



Evaluating Cultural Factors and Information Technology Impact on Knowledge Sharing in Organization

Kambiz Mansoori¹, Hassan Saberi^{2*}

¹Department of Executive Management, Farahan Branch, Islamic Azad University, Farahan, Iran

²Department of Management, Professor Hesabi Branch, Islamic Azad University, Tafresh, Iran

Abstract: The main objective of this study is to evaluate cultural factors and information technology impact on knowledge sharing in organization. From the view point of aim this study is applied research, in terms of how information is collected is descriptive type and as the objective of this study is to evaluate cultural factors and information technology impact on knowledge sharing in organization, this study is a descriptive survey. The statistical population included in this study are Mellat Bank employees in Alborz branch. The number of personnel employed in the statistical society reaches 3,000. To determine sample volume Morgan table used and 341 person intended as final sample. Sampling method was simple random. 400 questionnaire distributed which 360 of them were valid. Investigating the results obtained from LISREL structural equations have confirmed both hypotheses of the study. So as conclusion it is notable that there is meaningful relation between organizational culture and knowledge sharing and also there is meaningful relation between information technology and knowledge.

Keywords: cultural factors, technological factors, knowledge sharing

I. Introduction

Given the rapid growth of the changes and increased competition, correct knowledge management in organizations has a great importance (Fung and wuk, 2009, 1). Knowledge is increasingly known as the title of a vital component for organizations. Knowledge sharing relies heavily on individuals and group characteristics of individuals in the form of organizational culture and may be an important factor play a key role in the rejection or acceptance of knowledge management (Sigang et al., 2010, 2). Therefore, to be able to benefit from knowledge to efficiently create achieving the goals quickly, the system of supplying, storing, processing and disseminating knowledge to provide the necessary knowledge at any time and place. The solution that has been used in the past few years by many industries and organizations is knowledge management (Hiks et al., 2007:5).

Knowledge sharing as the process of identifying, distributing and exploiting existing knowledge is interpreted to solve more favorable issues than the past. Overcoming employees' willingness to accumulate knowledge, requires understanding the factors affecting the sharing of knowledge and considering that how an organization can be managed through these factors in this way? (Benkeh, 2010: 7).

In today's organizations, things are so dependent on teamwork and collective knowledge that the slogan of knowledge of power is not applicable anymore. Instead of encouraging employees to share knowledge, it's better to identify the factors affecting sharing (Keshavarzi, 2007:5). If employee knowledge is not shared by the organization, it is possible to for various reasons, their knowledge will quickly become obsolete or at the same time as leaving the organization by the person, goes out of organization reach. Therefore, organizations are required to increase the effectiveness of knowledge sharing activities and as a result of increasing its competitive ability, there is a need for further studies on knowledge sharing; therefore, any organization that wants to achieve unsustainable growth in its business, should turn knowledge sharing activities into a routine activity.

Among the factors that influence the sharing of knowledge in organizations, organizational culture can be named (Raja and Hadad, 2008: 182). In fact, organizational culture is the basis of knowledge sharing and it plays an important role in the failure or success of organizational strategies. Also organizational culture supporting role of knowledge sharing well expressed by knowledge management specialists. Altogether they believe that organizational culture creates an appropriate environment to promote the skills and knowledge required to advance knowledge management processes (Jones, 2009: 1). If culture does not encourage the distribution and sharing of knowledge, knowledge management will face challenges (Dawnport and Prosak, 1998: 2).

On the other hand, information technology can act as a powerful tool for providing effective and efficient tools for all aspects of knowledge management. The ability of information technology to explore, profile, integrate, archive and transfer information can create an evolution in the collection, organization, classification and

dissemination of information. Technologies such as related databases, document management systems, the Internet, intranets, search engines, workflow tools, runtime support systems, data mining, data storage, electronic listings, and video conferencing, bulletin boards, newsgroups, and discussion boards and so on can have a key role in facilitating knowledge management.

Real knowledge is usually implicit. But there are a lot of data, information and knowledge that can be represent in electronic form. Information technology makes it possible to extract knowledge from the mind of the owner of knowledge. So with technology, it is possible to place knowledge in regular templates and transfer to other members of the organization and business partners in the world (Raja and Hadad, 2008: 185).

Therefore, organizations management by relying on superior knowledge, should find possibility to make reasonable decisions on important topics and improve knowledge-based practices. But given the increasing complexity of knowledge in the banking industry, the question is that does management can improve knowledge sharing in organization through certain tools? Among the tools, cultural factors and information technology in knowledge sharing have special importance which we are going to study them in this article.

Conceptual framework of the study is derived from Raja and Hadad (2008). After identifying research models, dimensions and model indicators, Relationship between spiritual intelligence and organizational citizenship behavior, extracted and after that by review, review and modify existing indicators, important points were taken into consideration by the researcher, then, model indices were selected. Dimensions and selected indicators were reviewed and confirmed by supervisors and consultants.

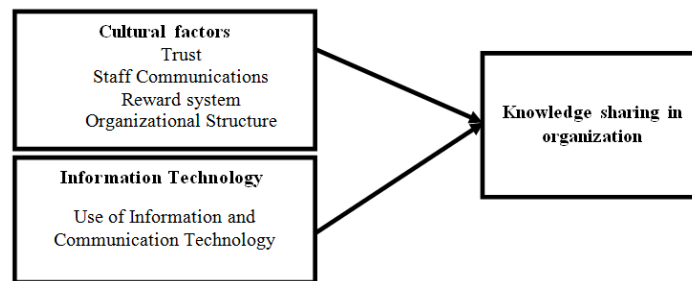


Fig. 1: study conceptual framework (Derived from the model by Raja and Hadad (2008))

According to the conceptual framework, two hypothesis will be discussed:

H1: Cultural factors has significant effect on knowledge sharing.

H2: Information technology has significant effect on knowledge sharing.

Operational definition of the investigated factors:

Organizational Culture: In this research, organizational culture is a system of shared beliefs and values that organization makes them and through that guide employees' behaviors. This factor is evaluated by questionnaire with 15 questions about organizational culture by Alalavi et al. (2007) which includes dimensions of trust, communication between employees, reward system, organizational structure.

Information Technology: Specifically, information technology can be considered as a score that respondents consider using ICT in the organization. This factor is evaluated by Hong and Negar (2005) questionnaire (5 questions).

Knowledge Sharing: Specifically, knowledge sharing can be considered as a score that respondents consider their attitudes and behaviors in order to share organizational knowledge. This factor is evaluated by Pshazadeh (2010) questionnaire (15 questions).

II. Research Methodology

From the view point of aim this study is applied research, in terms of how information is collected is descriptive type and as the objective of this study is to evaluate cultural factors and information technology impact on knowledge sharing in organization, this study is a descriptive survey. The statistical population included in this study are Mellat Bank employees in Alborz branch. The number of personnel employed in the statistical society reaches 3,000. To determine sample volume Morgan table used and 341 person intended as final sample. Sampling method was simple random. 400 questionnaire distributed which 360 of them were valid. The final questionnaire of this research consists of two general questions:

General questions: General questions have been sought to collect general and demographic information in relation to respondents.

Special questions: This section of the questionnaire include 15 questions related to organizational culture and 20 questions related to the variable of information technology and 15 questions related to knowledge sharing.

The questions were asked in five degree Likert scale. To ensure the content validity of standard research questionnaires, questionnaires were delivered to supervisors and consultants and they confirmed their validity.

Cronbach's alpha was used to assess the reliability of the questionnaires. The mean Cronbach's alpha for all of the research variables were above 0.7. To check the normality of the variables Kolmogorov-Smirnov test was used and also to test research hypotheses, structural equations modelling using LISREL applied.

III. Research Findings

Sample sufficiency test

Sample sufficiency test is prerequisites for using Laser structural equations. For this KMO test is performed.

Table 1: Sample Sufficiency Test

Sample Sufficiency Test		0.867
Cruet-Bartlett's test	Cruet-Bartlett's Index	10408.4
	Degrees of freedom	1225
	The significance level	0.000

Sample sufficiency test is 0.867 so the sample size is appropriate for use in structural equations .In general, high values (nearly one) indicate that factor analysis is applicable to the data, if this value is less than 0.5, probably, the results of the factor analysis will not be useful for the data.

Structural Equation Modeling Research Modeling

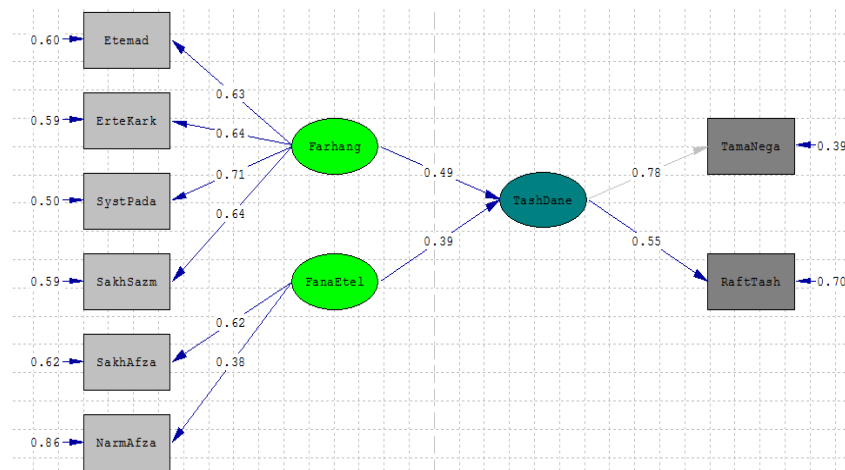


Fig. 2: research final model

The significance level of relationships between variables is as follows:

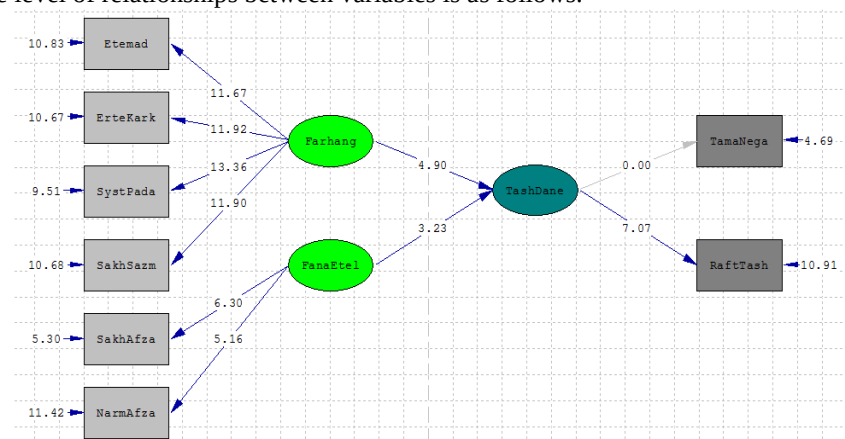


Fig.3: significance level of relationships between variables

Other values of the final model are shown in the table below:

Table 2: values of the final model

	Standard amount	standard error	T	R ²	Significant level	Result
H1	0.49	0.1	4.9	0.58	p<0.01	Hypothesis Confirmed
H2	0.39	0.12	3.33	0.58	p<0.01	Hypothesis Confirmed

Estimated values of factor loads which are calculated by maximum likelihood are represented in Fig2. These values which are called λ , they get used to estimated standard scores for variables in Structural Equation Modeling analysis. Also, the estimated standard error values shows error in raw material estimation of factor loads which smaller values (close to zero) indicate more accurate estimates and lower confidence intervals.

The values of T, which are the result of the division of the load factor estimation into the standard error shows load factor estimation significance (significant difference between factor load and zero). The values of T between -1.96 and 1.96 indicates lack of significant effect between the variables. The values of T between 1.96 and 3 indicates significant effect between the variables. The values of T more than 3 indicates significant effect between the variables by 99% confidence level. So, as shown in the table above, impact of variables on each other is acceptable with over 99% confidence.

IV. Study model fitting

Model fitting means that observed Variants-Covariance matrix should have exact values with real Variants-Covariance matrix or they be fit. The more we fit together in the matrix, model is better fitted. In Modeling Structural Equations once you can trust the model's estimates that the model has enough fit.

Table 3: Final fitting indices

Indicator title	Domain accepted	Amount	Result
χ^2/df ¹	≤ 3	2.96	confirmed
RMSEA ²	RMSEA<0.09	0.000	confirmed
GFI ³	GFI>0.9	0.95	confirmed
AGFI	AGFI>0.85	0.89	confirmed
CFI ⁴	CFI>0.90	0.90	confirmed
IFI ⁵	IFI>0.90	0.90	confirmed

NFI = (Normed Fit Index)

NNFI = (Non- Normed Fit Index)

CFI= (comparative Fit Index)

RMSEA = (Root Mean Square Error of Approximation)

All fitting indicators used indicate that the model has good fitting. So we conclude that the research model has a high ability to measure the main research variable. Given the standard of the model, LISREL findings are reliable.

V. Research hypotheses testing using structural equation model

H1: Cultural factors has significant effect on knowledge sharing.

According to standard estimation which 0.49 between organizational culture and knowledge sharing and the value of T=4.9 and R²=0.58 this can be concluded that at significance level of p<0.01, there is meaningful relation between organizational culture and knowledge sharing. Therefore the first hypothesis is confirmed.

H2: Information technology has significant effect on knowledge sharing.

According to standard estimation which 0.39 between information technology and knowledge sharing and the value of T=3.33 and R²=0.58 this can be concluded that at significance level of p<0.01, there is meaningful relation between information technology and knowledge sharing. Therefore the second hypothesis is confirmed.

VI. Conclusion

Investigating the results obtained from LISREL structural equations have confirmed both hypotheses of the study. So as conclusion it is notable that there is meaningful relation between organizational culture and knowledge sharing and also there is meaningful relation between information technology and knowledge.

¹Chi Square Divided to Degree of Freedom

² Root Mean Square Error of Approximation

³ Goodness of Fit Index

⁴ Comperation Fit Index

⁵ Inceremental Fit Index

VII. Research Limitations

Some respondents do not cooperate filling in the questionnaire under the pretext of lack of time.
Extension of effective and determinant factors in knowledge sharing.
The inherent limitations of the questionnaire, which is also exist with other similar questionnaires.

References

- Alavi, M. and Leidner, D.E (2001) " Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues " . MIS Quarterly, 25(1),pp 107-136.
- Behnke, T. M. (2010)" Knowledge sharing At work: An Examination of organizational Antecedents" , Doctoral Dissertation research, Ambrose university.
- keshavarzi,A(2001)" The role of intelligent resources in knowledge management", 5(4), 358-367.
- Davenport, T. H, Prusak, L (1998)" Working knowledge: How organizations manage what they know", Boston, MA: Harvard Business School Press.
- Hicks, R.C, Dattero, R, & Galup, S.D (2007)" A metaphor for knowledge management: islands in a tacit sea", Journal of Knowledge Management, Vol. 11. No. 1, PP. 5-16.
- Hislop,D(2005)"knowledge management in organization",New York : oxford university press inc.
- Holdt, C. P. (2007)" Knowledge sharing: moving a way from the obsession with best practices", journal of knowledge management, 11, (1), pp. 36- 47.
- Hsia,T.I and et.al (2006) " a framework for designing nursing knowledge management systems " , interdisciplinary journal of information knowledge management.
- Jones, M.B (2009) " Organizational Culture & knowledge management: an empirical investigation of U.S Manufacturing Firms , Doctoral dissertation", Nova Southeastern University, Proquest Information and Learning Company.
- Kagan , A.(1994)" Information Technology seen as key to productivity", Chemical Week, 155(2), 20-40.
- Ke,w&Wei,K(2008) "organizational culture and leadership in ERP implementation ", Decision support systems,vol.45,NO.2,PP208-218.
- Keyes, J(2008)" Identifying the Barriers to knowledge sharing in knowledge intensive organizations ", doctoral dissertation research, submitted to north central university, Prescott valley, Arizona.
- Okunoye, A (2003)" Knowledge management and global diversity: A framework to support organizations in developing countries", ph.D. dissertation, university of Turku, Finland, 1-128.
- Raja, R.A.Issa , Haddad , Josef (2008) " Perceptions of the impacts of organizational culture and information technology on knowledge sharing in construction " Construction Innovation: Information, Process, Management, Vol. 8, Iss: 3, pp182 – 201.
- Wang ,E, Klein,G, Jiang,J.J (2007) " IT support in manufacturing firms for a knowledge management dynamic capability link to performance " , international journal of production research, vol.45,NO.11,pp2419 -2434.