

BREAKING MYTHS OF REWARDS: A STUDY OF ATTITUDES ABOUT KNOWLEDGE SHARING[⊞]

Gi-Woo Bock* Young-Gul Kim**

Graduate School of Management, KAIST
207-43 Cheongryangri-Dong, Dongdaemoon-Gu, Seoul, 130-012, Korea
E-mail: serigwb@seri21.org*, domino2@unitel.co.kr**

ABSTRACT

Many CEOs and managers make knowledge sharing the top priority among their employees to initiate knowledge management in their organizations. However little is known about the determinants of knowledge sharing behavior. The purpose of this study is to develop an understanding of factors affecting the individual's knowledge sharing behavior in a business organization and how the determinants affect this behavior. Research results from the field survey of 467 employees show that Expected Associations and Contribution are the major determinants of attitude toward knowledge sharing, but Expected Rewards is not. It is very interesting for both researchers and practitioners who have insisted on the importance of the rewards in knowledge sharing.

KEYWORDS: Knowledge Sharing, Social Exchange, Self-efficacy, Theory of Reasoned Action, Triandis, Rewards, Attitude, Intention, Behavior

I. Introduction

In a vast expanse of knowledge, every aspect of the firm is also changing and knowledge management becomes one of key factors to sustain competitive advantages [Spender & Grant, 1996; Wiig, 1997; Teece, 1998]. In particular, knowledge sharing is one of the most important processes for knowledge management. In a survey of 260 CEOs and directors in European multinational organizations, conducted in 1997~1998 by the Information Systems Research Center in Cranfield School of Management in England, 94% of the respondents answered that knowledge required people to share what they knew with others in the organization [Financial Times, 1999].

However, sharing knowledge is often unnatural. People will not share their knowledge as they think their knowledge is valuable and important. Hoarding knowledge and looking suspiciously upon knowledge from others are the natural tendency [Davenport, 1997]. In addition, this natural tendency is difficult to change. In a study of 431 U.S. and European organizations, conducted in 1997 by the Ernst & Young Center for Business Innovation, the biggest

[⊞] This study was sponsored by KOSEF (Korea Science and Engineering Foundation) – Project # 98-0102-0801-3.

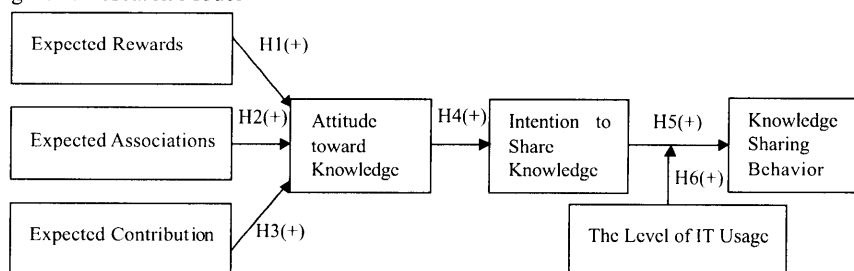
difficulty in knowledge management was “changing people’s behavior” [Ruggles, 1998].

Therefore, sharing knowledge not only should not be taken for granted, but also the motivation to share knowledge must be fostered. The purpose of this research is to develop an understanding of factors that support or constrain knowledge sharing behavior in an organization, and how they influence knowledge sharing behavior. We proposed Expected Rewards, Expected Associations, and Expected Contribution as the major determinants of individuals’ knowledge sharing attitudes, and this attitude as a determinant of intention to share knowledge. Then, we suggested this intention as an immediate predictor of knowledge sharing behavior.

II. Research Model and Hypotheses

While many factors affecting knowledge sharing were identified in recent knowledge management studies as well as information sharing research, few researchers empirically tested these factors in a knowledge-sharing context, or derived those factors from solid theoretical foundations. That’s why there has been no consensus on the key determinants of knowledge sharing even though many factors are listed as important variables. In order to overcome these limitations, we derived determinants of knowledge sharing from social psychology theories-Social Exchange Theory [Gouldner, 1960; Blau, 1967; Kelley and Thibaut, 1978; Constant, et al., 1994] and Self-efficacy Theory [Bandura, 1986; Stajkovic & Luthans, 1998], and suggested the Theory of Reasoned Action [Fishbein and Ajzen, 1975] as how these determinants affect this behavior, in the next section. On the grounds of literature reviews and the theoretical background, the suggested research model for this study is as follows.

Figure 1. Research Model



The Expected Rewards mean that if the employee believed to receive extrinsic benefits such as monetary rewards, promotion, or educational opportunity, he would have a more positive attitude toward his knowledge sharing. Expected Associations assume that if the employee believed he could improve relationships with other employees by offering his knowledge, he would have a more positive attitude toward knowledge sharing. Expected Contribution refers to the idea that if the employee believed he could make contributions to the organization’s performance, he would have a more positive attitude toward knowledge sharing. These first three hypotheses examine relationships between salient beliefs and attitude toward knowledge sharing.

- H1: Expected Rewards will have a positive effect on attitude toward knowledge sharing.
H2: Expected Associations will have a positive effect on attitude toward knowledge sharing.
H3: Expected Contribution will have a positive effect on attitude toward knowledge sharing.

The next two hypotheses examine relationships between attitude and intention, and relationships between intention and behavior in a knowledge-sharing context. These relationships have been supported by Fishbein and Ajzen (1975) in many other behavioral contexts.

- H4: Attitude toward knowledge sharing will have a positive effect on intention to share knowledge.
H5: Intention to share knowledge will have a positive effect on knowledge sharing behavior.

The last hypothesis refers to the individual's usage of information technology. Fishbein and Ajzen (1975; 1980) argued that several external variables could have an affect when an intention was realized to perform a behavior. Since information technology is considered as an important enabler in knowledge management [Davenport, 1997; Ruggles, 1998, O'Dell & Grayson, 1998], we examine how the individual's level of IT usage affects knowledge sharing behavior.

- H6: Information technology usage will have a positive effect on knowledge sharing behavior.

III. Results

In order to test the proposed hypotheses, we developed measurements for each variable and performed a pretest. Then, the main survey was conducted. The sample consisted of 473 employees in 75 departments in the organization called Korea Gas Corporation (KOGAS). KOGAS was established in 1983 to produce and distribute natural gas to the public in Korea. It is owned by government (50.2%). The data were gathered by means of a questionnaire in October and November, 1999. Overall, of the 900 questionnaires that were distributed, 861 questionnaires were received and 473 were usable. Detailed descriptive statistics of the respondents' characteristics are shown in Table 1. The unit of analysis for this study is the individual.

Table 1. Profile of Respondents

Measure	Items	Frequency	Percent	Measure	Items	Frequency	Percent
Gender	Male	413	92.6%	Work Training (# of times in 3 yrs.)	1~2	106	28.0%
	Female	33	7.4%		3~4	138	36.4%
Age	21~29	109	25.7%		5~6	78	20.6%
	30~34	182	42.9%		Over 7	57	15.0%
	35~39	73	17.2%		Work Training (# of days in 3 yrs.)	1~10	88
	Over 40	60	14.2%	11~20		125	36.0%
Position	Employee	97	21.7%	21~30		63	18.1%
	Chief employee	222	49.8%	31~		71	20.5%
	Manager	95	21.3%	Education	High school	37	6.5%
	Director	32	7.2%		College(2 yrs)	50	8.7%
Work Experience	0~3	76	17.5%		University	326	56.9%
	3~6	203	46.6%		Graduate	24	4.2%
	6~9	54	12.5%		Etc.	7	1.2%
	9~	102	23.4%				

Hypothesis Testing

The hypothesized relationships depicted in Figure 1 were tested using the regression analysis. Table 2 presents a summary of the hypothesis tests. Hypotheses 1 to 3 examine the links between the employee's beliefs about Expected Rewards, Associations, and Contribution, and attitude toward knowledge sharing. As shown in Table 2, interesting results were drawn. While Expected Associations ($\beta = .382$, $t\text{-value} = 7.542$, $p < .001$) and Contribution ($\beta = .237$, $t\text{-value} = 4.706$, $p < .001$) were positively related to attitude as expected, Expected Rewards ($\beta = -.124$, $t\text{-value} = -3.127$, $p < .01$) is negatively related to attitude. Therefore, hypothesis 1 was rejected, and hypothesis 2 and 3 were not rejected.

Table 2. Hypothesis Test Results

Equation	R ²	.R ²	.	Hypothesis test results
Attitude toward knowledge sharing A=ER+EA+EC+errors ER EA EC	.304***		-.124** .382*** .237***	H1 was rejected. H2 was not rejected. H3 was not rejected.
Intention to share knowledge I=A+errors	.323***		.568***	H4 was not rejected.
Knowledge Sharing Behavior B=I+errors	.014*		.118*	H5 was not rejected.
Knowledge Sharing Behavior B=I+IT+I*IT+errors I IT I*IT	.054	.000	.094 .168 .039	H6 was rejected.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $p < 0.1$

Hypotheses 4 and 5 examine Fishbein and Ajzen's model in knowledge-sharing context. Attitude toward knowledge sharing ($\beta = .568$, $t\text{-value} = 14.995$, $p < .001$) has a significant influence on the behavioral intention. Thirty-two percent of the variance of behavioral intention to share knowledge is explained by attitude toward knowledge sharing. Also, an individual's actual knowledge sharing behavior is highly correlated with behavioral intention to share knowledge. The positive influences of attitude on intention and intention on behavior are confirmed in the knowledge-sharing context, too.

For the last hypothesis, we investigated the moderating effect of an individual's level of IT usage on knowledge sharing behavior. We obtained that the individual's level of IT usage has no moderating effect on knowledge sharing behavior ($R\text{ Square Change} = .000$, $F\text{-value Change} = .016$, $p = .900$). Thus, hypothesis 6 is rejected.

Discussions

One of the most interesting findings is about Expected Rewards. Many researchers as well as practitioners have emphasized the important role of rewards in knowledge sharing. From a theoretical perspective, economic exchange theory also told us that people behaved after the calculation of expected rewards and costs occurred by his or her behavior. However, on the contrary to many researchers' expectation, this research shows that attitude toward knowledge sharing is negatively related to Expected Rewards. That is, Expected Rewards discourage the formation

of a positive attitude toward knowledge sharing.

Surprisingly, research on pay-performance has conclusively shown that there are no relationships, or even negative relationship between rewards and performance [Kohn, 1993]. Kohn (1993) provided six reasons why rewards failed, and several explanations make sense in a knowledge-sharing context, too.

First of all, he insisted that rewards have a punitive effect because they are manipulative like outright punishment. Further, not receiving a reward that one had expected to receive is also indistinguishable from being punished. The second, rewards break off relations. For each person who wins, there are many others who feel they have lost. Furthermore, when employees compete for a limited number of incentives, they will very likely begin to see each other as competitors to their own success. Next, managers often use incentive systems as a substitute for giving workers what they need to do a good job .providing useful feedback, social support, and the room for self-determination. Finally, rewards, like punishment, may actually undermine intrinsic motivation. The more we experience being controlled, the more we tend to lose interest in what we are doing. Furthermore, the recipient of the reward assumes, "If they have to bribe me to do it, it must be something I wouldn't want to do." So, the larger the incentive we are offered, the more negatively we view the activity for which the bonus was received [Kohn, 1993].

In fact, employees in KOGAS, have received small amounts of monetary incentives in return for providing innovative ideas for the organization. This small amount of money is worse than nothing. It gives bad feelings to one who expected to receive a reward but did not. Most employees who do not receive incentives feel relative deprivation. It ruins relationships. Moreover, it makes employees think that knowledge is a competitive asset for them and that they should not be controlled by the organization. As a result, employees who have had this kind of experience, form a negative attitude toward incentives.

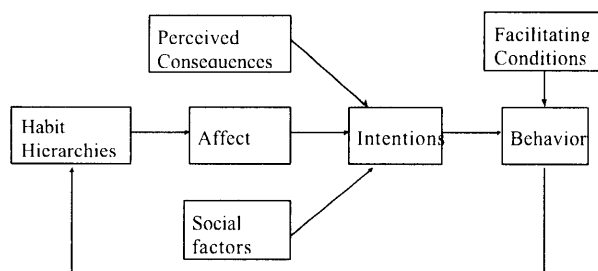
The next explanation is related to organizational citizenship behavior (OCB). OCB can be defined as "willingness of persons to contribute efforts to the cooperative system" by Barnard (1938). Almost 30 years after Barnard, Kats and Kahn (1966; 1978) suggested that reward systems may inhibit cooperation [Organ & Konovsky, 1989], because critical voluntary behaviors that are not specified by job descriptions are largely a function of identification and internalization rather than instrumental involvement [O'Reilly & Chatman, 1986]. In KOGAS, the employee who has over 9 year work experience displayed a negative attitude toward knowledge sharing as the Expected Rewards increased ($\beta = -.209, t\text{-value} = -2.517, p < .05$), while the relationship between Expected Rewards and attitude in the group with less than 9 years of work experience is insignificant. According to Constant et al. (1994), experienced workers learned that they should share their knowledge which was acquired from their work and training. Therefore, they may have a negative attitude toward receiving extrinsic benefits in return for knowledge sharing behavior which they should do, as a matter of course.

New Hypotheses

If so, do rewards play no role for knowledge sharing? Then, why do many researchers and practitioners emphasize the role of rewards in knowledge sharing? To answer this question, we introduced Triandis (1980)'s model (Figure 2). Triandis proposed a theory that incorporated many of the same concepts and constructs with Fishbein and Ajzen,

but also modified and redefined them [Thompson et al., 1991]. He acknowledged that even when intentions were high, behavior might not occur if certain conditions of a particular situation, for example accessibility, made the behavior impossible.

Figure 2. Triandis's Model



Thompson, Higgins, & Howell, 1991

We thought rewards could be a facilitating condition for knowledge sharing just like accessibility. Many practitioners mentioned that rewards played important role in the initiation stage of knowledge management. This means that reward can be a trigger for knowledge sharing, but they are not a fundamental force for forming attitude. To test our new hypothesis, we conducted regression, and results are shown in Table 3. As we expected, Expected Rewards have a significantly positive effect on behavior ($\beta = .242, t\text{-value} = 5.536, p < .001$).

Table 3. Hypothesis Test Results

Equation	R ²		Hypothesis test results
Knowledge Sharing Behavior	.112***		
Behavior=Intention+ER+IT+errors			
I		.107*	Not rejected
ER		.242***	Not rejected
IT		.188***	Not rejected

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $p < 0.1$

For the role of Π , we suggested the level of IT usage of an individual would have a moderating effect on knowledge sharing behavior, because IT was described as an enabler for knowledge sharing in much of available literature [Davenport, 1997]. We expected people who had intention to share their knowledge and used IT frequently would actually share their knowledge more frequently through BBS, email and etc. However, the moderating effect of the individual's level of IT usage was not significant. Instead, the level of IT usage directly affected knowledge sharing behavior as a facilitating condition just like Expected Rewards ($\beta = .188, t\text{-value} = 4.301, p < .001$ in Table 3).

IV. Implications

Implications for Researchers

Many researchers in knowledge sharing have mentioned concepts and variables in visionary fashion. However, in

this research, we empirically tested hypotheses derived from social psychological theories. In our research, empirical evidence shows that Expected Rewards do have a negative effect on attitude toward knowledge sharing, on the contrary to many researchers' expectations while Expected Associations and Contribution have positive effects.

In order to interpret these results, we examined pay-performance research and OCB studies. Then, we proposed the role of rewards as a facilitating condition along with the level of IT usage, based on Triandis' model. This result suggests that rewards succeed at securing only one thing: temporary compliance, as Kelman (1958) mentioned [Kohn, 1993; O'Reilly and Chatman, 1986]. When it comes producing lasting changes in attitude, however, rewards, like punishment, are strikingly ineffective. Once the rewards run out, people revert to their old behavior [Kohn, 1993]. In technical terms, the marginal utility of increasing amounts of extrinsic benefits eventually diminishes [Blau, 1967]. However, since social benefits have no exact price, the marginal utility function does not apply to Expected Associations and Contribution [Blau, 1967]. Therefore, the frequent rendering of OCB like knowledge sharing would seem to mainly foster a sense of social exchange relationship [O'Reilly and Chatman, 1986].

Implications for Practitioners

Lotus Development, a division of IBM, devotes 25% of the total performance evaluation of its customer support employees to knowledge sharing. Buckman Laboratories recognizes its 100 top knowledge sharers with an annual conference at a resort [Davenport, 1997]. Are these efforts really worth the tremendous time and costs? The result of this study shows that this effort should be considered with skepticism. Employees who think knowledge sharing would increase scope and depth of associations among organizational members have a positive attitude toward knowledge sharing. Their positive attitudes toward knowledge sharing are formed by the expectations of reciprocation on knowledge sharing. Moreover, employees who believe in their ability to contribute to improvements of organizational performance have a positive attitude toward knowledge sharing.

However, Incentives, what is called extrinsic motivators, do not alter the attitude that underlies our knowledge sharing behavior. They do not create an enduring commitment to any action. Rather, incentives merely – and temporarily – change what we do [Kohn, 1993]. It is no more than a trigger or facilitating condition. The role of individual's level of IT usage is the same as the role of rewards. Therefore, we should pay more attention to enhancing positive mood state for social associations which precedes knowledge sharing behavior and we should provide useful feedback to improve the individual's self-efficacy instead of designing elaborate evaluation and incentive systems.

V. Limitations and Further Research

Even though this research has drawn intellectually and practically meaningful implications, there are a few limitations. First of all, the use of self-report scales to measure the study variables involves the possibility of the common method bias for some of the results obtained. In order to pursue further investigation of the conceptual model, it would be appropriate to develop more direct and objective measures for knowledge sharing behavior.

The second, data is collected from only one organization called KOGAS. The results might be contaminated by organizational characteristics which are unique to KOGAS. In order to generalize results from this study, we need to collect data out of various organizations in various industries.

The final limitation is that we passed over social factors in knowledge sharing. In this research, because we considered knowledge sharing as a very individualistic behavior, we focused on examining salient beliefs which affected attitude toward knowledge sharing. However, according to Fishbein and Ajzen, behavioral intention determined by social factors as well as attitude. Therefore, social factors should be considered in future research.

For further research, it will be interesting to compare Fishbein and Ajzen's model with Triandis' model. In terms of facilitating condition, explanatory power of Triandis' model seems to be stronger than Fishbein and Ajzen's model. However, Fishbein and Ajzen's model is simpler and generally accepted. Besides, this study was conducted with a snapshot approach, but, to provide a more accurate explanation on knowledge sharing behavior based on Fishbein and Ajzen's model, a longitudinal approach also needs to be taken.

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