

## A study on relationship between organizational culture and information technology on knowledge sharing

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### CHRONICLE

#### Article history:

Received January 20, 2014

Accepted 30 August 2014

Available online

September 15 2014

*Knowledge sharing*

*Organizational culture*

*Trust*

*Reward system*

*IT*

### ABSTRACT

This paper presents an empirical investigation to study the effects of organizational culture and information technology on knowledge sharing in national foundation of computer games (NFCG) located in city of Tehran, Iran. The proposed study designs a questionnaire in Likert scale, distributes it among 55 selected people who work for NFCG, which consists of three categories of organizational culture, information technology and knowledge sharing and Cronbach alphas are calculated as 0.869, 0.707 and 0.773, respectively. Using ANOVA test, the study has determined a positive and meaningful relationship between organizational cultures and knowledge sharing. However, the study has not determined any positive and meaningful relationship between information technology and knowledge sharing. Furthermore, while the results of the study have not indicated any meaningful relationships between trust, employee communication on one side and knowledge sharing on the other side, there were positive and meaningful relationships between reward system and organizational structure on one side and knowledge sharing on the other side.

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## 1. Introduction

Knowledge has been a controversial debate in western philosophy for years (Betz, 2001). During the past several years, there has been a growing interest in considering knowledge as an organizational asset. Information sharing (IS) researchers have begun promoting a class of information systems stated as as knowledge management systems (KMS). The primary objective of KMS is to provide some support on creation, transformation, and application of knowledge in all sorts of firms. Effective development and implementation of KMS needs a foundation in various rich literatures. To be credible, KMS research and development have to preserve and construct on the literature, which exists in various but related fields. Alavi and Leidner (2001) presented a comprehensive review and interpretation of knowledge management literatures in various fields with the focus towards determining the important areas for research. They presented a detailed process view of organizational knowledge management with a concentration on the potential role of information technology in this process.

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Hicks et al. (2007) investigated the current thoughts on knowledge management (KM). They developed a metaphor to combination of these thoughts in a new way that effectively conveyed various kinds of knowledge and ways of managing it. According to Christensen (2007), Knowledge sharing is the best method for moving away from the obsession with best practices.

## 2. The proposed study

This paper presents an empirical investigation to study the effects of organizational culture and information technology on knowledge sharing (Al Busaidi et al., 2010; Daft, 2006) in national foundation of computer games (NFCG) located in city of Tehran, Iran. The proposed study designs a questionnaire in Likert scale, distributes it among 55 selected people who work for NFCG, which consists of three categories of organizational culture, information technology (Davenport & Prusak, 1998) and knowledge sharing (Huysman & Wulf, 2006) and Cronbach alphas are calculated as 0.869, 0.707 and 0.773, respectively. The results of these values are well above the minimum acceptable level of 0.70. Therefore, we can confirm the overall questionnaire of the survey. There are two main hypotheses as well as four sub-hypotheses associated with the proposed study of this paper (Fig. 1).

1. First main hypothesis: There is a positive and meaningful relationship between knowledge sharing and organizational culture.

2. Second main hypothesis: There is a positive and meaningful relationship between information technology and knowledge sharing.

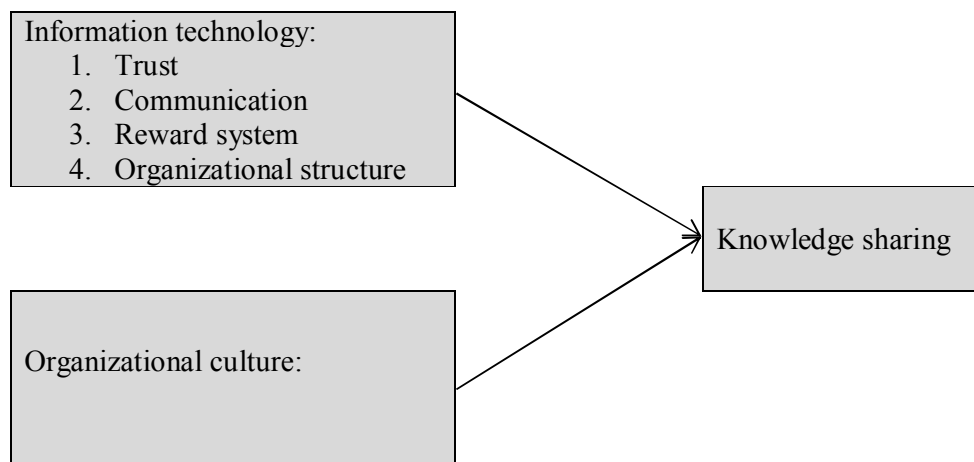
There are four sub-hypotheses associated with the proposed study of this paper as follows,

2.1. There is a meaningful and positive relationship between trust and knowledge sharing.

2.2. There is a meaningful and positive relationship between employee communication and knowledge sharing.

2.3. There is a meaningful and positive relationship between reward system and knowledge sharing.

2.4. There is a meaningful and positive relationship between organizational structure and knowledge sharing.



**Fig. 1.** The proposed study

Table 1 demonstrates the results of Kolmogrove-Smirnove test to verify whether the gathered information.

**Table 1**

The results of Kolmogrove-Smirnove

Variable	Number	Mean	Standard deviation	Z-value	P-value
Organizational culture	51	70.16	10.34	0.474	0.978
Information technology	52	33.53	5.04	0.585	0.884
Knowledge sharing	53	32.02	5.09	0.90	0.393

As we can observe from the results of Table 1, all components of the survey are normally distributed.

### 3. The results

In this section, we present details of our findings on testing various hypotheses of the survey.

#### 3.1. The first hypothesis: The relationship between organizational culture and knowledge sharing

The first hypothesis of the survey investigates the relationship between organizational culture and knowledge sharing. Table 2 demonstrates the results of Analysis of Variance (ANOVA) test for testing the first hypothesis of the survey.

**Table 2**

The results of ANOVA test for testing the first hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	108.725	1	108.725		
Residual	1106.687	49	22.585	4.814	0.033
Total	1215.412	50			

As we can observe from the results of Table 2, there is a meaningful relationship between organizational culture and knowledge sharing when the level of significance is five percent. Therefore, the first hypothesis of the survey has been confirmed.

#### 3.2. The second hypothesis: The relationship between information technology and knowledge sharing

The second hypothesis of the survey studies the relationship between information technology and knowledge sharing. Table 3 shows the results of ANOVA test for testing the first hypothesis of the survey.

**Table 3**

The results of ANOVA test for testing the second hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	65.363	1	65.363		
Residual	1256.369	49	25.127	2.601	0.113
Total	1321.692	50			

As we can see from the results of Table 3, there is not any meaningful relationship between information technology and knowledge sharing when the level of significance is five percent. Therefore, the second main hypothesis of the survey has not been confirmed.

### 3.2.1 The first sub-hypothesis: The relationship between trust and knowledge sharing

The first sub-hypothesis of the survey tries to find out the relationship between trust and knowledge sharing. Table 4 presents the results of ANOVA test for testing the first sub-hypothesis of the survey.

**Table 4**

The results of ANOVA test for testing the first sub-hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	13.622	1	13.622		
Residual	1324.301	49	26.486	0.514	0.477
Total	1337.923	50			

As we can see from the results of Table 4, there is not any meaningful relationship between employee trust and knowledge sharing when the level of significance is five percent. Therefore, the first sub-hypothesis of the survey has not been confirmed.

### 3.2.2 The second sub-hypothesis: The relationship between communication and knowledge sharing

The second sub-hypothesis of the survey attempts to determine the relationship between employee communication and knowledge sharing. Table 5 shows the results of ANOVA test for testing the second sub-hypothesis of the survey.

**Table 5**

The results of ANOVA test for testing the second sub-hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	64.493	1	64.493		
Residual	1282.488	49	25.147	2.565	0.115
Total	1346.981	50			

As we can see from the results of Table 5, there is not any meaningful relationship between employee communication and knowledge sharing when the level of significance is five percent. Therefore, the second sub-hypothesis of the survey has not been confirmed.

### 3.2.3 The third sub-hypothesis: The relationship between reward system and knowledge sharing

The third sub-hypothesis of the survey investigates the relationship between reward system and knowledge sharing. Table 6 presents the results of ANOVA test for testing the third sub-hypothesis of the survey.

**Table 6**

The results of ANOVA test for testing the third sub-hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	107.043	1	107.043		
Residual	1116.187	49	22.324	4.795	0.033
Total	1221.231	50			

As we can observe from the results of Table 6, there is a meaningful relationship between reward system and knowledge sharing when the level of significance is five percent. Therefore, the third sub-hypothesis of the survey has been confirmed.

### 3.2.4 The fourth sub-hypothesis: The relationship between organizational structure and knowledge sharing

The fourth sub-hypothesis of the survey investigates the relationship between organizational structure and knowledge sharing. Table 7 shows the results of ANOVA test for testing the fourth sub-hypothesis of the survey.

**Table 7**

The results of ANOVA test for testing the fourth sub-hypothesis of the survey

	Sum of Squares	df	Mean of Squares	F-value	P-value
Regression	224.287	1	224.287		
Residual	1122.694	49	22.014	10.189	0.002
Total	1364.981	50			

As we can observe from the results of Table 7, there is a meaningful relationship between organizational structure and knowledge sharing when the level of significance is five percent. Therefore, the fourth sub-hypothesis of the survey has been confirmed.

## 4. Conclusion

We have presented an empirical investigation to study the impact of organizational culture and information technology on knowledge sharing in national foundation of computer games (NFCG) located in city of Tehran, Iran. Using ANOVA test, the study has determined a positive and meaningful relationship between organizational cultures and knowledge sharing. However, the study has not determined any positive and meaningful relationship between information technology and knowledge sharing. Furthermore, while the results of the study have not indicated any meaningful relationships between trust, employee communication on one side and knowledge sharing on the other side, there were positive and meaningful relationships between reward system and organizational structure on one side and knowledge sharing on the other side. Based on the results of the survey, we can conclude that reward may increase the employees' motivation to share knowledge and help organization grow faster.

The findings of this survey are somewhat consistent with other studies. Jiacheng et al. (2010), for instance, explored individual cognitive mechanisms of knowledge-sharing (KS) motivation and intends to incorporate more effective measures to judge and effect individual inclinations toward KS in a cross-cultural context in Chinese community. They reported that Chinese had more tendencies to conform to teams' opinions and tend to favor KS as a tool of reaching harmonious relationships, while Americans engaged in KS because self-worth was considered as the manifestation of their individual determinations. The result of our study is not consistent with the results of other studies in terms of trust (Nonaka & Takeuchi, 1995; Issa & Haddad, 2008; Wang & Noe, 2010). According to Lin (2008), for instance, trust and commitment among units, which are important for facilitating knowledge sharing among units, and creative and supporting characteristics of organizational culture could be beneficial for the implementation of knowledge sharing activities and this is not what this study has found about it.

## Acknowledgement

The authors would like to thank the anonymous referees for constructive comments on earlier version of this paper. We are also delighted for the cooperation we received from the employees of national foundation of computer games (NFCG).

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