An analysis of the factors relating to the knowledge sharing of the faculty members of engineering and humanities faculties of university of Tehran

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Abstract: The aim of the present study is to explore the factors relating to the knowledge sharing of faculty members of engineering and humanities faculties of university of Tehran. The research uses survey methods and is descriptive in nature. The faculty members of the engineering and humanities faculties constitute the population of the study whose count was determined for each of the faculties and in general 100 faculty members were chosen from the engineering faculty and 99 faculty members were chosen from the humanities faculty. To gather the data, the researcher identified some factors based on the theoretical background (literature) and devised a questionnaire with 31 questions on personal, organizational and technological factors relating to knowledge sharing in university teachers. To analyze the gathered data descriptive statistics values such as frequency, percentage and average, and inferential statistics measures such as T-test are utilized. The results reveal that trust factor (4.08) and interpersonal relationships factor (5.53) from the personal factors, as well as compensation factor (2.83) from the organizational factors of knowledge sharing among faculty members of engineering faculty are higher than those values in humanities faculty, and culture factor (-4.76) and leadership factor (-2/20) from the organizational factors of the faculty members of faculty of humanities were more than those of the faculty members of the faculty of engineering. This study also shows that there is no significant difference in the structure factor (-0.835) from the organizational factors and information technology factor (0.934) among the faculty members of the two faculties.
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Keywords: knowledge sharing – organizational factors – personal factors – information technology factors – faculty of engineering and humanities of university of Tehran.

1. Introduction

Today, it has been more considered potential importance of knowledge as a key source of producing permanent income and competitive advantage in knowledge – oriented economy (Grant 1996, Bresnen 2003, Renzel 2008). Because it's unique and non-replaceable and imitable hardly (Ambrosini, 2001). Also, Pritve and Ruila (2004) believe that there isn't any doubt concerning knowledge value and learning in improving worthiness's and organizational function in full of challenge environment of global today's competitions. Papuz (1994) (Chang, 2008) believes that mainly knowledge management follows making, contributing and using knowledge in order to achieve organizational learning. A note worthy characteristic to this strategic source (knowledge) is increasing its value by contributing and sharing. (Grich and others, 2007, Eype, 2003) (Renzel, 2008) Believes that people can achieve results beyond their individual results by contributing knowledge. Knowledge sharing has been important to extent that many people have accepted that achievement of knowledge management depends on knowledge sharing.Also; some people believe that knowledge sharing is the most important part of knowledge management. In fact, an instrument that is contributed knowledge by that and factors that contribution contributing and transferring knowledge, are knowledge management basics (Renzel, 2008). With respect to investigations made, researchers that have made investigations about contributing knowledge, have introduced each one of aspectual factors related to knowledge sharing. Generally some of them have introduced only organizational factors and individual factors in general form (Alizadeh 2009, Connelly 2003, Khatmyan & Parirokh 2009), some of other people have considered mental factors(Abbasi,2010). some of other people have referred to three factors of organizational and individual and technology in their investigation (Hang 2007,Lin 2007, Miroslav 2007, fischer 2001, Huang 1998,Kaplan 1992,Sohrabi 2010), also researchers have referred to only tiny components of organizational factors of knowledge sharing some of other people have combined number of tiny components of individual and organizational factors altogether (Mortazavi 2008, Shami 2009, Wang 2010, Gold 2001, Lee 2003, Park 2006).

Generally universities and high education institutes are content places for producing

knowledge. However, some time ago these universities and high educations that they search for systematic processes for improving quality of their main functions. universities and high education institutes require growth and development and investment of their manpower to account external and internal challenges and encounter ultra reaction in facing them. In this case, universities and high education institutes have to create learning environment for their staff until there by they promote creatively learning and ability of solving problem item. On the other hand, universities require people with high professional expertise that they have shared their knowledge and experience with other colleagues to provide learning fields and knowledge enrichment that it's done by sharing and knowledge sharing among faculty as expert powers at universities. Regarding that there isn't any comprehensiveness between investigations made for factors of knowledge sharing researchers have ever considered this issue each one form a view, a researcher purpose in this investigation is that he considers effective factors on knowledge sharing among faculty of engineering Campus and humanities Campus of Tehran university with more comprehensiveness that includes organizational factors, individual factors, technology factors.In this investigation about organization factors, the cases: culture, structure, Leadership, Compensation are considered. The cases Trust, Interpersonal relationships, are considered for individual factors. Information technology and technological instruments are considered for technology factors.

2. Research Questions

1- How is comparison of individual factors condition of in engineering Campus and humanities Campus of Tehran university form faculty point of view?
2- How is comparison of organizational factors condition of knowledge sharing in engineering Campus and humanities Campus of Tehran university form faculty point of view?
3- How is comparison of technology factors condition of knowledge sharing in engineering Campus and humanities Campus of Tehran university form faculty point of view?

3. Definition of knowledge sharing its place

Many people believe that effective knowledge contribution is one of the most important ways of employing key worthiness's and obtaining competitive advantage (Huang, 1998). Lee (2001) believes that knowledge sharing activities including knowledge distribution and transfer (explicit and implicit) from a person, group or an organization to others (Kaplan, 1992). Sang (2001) has showed that organizations can improve efficiency, decrease educational costs and make committee risk of non Trusting the organization by contributing suitable knowledge (Sohrabi 2010). Bartol and Kelovi (2003) also indicate that knowledge sharing a set of behaviors that include information exchange and helping each other (Renzel, 2008). Since each one of organizational, individual factors and information technology related to knowledge sharing have tiny components, the researcher has recognized tiny components related to knowledge sharing with respect to investigations made and their frequency has been denied in the following table.

Table 1. Tiny factors knowledge sharing of experts and researchers

Experts and Researchers	Factors	
Ramezani 2004, Kim and Lee 20004,Nemati 2004, Morad zadwh 2006, Naqvi and bahrolom 2008, Alizadeh 2009, Cheng Ming Yu 2005, Mortazavi 2008, Gould and others 2001, Lee and Choi 2003, Davenport and others 1998, Jang Ye and others 2006, Alavi and Lydnr 2001, Parirokh 2009,Shami 1388,Wang and noo 2007, park 2006.	Culture	Organizational factors
O'Dell and Garrison 1998, Nonaka and Takvchy 1995, Ergot and Aypl1999, Valzak 2005, Mortazavi 1387, Gould and others 2001, Lee and Choi 2003, McCain 1999, Shami 2009, Wang and noo 2010, Park 2006.	Structure	
Ming Yu 1995, McNeill 2003, Young 2007, Khatmyan and Parirokh 2009,Shami 2009.	Leadership	
Salvpk 2000, Lee and on 2006, Davenport and others1998, Alavi and Lydnr 2001, Park 2006, Choi and others 2008, Bok 2005, Abbasi 2010, Wang and noo 2010, Khatmyan and Parirokh 2009.	Compensation	
Rahnemod and sadr 2009, Renzel 2008, Alizadeh 2009, Mortazavi 2008.	Trust	Personal factors
Baryng and Klvvy 2000, Gynk1999, Ma and Kim2005, Alizadeh, 2009, Parirokh and Khatmyan 2009.	Interpersonal relationships	
Davenport 1999, Kim and Lee 2004, Lin 2007, Nemati1383, Morad zadeh 2006,Rahnavard and Khavndkar 2006, Gould and others 2001, Lee and Choi 2003, Abbasi 2010, Sohrabi 2010,Shami 2009, Han et al 2007, Fischer 2004, Kaplan and Norton 1999, Park 2006.	Information technology	Information technology

So, in this investigation action about organizational factors, the cases: culture, structure, Leadership and Compensation system are considered.The cases: Trust and Interpersonal relationships are considered for individual factors. Information technology and technological instrument are considered for technology factors.

Faculty characteristics and knowledge sharing in educational environments

Faculty in educational institutes are one of most important fields that present and provide knowledge and using it in the society and at university.In this reason commuting them with each other, information exchange in the fields related, participation and sympathy in activities and researches can play an important role in promoting social knowledge and rising educational quality in education of regular and disciplinary conceptions in an organization that in total, these conceptions and regulations have caused of creation a series of relations in campus. For example, it can be defined three types of relations between faculty that are formed teaching methods of faculty members and their communication with colleagues and students:

1- Occupational and professional relationship between faculty a university (and) or other universities related.
2- Formal relationship between faculty and their colleagues.
3- Official and regular relationship, with other staff in the campus Through these relationship

Only occupational and professional relationship can be played a role in transferring knowledge and it is changes between faculty members (Kim and Jou, 2008).So, need of notice and strengthening this relationship between faculty members at universities is felt more.

4. Research Methodology

Based on research aim, this investigation is a type of fundamental and descriptive research is a type of survey in terms of collecting data. Information collection method has been in the form of library and questionnaire in this investigation.The questionnaire verified by knowledge sharing has been provided with respect to collected research background and for assess of individual and organizational factors and informational technology among faculty members.

5. Community, Sample and Sampling Method

Community is considered by faculty of engineering Campus and humanities s Campus that their number is determinate by separation of colleges and generally are 299, 291 respectively.Faculty number of engineering Campus colleges are 299 person that number of sample persons form engineering Campus colleges are over 100 person based on calculation estimated.And regarding that faculty number in humanities s are 99 persons. Sampling method in this investigation, sampling method of class or relative in proportion to volume.So number of sample persons has been estimated by separation of each college in the following table.

6. Data Collection Tools

Questionnaire of this investigation includes two part.In the first part, Sociological information of faculty has been noted and the second part of the questionnaire is knowledge sharing that this questionnaire has verified that it includes individual and organizational factors and information technology that each one of these factor includes tiny components that ultimately determine condition of knowledge sharing among faculty.This questionnaire includes 5 question in the first part and it includes 31 question in the second part. The following table shows questions of each factor.

Table 2. Questionnaire of contributing knowledge

knowledge sharing	Organizational factors	Personal factors	Information technology
factors	Structure (1- 2-3)	Trust	Information technology
	Culture (4-5-6-7)	(18-19-20-21-22-23)	(27-28-29-30-31)
	Leadership (8-9-10-11-12)	Interpersonal relationships	
	Compensation (13-14-15-16-17)	(24-25-26)	

7. Data Analysis

T calculated in the meaningful level had been %5 bigger that critical table value.For considering main question of investigation, each of variables of individual factors (Trust and relationships between individual), organizational factors (structure, culture, leadership, Compensation) and technology factors are compared with each other in two Campus of engineering and humanities s to be determined whether a meaningful difference is among these variables in two above community or no.

7.1 Condition comparison of individual factors of knowledge sharing in engineering and humanities s Campus from faculty point of view

Based on Levine test, Since reliability rate obtained from this test has been more than %5, we use equality method of engineering and humanities s Campus.Analysis made on the base of test of T mono sample express

that there isn't meaning difference between individual factors in engineering and humanities s Campus with value T (-1/35).(Table 3)

Table 3. Comparison of average responsible persons views in individual factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min				
-0/045	-0/24	0/179	-1/35	0/053	Individual factors

7.1.1 Comparison of condition from individual factors in engineering and humanities s Campus

Based Levine test, since Reliability rate obtained from this test has been more than %5,we use equality method of variance in Comparison test of average two community of engineering and humanities s Campus.Analysis made on the base of T-test express that there is a meaningful difference between Trust variable from individual factors in engineering and humanities s Campus.Since T obtained is positive (4/08), it shows that Trust in (the first community) of engineering Campus is more than (the second community) of humanities s Campus.(table 4)

Table 4. Comparison of average responsible views in Trust variable from Individual factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/000	4/08	0/678	confidence
0/627	0/218				

7.1.2 Comparison of Interpersonal relationships from individual factors in engineering and humanities Campus

Based Levine test, since Reliability rate obtained from this test has been more than %5,we use equality method of variance in Comparison test of average two community of engineering and humanities s Campus.Analysis made on the base of T-test express that there is a meaningful difference between of Interpersonal relationships variable from individual factors in engineering and humanities s Campus.Since T obtained is positive (5/53), it shows that of Interpersonal relationships in (the first community) of engineering Campus is more than (the second community) of humanities s Campus.(table 5)

Table 5. Comparison of average responsible views in Interpersonal relationships variable from individual factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/000	5/53	0/996	
0/833	0/395				Interpersonal relationships

7.2 Condition comparison of organizational factors of knowledge sharing in engineering and humanities s Campus from faculty point of view

Based on Levine test, Since reliability rate obtained from this test has been under than %5, we use Inequality method of engineering and humanities s Campus.Analysis made on the base of test of T mono sample express that there is meaning difference between organizational factors in engineering and humanities s Campus with value T (-2/14).(Table 6)

Table 6. Comparison of average responsible persons views in organizational factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/034	-2/14	0/070	organizational factors
-0/14	-0/38				

7.2.1 Comparison of Structure from organization factors in engineering and humanities s Campus

Based Levine test, since Reliability rate obtained from this test has been more than %5,we use equality method of variance in Comparison test of average two community of engineering and humanities s Campus. Analysis based on a single sample t-test, indicates that the variable structure of the organizational, engineering and humanities s campus with the t (-./835) difference does not exist. (Table 7)

Table 7. Comparison of average responsible views in Structure variable from organization factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/405	-0/835	0/144	Structure
0/102	-0/253				

7.2.2 Comparison of Culture from organization factors in engineering and humanities s Campus

Based Levine test, since Reliability rate obtained from this test has been more than %5,we use equality method of variance in Comparison test of average two community of engineering and humanities s Campus.Analysis made on the base of T-test express that there is a meaningful difference between Culture variable from organization factors in engineering and humanities s Campus.Since T obtained is negative (-4/76), it shows that Culture in (the second community) of humanities s Campus is more than (the second community) of engineering Campus.(table 8)

Table 8. Comparison of average responsible views in Culture variable from Organization factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/000	-4/76	0/305	Culture
-0/283	-0/686				

7.2.3 Comparison of Leadership from organization factors in engineering and humanities s Campus

Based Levine test, since Reliability rate obtained from this test has been more than %5,we use equality method of variance in Comparison test of average two community of engineering and humanities s Campus.Analysis made on the base of T-test express that there is a meaningful difference between Leadership variable from organization factors in engineering and humanities s Campus.Since T obtained is Negative (-2/20), it shows that Leadership in (the second community) of humanities s Campus is more than (the second community) of engineering Campus.(table 9)

Table 9. Comparison of average responsible views in Leadership variable from organization factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/029	-2/20	0/270	Leadership
-0/023	-0/418				

7.2.4 Comparison of Compensation from organization factors in engineering and humanities s Campus

Based Levine test, since Reliability rate obtained from this test has been under %5,we use Inequality method of variance in Comparison test of average two community of engineering and humanities s Campus. Analysis made on the base of T-test express that there is a meaningful difference between Trust variable from Compensation factor in engineering and humanities s Campus.Since T obtained is positive (2/83), it shows that Trust in (the first community) of engineering Campus is more than (the second community) of humanities s Campus.(table 10)

Table 10. Comparison of average responsible views in Compensation variable from Organization factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/005	2/83	0/007	Compensation
0/496	0/088				

7.3 Condition comparison of Information technology factors of knowledge sharing in engineering and humanities s Campus from faculty point of view

Based on Levine test, Since reliability rate obtained from this test has been more than %5, we use equality method of engineering and humanities s Campus.Analysis made on the base of test of T mono sample express that there isn't meaning difference between Information technology factors in engineering and humanities s Campus with value T(0/934).(Table 11)

Table 11. Comparison of average responsibility persons views in Information technology factors T-test.

Trust level		Meaningful rate of T-test	t	Reliability rate of Leven test	variable
max	min	0/352	0/934	0/599	
0/302	-0/108				Information technology

8. Conclusion

There isn't any doubt concerning knowledge value and learning in improving worthiness's and organizational function today.Mainly knowledge management follows making, contributing and using knowledge in order to achieve organizational learning.A note worthy characteristic to this strategic source (knowledge) is increasing its value by contributing and sharing. People can achieve results beyond their individual results by contributing knowledge. Contributing knowledge has been important to extent that many people have accepted

that achievement of knowledge management depends on contributing knowledge. In fact an instrument (tool) that is contributed by that and factors that contributing and transferring knowledge are knowledge management basics. Generally universities and high education institutes are counted places for producing knowledge, however sometime ago these universities and high education institutes have been no considered as learner organizations and organizations that they search for systematic process for improving quality of their main functions. Universities and high education institutes require growth and development and investment of their man power to account external and internal challenges and encounter ultra reaction them.In this case universities and high education institutes have to create learning environment for their staff until thereby they promote creatively learning and ability of solving problem in them. On the other hand, universities require people with high professional expertise that they have shared their knowledge and experience with other their colleagues to provide learning fields and knowledge enrichment that this is done by sharing and knowledge sharing among faculty as expert powers at universities. So, Factors related to knowledge sharing has been determined based on theoretical bases in has investigation and these factor that include individual, organizational factors and information technology, have been consider in engineering and humanities s Campus of Tehran university from faculty point of view that it was determined based on findings of this investigation that Trust component and relationships among individual from individual factors and Compensation component from organizational factors in engineering Campus has been more than humanities s and culture and Leadership component form organizational factors in humanities s has been more than engineering Campus and structure component form organizational factors and information technology factor have been different between engineering and humanities s Campus.

Resources

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