

A Study on Individual Factors Affecting Knowledge Sharing Intention by knowledge type

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Key Words : knowledge sharing, knowledge sharing mechanism

Abstract

Knowledge sharing is an essential component of effective knowledge management, however, individuals' knowledge does not transform easily into organizational knowledge even with the implementation of knowledge management program, rather, individuals tend to hoard knowledge for various reasons. This article is to explore what factors have influenced the knowledge sharing intention and knowledge sharing mechanism. Although several factors have been identified to help create a high performing knowledge organization, including leadership, organizational culture and so on, the major objective of the research is to explore what kinds of individuals' factors have influence on knowledge sharing intention and knowledge sharing mechanism by knowledge types. This paper applied personality trait, ability, extrinsic motivation, intrinsic motivation structure to explain knowledge sharing in organization.

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I . Introduction

The society we live in has been gradually turning into a knowledge society." Managing knowledge resources is one of the key functions in modern organizations. Knowledge is treated as a vital and significant strategic organizational resource that can influence the competitive advantages of the organization (Alavi & Leidner, 2001), a recent study reported that about 80 percent of companies in Europe consider knowledge is a strategic asset (KPMG, 2003), managing knowledge is an extremely important activity in the IS industry

However, 78% of respondents believe they are currently missing out on business opportunities by failing to successfully exploit available knowledge. Despite a growing understanding of the importance of knowledge sharing, the knowledge sharing within organizations remains a challenge (Burgess, 2005).

It has been noted that individuals do not share their knowledge under all circumstances and they may not be willing to share as much as the organization would like them to. When knowledge sharing occurs, more people may have that same knowledge, as a result, that knowledge is considered to be less valuable, organization experts may view the knowledge individuals possess as their intellectual property which gives them a personal advantage they can leverage for the organization they are working for and thus are reluctant to share with other coworkers

(Bowman, 2002). something like reward, promotion opportunities. And people usually ask their friends or their coworkers for their expertise to help them with their problems on the job. That is, one person's primary motivation for sharing knowledge might be to accrue recognition and rewards, whereas another person might be primarily motivated by a desire to help his or her colleagues. Organization need to take the initiative to foster such behaviors. Although several factors have been identified to help create a high performing knowledge sharing, including leadership, rewards, organizational culture and so on, this paper focuses on individual differences, motivational conditions to promote knowledge sharing, employees need to be motivated to create, share, and use knowledge, as knowledge does not flow or grow by itself (Davenport and Prusak, 1998).

There are primarily two different types of KM strategies: the personalization strategy and the codification strategy (Hansen et al, 1999). For those companies employing personalization strategy, the knowledge is usually shared through direct person-to-person contact. It does not necessarily have to be face-to-face but the primary use of technologies such as intranet; internet is to facilitate such mechanism rather than storing knowledge. For example, personalization strategies include water-cooler work-related conversation, formal meetings, and informal interaction; recently, technologies are commonly adopted for KM not only because of their capacity to

store knowledge but also for the reason that with the globalization of the economy, KM processes expand with the organization to be across time and geographical distance. Knowledge management systems (KMS) have been used to facilitate organizational learning by storing organizational knowledge and having it available to employees when needed (Alavi & Leidner, 2001).

This study will contribute to the knowledge management in several ways.

First, major portion of KM literature has put emphasis on information systems for KM as well as the macro level knowledge sharing. However, research is needed on how individual characteristics (e.g., personality, motivation) influence knowledge sharing for a better understanding of KM, because people are the fundamental players of KM initiatives.

Second, different organizations implement knowledge management in different ways, although some studies focused on knowledge sharing using KMS (Kankanhalli et al 2005; Wasko and Faraj, 2005)—a knowledge repository and a message board. Some studies focused on knowledge sharing using COP (community of practice) (Wasko and Faraj, 2005; Ardichvili et al 2006), however, research is needed examine what individuals' factors have influenced knowledge sharing mechanism.

II. Theoretical background

Knowledge sharing is crucial for firms in order to be able to develop skills

and competences, increase value and sustain competitive advantages (Grant, 1996; Spender, 1996). KM is expected to engender a more collaborative environment, promote knowledge sharing, as mentioned above; organizations have come to realize the importance of capitalizing on the knowledge within the organization itself and have also realized that knowledge sharing would have a positive effect on organization performance.

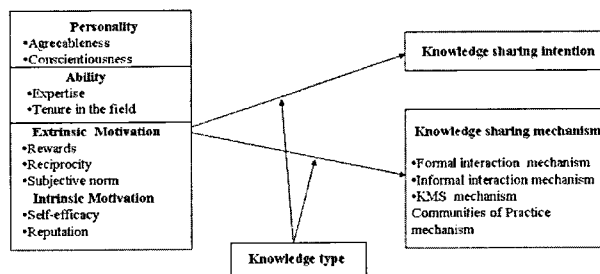
Without a doubt, one's personal direct or indirect connections with others play a critical role in the transfer of knowledge. However, little research has been conducted on how individual characteristics relate to knowledge sharing. That is, few studies in general have been conducted at the individual level of analysis to find out how individuals may have an impact on knowledge management processes in spite of the rising interest in issues relate to KM. It makes sense for organizational knowledge to be studied at the firm level but it is the individuals who are ultimately responsible for managing knowledge. Therefore, it would be important to examine the intention of individuals to get a better understanding of how we may be able to promote knowledge sharing and better manage employees' knowledge. This study will focus on the individual level and its results are intended to offer guidance and implications for the KM practitioners.

Knowledge sharing is a key component of knowledge management systems (Alavi and Leidner, 2001); Earl, 2001). Based

on the taxonomy of knowledge management systems proposed by Earl (2001), also based on Alavi and Leidner (2001) and Bartol and Srivastava (2002) proposed knowledge sharing mechanisms, and consistent with Hansen et al (1999) argument that companies tend to emphasize either a codification strategy or a personalization strategy for knowledge sharing. In this study, identify four major mechanisms for individuals to share their knowledge in organization. Knowledge management system, Community of Practice (COP), formal interaction, and informal interaction. It may be noted that these knowledge sharing mechanisms are not mutually exclusive, even though organizations may emphasize one over the other, all of these mechanisms are important for the organization in tapping individual knowledge for collective use.

III. The Research Model and Hypotheses

Figure 1 presents the conceptual model relating effects to one's intention to share knowledge and knowledge sharing mechanism. Specifically, the model proposes that, in general, personality traits (Agreeableness, Conscientiousness) and individual ability (expertise, tenure in the field) and extrinsic motivation (rewards, reciprocity, subjective norm) and intrinsic motivation (self-efficacy, reputation) have a direct effect on intention to share knowledge and knowledge sharing mechanism. These relationships are moderated by knowledge type condition.



<Figure 1> proposed research model

Personality trait

The factor structure of personality has been hotly debated without being able to grant consistent results for a

long time. Five fundamental traits (also known as "The Big Five." (Extraversion, Agreeableness, Openness to experience, Neuroticism, and Consciousness) has been identified, growing consensus was emerging that these were the fundamental

dimensions of personality,

The Big Five includes conscientiousness, openness to experience, extraversion, agreeableness, and neuroticism. The definitions of agreeableness show that individuals who are high on these traits are more trusting, straightforward, altruistic, compliant, modest, and tender-minded. It is of their nature to help others, cooperation argued to be the essence of agreeableness (Barrick et al., 1998), particularly; agreeableness contains the facet trust that has been related to knowledge sharing (Abrams et al. 2003). Individuals with high conscientiousness have been reported to have competence, order, dutifulness, achievement striving, self-discipline, and deliberation. Due to these characteristics, people tend to do what is expected of them to accomplish work (Liao and Chuang, 2004). Matzler et al. (2005) found agreeableness and conscientiousness are related to affective commitment and documentation of knowledge, which in turn, had an influence on the knowledge sharing. Thus, more agreeable and conscientious individuals would be more likely to have a higher intention to share knowledge and have influence on the knowledge sharing mechanism. This leads to the first hypothesis.

Hypothesis 1a: personality will have a positive effect on one's intention to share knowledge

Hypothesis 1b: personality will have a positive effect on knowledge sharing mechanism.

Personal ability

This study views ability as made up of two related factors: expertise and tenure in the field. Before an individual can contribute knowledge to others, that individual must possess a certain level of requisite base knowledge. Individuals must understand the context in which their knowledge is relevant. An individual's ability develops as he or she interacts over time with others sharing the same practice and learns the skills, knowledge, specialized discourse, and norms of the practice. In organization, even if an individual is motivated to contribute knowledge to others within the organization, contribution is still unlikely unless he or she has the requisite ability that is, unless he or she has knowledge to contribute. In addition, people are less likely to contribute when they feel their expertise is inadequate (Wasko & Faraj, 2000). Thus, individuals with high level expertise and longer tenure in the field are likely to be better able to share knowledge with others and have influence on the knowledge sharing mechanism. This leads to the following hypothesis.

Hypothesis 2a: ability will have a positive effect on one's intention to share knowledge.

Hypothesis 2b: ability will have a positive effect on knowledge sharing mechanism.

Motivation

Motivation is intrinsic if an activity

is undertaken for one's immediate need satisfaction. Intrinsic motivation is valued for its own sake and appears to be self sustained (Deci, 1980). Intrinsic motivation can be directed to the activity's flow, to the obligations of personal and social identities (Osterloh and Frey 2000), In contrast to intrinsic motivation, employees are extrinsically motivated if they are able to satisfy their needs indirectly, especially through monetary compensation. In this study, extrinsic motivation related to rewards, reciprocity and subjective norm, intrinsic motivation related to self-efficacy and reputation. Osterloh and Frey (2000) conclude that intrinsic motivation should enable the transfer of tacit knowledge. In IS, the results of Bock and Kim's (2002) field survey indicate that extrinsic rewards are a trigger for knowledge sharing. Thus, knowledge should transfer when the contributor are intrinsically and extrinsically motivated. This leads to the following hypothesis

Hypothesis 3a: extrinsic motivation will have a positive effect on one's intention to share knowledge.

Hypothesis 3b: extrinsic motivation will have a positive effect on knowledge sharing mechanism.

Hypothesis 4a: intrinsic motivation will have a positive effect on one's intention to share knowledge

Hypothesis 4a: intrinsic motivation will have a positive effect on knowledge sharing mechanism

Knowledge types

Knowledge types are a determinant of estimating the time and cost of the knowledge transfer and choosing appropriate sharing mechanisms (Pedersen, 2003). This implies that individual's knowledge sharing intention and knowledge sharing mechanism depends upon the type of knowledge being transferred. Thus, in this study argue that knowledge types play a role in determining the relationship between individual factors and knowledge sharing intention and knowledge sharing mechanism. This leads to the following hypothesis.

Hypothesis 5a: knowledge types will moderate the effect of individual's factor on one's intention to share knowledge,

Hypothesis 5b: knowledge types will moderate the effect of individual's factor on knowledge sharing mechanism

IV. Research methodology

Measurement development

To test the proposed research model, in this study adopted the survey method for data collection, developed the items in the questionnaire either by adapting measures that had been validated by other researchers or by converting the definitions of constructs into a questionnaire format. These constructs were measured using questions adapted from prior studies to enhance validity,

based on a review of the previous KM literature. Personality questions in the instrument were measured using five-point likert type scales anchored from "1=Very inaccurate" to "5=Very accurate". The remaining questions were measured using five-point likert type scales anchored from "strongly disagree" to "strongly agree".

Measures of the knowledge type were developed by Parikh (2001). He placed knowledge into two dimensions—tacit/explicit and internal/external. This study classified the knowledge of each organization into four categories, internal-tacit, external-tacit, internal-explicit, and external-explicit.

Based on research developed by Bartol and Srivastava (2002), in this study, identify four major mechanisms for individuals to share their knowledge in organization. Knowledge management system, Community of Practice (COP), formal interaction, and informal interaction.

Survey Administration

We adopted both distributing surveys and e-mail surveys. Surveys conducted from Oct 25 to Nov 22, the survey was conducted on a sample of working adults taking evening classes in the part-time MBA program of Hanyang University. Of 180 questionnaires that were distributed, 141 questionnaires were returned completed. E-mail survey was distributed to Samsung four subsidiary companies' employees; a total of 81 people completed the survey. Due to incomplete data, 15 responses from MBA students

were eliminated. Consequently, 207 responses were analyzed

Validity and reliability

The constructs were first assessed for reliability and validity. After ascertaining that the constructs could meet parametric requirements of the regression test,

The questions were tested for validity using factor analysis with principal components analysis and varimax rotation, convergent validity was assessed by checking loadings to see if items within the same construct correlate highly among themselves. Discriminant validity was checked by using the factor loading values. Above 0.5 are considered.

Internal consistency for all constructs was investigated using the using Cronbach's alpha (Cronbach 1951). Nunnally (1978) suggested that a value of at least 0.60 indicated adequate reliability, in order to improve the reliabilities of the corresponding constructs.

Factor analysis for Independent variable yielded 9 components with eigen-values above 1 (see table 2). In order to improve the validity and reliabilities, Two question were omitted from the agreeableness, four question were omitted from the conscientiousness, one question was omitted from self-efficacy, one question was omitted from reputation. Validity and reliability analysis for Independent variable is Factor analysis for dependent variable yielded 2 components.

Hypothesis tests

We tested the hypotheses using multiple regression analysis (SPSS 12.0 for windows), all statistical tests were carried out at a 5 percent level of significance.

Testing the main effects:

The R^2 value of 0.179 and adjusted R^2 value of 0.142 indicated that the overall model was acceptable in explaining the variance in knowledge sharing intention. Expertise ($\beta = 0.156, p < 0.05$) subjective norm ($\beta = 0.170, p < 0.05$) and self-efficacy (β

$= 0.181, p < 0.05$) had significant relationship with knowledge sharing intention. Falk and Miller (1992) indicate that explanatory power (R^2 value) greater than 10 percent is acceptable.

The R^2 value of 0.163 and adjusted R^2 value of 0.124 indicated that the overall model was acceptable in explaining the variance in knowledge sharing mechanism. Agreeableness ($\beta = 0.172, p < 0.05$) reciprocity ($\beta = 0.141, p < 0.05$) and self-efficacy ($\beta = 0.178, p < 0.05$) had significant relationship with knowledge sharing mechanism.

Testing the moderating effects:

<Table 5> the Internal-tacit knowledge condition.

Dependent	Independent	Beta	T	R^2
KS intention	Self efficacy	.174(.031)*	2.169	.075
KS mechanism	Self efficacy	.296 (.000)*	4.206	0.156
	Reputation	.169 (.017)*	2.407	

<Table 6> the external-tacit knowledge condition.

Dependent	Independent	Beta	T	R^2
KS intention	Self efficacy	.254 (.001)*	3.296	.141
	Reciprocity	.146 (.048)*	1.965	
KS mechanism	Self efficacy	.250 (.001)*	3.293	.165
	Agreeableness	.191(.005)*	2.817	

<Table 7> the internal-explicit knowledge condition.

Dependent	Independent	Beta	T	R ²
KS intention	Expertise	.211(.009)*	2.625	.159
	Subjective norm	.237(.003)*	3.021	
KS mechanism	Reciprocity	.196(.005)*	2.834	.102
	Self efficacy	.186(.008)*	2.696	

<Table 8> the external-explicit knowledge condition.

Dependent	Independent	Beta	T	R
KS intention	Agreeableness	.154(.031)*	2.176	.107
	Subjective norm	.172(.036)*	2.113	
KS mechanism	Agreeableness	.263(.000)*	3.753	.111

<Table 9> ranking of one's choice of mechanism

Knowledge types	1	2	3	4
Internal -tacit	Formal interaction	KMS	COP	Informal interaction
External -tacit	Formal interaction	COP	KMS	Informal interaction
Internal -explicit	Formal interaction	COP	Informal interaction	KMS
External -explicit	Formal interaction	Informal interaction	COP	KMS

<Table 10> the summary of the results

Knowledge type	Dependent variable	Independent variable	Beta(Sig)
Internal Tacit	Knowledge Intention	Self efficacy	.174(.031)*
		KS mechanism	.250(.001)*
		Reputation	.191(.005)*
External Tacit	Knowledge Intention	Self efficacy	.254(.001)*
		Reciprocity	.146(.048)*
	KS mechanism	Self efficacy	.250(.001)*
		Agreeableness	.191(.005)*
Internal Explicit	Knowledge Intention	Expertise	.211(.009)*
		Subjective norm	.237(.003)*
	KS mechanism	Reciprocity	.196(.005)*
		Self efficacy	.186(.008)*
External Explicit	Knowledge Intention	Agreeableness	.154(.031)*
		Subjective norm	.172(.036)*
	KS mechanism	Agreeableness	.263(.000)*

V. Results of Hypothesis testing

H1A to H1B examine the links between the sharing intentions and sharing mechanism about personality, H1A and H1B were not supported. H2A was supported. H2B was not supported. H3A and H3B were partially supported. H4A and H4B were partially supported. H5A and H5B were supported.

VI. Discussion

Out R^2 value are relatively low for the model. This may also indicate that there are other factors that can help explain

additional variance in sharing knowledge. Many practitioners mentioned that rewards played an important role in the knowledge management, reward may be a trigger for knowledge sharing, but they are not a fundamental force for forming a person's intention to share knowledge.

Based on our findings, self-efficacy significantly impacted knowledge sharing by individuals. As hypothesized, when people are confident of their ability to share knowledge that would be useful to the organization, they tend to be more motivated to do so.

The subjective norm significantly impacted knowledge sharing by individuals, as hypothesized, when people believes that people who bear

pressure on one's actions expect one to share knowledge. They tend to be more motivated to share knowledge.

Our results also suggest that expertise links to knowledge sharing, implying that experts tend to actively share their knowledge, thus experts play a vital role in organization by sharing knowledge to the benefit of others

We need more research to advance our understanding in terms of how these mechanisms can reinforce each other.

The individuals are more likely to choose formal interaction mechanism to share knowledge. It might be possible for the organization to allocate a certain weight to the knowledge sharing of individuals as part of their performance appraisals and for supervisors to evaluate the individuals on this dimension.

Despite many organizations implement knowledge management systems to support knowledge sharing, but seems to be lack of usage of knowledge management systems to share knowledge.

Our results also find that individuals do not seem to use informal interaction to sharing knowledge. Since knowledge sharing behavior in this context are not easily measured.

People who have high scores on agreeableness will have influence on the sharing mechanism.

VII. Implications and Future Research

We suggest that there should be noted

that these knowledge sharing mechanisms are not mutually exclusive, even though organizations may emphasize one over the other, all of these mechanisms are important for the organization in tapping individual knowledge for collective use.

We should pay more attention to enhancing the positive mood state for social associations which precedes knowledge sharing intention and should provide useful feedback to improve the individual's self-efficacy instead of designing reward system.

This research has several limitations in its. First, because we only considered knowledge sharing as a very individualistic behavior, we focused only on the individual factors which affected the knowledge sharing and mechanism. However, facilitating knowledge sharing is a complex challenge. This study has not attempted to address all aspects of this complexity. Another factors need to be considered in the future research to increase the explanatory power of the research model.

Second, the distinction between explicit and tacit knowledge is well known, but the measurement of these two knowledge types is elusive, third, the small size of our sample reduces the power of the research model.

Future research should improve to provide more reliable measures of tacit and explicit knowledge sharing, and should consider the fitness of the sharing mechanism for the types of knowledge, for instance, Petersen et al (2003) propose the need to match tacit

knowledge with rich communication media (face-to-face) and explicit knowledge with something like written media.

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