	-0.25	18	5	13	142
Total of knowledge creation	49.70	9.14	0.142	81	28	53	142

Organizational culture

Based on the results, organizational identity from faculty members' perspectives (determining common values either from faculty members' or from organization managers' perspectives) was rather weak. Regarding the attention of university managers to professors' proposals and also regarding the criteria for the selection of faculty members, most professors believed that there were disorders in the above – mentioned factors (Table 4).

as the findings reveal the feeling of commitment, job interest, working above duty and group belonging are the factors which were not of an acceptable level (Table 4.).

Most professors believed that altogether, the performance of the faculty members is the criterion for assessing their success and promotion in the organization. Therefore, all the cases of the

sample received acceptable scores in stability and social system (Table 4.).

Generally, most professors were highly interested in studying and believed that they can freely discuss their thoughts beliefs, criticisms and proposals. It showed that giving direction to social behavior among professors was at an acceptable level (Table 4.).

The final conclusion is that firstly, the first two dimensions, namely, organizational identity and group commitment were not optimal among the faculty members. However, the other two dimensions namely, stability and social system and giving direction to social behavior were optimal and the professors received acceptable scores in these two dimension. Secondly, as a whole, organizational culture has been realized among the faculty members to a great extent (figure 2 and Table 5).

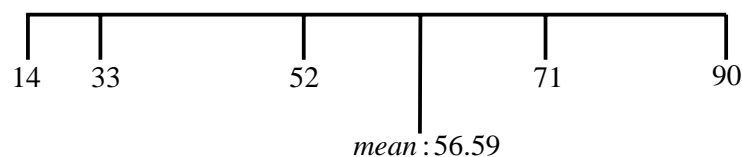
**Figure 2.Organizational culture**

Table 4. The percentages of variables related to the organizational Culture and its dimensions

	It seems that in this university	never	seldom	sometimes	rather high	always	missed	total
Organizational identity	All professors can determine the common values and defend them	4.9	21.8	43	23.2	7	0	100
	In a few cases, the behaviors and actions of university managers oppose the accepted values of the university	0.7	17.6	60.6	16.9	3.5	0.7	100
	If there are oppositions between short-term and long – term benefits, the university prefers long – term benefits	5.6	21.8	35.2	32.4	2.4	0.7	100
	If useful proposals are presented, the university managers pay special attention to them.	2.8	14.8	43	33.8	4.9	0.7	100
	all members are dynamic, active and creative	4.2	26.8	50	18.3	0.7	0	100
	The selection and employment of faculty members is done based on clearly – defined methods and criteria.	4.9	17.6	38.7	33.8	4.2	0.7	100
group commitment	The new members are very active at the beginning and participate .in different professional workshops.	.7	9.9	29.6	53.5	6.3	0	100
	The experience of hard work among the new members makes a kind of connection or affiliation in them from the beginning of their work.	2.8	12.7	39.4	39.4	5.9	0	100
	Professors frequently have a feeling of commitment beyond the level of their job duties.	4.2	25.4	39.4	26.1	4.9	0	100
	Each person cooperates greatly with others within the realm of his/her own duties with the group to whom he / she belongs.	2.8	14.1	36.6	40.1	6.3	0	100
Stability and social system	The newly – employed members, despite their high level of education should start teaching from beginning levels	5.6	13.4	28.2	27.5	25.4	0	100
	There is great consistency between the promotion criteria and the specific features of successful members in the university	2.1	24.6	35.2	33.1	4.2	0.7	100
	Just the professors' performance and function is the criterion for assessing success not relationships with managers or affiliation to a specific political party.	10.6	21.8	35.2	29.6	8.2	0	100
Giving direction to social behavior	The new people attend in some interviews for employment and are carefully evaluated.	6.3	16.9	32.4	37.3	0.7	0	100
	If the person is not brilliant in a specific subject, he/ she is not able to get the promotion criteria.	5.6	14.8	39.4	34.5	4.9	0.7	100
	For many successive years, the path of growth and promotion is almost clear for the professors.	2.8	19	31.7	38.7	7.7	0	100
	Great interest and effort to study is observed in all professors.	3.5	22.5	31.7	35.2	0.7	0	100
	Professors can talk about their thoughts, beliefs, criticisms and proposals with complete freedom.	11.3	31	34.3	16.2	4.2	0	100

Table 5. statistics related to organizational culture

	Mean	Standard deviation	Skewedness	max	min	range	N
Organizational identity	18.43	3	0.92	30	11	19	142
Group commitment	13.22	2.28	0.171	20	8	12	142
Stability and social system	9.59	2.19	-0.393	15	11	4	142
Giving direction to social behavior	15.61	3.51	-0.32	25	18	7	142
Total of organizational culture	56.56	9.31	-0.5	90	14	79	142

B) Inferential analysis (Testing hypotheses)

General hypothesis: There are relationships between "organizational culture and its dimensions" and "knowledge creation and its dimensions".

For testing the above – mentioned general hypothesis, Pearson "r" was used. The findings reveal that:

A) There is a significant relationship between organizational identity, group commitment, stability and social system and the dimensions of knowledge creation (socialization), externalization, combination and internalization); it means that the more organizational identity (positive interaction between professors and university managers), group commitment (sense of commitment towards the determined duties of the faculty members), stability and social system (regulation) we observe, the more inter-group and intra- group interactions we will have, and detailed discussions of scientific issues among the professors will increase. On the other hand, realizing the above – mentioned factors can be effective in applying the science and skills. The important point is that there was not meaningful relationship between organizational identity, group commitment, stability & social system and "internalization". It may be due to the fact that

personal motivation has been more important than external factors. In addition, regarding "giving direction to social behavior" which is related more to personal features, there was a meaningful relationship with "internalization". This means that the more the professors are able to express their thoughts, beliefs, criticisms, and proposals with complete freedom, the more they are successful in applying the acquired knowledge to the needs of the society. The reverse is also true for this relationship (Table 6).

B) The results revealed that generally, there was a meaningful relationship between organizational culture (its four dimensions) and knowledge creation (its four dimensions). It shows that realizing organizational culture in university can be an important factor for knowledge creation, and if continued, it can be very useful for solving the problems of society and removing scientific needs (Table 6).

C) Considering the dimensions of organizational culture and the dimensions of knowledge creation, it can be said that "giving direction to social behavior" as a strong psychological factor has high correlation with the dimensions of knowledge creation. It shows that the more freedom the professors have in expressing their viewpoints, the more willing they are in creating knowledge (Table 6).

Table 6. The comparison of the two variables

Organizational culture and its dimensions	statistics	Knowledge creation and its dimensions				
		Socialization	externalization	Combination	Internalization	Knowledge creation
Organizational identity	Pearson R	0.381	0.305	0.195	0.148	0.352
	Level of significance	0	0	-0.27	-080	0
	N	142	142	142	142	142
Group commitment	Pearson R	363**	0.373*	0.157	0.132	348**
	Level of significance	0	0	0.63	0.118	0
	N	142	142	142	142	142
Stability and social system	Pearson R	0.265**	0.186*	0.145	-0.014	.203*
	Level of significance	0.001	0.27	0.870	0.870	0.015
	N	142	142	142	142	142
Giving direction to social behavior	Pearson R	0.415**	0.418*	0.244*	215*	0.439**
	Level of significance	0	0	0.003	.010	0
	N	142	142	142	142	142
Organizational culture	Pearson R	0.470**	0.393*	0.280*	0.173**	0.450**
	Level of significance	0	0	0.001	0.39	0
	N	142	142	142	142	142

**: Correlation at the .01 level of significance

*: Correlation at the .05 level of significance

In order to indicate the effects of different dimensions of organizational culture on knowledge creation, regression analysis was employed. The results revealed that the extent of professors' knowledge creation was mostly influenced by "giving direction to social behavior". Furthermore, other variables had no meaningful effects on knowledge creation. The revised coefficient of determination reveals that 20% of changes in observations can be determined by the model of linear regression including independent variables. In other words, the model of linear regression, with that .01 level of significance, is meaningful (Table 7.)

Considering each dimension of knowledge creation as the dependent variable, the following results were achieved:

A) The two variables "giving direction to social behavior" and "organizational identity" had effects on the extent of socialization of professors and among the variables, "giving direction to social behavior" had the most effect, other dimensions had no meaningful effects on the dependent variable (Table 8.).

B) Among the variables of this model, "giving direction to social behavior" and "group commitment" had the most effects on the extent of externalization in professors; other dimensions had no meaningful effect on the dependent variable (Table 9.).

C) None of the variables of the model had meaningful effect on combination and internalization (other dimensions of knowledge creation).

Table 7. Statistics of Multi – variable regression analysis of the extent of knowledge creation based on dimensions of organizational culture

Variable	Analysis of Variance (ANOVA)						0.488
	β	t	Sig	F	Level of significance	Multiple correlation coefficient	
giving direction to social behavior	0.31	3.046	0.003	5.991	0	Coefficient of determination	0.238
						revised coefficient of determination	0.20

Table 8. Statistics of Multi – variable regression analysis of the extent of socialization based on dimensions of organizational culture

	Analysis of Variance (ANOVA)						0.499
Variable	β	t	Sig	F	Level of significance	Multiple correlation coefficient	
giving direction to social behavior	0.23	2.22	0.028	6.34	0	Coefficient of determination	0.249
Organizational identity	0.21	2.17	0.031	6.34		revised coefficient of determination	0.21

Table 9. Statistics of Multi – variable regression analysis of the extent of externalization based on dimensions of organizational culture

	Analysis of Variance (ANOVA)						0.463
Variable	β	t	Sig	F	Level of significance	Multiple correlation coefficient	
giving direction to social behavior	0.27	2.27	0.01	5.23	0	Coefficient of determination	0.215
Organizational identity	0.195	2.051	0.042			revised coefficient of determination	0.174

Summary and conclusion:

It seems clear that today, there have been great changes in all fields of science and these changes have been considerable in interdisciplinary fields as well. In the past, the issues of data and information were the key concepts of empirical sciences, but today, it has changed and the concept of science is considered differently.

Today, in the post – positivism era, not all meaningful relationships are useful and the emphasis is only on applied information. Regarding these changes and the indisputable power of knowledge in the dynamism of organizations, etc, this study attempted to investigate the process of knowledge creation and the effects of organizational culture on it.

The results revealed that, as a whole, the extent of knowledge creation in the University of Isfahan has not been optimal and acceptable although we can observe the realization of organizational culture in this university to some extent. It shows that organizations such as universities are also in the process of change and time is needed for knowledge creation to become institutional as a dynamic university element. This new approach has been proposed in the third millennium and naturally, it needs time to become institutional. However, it does not mean that we should just observe the passing of time because these changes do not occur by themselves. Therefore, considering the impact of organizational culture on knowledge creation in universities, it has been proposed that university authorities attempt to develop knowledge creation at all levels. In other words, they could make an attempt to have applied programs in order to have meetings and discussions with the faculty members and in order to encourage the faculty members to participate, they can provide some incentives for attending these meetings.

It is natural that expressing new ideas can occur in a situation in which the professors have freedom within the framework of the norms of university system. In such situations, we can observe creating new and applied knowledge which can fulfill the scientific needs of the society.

The important discussion about knowledge creation, which starts from "implicit knowledge to implicit knowledge" and ends with "explicit knowledge to implicit knowledge", is about their feedback effects and using that feedback in the process of recreating knowledge. Therefore, if we hope to observe an increase of knowledge creation in an applied manner in universities, it's necessary to pay more attention to the role of management

in providing an opportunity for presenting feedbacks in the discussions about organizational culture.

Finally, holding scientific meetings inside and outside the university can be a promising beginning towards institutionalizing the process of knowledge creation among the managers of universities at different levels and the faculty members. It is through the continuous interactions among the faculty members and between the faculty members and managers that such a process regains its actual life.

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