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38. Exploring Tacit Knowledge Sharing Intention and Behavior within Workgroup from the Perspectives of Social Capital and Behavioral Control

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Abstract

Several researchers suggest that tacit knowledge sharing among employees is a process of social interaction by nature. Accordingly, the perspectives of social capital and behavioral control are employed in this study to investigate an individual's tacit knowledge sharing and behavior within a workgroup. This study collects data through a multi-informant questionnaire design. There are three areas of interesting results. First, results show that tacit knowledge sharing intention and behavior can be induced by affect-based trust through organizational citizenship behavior. Second, internal control has positive effect on tacit knowledge sharing intention, but the relationship between internal control and tacit knowledge sharing behavior cannot gain support. Third, external control positively moderates the relationship between tacit knowledge sharing intention and behavior. It is interesting to note that tacit knowledge sharing intention does not necessarily lead to tacit knowledge sharing behavior unless the moderating effect of external control is taken into account. These findings and their implications are also addressed.

Keywords: Behavioral Control, Intention-Behavior Relationship, Tacit Knowledge Sharing, Organizational Citizenship Behavior, Social Capital

Introduction

The importance of knowledge within organizations has been addressed by several researchers (e.g. Alavi and Leidner 2001; Bock et al. 2005). It is important to note that knowledge itself cannot create significant value without utilization (Fahey and Prusak 1998). As argued by Alavi (2000), knowledge sharing among organizational members is the most important and challenging means to increase values of knowledge utilization. Based on Polanyi's (1967) conceptualization, Nonaka (1994) suggested that knowledge can be classified as tacit and explicit. Tacit knowledge – reflecting an individual's know-how and experiences from works – is increasingly considered as an important type of valuable intangible resource that is difficult to imitate and acquire, and can be regarded as the most important source of advantage for an individual, a group, or a firm (Berman et al. 2002). This is especially true in the context of innovative works, where much of the task-related knowledge is tacit in nature, and tacit knowledge sharing among members is crucial for creating higher collective performance (Käser and Miles 2002). However, an individual may hoard rather than share his tacit knowledge because tacit knowledge is valuable and important, and the contribution of tacit knowledge cannot be easily measured and compensated accordingly (Osterloh and Frey 2000). Thus, tacit knowledge acquisition and sharing is one of most important issues for knowledge management within organizations. For a work group, tacit knowledge sharing among members is also critical for task completion and group performance. Accordingly, this study intends to explicate the following two research questions: (1) what are the factors that influence an individual's tacit knowledge sharing intention and behavior within a work group? (2) Will an individual's tacit knowledge sharing intention necessarily lead to tacit knowledge sharing behavior?

While explicit knowledge sharing can be facilitated by information technology, tacit knowledge sharing is subject to social interaction (Käser and Miles 2002; Nonaka 1994). That is to say, tacit knowledge sharing among organizational members is socially driven. Knowledge sharing behavior is also inherently a kind of collective actions (Bock, et al. 2005) and sometimes beyond an individual's volitional control. Accordingly, perspectives of social capital and behavioral control are employed here to provide a useful lens for investigating an employee's tacit knowledge sharing within a work group. In this study, data are collected through multi-informant questionnaire design in that each respondent's organizational citizenship behavior and tacit knowledge sharing behavior are reported by his colleagues in order to avoid the bias resulted from self-reporting.

Conceptual Background

Tacit Knowledge Sharing

Nonaka (1994) addresses two types of knowledge within organizations: explicit and tacit. Explicit knowledge is regarded as knowledge that can be formally and systematically stored, articulated, and disseminated in certain codified forms, such as manual or computer files (Becerra-Fernandez and Sabherwal 2001). However, tacit knowledge is deeply rooted in action, experience, thought, and involvement in a particular context (Alavi and Leidner 2001), and thus is difficult to be transformed into explicit form in order to be easily transferred and shared (Berman et al. 2002). Polanyi (1967, p. 4) expresses the nature of tacit knowledge with a phrase "we know more than we can tell". That is to say, tacit knowledge is deeply embedded in the mind to the extent that the knowers are not fully aware of that knowledge they possesses (Koskinen et al. 2003). Nevertheless the tacit knowledge determines the behavior of the knower. Common examples of tacit knowledge include the ability to ride a bicycle, the knowledge of an expert baseball player, and skills to debug a computer program.

Tacit knowledge may be considered as the concepts of skill (Berman et al. 2002) or practical know-how (Koskinen et al. 2003), thus an individual usually will not share his knowledge when the knowledge is regarded as valuable or important due to possible losing advantages (Bock et al. 2005). Furthermore, potential risk of losing advantage and lack of proper reward mechanism are the major reasons that an individual is usually reluctant to share his tacit knowledge with others (Osterloh and Frey 2000). Thus, tacit knowledge sharing can be only facilitated by intrinsic motivation, such as sociability and friendship (Osterloh and Frey 2000). Choi and Lee (2003) also suggest that an individual can acquire tacit knowledge and personal experience only through tacit-oriented manner that emphasizes social interaction. Nonaka (1994) also considers that tacit knowledge is of personal quality and can be shared through sharing metaphors or experiences during social interaction without substantial knowledge loss. Accordingly, social relationship may be the most important factor to facilitate tacit knowledge sharing among employees within an organization.

Social Capital

Social capital conceptualized as a set of resources embedded in the social relationship among social actors can be regarded as a valuable asset with which to secure benefit for social actors ranging from individuals to organizations (Adler and Kwon 2002). For examples, higher degree of social capital is helpful in finding better jobs (Granovetter 1995), getting promoted early (Burt 1997), making collective work easier (Bolino et al. 2002), inter-unit resource exchange and combination within an organization (Tsai and Ghoshal 1998), creation of intellectual capital and dissemination of knowledge within an organization (Nahapiet and Ghoshal 1998), and enhancing organizational flexibility (Leana and Van Buren 1999).

In a broader sense, social capital is not a unidimensional concept (Putnam 1995) and “encompasses many aspects of a social context, such as social ties, trusting relations, and value systems that facilitate actions of individuals located within that context” (Tsai and Ghoshal 1998, p. 465). Putnam (1995) argues that clarifying the dimensions of social capital is a top priority because social capital has many complicated attributes related to social context. Accordingly, Nahapiet and Ghoshal (1998) propose that structural, relational, and cognitive aspects are three dimensions of social capital. This three dimensional framework has been employed to investigate the relationship between social capital and intra-organizational phenomena, such as creation of intellectual capital (Nahapiet and Ghoshal 1998), inter-units resource exchange (Tsai and Ghoshal 1998), and organizational citizenship behavior (Bolino et al. 2002).

Structural social capital can be conceptualized as the overall pattern of relationships among social actors (Nahapiet and Ghoshal 1998). Bolino et al. (2002) suggest the structural social capital can also be considered as the extent to which actors in a social network are connected. Relational social capital includes the assets created and leveraged through ongoing relationship that influence social actors’ behavior (Nahapiet and Ghoshal 1998). This dimension bears some resemblance to Adler and Kwon’s (2002) concept of “goodwill” and can be manifested by trust, norms, obligations, and identification (Nahapiet and Ghoshal 1998). Besides, Nahapiet and Ghoshal (1998) regard cognitive social capital as the common understanding among social actors through shared language and narratives. It is embodied in attributes like shared vision or shared value that facilitates individual and collective actions and common understanding of proper actions and collective goals. Boland and Tenkasi (1995) suggest that higher cognitive social capital gives partners a common perspective that enables them to develop similar perception and interpretation toward events. Unlike the impersonal nature of structural social capital, both relational and cognitive dimensions describe the personal qualities of interpersonal relationship (Bolino et al. 2002) and can be categorized into relational embeddedness of social capital that represents the motivational characteristic of interpersonal social exchange. Thus, relational social capital and cognitive social capital are emphasized in this study.

Among the manifestation of relational social capital, trust quality has received much attention in organizational and management research (McEvily et al. 2003). Trust is also an important dimension of Leana and Van Buren’s (1999) conceptualization of social capital. McAllister (1995) suggests these two factors of trust as “affect-based trust” and “cognition-based trust”. Trust is cognition-based in that “we cognitively choose whom we will trust in which respects and under which circumstances, and we base the choice on what we take to be ‘good reasons,’ constituting evidence of trustworthiness” (Lewis and Weigert 1985, p. 970). On the other hand, affect-based trust is based on the emotional ties linking individuals, such as friendship, love, or care (Lewis and Weigert 1985; McAllister 1995). Here, this study employs affect-based trust to characterize the relational dimension because relational social capital represents the affective quality of interpersonal relationship (Bolino et al. 2002). Furthermore, the concept of shared value is employed to characterize the cognitive dimension of social capital in this study. Morgan and Hunt (1994, p. 25) define shared value as “the extent to which partners have beliefs in common about what behaviors, goals, and policies are important or unimportant, appropriate or inappropriate, and right or wrong.”

Organizational Citizenship Behavior

An employee's tacit knowledge sharing behavior will be also determined by his behavior exhibited within organization. According to Katz's (1964) studies, extra-role behaviors are much different from in-role behaviors within an organization. In-role behavior is required and expected behavior that is necessary for ongoing operations within an organization. Extra-role behaviors, however, describes individual employee's discretionary behavior and is not specifically or explicitly included in his formal job description and organizational reward system. Bateman and Organ (1983) first propose the term "organizational citizenship behavior" (OCB) defined as an employee's willingness to go beyond his prescribed and assigned roles to embody Katz's category of extra-role behavior. This study argues that an individual with higher OCB will tend to contribute his tacit knowledge to other colleagues in the same organization for the shared good rather than self-interest.

Despite the growing interest in OCB, there is lacking of consensus about the dimensionality of this construct among past literature (Podsakoff et al. 2000). The most well-known one is Organ's (1988) conceptualization OCB as five dimensions: altruism (e.g. helping another coworker with a work-related problem), courtesy (e.g. helping another coworker preventing the occurrence of work-related problem), conscientiousness (e.g. going above and beyond minimal call of duty), sportsmanship (e.g. tolerating the inevitable inconvenience of work with positive attitudes), and civic virtue (e.g. being responsible involving in the political life of the organization). However, Podsakoff and his colleagues suggested a three-factor model – helping behavior, sportsmanship, and civic virtue – because managers often have difficulty recognizing some of distinctions among Organ's five dimensions (e.g. Podsakoff and MacKenzie 1994). In the three-factor model, altruism and courtesy are lumped into a single helping behavior dimension and conscientiousness is removed. Based on their review of several empirical studies, Podsakoff and MacKenzie (1997) found that helping behavior tends to have more effects on organizational effectiveness than sportsmanship and civic virtue.

Internal and External Control

Although there are several empirical supports for the Theory of Planned Behavior across a number of domains (e.g. Armitage and Conner 2001; Conner and McMillan 1999), the role and concept of perceived behavioral control (PBC) does not yet fall into consensus. In earlier versions of the TPB, Ajzen (1985) considers that PBC that reflects availability of requisite opportunities and resources will moderate the intention-behavior relationship. That is to say, the relationship between intention and behavior is stronger when PBC is high. Due to lacking evidences of the moderating effects of PBC, Ajzen (1991) subsequently argues that PBC will affect behavior directly. However, the moderating effect of PBC is still gained supports from several empirical studies (e.g. Armitage and Conner 2001; Conner and McMillan 1999; Terry and O'Leary 1995).

Conner and Armitage (1998) suggest that PBC can be dimensionalized into internal and external control. Internal control includes intrinsic control factors and is similar to the concept of self-efficacy, whereas external control reflects extrinsic control factors and is similar to Triandis's (1977) concept of facilitating conditions or Kuhl and Beckman's (1985) "action control". The distinctions between internal control and external control also embody Ajzen's (1985) suggestion that non-motivational factors may relate to both internal (such as skill or ability) and external aspects (such as opportunities or resources). The external control factors can be also described in terms of available resources and opportunities that will facilitate the performance of focal behavior (Fitch and Ravin 2005). Ajzen (2002) suggested that PBC can lead to distinct components of self-efficacy and controllability, which are similar to internal control and external control respectively.

Research Model and Hypotheses Development

Based on previous conceptual background, this study proposes a research model in order to investigate tacit knowledge sharing intention and behavior within a workgroup (as shown in Figure 1). *First*, this study posits that an individual's relational social capital is helpful to his OCB formation. *Second*, OCB is hypothesized to be positively related to an individual's motivation to share his tacit knowledge with other coworkers. *Third*, two dimension of PBC – internal control and external control – make differences in term of their effects on an individual's knowledge sharing. Internal control is hypothesized to direct affect an individual's knowledge sharing intention and behavior. External control, however, is hypothesized to moderate the relationship between an individual's motivation to share his tacit knowledge and his actual sharing behavior. That is, the relationship between tacit knowledge sharing intention and tacit knowledge behavior is stronger under higher external control than under lower external control. In the following, five research hypotheses derived from research model are proposed.

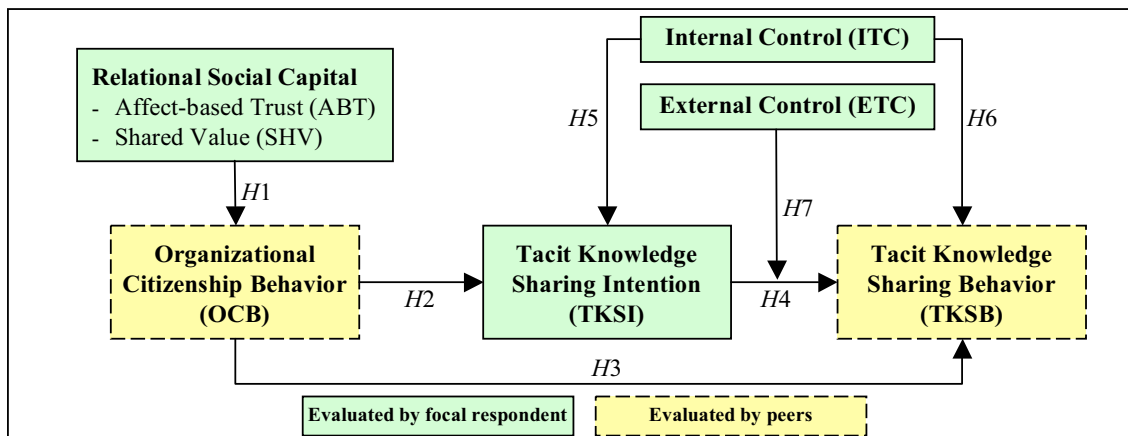


Figure 1: Research Model

Social capital can reflect strong interpersonal connections and extensive investment in interpersonal relationship. As an individual has higher social capital in his social network, he will be likely to behave in ways that benefit other members. Thus, it is likely that citizenship behaviors will be an outcome of intensive social relationship. Cardona et al. (2004) consider that social attachment among individuals will also lead to manifestation of OCB. Bolino et al. (2002) also suggest that social capital may play an important antecedent of citizenship behavior. People who were considered trustworthy and have shared value with others will also tend to express stronger extra-role behaviors in order to maintain established interpersonal friendship in their social network. This leads to following hypothesis:

H1a: Affect-based trust positively affects OCB.

H1b: Shared Value positively affects OCB.

OCB is often manifested as prosocial behavior that reflects trust and identification among organizational members, indicating an individual will help others coping with their difficulties. From the social exchange perspective, OCB lead to the formation of unspecified obligation that enables an individual will voluntarily do others favor even without expectation of equivalent returns. Bolino et al. (2002) also suggest that OCB will facilitate the development of desirable relationship among employees, thus lead to altruistic behaviors within an organization. Therefore, an individual will be willing to share his tacit knowledge

with coworkers through the reciprocal relationship when he expresses stronger citizen behavior. Feather and Rauter (2004) also suggest that an individual's OCB is positively related to his commitment toward organization. That is to say, an individual with stronger OCB will tend to contribute his resource and experience for the benefit of his employing organization. Accordingly, the following hypothesis is proposed:

H2: OCB positively affects tacit knowledge sharing intention.

H3: OCB positively affects tacit knowledge sharing behavior.

As argued by and TPB model, behavioral intention captures all the motivational factors that reflect the effort people plan to exert in order to perform the behavior in question (Ajzen 1991). Thus, as an individual expresses stronger intention to engage in a behavior, he is more likely to put the behavior into practice. The following hypothesis is then proposed:

H4: Tacit knowledge sharing intention positively affects tacit knowledge sharing behavior.

TPB model suggests that an individual's perception of non-motivational factors (i.e. PBC) plays an important role in the intention-behavior relationship when the focal behavior is not under complete volitional control (Ajzen 1991). However, the effects of PBC cannot fall to consensus among different studies. On one hand, as PBC is conceptualized as internal non-motivational factors (such as self-efficacy), it is suggested to directly affect behavioral intention (e.g. Ajzen 1991; Terry and O'Leary 1995). As PBC is conceptualized as external non-motivational factors, on the other hand, it is suggested to directly affect behavior or to moderate the intention-behavior relationship (e.g. Fitch and Ravlin 2005; Terry and O'Leary 1995). In order to clarify the role of PBC in an individual's tacit knowledge sharing behavior, this study adopts Conner and Armitage's (1998) dimensionalization of PBC as internal control and external control.

By Conner and Armitage's (1998) definition, internal control describes an individual's confidence to perform the behavior in question. An individual with high internal control may believe that he is able to easily handle the focal behavior by himself, thus leading to strong behavioral intention. However, external non-motivational factors (external control) exert their moderating effects on the intention-behavior relationship when the focal behavior is under partial volitional control (Armitage and Conner 2001). On the other hand, external control describes all the environmental factors that may impede or facilitate focal behavior performance and usually cannot be manipulated by an individual alone. Higher external control will facilitate the implementation of intentions into action. In general, an individual's performance in knowledge sharing behavior is sometimes beyond his own control (not under complete volitional control). For example, an individual who has strong motivation to share his tacit knowledge may not actually provide his know-how and experiences when other members have no requests. Besides, unimpeded and free communication among employees is also one of the most important facilitating factors for tacit knowledge sharing behavior within an organization. Accordingly, the relationship between an individual's tacit knowledge sharing intention and behavior will be stronger when he perceives that the external conditions is favorable for performing tacit knowledge sharing behavior. Thus, the following hypotheses regarding the effects of internal and external control are proposed:

H5: Internal control positively affects tacit knowledge sharing intention.

H6: Internal control positively affects tacit knowledge sharing behavior.

H7: The effect of tacit knowledge sharing intention on tacit knowledge sharing behavior is stronger for higher external control than for lower external control.

Research Method

Procedure

People whose works are highly knowledge intensive and need certain degree of interpersonal interaction for task completion will be target respondents in this study, such as personnel in MIS departments, R& D departments, or various project teams. Each department or team that satisfies above requirements is referred to as a qualified group hereinafter. This study employs multi-informant design to measure each respondent's OCB and tacit knowledge sharing behavior. As an individual's OCB is manifested from his behaviors and social relationship with others within an organization, it is unreasonable to gather data of OCB solely from his point of view. That is, each respondent's OCB should be reported by other members in the same qualified group. Besides, each respondent's tacit knowledge sharing behavior also reported by others in order to avoid the bias resulted from self-reporting.

To reduce respondents' tasks to a more manageable size, three members in a qualified group are invited. Thus, a qualified group must have more than three members. Each respondent is asked to rate actual tacit knowledge sharing behavior and OCB for each other two members in the same qualified group. For example, NR1, NR2, and NR3 are three respondents in a qualified group. NR1 is asked to evaluate the OCB and tacit knowledge sharing behavior of NR2 and NR3, while his OCB and tacit knowledge sharing behavior are evaluated by NR2 and NR3. We also asks each respondent to offer his perceived affect-based trust toward and shared value with other two members, because these two constructs represent the quality of his social relationship with colleagues. All other remaining constructs are measured in self-rated way by each respondent.

This study follows three steps in the data collection. *First*, we solicited qualified groups through researchers' social relationship. For each qualified group, three volunteers were asked to participate in this study. Questionnaires for these three respondents in a qualified group were then tailored to meet research design. Take the case of a qualified group with NR1, NR2, and NR3, NR1 was asked to report the social capital of NR2 and NR3 in his tailored questionnaire. *Second*, the tailored questionnaires were then sent by e-mail. Each respondent was asked to fill out his tailored questionnaire in a computer file and reply by e-mail after completion for the sake of confidentiality. We also sent follow-up emails to those who had not replied their finished questionnaires in three days. *Third*, we sent NT \$200 for each respondent by postal mail after all respondents in the same group finished their tailored questionnaires.

Measurement

All constructs are measured using multiple-item scales, drawn from pre-validated measures in previous related studies. In order to strengthen the validity of the translation from English to Chinese, this study has the following three steps. First, all the items are translated into Chinese with modification by researcher, one MIS professor, and four MIS doctoral students who had an average of five years of actual experience of system development. Second, one graduate student SG and one senior undergraduate student SU from department of English in National Central University were asked to translate the Chinese items into English. In order to check the semantic differences, the two back-translated English versions from SG and SU were compared to original English version by SU and SG respectively. The wordings of Chinese items in this study are then modified according to the significant semantic

differences. Third, a pretest with several respondents who have real world work experiences was conducted to ensure the wordings were understandable.

Method of Data Analyses

Before hypotheses testing, a confirmatory factor analysis (CFA) was performed to examine the measurement model. Item purification may be made in the process of CFA and the results were employed as the basis for further hypotheses testing. Five hypotheses were then examined by three statistic techniques. First, all the hypotheses except for moderating effect were tested by performing structural equation modeling (SEM) analyses. Second, moderated regression analyses (MRA) were employed to test moderating effect of External Control on the relationship between Tacit Knowledge Sharing Intention and Tacit Knowledge Sharing Behavior (as described in hypothesis 7).

Analyses and Results

Two hundred and eighty-eight respondents from 61 organizations agreed to participate in this study. These respondents were from 96 groups that ranged in size from 3 to 26 people, with average team size of 6.29 (SD = 3.77). Sixty-two percent of the respondents were male and 75 % were 26 to 34 years old. With regard to tenure, the respondents' work experiences ranged from 1 month to 290 months with average of 28.40 months (SD = 30.21).

Measurement Model – Convergent and Discriminant Validity

According to the two-step procedure recommended by Anderson and Gerbing (1988), we estimated and re-specified the measurement model prior to examining structural model. A CFA was used to assess the convergent and discriminant validity of the operationalization. All the research constructs were modeled as 6 correlated first-order factors and employ LISREL 8.50 with the Maximum Likelihood estimation to estimate the measurement model. The construct External Control was not included in the CFA analysis because it is measured with formative indicators. As suggested by Cohen et al. (1990), reliability criteria employed to characterize constructs measured by reflective indicators cannot be applied for the construct measured by formative indicators. This study performed first CFA with 25 items and the threshold employed for judging the significance of factor loadings was 0.60 suggested by Sharma (1996). Factor loadings of all measurement items range from 0.69 to 0.97, which indicates acceptable convergent validity. The CFA resulted in a chi-square statistic of 717.73 with 260 degrees of freedom. Since the chi-square is less than three times the degrees of freedom, a good fit is implied (Carmines and McIver 1981). Furthermore, the values on other goodness of fit indexes also show a relative good fit between measurement model and data (RMSEA = 0.078; CFI = 0.97; NFI = 0.96; NNFI = 0.97; GFI = 0.83).

This study also assessed construct reliability by calculating composite reliability that assesses whether the specified indicators are sufficient in their representation of their respective latent factors, as suggested by Segars (1997). These estimates of composite reliability of latent factors range from 0.91 to 0.98, which are all well above the threshold of 0.70 suggested by Jöreskog and Sörbom (1989) and thus acceptable construct reliability is implied. However, composite reliability cannot reflect the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error (Fornell and Larcker 1981). Thus, average variance extracted (AVE) estimate was employed to acquire this information. AVE estimate of 0.50 or higher indicates acceptable validity for a construct's measure (Fornell and Larcker 1981). All AVE estimates in this study (range from 0.80 to 0.90) are well above the cutoff value, thus suggests all measurement scales have convergent validity. In order to assess discriminant validity among the constructs, this study calculated square root of

AVE for each construct and compared them to inter-construct correlations for each pair of constructs. Result also shows that square root of all AVE estimates for each construct are greater than inter-construct correlations, thus discriminant validity is supported.

Structural Equation Modeling – Direct Effect Testing

In order to test direct effect hypotheses in our research model, an SEM analysis was performed. This study modeled 6 first-order factors (all constructs in this study except for External Control) with 7 hypothetical causal paths and employ LISREL 8.50 with the Maximum Likelihood estimation to estimate the structural model. Figure 2 shows structural model estimation resulted in a chi-square statistic of 542.24 with 262 degrees of freedom. The chi-square is less than three times the degrees of freedom, thus a good fit is implied (Carmines and McIver 1981). Furthermore, the values on other goodness of fit indexes also show a relative good fit between structural model and data.

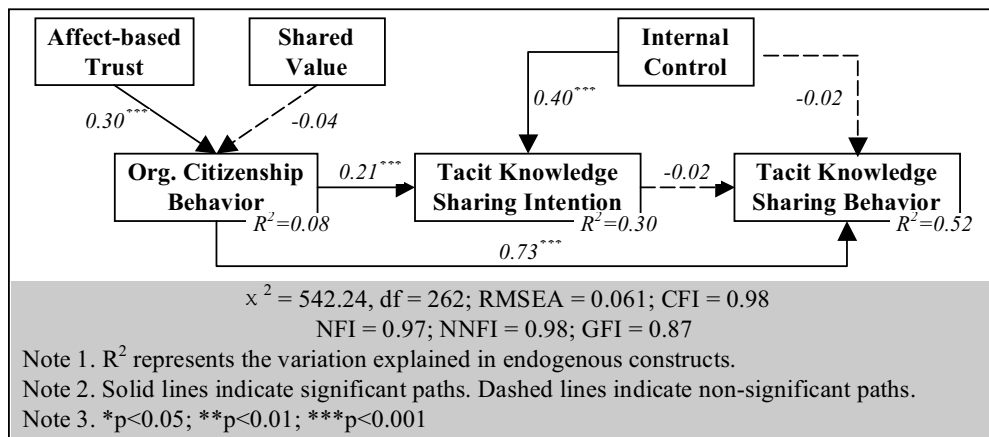


Figure 2: Structural Model Estimation

As shown in Figure 2, three out of seven hypothetical causal paths cannot gain support. First, only one out of two relational social capital variables – affect-based trust – significantly leads to the formation of OCB. Second, Internal Control positively affects Tacit Knowledge Sharing Behavior while the relationship between Internal Control and Tacit Knowledge Sharing Behavior is not significant. Third, results cannot support positively direct effect of Tacit Knowledge Sharing Intention on Tacit Knowledge Sharing Behavior. That is, an individual may not put his strong tacit knowledge sharing intention into action, thus implies the importance of situational factors.

Hierarchical Regression – Moderating Effect Testing

This study employed MRA to identify the moderating effects without information loss resulting from the artificial transformation of a continuous variable into a qualitative one in the subgroup analyses (Szymanski et al. 1995). In order to examine the moderating effect of External Control on the relationship between Tacit Knowledge Sharing Intention and Tacit Knowledge Sharing Behavior, this study assigned Tacit Knowledge Sharing Behavior as the dependent variable in three models of the MRA. According to research model, OCB, Internal Control, and Tacit Knowledge Sharing Intention were first specified as three independent variables in Model 1. That is, these independent variables entered as the first block into the regression equation. Against model 1, the moderator External Control was added as the fourth independent variable in model 2. In this step, External Control entered as the second block in the regression equation. The cross-product of Tacit Knowledge Sharing Intention and

External Control is then added as the fifth independent variable in Model 3. Finally, there are three blocks in the regression equation. Three models in MRA for moderating effect of External Control are designed as the following:

$$\text{Model 1. } TKS\text{B} = b_0 + b_1TKSI + b_2OCB + b_3ITC$$

$$\text{Model 2. } TKS\text{B} = b_0 + b_1TKSI + b_2OCB + b_3ITC + b_4ETC$$

$$\text{Model 3. } TKS\text{B} = b_0 + b_1TKSI + b_2OCB + b_3ITC + b_4ETC + b_5ETC \times TKSI$$

Table 1 shows the results of MRA for the moderating effect of External Control on the relationship between Tacit Knowledge Sharing Intention and Tacit Knowledge Sharing Behavior by employing SPSS 13.0. This study found significant change in R squared between Model 2 and Model 3, which indicates the significant moderating effect of External Control. The relationship between Tacit Knowledge Sharing Intention and Tacit Knowledge Sharing Behavior is stronger under higher External Control than under lower External Control. Thus, hypothesis 7 is supported. This study also found that the change in R squared from Model 1 to Model 2 is not significant, External Control is thus regarded as a pure moderator.

Table 1: MRA for Moderating Effect of ETC on TKSI → TKS B

Models		Standardized Coefficients	R ²	ΔR ²	ΔF for ΔR ²
1	TKSB=b ₀ +b ₁ TKSI+b ₂ OCB+b ₃ ITC		0.485	—	89.010 ^{***}
	TKSI	-0.017			
	OCB	0.703 ^{***}			
	ITC	-0.011			
2	TKSB=b ₀ +b ₁ TKSI+b ₂ OCB+b ₃ ITC+b ₄ ETC		0.486	0.001	0.720
	TKSI	-0.030			
	OCB	0.706 ^{***}			
	ITC	-0.020			
	ETC	0.041			
3	TKSB=b ₀ +b ₁ TKSI+b ₂ OCB+b ₃ ITC+b ₄ ETC+b ₅ ETC × TKSI		0.499	0.013	7.134 ^{**}
	TKSI				
	TKSI	0.049			
	OCB	0.727 ^{***}			
	ITC	-0.016			
	ETC	0.017			
	ETC × TKSI	0.140 ^{**}			

Note 1. *p<0.05; **p<0.01; ***p<0.001.

Discussion and Implications

As suggested by several researchers that tacit knowledge sharing is subject to social interaction (e.g. Käser and Miles 2002; Nonaka, 1994; Osterloh and Frey 2000), this study investigates tacit knowledge sharing among work group members from the perspective of social capital and behavioral control. Results can be employed to answer the two research questions described in section of Introduction of this study. First, an employee's tacit knowledge sharing intention is affected by affect-based trust through his OCB. OCB also has effect on an employee's tacit knowledge sharing behavior. Besides, internal control has positive effect on tacit knowledge sharing intention, but the relationship between internal control and tacit knowledge sharing behavior is not significant. Second, an employee's tacit knowledge sharing intention does not necessarily lead to tacit knowledge sharing behavior. However, external control for knowledge sharing moderates the relationship between an employee's tacit knowledge sharing intention and behavior.

Future research may be conducted with limitations of this study in mind. First, three members were selected as respondents for each qualified group in order to reduce respondents' tasks to a more manageable size. However, this research design may be questionable for a work group with large number of members. Second, as this study employed a cross-sectional design, all the hypothetical causal relationships can only be inferred rather than proven. A study with longitudinal design can enhance our understanding about the dynamics of tacit knowledge sharing among employees. Finally, the cultural factors should be taken into account in interpretation of the results because this study was conducted in Taiwan. People's attitudes and tendency to share knowledge in Eastern corporations may be quite different from those in Western corporations.

There are several theoretical implications as following for the knowledge sharing literature. First, this study employed perspectives of social capital and OCB to investigate an employee's tacit knowledge sharing intention and behavior within his work group. Several literatures have claimed that tacit knowledge sharing among employees is social driven (e.g. Käser and Miles 2002; Nonaka, 1994; Osterloh and Frey 2000), but extant empirical studies about antecedents of employees' tacit knowledge sharing are not abundantly available. This study provides a compelling theoretical framework for conducting an empirical study for this line of research. Later studies can extend this study to better explicate tacit knowledge sharing within organizations. However, the non-significant relationship between shared value and OCB should be further investigated. Second, this study investigated both employee's tacit knowledge sharing intention and behavior in an integrated framework. Most knowledge sharing studies did not take the actual behavior into account by assuming that behavioral intention is highly related to behavior, as suggested by TPB models (e.g. Chiou, et al. 2005). However, this study found that an employee's tacit knowledge sharing intention is not significantly related to tacit knowledge sharing behavior and the intention-behavior relation is positively moderated by his external control about tacit knowledge sharing. Compared with previous studies, this study offered a more insightful examination into employees' tacit knowledge sharing. Finally, a multi-informant research design was employed in this study. By nature, it is reasonable that an employee's OCB and tacit knowledge sharing behavior are reported by his colleagues in the same work group. Such design can avoid the bias resulted from self-reporting and has merits for conducting a solid empirical study.

This study also has several managerial implications based on the empirical results of this study. First, result shows that affect-based trust and OCB are important prerequisites for effective interpersonal tacit knowledge sharing. Thus, managers need to foster the formation of an intensive social network among employees in order to promote tacit knowledge sharing within work group through their exhibition of extra-role behaviors. Knowledge sharing is the most effective way to increase values of knowledge utilization, which enhances group performance. Second, internal control is important determinants of employees' tacit knowledge sharing intention. These factors are malleable under active managerial intervention. An employee's internal control about tacit knowledge sharing usually derives from his individual characteristics and organizational experiences. When an individual is usually encouraged to share his tacit knowledge and feel few frustrations, he will be confident of his ability to share tacit knowledge with colleagues. It appears much important for managers to foster above antecedents of OCB and internal control in order to reduce the obstacles and difficulties in tacit knowledge sharing among employees. Third, external control plays a contingent effect on an employee's tacit knowledge sharing. When an employee perceives that he has no opportunities for tacit knowledge sharing, he will not actually share

his experiences or know-how to others even though he has strong willingness to do that. For managers, this result implies that offering frictionless communication mechanisms that are favorable for tacit knowledge sharing among employees is of first important. When an employee can be well aware of the problems and difficulties encountered by other colleagues and the communication channels among employees are unhindered, he will easily put his tacit knowledge sharing intention into action. For example, group meeting can be held frequently to offer opportunities for tacit knowledge sharing among employees.

Conclusion

This study has used responses from 288 employees in 96 work groups across 61 organizations to examine the roles that social capital, OCB, and behavioral control play in tacit knowledge sharing and behavior among organizational members. Results show affect-based trust, OCB, and internal control are critical for facilitating tacit knowledge sharing intention and external control plays a moderating role in intention-behavior relationship. Despite its limitations, we believe this study may be useful for future research on knowledge sharing.

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