

## **Factors Influencing Knowledge Sharing among Personnel of Agricultural Extension and Education Organization in Iranian Ministry of Jihad-e Agriculture**

Gh. Pezeshki Rad<sup>1\*</sup>, N. Alizadeh<sup>1</sup>, N. Zamani Miandashti<sup>2</sup>, and H. Shabanali Fami<sup>3</sup>

### **ABSTRACT**

The main purpose of this study was to investigate factors influencing knowledge sharing among the personnel of Agricultural Extension and Education Organization in the Iranian Ministry of Jihad-e Agriculture. A survey method was employed for the study, and 110 personnel randomly selected as a sample out of 140 who were busy working in the organization. Data was collected through a questionnaire employed as the tool of the study. The reliability of the questionnaire was determined as 0.93. The personnel were of the belief that knowledge sharing happened in their organization to a large extent. According to the study, there existed significant relationships between the factors of social trust, relational social capital and attitude toward knowledge sharing, and the dependent variable of knowledge sharing. A stepwise regression analysis indicated that relational social capital and attitude towards knowledge sharing could explain about 37 percent in the variations of knowledge sharing.

**Keywords:** Attitude, Knowledge sharing, Relational social capital, Social trust.

### **INTRODUCTION**

Knowledge management has long been a significant matter of concern in organizations. It emerged as a key planned instrument for improving organizations and to promote the use of knowledge among personnel (Kim and Ju, 2008). Today, knowledge is seen as one of the most significant resources in any organization (Smith, 2001; Ofek and Sarvary, 2001), thus successes in any organization depend on the efficiency of managers in managing the knowledge of personnel as well as promoting knowledge sharing in their organizations.

The main goal of knowledge management in organizations is to encourage knowledge sharing among personnel in the organization. However sharing of knowledge is hard to ensure, because it is generated and stored in the minds of staff in an office. Knowledge sharing involves a set of behaviors that help the better exchange of acquired information among personnel with their organizations also being able to really reduce the time spent on problem solving, while increasing the quality of work among personnel (Dave and Koskela, 2009). Knowledge sharing can influence and shape skills, attitudes, and activities of personnel in achieving organizational goals (Collins and Clark, 2003).

<sup>1</sup> Department of Agricultural Extension and Education, College of Agriculture, Tarbiat Modares University, P. O. Box: 14115-336, Tehran, Islamic Republic of Iran.

\* Corresponding author, e-mail: pezeshki@modares.ac.ir

<sup>2</sup> Department of Agricultural Extension and Education, College of Agriculture, Shiraz University, Shiraz, Islamic Republic of Iran.

<sup>3</sup> Department of Agricultural Extension and Education, College of Agriculture, University of Tehran, Karaj, Islamic Republic of Iran.



Yang and Wu (2008) noted that people owning specific knowledge could enjoy special benefits and unique positions. Therefore, the issue of knowledge sharing involves the social dilemma, and complex interactions between personnel and organization policy. An important question that arises is: what factors enable organizations to promote sharing of knowledge among staff in their offices?

Agricultural Extension and Education Organization (AEEO) which is affiliated with the Iranian Ministry of Jihad-e Agriculture is one of the main organizations involved in agricultural knowledge processes particularly in knowledge creation, store and exchange. In fact, it is one of the main components of Iranian Agricultural Knowledge and Information System (AKIS), and therefore, the improvement of knowledge sharing in AEEO is perceived by academia and practitioners to greatly contribute to agricultural knowledge management. To date, little empirical research has been carried out to investigate knowledge sharing behavior and to determine factors influencing it in agricultural organizations, and therefore, to improve knowledge management in AEEO, more detailed information concerning personnel knowledge sharing is indispensable. To address the problem, the main purpose of this study was formulated as identifying factors influencing knowledge sharing among personnel of AEEO. Several organizational as well as individual factors and also factors related to knowledge level influence knowledge sharing, but in this study the effects of the two former aspects will be examined. The remainder of this paper is organized as follows: in section 2, the research model and hypotheses are presented as based on theoretical rationales. The research methodology and specific information pertaining to the research procedures and measures are given in section 3, while section 4 outlines the data analysis and presents the results. Finally, the implications of the findings are discussed in

section 5, together with managerial implications and an overview of the research limitations.

### Theoretical Background and Hypotheses

Many researchers have argued that knowledge sharing, the process by which an individual imparts his or her expertise, insight, or understanding to another individual, so that the recipient may potentially acquire and use the knowledge to better perform his or her tasks, plays a crucial role in knowledge management (Bock and Kim, 2002; Markus, 2001; Wasko and Faraj, 2005; Yu *et al.*, 2009). Knowledge sharing is one of the knowledge management processes which include knowledge creation/generation and acquisition, knowledge codification and knowledge sharing, which is similar to knowledge transfer and knowledge use of application (Alavi and Leidner, 2001; Bock and Kim, 2002; Kankanhalli, Tan and Wei, 2005). Employing Davenport and Prusak's (1998) proposal, one operationally considers knowledge sharing as a process that includes the attempt to transfer knowledge by a sender, the completion of the transfer, and the successful absorption of this knowledge by a recipient. To be more specific in terms of this study, knowledge sharing is the extent to which an individual shares the knowledge he has acquired or created with the people who are working in the same office where the individual works. As Yu *et al.* (2009) stated, knowledge sharing behavior can not be forced but can only be encouraged and facilitated. However, there are various factors that should be identified to foster sharing of knowledge.

Yang and Chen (2007) categorized the influencing factors regarding knowledge sharing into three aspects: organizational, individual, and knowledge level. Organizational and individual factors are focused on in this study. The authors proposed that such factors as organizational

culture, organizational structure and technologies belong to organizational category, and such factors as trust and social capital fall into the individual category.

### Organizational Factors

Much literature has concentrated on the context and means to manage knowledge in a top-down fashion, focusing on the analysis of the role of organizational and technical infrastructure in facilitating knowledge sharing among individuals (Hoof and Huysman, 2009). Based on the existing literature, organizational culture (Huysman and Wulf, 2006; Hoof and Huysman, 2009), organizational structure (Hoof and Huysman, 2009, Yang and Wu, 2008), and information and communication technology (ICT) infrastructure (Carlson and Davis, 1998; Hoof and Huysman, 2009; in the organization are well-known organizational factors that most researchers are now agree on their direct and/or indirect influence on the sharing of knowledge.

Performance of knowledge sharing involved a variety of challenges. Among the most difficulty of this challenge, organizational culture is believed to be the most significant input to effective knowledge management which determines values, beliefs, and work systems that could either encourage or impede knowledge creation and sharing (Hsieh *et al.*, 2009).

H1a: Organizational culture is positively associated with knowledge sharing.

H1b: A knowledge friendly culture positively influences knowledge sharing.

Knowledge sharing can be managed by providing the context and means to manage knowledge in a top-down fashion. Much literature has concentrated on the analysis of the role that organizational structure plays in facilitating the sharing of knowledge among individuals (Egan and Kim, 2000). The concept of organizational structure is the extent to which a structure facilitates knowledge sharing.

H2a: Organizational structure is positively associated with knowledge sharing.

H3b: The extent to which the organizations' structure supports knowledge sharing positively influences knowledge sharing.

Dave and Koskela (2009) suggested that ICT encourages organizations to develop corporate of staff toward sharing of knowledge and aid in the exchange of knowledge in an organization. It plays a supporting role in relations between personnel and contributes to a shared identity, norms and values.

H3a: The level of ICT support in the organization is positively associated with knowledge sharing;

H3b: The level of ICT support in the organization positively influences knowledge sharing.

### Individual Factors

Among individual factors, focus was made on social trust (Hsu *et al.*, 2007; Watson and Hewett, 2006; Chiu *et al.*, 2006), relational social capital (Wasko and Faraj, 2005; Tiwana and Bush, 2005, Chow and Chan, 2008), and individual attitudes towards knowledge sharing (Kim and Ju, 2008), of which the last one was proposed by the researchers as an independent variable that could directly influence knowledge sharing.

Most of the problems encountered in knowledge sharing can be traced back to a lack of trust among staff in an organization. Researches have showed that most employees are often either unwilling or unable to share their knowledge and information with other colleagues, because of a lack of social trust among them (Chen and Huang, 2009). Therefore the concept of social trust is the degree of one's willingness to be vulnerable to the action(s) of another. Within the specific context of the current research, it is hypothesized that:

H4a: The level of social trust is positively associated with knowledge sharing.



H4b: The level of social trust positively influences knowledge sharing.

More recent efforts have focused on social capital approaches to motivate behavior that helps in promoting knowledge sharing. The concept of relational social capital is providing access to staff with relevant knowledge (Blacker, 1995) and providing a common interest as well as an environment of appreciation of the value of others' knowledge to help in understanding the personnel's knowledge in an organization (Bock *et al.*, 2005). This would lead to the following hypotheses:

H5a: The level of relational social capital is positively associated with knowledge sharing.

H5b: The level of relational social capital positively influences knowledge sharing.

Although researchers and practitioners have realized that individuals are not born to share what they know, some individuals are more inclined than others to share their knowledge (Wasko and Faraj, 2005). We should consider that knowledge sharing is a personal behavior (Yang and Wu, 2008) and therefore an individual's attitude toward knowledge sharing may influence his behavior of knowledge sharing.

H6a: Employee's attitude towards knowledge sharing is positively associated with knowledge sharing.

H6b: An employee's attitude towards knowledge sharing positively influences his attitude towards knowledge sharing.

## MATERIALS AND METHODS

A survey was undertaken to carry out this research. The research populations consisted of personnel of AEEO in the Iranian Ministry of Jihad-e Agriculture (N=140). This organization was selected because it is knowledge-intensive and highly active in knowledge processes in agriculture sector. The populations were engaged in two departments including Extension Department (100 personnel in four offices of: Extension and Extension Systems

Improvement, Provision and Support of Extension Network, Developing Agricultural Organizations, and Rural and Nomadic Women Affairs), and Education Department (40 personnel in three of its offices namely: Educational Technology, Agricultural Jobs, and Organizations). They were more involved in support and planning activities in the organization than in field work. Through a proportional stratified sampling technique, 110 personnel of AEEO were selected following the recommendations of Krejcie and Morgan (1970). Sample populations were on the average 42 years old, while the majority (68.8%) being male. Sixty percent of the samples were working in Extension Department while the rest (40%) were engaged in Education Department. A questionnaire, consisting of three sections was designed to collect data. In designing a suitable questionnaire for the study, the authors were aided by the scientific staff of Tehran and Tarbiat Modares Universities. Section one of the questionnaire was related to demographic information of the participants, including: age, gender, work experience, and place (department) of work.

Since knowledge sharing behavior is difficult to observe from an external perspective due to the nature of knowledge in relation to information (Davenport and Prusak, 1998), and on the other hand informers are the best judges as to whether or not knowledge gets shared (Yu *et al.*, 2009), self-reporting was employed to evaluate actual knowledge sharing. Therefore, section two of the questionnaire (9 items) was designed to determine the extent to which the personnel share knowledge with their colleagues, and was assessed on a five-point, Likert-type scale that ranged from very low (1) to very high (5). The knowledge sharing scale was derived from a study on knowledge sharing and communication styles (Vries *et al.*, 2006). Section three of the questionnaire (47 items) was designed to identify the factors influencing knowledge sharing among personnel of the organization, and was

assessed on a five-point, Likert-type scale ranging from strongly disagree (1) to strongly agree (5). The scales for organizational culture, organizational structure, and ICT infrastructure were slightly adapted versions of the scales used by Gold *et al.* (2001). For relational social capital, a scale was used that integrated items from a social identification scale (Doosje *et al.*, 1995). Scale for social trust was an adapted version of the scale used by Hoof and Huysman (2009). The scale for attitude toward knowledge sharing was newly designed.

The instrument of the study was assessed for face and content validities by an AEEO panel of experts. A pilot test was conducted with the participation of 25 personnel of the Agricultural Ministry who were not included in the study. Some changes were made to improve the clarity and readability of the instrument. Cronbach's alpha applied to assess how well a set of variables employed in an instrument measure a one-dimensional construct through coefficient reliability. Table 1 presents the analysis of internal consistency of the relational dimension factors, the organizational factors, individual factors and the dependent variable (knowledge sharing). Results indicated that the scales for knowledge sharing (0.80), organizational culture (0.91), organizational structure (0.75), ICT infrastructure (0.85),

social trust (0.86), relational social capital (0.72), and finally individual attitude toward knowledge sharing (0.71) were reliable regarding the study.

Fifty five questionnaires (50%) were returned within two weeks. A follow-up letter was sent two weeks later than the original to remind of those who did not respond. As a result of this 2<sup>nd</sup> effort, an additional 25 questionnaire were received. In all, 80 survey instruments (73%) were returned to control nonresponsive error; later responses (23%) were compared with the early responses (50%). No significant differences were found, therefore the results of the study could be generalized to the target population.

## RESULTS

### Descriptive Statistics

#### *Knowledge Sharing among Colleagues*

The objective of the study was to determine the extent to which personnel share their knowledge with the colleagues, who are working in the same office. The results of ranking showed the notions of: "I am willing to share my knowledge with my colleagues, if they are willing to" (Mean= 4.34; SD= 0.61), "when I need some special

**Table 1.** Measurement Model and Construct Reliability Results.

| Construct                                    | Description   | Items | Cronbach's alpha |
|--|---|-------|------------------|
| Knowledge sharing                            | Create knowledge, knowledge transfer and acquired information among colleagues in organization. | 9     | 0.80             |
| Organizational culture                       | Beliefs and attitudes of personnel toward knowledge sharing in organization.                    | 15    | 0.91             |
| Organizational structure                     | Ability and flexibility of decision making in organization.                                     | 6     | 0.75             |
| ICT infrastructure                           | Access to and application of ICT in organization.   | 7     | 0.85             |
| Social trust                                 | Trust in colleagues' expertise and cooperation.   | 9     | 0.86             |
| Relational social capital                    | Interaction among personnel.  | 5     | 0.72             |
| Individual attitude toward knowledge sharing | The degree of one's favorable or positive feeling about knowledge.                              | 5     | 0.71             |



information, I ask my colleagues” (Mean= 4.24; SD=0.64) and “when one of my colleagues have special skills, I ask him (her) to teach me on that” (Mean=4.16; SD= 0.73) ranking 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. On the other hand, “I consider it important that my colleagues be aware of what I am working on” (Mean=3.54; SD= 0.95), and “I regularly inform my colleagues of what I am working on” (Mean=3.47; SD= 0.97) were ranked 8<sup>th</sup> and 9<sup>th</sup>, respectively. The mean score of knowledge sharing among personnel was 4.19 (4= Much), with standard deviation of 0.66. This result showed that personnel in general believed that knowledge sharing happened in their organization to a large extent. The ranking of main variables related to knowledge sharing has been presented in Table 2.

#### *Descriptive Statistics of Independent Variables*

Table 3 shows means and standard deviations of independent variables. To investigate personnel's perceptions regarding these factors, statements were ranked based on their mean scores. The results revealed that among variables related to organizational culture, “The management

of this organization encourages personnel to come up with new ideas” (Mean=3.19; SD= 1.17), came up with the highest mean and ranked 1<sup>st</sup>, while the least mean was for “The management of this organization encourages personnel to state all the ideas in their minds” (Mean=2.31; SD= 1.28). Mean score of organizational culture (Mean=2.80; SD= 0.81) revealed that culture of the organization was not supportive of knowledge sharing. According to the results, among variables related to organizational structure, “personnel don't need any explanation to fulfill their duties, because the duties have been predefined and clear” (Mean=2.67; SD= 1.08), acquired the highest mean and was ranked 1<sup>st</sup>, while the least mean went to “personnel are encouraged to take risks and make decisions when it is necessary” (Mean=2.30; SD= 1.13). Mean score of organizational structure (Mean=2.53; SD= 0.76) indicated that the organizational structure did not contribute to knowledge sharing among personnel.

With regard to ICT infrastructure, the statement “personnel of this organization can use email and internet” (Mean=4.09; SD=0.96) was at the highest rank, and “I always have access to all information resources in this organization” (Mean=2.74; SD= 1.09) was ranked as the last standing

**Table 2.** The extent of knowledge sharing in the organization as perceived by personnel (n= 110).

| Variable   | Mean | Std. dev. | Rank |
|--|------|-----------|------|
| 1. I am willing to share my knowledge with my colleagues if they are willing to.       | 4.34 | 0.61      | 1    |
| 2. When I need especial information, I ask my colleagues.                              | 4.24 | 0.64      | 2    |
| 3. When any of my colleagues has special skills, I ask him/her to teach me on that.    | 4.16 | 0.73      | 3    |
| 4. I like being informed of what knowledge, skills and information my colleagues have. | 4.15 | 0.64      | 4    |
| 5. When I want to learn something new, I ask my colleagues about it.                   | 4.02 | 0.77      | 5    |
| 6. I regularly share my knowledge with my colleagues.                                  | 3.79 | 0.81      | 6    |
| 7. I have learned a lot through communication with my colleagues.                      | 3.64 | 0.94      | 7    |
| 8. I consider it important that my colleagues be aware of what I am working on.        | 3.54 | 0.95      | 8    |
| 9. I regularly inform my colleagues of what I am working on.                           | 3.47 | 0.97      | 9    |
| Collective personnel knowledge sharing with their colleagues                           | 4.19 | 0.66      |      |

Scale: Very little= 1; Little= 2; Somewhat= 3; Much= 4; Very much= 5.

**Table 3.** Personnels' perceptions about independent variables (n= 110).

| Variable                          | Mean | Std. Dev. |
|-----------------------------------|------|-----------|
| Organizational culture            | 2.80 | 0.81      |
| Organizational structure          | 2.53 | 0.76      |
| ICT infrastructure                | 3.40 | 0.71      |
| Relational social capital         | 4.06 | 0.51      |
| Social trust                      | 3.73 | 0.60      |
| Attitude toward knowledge sharing | 4.37 | 0.54      |

statement. Based on the mean score of ICT infrastructure (Mean=3.40; SD= 0.71), it could be said that the personnel were somehow in agreement that ICT infrastructure (in the organization) was supporting knowledge sharing by personnel. The ranking of the variables related to relational social capital showed that "when a client asks a question, I know which colleagues could be of help to him" (Mean=4.35; SD= 0.53) ranked 1<sup>st</sup>, and while the least mean was registered for "I view this organization as a group I belong to" (Mean=3.72; SD= 0.93). Mean score of relational social capital (Mean=4.06; SD= 0.51) revealed that close relations between personnel were supportive of sharing knowledge.

The results suggested that among variables of social trust "I feel like I've established good relationships with my colleagues" (Mean=4.10; SD= 0.72), was at the highest rank, and "when I face difficulty, I can trust my colleagues to help me" (Mean= 3.45; SD= 0.91) ranked the lowest. It could be said that based on the mean score of social trust (Mean= 3.73; SD= 0.60), that personnel trusted their colleagues' expertise and cooperation to some extent. Among variables related to personnel's attitude toward knowledge sharing, "I feel knowledge sharing between personnel is necessary in the organization" (Mean=4.44; SD= 0.81) ranked 1<sup>st</sup>, while "I feel that if I share knowledge with my colleagues, my knowledge develops" (Mean=4.26; SD= 0.90) ranked as 5<sup>th</sup>. Mean score of

personnel's attitudes toward knowledge sharing (Mean=4.37; SD= 0.54) indicated that they were positive in their attitudes towards knowledge sharing in the organization.

### Hypothesis Testing

#### *Correlations between Independent Variables and Knowledge Sharing*

Likely correlations between independent variables and knowledge sharing was investigated through Pearson correlations (Table 4). Results showed that there existed a significant relationship between social trust and knowledge sharing ( $r= 0.253$ ), providing support for H4a. Relational social capital had a positive significant relationship with knowledge sharing ( $r= 0.583$ ), providing support for H5a. The results provided support for H6a, as respondents' attitudes towards knowledge sharing in the organization showed a positive relationship with knowledge sharing ( $r= 0.376$ ). But all the hypotheses derived from organizational factors (H1a, H2a and H3a) were rejected.

#### *Factors Explaining Variations in Knowledge Sharing*

Multivariate Liner Regressions were employed to investigate causal relations between independent and dependent variables. Utilizing the stepwise method, the results of multiple regression showed that

**Table 4.** Correlations between independent variables and knowledge sharing.

| Variables                         | r       | p     |
|-----------------------------------|---------|-------|
| Organizational culture            | 0.119   | 0.293 |
| Organizational structure          | 0.213   | 0.058 |
| ICT infrastructure                | 0.101   | 0.372 |
| Social Trust                      | 0.253*  | 0.024 |
| Relational social capital         | 0.583** | 0.000 |
| Attitude toward knowledge sharing | 0.376** | 0.001 |

\*Correlation significant at 0.05 and \*\* Correlation significant at 0.01



relational social capital ( $\beta = 0.874, P < 0.01$ ) and attitude toward knowledge sharing ( $\beta = 0.361, P < 0.05$ ) remained in the regression while the other independent variables were eliminated. Relational social capital and attitude toward knowledge sharing could explain about 37% ( $R^2 = 0.37$ ) of the variations in knowledge sharing (Table 5). Therefore, these results provided support for H5b and H6b, although 1b, 2b, 3b, and 4b were rejected.

## DICSUSSION

The aim of this research was to address the direct effect of some well-known individual and organizational factors on knowledge sharing. The study found support for the impact of relational social capital and attitudes toward knowledge sharing on the extent to which individuals share their knowledge.

### Discussion of the Empirical Results

The present study echoes the findings of prior research (Wasko and Faraj, 2005; Tiwana and Bush, 2005) that social relations positively influence knowledge sharing; the extent to which an individual has good relations with co-workers leads to more knowledge sharing between employees. It has been widely realized that social relationship can also affect an individual's attitude towards knowledge sharing (Bock *et al.*, 2005; Chiu *et al.*, 2006; and Tiwana and Bush, 2005). Since an individual's attitude could influence his/her knowledge sharing, social relations have also indirect effect on knowledge sharing behavior. Our findings

support prior research (Hsu *et al.*, 2007; Watson and Hewett, 2006; Chiu *et al.*, 2006) that observes a positive significant relationship between social trust and sharing of knowledge. Individuals who trust each other are more willing to share relevant ideas and information. The study echoes the literature that individual's positive attitude toward knowledge sharing improves his/her knowledge sharing behavior. Although nobody denies the effect of attitude's effect on behavior, in most of the studies on knowledge sharing, this causal relation appears to be missing.

The finding of positive relationships between individual factors and knowledge sharing provides empirical support for the notion that knowledge sharing is a personal behavior, and people themselves decide whether to share their knowledge. Sharing of knowledge is influenced by the social dynamics going on among individuals. This does not mean, however, that managers cannot play any role in knowledge sharing promotion. Organization managers could create the conditions in which emergent variables exist.

Furthermore, the results indicated that organizational culture, structure and organizational ICT infrastructure did not exert any influence on knowledge sharing. This finding contradicts most of the research findings (Hoof and Huysman, 2009) and theoretical discussion within the existing knowledge sharing behavior literature, where these organizational factors are often extolled as important determinants of the knowledge sharing behavior. In the present study, the relationships between organizational factors and knowledge sharing were positive but too negligible to

**Table 5.** Multivariate Regression analysis.

| Coefficients                           | Unstandardized coefficients |           | Standardized |       |       |
|--|-----------------------------|-----------|--------------|-------|-------|
|  | B                           | Std.Error | Beta         | t     | Sig   |
| Constant                               | 9.736                       | 3.898     | -            | 2.498 | 0.015 |
| Relational social capital (X1)         | 0.874                       | 0.158     | 0.517        | 0.515 | 0.000 |
| Attitude toward knowledge sharing (X2) | 0.361                       | 0.152     | 0.222        | 2.370 | 0.020 |

$R = 0.620$ ; Adjusted  $R^2 = 0.368$ ;  $F = 24.032$ , Sig.  $F = 0.000$ .



be significant.

Variance explained in the knowledge sharing (37%) was not very high. The reason could be that other potential determinants (e.g. outcome expectations, organizational rewards and the value of knowledge) were not included as part of the study.

### Limitations and Future Studies

Although this research provides insights into the factors which impact knowledge sharing in the organization, the results must be carefully interpreted. First, although the sample size was adequate for hypotheses testing, members from only one Iranian organization were surveyed, thus, external validity limitations exist, and it may introduce a selection bias to the findings. Additional investigations with other organizational settings could generate findings that are more robust and generalizable. Second, although self-reported measures represent the most appropriate method in this study because all the variables referred to subjective states, as with any self-reported behavior, this runs the risk of a response bias. Therefore, similar studies that use multi-method and multi-trait measurements should produce more powerful results. Third, as discussed earlier, this study was only able to explain less than forty percent (37%) of the variance in knowledge sharing. Future studies are encouraged to extend our theoretical model to account for any unexplained behavioral variance, e.g. organizational rewards, outcome expectations, the value of knowledge and so forth. A direct effect of an individual's attitude toward knowledge sharing on knowledge sharing was supported in this study. Therefore, not only the direct effect of individual's attitude toward knowledge sharing on sharing of knowledge could be studied in future researches, but also factors influencing individual's attitude toward knowledge sharing, e.g. organizational reward (Constant *et al.*, 1994) and social relationship (Chiu *et al.*, 2006;

Tiwana and Bush, 2005) could be investigated in the coming knowledge sharing studies.

### CONCLUSIONS

Factors influencing knowledge sharing among the personnel of Agricultural Extension and Education Organization in Iranian Ministry of Jihad-e Agriculture were examined in this study. The study revealed that personnel's social relationships along with their attitudes toward knowledge sharing influence the extent to which they share their knowledge with their co-workers working in the same office. Managers are encouraged to improve their personnel's social relations and inspire a positive attitude toward knowledge sharing in their personnel to help employees create, share and utilize working knowledge in the organization and try to save the existing knowledge from fading away. Future studies are needed to investigate such other influencing factors as knowledge value, organizational rewards and outcome expectations, and also the paths between influencing factors and knowledge sharing for a more informed approach to guiding and directing organizations towards an improved knowledge-sharing climate.

### REFERENCES

1. Alavi, M. and Leidner, D. E. 2001. Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, **25(1)**: 107-136.
2. Blacker, F. 1995. Knowledge, Knowledge Work and Organization: An Overview and Interpretation. *Organization Studies*, **6**: 1021-1046.
3. Bock, G. W. and Kim, Y. G. 2002. Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing. *J. Inform. Res. Manage.*, **15(2)**: 14-21.
4. Bock, G. W., Zmud, R. W., Kim, Y. G. and Lee, J. N. 2005. Behavioral Intention



- Formation in Knowledge Sharing: Examining the Role of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate. *MIS Quarterly*, **29(1)**: 87-111.
5. Carlson, J. R. and Davis, G. B. 1998. An Investigation of Media Selection among Directors and Managers: From "Self" to "Other" Orientation. *MIS Quarterly*, **22(3)**: 335-362.
  6. Chaw, W. S. and Chan, L. S. 2008. Social Network, Social Trust and Shared Goals in Organizational Knowledge Sharing. *J. Inform. Manage.*, **45**: 458-465.
  7. Chen, C. J. and Huang, J. W. 2009. Strategic Human Resource Practices and Innovation Performance: The Mediating Role of Knowledge Management Capacity. *J. Bus. Res.*, **62**: 104-114.
  8. Chiu, C. M., Hsu, M. H. and Wang, E. T. G. 2006. Understanding Knowledge Sharing in Virtual Communities: An Integration of Social Capital and Social Cognitive Theories. *Decision Support Systems*, **42(3)**: 1872-1888.
  9. Constant, D., Keisler, S. and Sproull, L. 1994. What's Mine Is Ours, or Is It? A Study of Attitudes about Information Sharing. *Information Systems Research*, **5(4)**: 400-421.
  10. Collins, C. J. and Clark, K. D. 2003. Strategic Human Resource Practices, Top Management Team Social Network, and Firm Performance: The Role of Human Resource in Creating Organizational Competitive Advantage. *J. Hum. Resour. Manage.*, **64(6)**: 740-751.
  11. Dave, B. and Koskela, L. 2009. Collaborative Knowledge Management-A Construction Case Study. *J. Automat. Constr.*, **18**: 894-902.
  12. Davenport, Thomas H. and Prusak, L. 1998. Working Knowledge: How Organizations Manage What They Know. Cambridge, MA: Harvard Business School Press, Pp 197
  13. Doosje, B., Ellemers, N. and Spears, R. 1995. Perceived Intergroup Variability as a Function of Group Status and Identification. *J. Exp. Soc. Psychol.*, **31**: 410-436.
  14. Egan, M. and Kim, J. 2000. Knowledge Sharing the World Bank. *Knowledge Management Review*, **3(3)**: 24-27.
  15. Gold, A. H., Malhotra, A. and Segars, A. H. 2001. Knowledge Management: An Organizational Capabilities Perspective. *J. Manage. Inform. Syst.*, **18**: 18-214.
  16. Hoof, V. D. and Huysman, M. 2009. Managing Knowledge Sharing: Emergent and Engineering Approaches. *Information Management*, **46**: 1-8.
  17. Hsu, M. H., Ju, T. L., Yen, C. H. and Chang, C. M. 2007. Knowledge Sharing Behavior in Virtual Communities: The relationship between Trust, Self-efficacy, and Outcome Expectations. *J. Hum. Computer. Stud.*, **65(2)**: 153-169.
  18. Huysman, M. and Wulf, V. 2006. IT to Support Knowledge Sharing in Communities: Towards a Social Capital Analysis. *J. Inform. Technol.*, **21**: 40-51.
  19. Hsieh, P. J., Lin, B., and Lin, C. 2009. The Construction and Application of Knowledge Navigator Model: An Evaluation of Knowledge Management Maturity. *Expert Systems with Applications*, **36**: 4087-4100.
  20. Kankanhalli, A., Tan, B. C. and Wei, K. K. 2005. Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation. *MIS Quarterly*, **29(1)**: 113-143.
  21. Kim, S. and Ju, B. 2008. An Analysis of Faculty Perceptions: Attitudes toward Knowledge Sharing and Collaboration in an Academic Institution. *Library Information Science Research*, **30**: 282-290.
  22. Krejcie, R. V. and Morgan, D. W. 1970. Determining Sample Size for Research Activities. *Educational Psychological Measurement*, **30**: 607-610
  23. Markus, M. L. 2001. Towards a Theory of Knowledge Reuse: Types of Knowledge Reuse Situations and Factors in Reuse Success? *J. Manage. Inform. Syst.*, **18(1)**: 57-93.
  24. Ofek, E. and Sarvary, M. 2001. Leveraging the Customer Base: Creating Competitive Advantage through Knowledge Management. *J. Manage. Sci.*, **47**: 1441-1456.
  25. Smith, E.A. 2001. The Role of Tacit and Explicit Knowledge in the Workplace. *J. Knowl. Manage.*, **5**: 311-321.
  26. Tiwana, A. and Bush, A. A. 2005. Continuance in Expertise-Sharing Network: A Social Perspective. *IEEE Transactions on Engineering Management*, **52(1)**: 85-101.
  27. Vries, R. E., Van den Hoof, B. and Ridder, J. A. 2006. Explaining Knowledge Sharing: The Role of Team Communication Styles,

- Job Satisfaction and Performance Beliefs. *J. Commun. Res.*, **33**: 115-135.
28. Wasko, M. M. and Faraj, S. 2005. Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice. *MIS Quarterly*, **29(1)**: 35-57.
29. Watson, M. and Hewett, K. 2006. A Multi-Theoretical Model of Knowledge Transfer in Organizations: Determinants of Knowledge Contribution and Knowledge Reuse. *J. Manage. Stud.*, **43(2)**: 141-173.
30. Yang, C. and Chen, L. -C. 2007. Can Organizational Knowledge Capabilities Affect Knowledge Sharing Behavior? *J. Inform. Sci.*, **33(1)**: 95-109.
31. Yang, H. L. and Wu, C. T. 2008. Knowledge Sharing in Organization. *Forecasting Social Change*, **75**: 1128-1156.
32. 33. Yu, T. -K., Lu, L. -C. and Liu, T. -F. 2009. Exploring Factors that Influence Knowledge Sharing Behavior via Weblogs. *Computers in Human Behavior*, In Press.

## عوامل موثر در تسهیم دانش میان کارکنان سازمان ترویج و آموزش وزارت جهاد کشاورزی

غ. پزشکی راد، ن. علیزاده، ن. زمانی میاندشتی و ح. شعبانعلی فمی

### چکیده

هدف این تحقیق بررسی عوامل موثر بر تسهیم دانش میان کارکنان سازمان ترویج و آموزش کشاورزی وزارت جهاد کشاورزی ایران بود. تحقیق حاضر به روش پیمایشی انجام شد، از میان ۱۴۰ نفر از کارکنان سازمان ترویج و آموزش کشاورزی، ۱۱۰ نفر از ایشان به طور تصادفی انتخاب شدند. داده ها از طریق پرسشنامه به عنوان ابزار تحقیق جمع آوری شده است. ضریب کرونباخ آلفای پرسشنامه ۹۳ درصد، بدست آمد که نشان دهنده اعتبار ابزار تحقیق است. کارکنان اعتقاد داشتند که تسهیم دانش در حد زیادی در سازمان آنها اتفاق می افتد. بر همین اساس همبستگی معناداری بین سازه های اعتماد بین اعضا، سرمایه اجتماعی ارتباطی، و نگرش نسبت به تسهیم دانش، با متغیر وابسته تحقیق (تسهیم دانش) بدست آمد. نتایج حاصل از تجزیه و تحلیل رگرسیون به روش گام به گام نشان داد که دو متغیر سرمایه اجتماعی ارتباطی و نگرش اعضا نسبت به تسهیم دانش، در مجموع ۳۷ درصد از تغییرات متغیر وابسته را تبیین می کند.