

Investigation of the impact of IT on knowledge sharing among Ahwaz City University Librarians

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ABSTRACT

The present research aims to investigate the role of IT in reducing barriers ahead of knowledge sharing. Research methodology was descriptive-survey. Statistical population of the present research included all librarians in Ahwaz City. They were 40 people in number. Research instrument was a questionnaire designed by the authors. It was actually a combination of standard knowledge sharing questionnaire and IT dimensions. Results of the research showed that women comprise a majority of statistical population. Individuals who have bachelor degree were significantly more than other degrees. From librarians' viewpoint, individual barriers ahead of knowledge sharing were reduced significantly after application of IT in Ahwaz universities libraries. Therefore, IT is effective on removing individual barriers ahead of knowledge sharing. Further, research hypothesis was verified and application of IT reduces individual and organizational barriers ahead of knowledge sharing. Moreover, results showed that the influence of IT on reducing barriers in individual and organizational levels is the same and impacts of IT on facilitation of individual and organizational barriers were not significantly different.

KEYWORDS: knowledge sharing, IT, individual barriers ahead of knowledge sharing, organizational barriers ahead of knowledge sharing.

INTRODUCTION

Knowledge is an important resource for keeping valuable heritage, learning new things and solving different problems and has a great ability to facilitate individual and organizational progress at present and future in wisdom era. Therefore, organizations should institutionalize knowledge in order to achieve human resource productivity, employees' empowerment, reduction in decision-making time, organizational effectiveness, employees' occupational satisfaction, reduction in costs, competitive advantage, increase in creativity and innovation, management and knowledge management (RasayeeNia, 2008). Knowledge sharing or knowledge distribution is one of the most important factors and processes of knowledge management which the base of many strategies of knowledge management (Eftekhar, 2008). Knowledge sharing is voluntary distribution of skills and individual experiences among others. Knowledge sharing is a power to encourage knowledge creation and transaction in order to recognize its competitive advantages (Liu, K. L., C. C. Change and I. L. Hu. 2010). Knowledge sharing improves libraries and information centers service quality because use of colleagues' knowledge and experience can be very effective in removing problems and improving service. However, there are always barriers ahead of knowledge sharing and distribution. Some of these barriers and problems have been dissolved by new information technologies but some of them are still there. The present research tries to investigate the influence of IT on reducing barriers ahead of knowledge sharing.

Definition of knowledge sharing

In a general definition, knowledge sharing means sharing organizational information, ideas, recommendations and experiences among employees (Abhishek, 2002). Davenport believes that knowledge sharing among employees mean making knowledge accessible for all employees in an organization (davenport, 1997). This is a process through which individual knowledge is converted to apprehensible format for others. Lee believes that knowledge sharing include activities related to distribution and transfer of knowledge from one individual, group or organization to others (Lee, 2001). Van Den Hoof and Do Reader believe that individuals trade knowledge (abstract and objective) and produce new knowledge in knowledge sharing process. This process includes two steps: knowledge presentation and knowledge reception (Van Den Hoof & Do Reader, 2004). Ardichvili et al believe that knowledge sharing involve new knowledge gathering and demand for new knowledge (Ardichvili,

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2003). Knowledge is an intangible asset and its value is not reduced with usage, but also increases. Knowledge loses its value only when it is not used. In fact, knowledge should be shared in order to be valuable and this is the only way to make it remain up-to-date (Allee, 1997). Therefore, knowledge sharing is a process through which individuals trade their knowledge with others knowledge, individual knowledge turns into organizational knowledge and it provides opportunity for learning new experiences and opportunity for practicing and implementing experiences, skills and abilities (Yu, 2004).

Barriers and preventive factors ahead of knowledge sharing

Different variables have been mentioned in studies which deal with barriers ahead of knowledge sharing in organizations (GAO, Joireman *et al.*, 200, Wilkins, Van den Hoof, Do Reader, Zhang & Faerman, 2004, Sharifuddin & Rowland 2004, Husted, Michailova & Minbaeva, 2005). In this part of the paper, various texts and previously-conducted studies are investigated and knowledge sharing barriers are analyzed in three individual, organizational and technological areas.

a) Barriers concerning human resources in knowledge sharing process

Individual obstacles of knowledge sharing are barriers which are resulted from employees' knowledge and experience, personality traits and inter-personal communications. 8 items are mentioned in the following sentences.

1. Shortage of time for participation in knowledge sharing activities: O'Dell & Grayson (1998) introduced shortage of time as a barrier ahead of knowledge sharing and concluded that although managers and employees are aware of usefulness of knowledge sharing, they do not tend to do it due to shortage in time. Therefore, temporal restrictions can be a reason why employees do not share their knowledge and prefer to do works which have more benefits (Michailova, Husted, and Minbaeva, 2005).

2. Ignorance of benefits and usefulness of knowledge sharing: achievement of knowledge and social status are two benefits of knowledge sharing. When individuals provide their thoughts for others, they probably gain new knowledge and thoughts from them. Meanwhile, they understand their knowledge more effectively and their knowledge will be evaluated and their defects will become clear. Moreover, employees may receive more respect from colleagues when they share their knowledge. They may also express a better image of them in organization and achieve a better status and social position in organization.

3. Difference in level of experience and knowledge: individuals' level of using shared knowledge is important in final victory of knowledge sharing. Individuals, who have more related knowledge, have more ability in learning, integrating and applying shared knowledge. On the other hand, employees who have less knowledge and experience should try more to make use of the shared knowledge. Therefore, they may have fewer tendencies to take part in knowledge sharing because they have less knowledge than other employees. Therefore, difference in the level of experience and knowledge can be a barrier ahead of participation of employees in knowledge sharing (Gao, 2004).

4. Uncertainty about usefulness and value of personal knowledge: employees' uncertainty about usefulness of their knowledge is another barrier ahead of knowledge sharing. Szulanski mentions this factor as one of the main barriers ahead of knowledge sharing (Szulanski, 1996).

5. Absence of trust among employees: unreliability is an important barrier ahead of intra-organizational cooperation and also knowledge sharing. It has been emphasized in many studies (Dodgson, 1999; Dyer & Singh, 1998; Zhang & Faerman, 2004). In fact, we should not expect employees to share their knowledge without presence of sense of trust among employees.

6. Individualism: individualism and sense of competition in individuals is a barrier ahead of knowledge sharing in organizations (Sharifuddin, 2004). Nonaka believes that the number of individuals who share their knowledge for free in organizations is very small (Nonaka, 1994).

7. Weak skill in verbal and written communications: many researchers believe that employees' ability to share their knowledge depends highly on their communication skills (Davenport & Prusak, 1998, Hendriks, 1999, Meyer, 2002). Both verbal skills (for sharing abstract knowledge) and written skills are bases for effective knowledge sharing in organizations. Therefore, if employees are weak in establishment of communication, they will not share their knowledge effectively in organization.

8. Lack of individual's commitment to organization: organizational commitment is also a factor which affects knowledge sharing and it has received a lot of attention by researchers Van den Hoof & De Ridder 2004. Meyer & Allen 1997). Organizational commitment depends on employees' coordination with organizational goals and values. If there is no correspondence between organizational culture and employees personality traits, individuals' organizational commitment will be reduced over time and this has adverse effects on tendency to share knowledge.

b) Organizational barriers ahead of knowledge sharing process:

Organizational barriers are barriers which are affected by organizational facilities, rules, structure, methods and culture. 8 organizational barriers have been reviewed in the next sentences:

1. Organizational culture: organizational culture is an important factor which affects knowledge sharing and has received a lot of attention by many researchers (McDermott&O'Dell, 2001; Riege, 2005; Yi, 2005, Chow, 2006 & Vera-Munoz, Ho). A culture which is based upon collaboration and cooperation is very effective on knowledge sharing process. In such an environment, trust will grow and individuals will understand that knowledge sharing will not only does not harm them, but also has many benefits for them (Yu, Wilkins & Ma, 2004).

2. Absence of management support: a manager's performance and behavior can be evaluated through his/her attention to the importance of knowledge sharing activities, his/her supports for such activities and being aware of effective role of knowledge sharing in organizations (Gao, 2004). In fact, efficient managers can affect knowledge sharing significantly considering their ability to change organizational structures and processes (Faerman& Zhang, 2004).

3. Absence of organizational trust: improvement of trust among employees is very effective on knowledge sharing. Absence of such a trust will result in employees' isolation and they will not be willing to share their knowledge and experiences and will lose their commitment to their organization gradually.

4. Hierarchical organizational structure: hierarchical structure has been mentioned as a barrier ahead of knowledge sharing (Ruggles, 1998; Ives, et al; Bill, 2003 in Yi, 2005, Zhang). According to these results, an open organizational structure which facilitates knowledge flow from top to bottom and vice versa will be effective on knowledge sharing. On the other hand, knowledge sharing opportunities are reduced in a hierarchical structure.

5. Absence of knowledge sharing strategies: it means identification and provision of methods which allow individuals to share their knowledge. Holtham& Courtney referred to some formal and informal mechanisms which influence on knowledge sharing (Holtham& Courtney, 1998, in Gao, 2004). Anyway, application of media and strategies can facilitate establishment of communications between individuals who look for knowledge and individuals who have knowledge (Swan, Robertson and Newwell, 1996, in Gao, 2004).

6. Absence of appropriate rewarding and motivation system: Leidner and Alavi emphasized on the importance of rewarding systems in motivating employees to share knowledge (Leidner&Allavi, 2001). Argote, McEvily& Reagans also believed that rewarding system and incentives are necessary for knowledge management process (Argote, McEvily& Reagans, 2003).

7. Absence of job security: absence of job security is an important barrier ahead of knowledge sharing. The fact that employees' think of knowledge as power and their position will be endangered if they share their knowledge is an important issue (Joireman et al., 2004; Sharifuddin&Rowland, 2004; Reige, 2005).

8. Inappropriate job position: job position is another factor which impacts on knowledge sharing. If employees are given positions which do not match their previous experiences and interests, they will not be able to make use of their knowledge. This will result in employees' isolation and they will not be able to share their knowledge (Bogdanowicz&Baily, 2002, Smith, 2001; Sharifuddin&Rowland, 2004).

c) technology-related barriers ahead of knowledge sharing:

Technology makes it easy to access a large amount of data and information easily. Therefore, it can facilitate knowledge sharing. it is important to use an appropriate technology system in order to share knowledge considering organization and employees status. Technology instruments which are successful in an organization may not be successful in another organization. Three factors are mentioned in the following sentences:

1. Absence of coordination among IT systems and working process and employees' needs: technologies like internet, intranet, e-mail systems and group-ware can considerably reduce barriers ahead of establishment of communication in organizations. However, they should be coordinated and integrated with organizational goals and cover all types of organizational communications. Lack of coordination between IT systems and employees' working processes not only does not facilitate knowledge sharing process, but also will act as a barrier. This is not definitely due to technical problems in technology system but it will not have any positive impact on knowledge sharing because of non-compliance with employees' working needs (Grayson & O'Dell, 1998).

2. Employees' unreal expectation of IT: another IT-related barrier ahead of knowledge sharing is lack of employees' familiarity with facilities and abilities of each of the present information systems. Unfamiliarity will create unreal expectations in employees and if these expectations are not fulfilled, they will not tend to use that system. For instance, commercial intelligence technologies are used to evaluate economic and competitive environments, cooperation and learning technologies are used for location and recovery of internal and external knowledge and knowledge map technology is used for tracking knowledge resources (Gold et al, 2001, as quoted from Reige, 2005).

3. Inadequate training for using IT systems: today, most working processes of employees depend on utilization of IT systems. Because an organization tries to make knowledge sharing a part of employees' working processes in their knowledge management strategy, employees will not be willing to use IT systems if they are not familiar with these systems and this is a barrier ahead of knowledge sharing. Therefore, it is necessary to train employees and familiarize employees with IT systems. Therefore, employees will have enough motivation for using the systems.

LITERATURE REVIEW

Bavakhani (2009) investigated knowledge management status in libraries of Iranian Atomic Energy Agency. Results showed that gathering, organizing, IT and human resource skills variables were average and dimensions which were related to knowledge sharing and distribution were evaluated low. PeiraviSiyani (2010) conducted a thesis titled: "investigation of factors affecting knowledge management implementation in Organization of Housing and Civil Construction (case study: western provinces of Iran)" and conducted three factors: organizational culture, IT and knowledge processes. In knowledge processes, knowledge creation, knowledge storage and knowledge sharing factors were investigated and results showed that all knowledge management processes were at low level except for knowledge storage.

Kaneli and Kalavi (2001) investigated the influence of organizational factors like management support, interactive culture, and knowledge sharing-related technologies and individual factors like age, gender and organizational position on knowledge sharing culture and concluded that two organizational factors (i.e. management support and interactive culture) and one individual factor (gender) have considerable impact on knowledge sharing culture (Connelly, Catherine, & Kelloway, Kevin, 2001). Neo J (2002) also conducted a research on factors affecting knowledge sharing in one of the news agencies in Singapore and found that cultural factors have positive influence on individual decision-making in relation to knowledge sharing. His research revealed that absence of motivation, managerial support, trust and group work spirit are the main barriers ahead of knowledge sharing. Studies show that many organizational factors like motivation and rewarding system, managerial support, job security, organizational atmosphere and IT are factors which impact on knowledge sharing and inappropriate level of these factors have performed as barriers ahead of knowledge sharing (Neo, L, 2002). Yun & Allyn (2005) showed that individual factors also impact on employees' tendency to take part in knowledge sharing activities. Individual motivations were identified and organizations are advised to pay special attention to individual motivations which are resulted from individuals' personality (Yun & Allyn, 2005).

RESEARCH METHODOLOGY

The present research is an applied study and in terms of data collection, it is a descriptive-analytical study. Statistical population of the research included all librarians who worked in Ahwaz Universities libraries. They were 40 in number. The universities included: Islamic Azad University, Shahid Chamran University, Ahwaz medical Sciences University, PN University, University Jihad Institute, Scientific and Applied University, Ahwaz SAMA Scientific and professional Supreme University. Sample size is equal to population size (40 people). Library study was used to collect data concerning theoretical fundamentals and background. Instruments included internet, information databases and library note-taking. A questionnaire designed by researcher was used for conducting a survey. This questionnaire was made up of 4 parts. The first section evaluated demographic features of the population. The second part of the questionnaire (questions 6 to 16) concerned individual barriers of knowledge sharing, the third part of the questionnaire (questions from 16 to 26) concerned organizational barriers ahead of knowledge sharing, and the fourth part concerned technological barriers ahead of knowledge sharing (questions 27 to 37) and the fourth part concerned technological barriers ahead of knowledge sharing (questions 37 to 49). Experts' and professors' opinions were used to evaluate the validity of the questionnaire and some adjustments were made to the questions. Cronbach's alpha was used to test reliability coefficient of the questionnaire. Alpha was calculated 0.91. Therefore, it can be said that the questionnaire has acceptable validity and reliability. In the present research, descriptive statistical indicators like frequency, frequency percentage, mean, mode and standard deviation

were used for descriptive analysis. Tables were drawn by means of word processing software and the hypotheses were tested using one-variable T test and Kai-squared test.

Data analysis

Results of descriptive test

Age: 3% of the librarians were 21-30 years old. About half of the respondents were aged 31-40 years and the greatest frequency percentage belonged to this age group. 20% of the respondents were aged 41-50 years.

Librarians' education level: 65% of the respondents had bachelor degree. 25% and 5% of the respondents had Master degree and PhD degree, respectively.

Working experience of librarians: 57.5% of the respondents had less than 10 years of working experience. 32.5% had an experience between 10 to 20 years and 10% of them had working experience between 21 years to 30 years.

In order to investigate demographic features, we used one-variable kai-squared test to test the questions of the questionnaire. This method was used because demographic features questions scale was non-quantitative (nominal or ordinal). H_0 , which is the hypothesis to be tested is the assumption of equality of variables in any question. When H_0 is rejected, there is a significance difference between two cases and population members characteristics can be evaluated by means of investigation of this significance difference and determination of frequency.

Table 1: Kai-squared test for demographic features

variables	choice	Observed values	Expected values	remainder		
Respondent gender	male	30	20	10	Kai-squared test	
					Test statistic	10.000
	female	10	20	-10	df	1
					sig	.002
Education level	High school degree	2	10.0	-8	Kai-squared test	
	bachelor degree	26	10.0	16	Kai-squared test statistic	38.400
	Master degree	10	10.0	0	df	3
	PhD	2	10.0	-8	sig	.000
Working experience	Less than 10 years	23	13.3	9.7	Kai-squared test	
	10-20 years	13	13.3	-.3	Kai-squared test statistic	13.550
	21-30 years	4	13.3	-9.3	df	2
	total	40			sig	.001

As it can be seen in table 1, H_0 is rejected in $\text{sig} < 0.05$ level of significance. This shows that there is significant difference between observations in low, average and high levels. Considering the results of the table 1, it can be said that:

There is significant difference between the number of women and men in target population and a majority of individuals in target population were female. Individuals who had bachelor degree were significantly more than other degrees in number. In other words, most librarians had bachelor degree. There was significant difference between working experience of the respondents in the three groups (less than 10 years, 10-20 years and 21-30 years) and relative frequency of working experience less than 10 years was significantly greater than that of other groups.

Table 2 also summarizes some information on the number of investigated data, mean, standard deviation, mean standard error, certainty limit (95%) and also maximum and minimum values of mean scores of individual, organizational and technological barriers ahead of knowledge sharing in Ahwaz Universities Libraries:

Table 2: descriptive statistics concerning knowledge sharing barriers

Knowledge sharing barriers	Number of observations	mean	SD	Standard error	95% certainty level for means		minimum	maximum
					Lower limit	Upper limit		
Individual barriers	40	2.4225	.56817	.08984	2.2408	2.6042	1.60	3.40
Organizational barriers	40	2.5788	.64476	.10195	2.3726	2.7851	1.85	3.85
Technological barriers	40	2.4625	.54851	.08673	2.2871	2.6379	1.40	3.50
Total sum	120	2.4879	.58743	.05362	2.3818	2.5941	1.40	3.85

As it can be seen in table 2, H0 is rejected and this shows that at least one of the means is significantly different from other means.

Table 3 shows that H0 is verified in (sig. <0.05) level and this indicates there is no significant difference between variables means. Therefore, the impact of IT on reducing barriers is the same for technological, individual and organizational level (IT impacts on facilitation of individual, and organizational and technological barriers are not significantly different).

Table 3: variance analysis of knowledge sharing barriers

	Sum of squares	df	Mean squares	F	Sig.
Between Groups	.528	2	.264	.762	.469
Within Groups	40.536	117	.346		
Total sum	41.064	119			

Results of inferential test

Hypothesis 1: individual barriers ahead of knowledge sharing are mitigated by IT.

Since “knowledge sharing individual barriers” variable was measured based on Likert scale, it has a score equal to 1 to 5. Therefore, the hypothesis can be investigated by means of testing equality of population mean score with “3” value (middle value of achievable score). H0 and H1 hypotheses are developed in this section for statistical analysis and necessary explanations are provided. Table 4 shows descriptive statistics concerning “knowledge sharing individual barriers” variable:

Table 4: descriptive statistics of the impact of IT on reducing knowledge sharing individual barriers

	N	mean	SD	Mean	standard error
Individual barriers	40	2.4225	.56817		.08984

Table 5 shows t test statistic, sig value (significance level), degree of freedom and certainty interval of the subtraction of observations from mean value in 95% certainty level.

Table 5: T test, knowledge sharing individual barriers

One-Sample Test						
Test Value = 3						
	t	df	Sig. (one-tailed)	Mean of subtraction of observations from mean	95% certainty level for subtraction of observations from mean	
					Lower limit	Upper limit
Individual barriers	-6.428	39	.000	-.57750	-.7592	-.3958

Table 5 shows that H0 is rejected in 0.05 significance level {sig<0.05 or $t \leq t_{(0.05, 39)}$ }. This indicates that individual barriers variable mean point is significantly smaller than 3 (middle value of possible values domain-adoptable-the variable under study). Therefore, reduction in individual barriers ahead of knowledge sharing in Ahwaz Universities Libraries (by means of IT) is verified in 0.05 significance level from respondent' point of view. T test statistic is equal to -6.428 and its degree of freedom is 39.

Complementary discussion-judgment based on T test statistic:

(because t statistic is equal to -6.428 and this is smaller than $-t_{(0.05, 39)} = -1.64$), H0 is rejected and individual barriers mean score is smaller than 3 in 0.05 significance level. In other words, individual barriers ahead of knowledge sharing (by means of IT) are reduced in (0.05) significance level from respondents' point of views in Ahwaz City Libraries.

Hypothesis 2: organizational barriers ahead of knowledge sharing are mitigated by IT.

Since “knowledge sharing organizational barriers” variable was measured based on Likert scale, it has a score equal to 1 to 5. Therefore, the hypothesis can be investigated by means of testing equality of population mean score with “3” value (middle value of achievable score). H0 and H1 hypotheses are developed in this section for statistical

analysis and necessary explanations are provided. Table 6 shows descriptive statistics concerning “knowledge sharing organizational barriers” variable:

Table 6: descriptive statistics of the impact of IT on Reducing knowledge sharing organizational barriers

One-Sample Statistics				
	N	mean	SD	Mean standard error
Technological barriers	40	2.5788	.64476	.10195

Table 7 presents t statistic, sig value (significance level), degree of freedom and certainty interval of subtraction of observations from means in 95% certainty level.

Table 7: t test for knowledge sharing organizational barriers

One-Sample Test						
Test Value = 3						
	t	df	Sig. (one-tailed)	Mean of subtraction of observations from mean	95% certainty level for subtraction of observations from mean	
					Lower limit	Upper limit
Organizational barriers	-4.131	39	.000	-.42115	-.6274	-.2149

Table 7 shows that H_0 is rejected in 0.05 ($\text{sig} < 0.05$) significance level. This shows that mean score value for organizational barriers variable is significantly smaller than 3 (middle value of possible values domain-adoptable-the variable under study). Therefore, reduction in organizational barriers ahead of knowledge sharing in Ahwaz Universities Libraries (by means of IT) is verified in 0.05 significance level from respondent' point of view. T test statistic is equal to -4.131 and its degree of freedom is 39.

Complementary discussion-judgment based on T test statistic:

(Because t statistic is equal to -4.131 and this is smaller than $-t_{(0.05, 39)} = -1.64$), H_0 is rejected and organizational barriers mean score is smaller than 3 in 0.05 significance level. In other words, organizational barriers ahead of knowledge sharing (by means of IT) are reduced in (0.05) significance level from respondents' point of views in Ahwaz City Libraries.

CONCLUSION AND DISCUSSION

Wide application of communication and information technologies in society (tablets, notebooks, mobile phones and ...) necessitates study on designing new structures of IT-based libraries. Library is an element in knowledge sharing and is regarded as a symbol of knowledge and wisdom in demographic studies. Therefore, we emphasize on the importance of doing research on IT-based libraries and the following recommendations are provided:

Considering the impact of IT on removal of individual and organizational barriers ahead of knowledge sharing, Ministry of Science, Research and Technology are advised to establish IT systems in University libraries of Iran. Results of the present research showed that e-learning and digital library are the most important technologies which remove knowledge sharing barriers. Therefore, it is advised to establish technologies, e-learning and digital library in University libraries. Universities (especially high-level universities) are advised to equip libraries with IT and include it in their strategic and development plans.

It is advised to select library clients (individuals who are registered for library and are members of libraries) as research population and a similar study be conducted on this population. A comparison of academic and non-academic libraries should be made in terms of “effectiveness of IT on knowledge sharing” in order to achieve strategies for selection of knowledge sharing technology. Results of the present research determine levels of technology needed by general and academic libraries of Iran and prevent from waste of resources. Because “digital library” and “e-learning” technology were propounded as two important technologies in knowledge sharing process, future researchers are advised to investigate methods of establishment or increasing the effectiveness of these two technologies in Iranian University libraries. Main restrictions of the present research include:

Inadequate literature for comparison of the present research results with their results, weak cooperation of research population universities due to reasons like asking questions concerning Facebook and; weak cooperation of librarians in filling questionnaires.

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REFERENCES

1. Abhishek, Srivastava (2002). Encouraging Knowledge Sharing: The Role of Organizational Reward Systems. *Journal*. Retrieved August 31, 2006, from www.allbusiness.com/periodicals/article/345328-1.html
2. Argote, Lind, McEvily, Bill, & Reagans, Ray (2003). Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes. *Management Science*, 49(4), 571-582. Retrieved September 03, 2006, from www.business.tepper.cmu.edu/facultyAdmin/upload/ppaper_59209756551843_Argote-McEvily-Reagans_2003b_abstract.pdf.
3. Eftekhary, Leila (1387). Examine the relationship between organizational culture and knowledge management in the ministry of culture and Islamic Guidance (in persian).
4. Gao, Sheng (2004). *Understanding Knowledge Sharing Behaviour*. Master's Thesis. The Hong Kong University of Science & Technology. Retrieved August 01, 2006, from http://lbxml.ust.hk/th_imgo/b834876.pdf
5. Liu, K. L., C. C. Change and I. L. Hu. 2010. Exploring the effects of task characteristics on knowledge sharing in libraries. *Library Review* 59(6): 455-468.
6. Lee, C. K. and. Al-Hawamdeh, S. "Factors impacting knowledge sharing," *Journal of Information and Knowledge Management*, (1), 2002, pp. 49-56.
7. Neo, J. (2002). *Cultural Factors Affecting Knowledge Sharing Behavior*. Master's Thesis. Nanyang Technological University. Singapore.
8. Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organizational Science*, 5(1), 14-37. Retrieved September 03, 2006, from www.michaelwmorris.com/R671/documents/Session_09/Nonaka94.pdf
9. O'Dell, C., & Grayson, C.J. (1998). If Only We Knew What We Know: Identification and Transfer of Internal Best Practices. *California Management Review*, 40(3), 154-74.
10. RasayeeNia, S (1387). Effect of Knowledge management on management performance in Islamic Azad University, North Tehran Branch. (In Persian).
11. Sharifuddin, Syed Omar, & Rowland, Fytton (2004). Knowledge Management in a Public Organization: A Study on the Relationship between Organization Elements and the Performance of Knowledge Transfer. *Journal of Knowledge Management*, 8(2), 95-111.
12. Van den Hooff, B., Elving, W.J.L., Meeuwssen, J.M. and Dumoulin, C.M. "Knowledge Sharing in Knowledge Communities" in *Communities and Technologies*. M. H. Huysman, Wulf, and E. Wenger(eds.), KluwerAcademic Publishers, Deventer, 2003, pp. 119-142.
13. Vera-Munoz, S.C., Ho, J.L., & Chow, C.W. (2006). Enhancing Knowledge Sharing in Public Accounting Firms. Retrieved March 12, 2006, from <http://www.atypon-link.com>
14. Yu, Yuecheng (2004). *Motivational Foundation of Individual Knowledge Sharing*. Master's Thesis. The Hong Kong University of Science & Technology. Retrieved August 01, 2006, from http://lbxml.ust.hk/th_imgo/b834875.pdf .(
15. Yi, Jialin (2005). A Measure of Knowledge Sharing Behaviour: Scale Development & Validation. Thesis (Doctor of Philosophy). School of Education. Indiana University. Retrieved August 15, 2007, from wwwlib.umi.com/dissertations/UnderstandingKnowledgeSharingBehaviour. Master's Thesis. The Hong Kong University of Science & Technology. Retrieved August 01, 2006, from http://lbxml.ust.hk/th_imgo/b834876.pdf.
16. Zhang, Jing, & Faerman, Sue R. (2004). The Nature of Knowledge and Its Influence on Knowledge Sharing Practice: Experiences from Building the MACROS System in: *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*. Retrieved April 22, 2006, from <http://csdl2.computer.org/comp/proceedings/hicss/2004/2056/08/205680249b.pdf>