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## **The Impact of Leadership Style on Knowledge Sharing Intentions in China**

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### **ABSTRACT**

*Knowledge management (KM) is a dominant theme in the behavior of contemporary organizations. While KM has been extensively studied in developed economies, it is much less well understood in developing economies, notably those that are characterized by different social and cultural traditions to the mainstream of Western societies. This is notably the case in China. In this paper, we develop and test a theoretical model that explains the impact of leadership style and interpersonal trust on the intention of information and knowledge workers in China to share their knowledge with their peers. All the hypotheses are supported, showing that both initiating structure and consideration have a significant effect on employees' intention to share knowledge through trust building: 28.2% of the variance in employees' intention to share knowledge is explained. We discuss the theoretical contributions of the paper, identify future research opportunities, and highlight the implications for practicing managers.*

*Keywords: knowledge sharing; leadership style; consideration; initiating structure; citizenship behavior; affect based trust; cognition based trust*

## INTRODUCTION

It is necessary for companies to organize their knowledge in order to succeed in today's economy (Davenport & Prusak, 1998). This is also consistent with the knowledge based view of companies: knowledge could help a company maintain its competitive advantage (Kearns & Lederer, 2003). However, knowledge is kept in the human brain, as well as in documents, and it has been suggested that people tend to turn to other people for information rather than documents and intranets (Allen, 1977; Cross & Sproull, 2004). What is more, knowledge sharing is needed when people attempt to solve complicated or unstructured problems (Augier, Shariq, & Vendelo, 2001). Thus, knowledge sharing between employees is quite a significant issue considering its potential impact on enhancing the effectiveness of firms (Cummings, 2004). Since it has been suggested that hoarding knowledge is an inherently human characteristic (Davenport & Prusak, 1998), knowledge sharing behavior could only be encouraged rather than mandated. Therefore, much research has focused on how to encourage employees to share knowledge within and across organizations (Tezuka & Niwa, 2004; Voelpel & Han, 2005).

In prior research which investigated how people can be encouraged to share knowledge, researchers have normally taken a variety of viewpoints, considering: managerial factors (Lin & Lee, 2004; Srivastava & Bartol, 2006); organizational factors (Cummings, 2004; Kolekofski & Heminger, 2003; Southon, Todd, & Seneque, 2002); cultural factors (Kyriakidou, 2004; Reid, 2003) and so on. Recently, many researchers have recognised realized the importance of leadership in knowledge management (Chen & Barnes, 2006). However, relatively little attention has been paid to the detailed processes by which leadership style would exert an impact on knowledge management activities. In fact, it is believed that leadership has a direct impact on the way companies arrange knowledge management initiatives because leaders could set the example for employees (Bell, Dyer,

Hoopes, & Harris, 2004). More importantly, much research has recognized that managers could provide a supportive atmosphere and culture which could help to encourage employees to share their knowledge (McDermott, 2000).

Leader attributes and behaviors will be influenced by societal culture (House, Javidan, Hanges, & Dorfman, 2002), and it has been further proposed that the cultural dimensions of power distance and collectivism/individualism have an impact on leadership style (Lu & Lee, 2005). Moreover, given the strong power distance (cf. Hofstede, 2001) that prevails in China, with leaders wielding considerable influence over the actions of their subordinates, the values and attitudes of leaders are of critical importance to the intention of employees to share their knowledge (Lin & Lee, 2004). Further, strong power distance could help to form the initiating leadership structure since attitudes towards authority affect leader-follower relationships (Casimir & Li, 2005). In addition, Chinese people are also inclined to strong collectivism and strive to maintain a good relationship with the people around them so as to achieve a harmonious situation (Wong, Wong, & Li, 2007). This cultural characteristic is consistent with the consideration leadership style. Consequently, it is worth investigating whether managers' leadership style (consideration and initiating structure) would affect employees' intention to share knowledge in the Chinese context. Identifying and understanding the detailed process through which leadership style influences employees' intentions to share knowledge is an important contribution to our knowledge about knowledge sharing practices in the Chinese context; indeed, it may have significant implications for organizations that plan to engage in knowledge work in China, a phenomenon that is increasingly frequently encountered.

A critical factor that is related to the impact of leadership style on knowledge sharing intention is trust. Lack of trust is often cited when discussing factors that counteract knowledge transfer (Davenport & Prusak, 1998). Politis (2003) finds that interpersonal trust

has a positive effect on communication and problem understanding which results in an enhancement of team performance. Moreover, trust is a typical and necessary factor in a knowledge sharing culture (Kyriakidou, 2004). Considering that managers could help to create a culture which could facilitate knowledge sharing between employees (Zakaria, Amelinckx, & Wilemon, 2004), we investigate the potential of trust as a medium linking knowledge sharing and leadership style.

Since China has become an increasingly important player in the global economy, many multinationals have taken the Chinese market as their important strategic target. We conduct this research in the Chinese context. Given different cultural attitudes and values when compared with Western countries (cf. Hofstede, 2001), it is entirely likely that the lessons gained from knowledge management practices in Western countries will not apply directly in the Chinese context. It is important to point out that this is not simply a matter of the technology that enables knowledge sharing. Rather, it concerns the way people choose to share and communicate their knowledge with others, and as such relates to psychological and social factors.

China has its own unique cultural context. Exploring the culture can lend us insights into how Chinese people and organisations function. Yang (2005) proposed four orientations in Chinese social interaction which are relevant to an appreciation of Chinese culture, viz.:

1) Familial orientation. People place the whole family's advantage above their own. An individual's benefit is unimportant compared to benefits that can accrue to the collective – i.e. the whole family. This orientation highlights the fact that individuals should conform to the needs of the collective and constitutes the basis of collectivism.

2) Guanxi orientation. This is the main operational mode in Chinese social life. People build guanxi with each other through frequent interaction and giving favors to each other. Also, people will choose different ways to treat others because of different guanxi. People

place great value on maintaining harmonious relations with others, so as to protect each other's face.

3) Authority orientation. Chinese people are sensitive to and dependent on authority. This orientation is associated with power distance (cf. Hofstede, 2001) and also could help explain why Chinese has a relatively high PDI score.

4) Social orientation with others. Chinese people pay attention to others' opinions about them; they have a strong sense of the value of social conformity, focusing on their own position in society, their reputation – and so, their face.

Given the unique cultural context prevalent in China, many authors have focused on knowledge sharing topics using a cultural lens, either to define their research questions, or at least to explain their findings (e.g. Chow, Deng, & Ho, 2000; Geng, Townley, Huang, & Zhang, 2005; Voelpel & Han, 2005; Weir & Hutchings, 2005). For instance, it has been found that, given high levels of willingness of Chinese employees to sacrifice their own interests for their collective in-group (Chow et al., 2000), it is easier to stimulate knowledge sharing within members of the in-group (i.e. those who work in the same group) than with members of out-groups (i.e. those who work in other groups). It has also been found that Chinese people are more ready to share out of a desire to improve their personal reputation (Voelpel & Han, 2005). However, little previous research has taken a leadership style perspective to knowledge sharing in China. Nevertheless, based on the cultural context, we expect that leadership style should also exert a significant impact on knowledge sharing intentions in organizations. Thus, our research linking leadership style to knowledge sharing intention contributes to practice and research. We also expect that our research findings will be of particular value for managers in the Chinese context. Managers themselves should realize that their own leadership style could facilitate or inhibit knowledge sharing behavior.

The layout of this paper is as follows. Following this introduction, we review the relevant literature on leadership style, trust and knowledge sharing. We then present our research methodology and research model, including the hypotheses. Next, we analyze the results and discuss the implications of the findings for research and practice. Finally we conclude and make suggestions for future research.

## **THEORETICAL BACKGROUND**

There are a number of areas of literature that are relevant to this study. These include leadership style, affect-based and cognition-based trust and their antecedents, finally the intention to share knowledge. Each of these literatures is reviewed in turn, before we turn to the research model and development of hypotheses.

### **Leadership Style**

Behavioral theories of leadership offer an important perspective in leadership research. From this perspective, “leadership was viewed as an observable process” (Jago, 1982) and effective leaders are judged by “how they behaved when interacting with followers or potential followers.” (Jago, 1982) Since behavioral theories focus on managers’ behavior, it has been suggested that a good leader could be developed through appropriate training (Robbins, 1997). A number of distinct leadership styles have been identified, including initiating structure and consideration; transformational and transactional; etc. Some research focuses on initiating structure and consideration: they find the leadership style would affect the subsequent success of any knowledge management system (Lu & Wang, 1997) or attempt to acquire knowledge (Politis, 2001). Politis (2001) finds that consideration plays a relatively unimportant role in knowledge acquisition while initiating structure plays a much more important role. Judge, Piccolo and Ilies (2004) confirm the contribution of consideration and



initiating structure in leadership research and ensure the appropriateness of future studies after reporting these two constructs' validity; in addition, the suggestion is made that future research should identify mediating factors that can explain how leadership has an effect on knowledge sharing. Thus, we will focus on the classification of consideration and initiating structure in our research.

### ***Initiating Structure***

Initiating structure “refers to the extent to which the leader is likely to define and structure his or her role and those of subordinates in the search for goal attainment. It includes behavior that attempts to organize work, work relationships and goals” (Robbins, 1997 p.322). It has often been observed that managers who are inclined to a high initiating structure are also the subject of satisfaction by their own superiors due to their better performance and effectiveness (Judge et al., 2004). However, it has also been suggested that a high initiating structure is often linked to high employee turnover (Fleishman & Harris, 1962).

Earlier studies have shown that features of Chinese culture, such as high power distance, Confucian values and centralization would lead to a strong initiating structure leadership style. Pye (1985) also suggests that in China, power represents status. Thus, Chinese managers will be more inclined to impress on their employees their position by telling them what should and should not be done. Chinese employees in consequence have relatively less space to make decisions on their own. The essence of Chinese leadership is, to a large extent, based on one's personal position and authority (cf. also Walder, 1995). What is more, even initiating structure is proposed to be linked to satisfaction in the context of eastern culture (Lok & Crawford, 2004). Thus, we find that initiating structure could embody the character of a Chinese leadership style.

## ***Consideration***

“Consideration refers to the extent to which a person has job relationships characterized by mutual trust and respect for subordinates’ ideas and feelings” (Robbins, 1997). If managers are inclined to high consideration, the work group tends to behave in a more harmonious fashion, with a correspondingly reduced level of employee turnover, when compared to high initiating structure, due to a higher satisfaction level experienced by subordinates (Filley, House, & Kerr, 1976). Also, managers with a high consideration characteristic should raise workgroup productivity (Dunteman & Bass, 1963).

Any one individual manager may display characteristics, to a greater or lesser extent, of each of these styles, and indeed the balance of styles will vary according to the specific job, organization and culture where a manager works. Although Blake and Mouton (1969) have proposed that ideally a manager has the potential to perform strongly according to the principles of both styles, this proposition has been the subject of debate in other research that has suggested that “the hi-hi style is often not any better than a style which emphasizes just one aspect of leader behavior” (Schriesheim, 1982).

Chinese leaders pay attention to more than initiating structure. Since harmony is an important factor in traditional Chinese culture, Chinese leaders tend to focus on relationships between them and their employees. In order to maintain a good relationship with their employees, Chinese leaders pay considerable attention to communication with them. Furthermore, Chinese managers are more inclined to participate in their employees’ life: having dinner, visiting their sick family members, attending their wedding, and so on. In other words, Chinese leaders are inclined to make a great effort to establish a good relationship with their employees so as to ensure a harmonious working environment. This demonstrates that Chinese leaders are highly considerate.

The leadership behavior description questionnaire (LBDQ) is used to measure to what extent managers are inclined to consideration and/or initiating structure. It was developed by the staff of the Personnel Research Board of the Ohio State University and is accepted by many management researchers (Fredendall & Emery, 2003). Moreover, some researchers have started to apply it to the studies of knowledge management (Lu & Wang, 1997; Politis, 2001).

### **Affect and Cognition Based Trust**

Trust can be explained as “the extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another” (McAllister, 1995). In the past few years, the impact of trust was investigated in a variety of fields such as business relationships, e-commerce, interpersonal trust in organizations, buyer-supplier relationships, etc. (Anderson & Narus, 1990; Gefen, Karahanna, & Straub, 2003; Korsgaard, Schweiger, & Sapienza, 1995; Zaheer, McEvily, & Perrone, 1998).

There is also a body of research that investigates the role of trust in knowledge sharing. Abrams, Cross, Lesser and Levin (2003) studied how to promote knowledge sharing by increasing the level of interpersonal trust from a managerial aspect including organizational factors and personal factors. Panteli and Sockalingam (2005) investigated the function of trust in knowledge sharing within virtual inter-organizational alliances showing that the level of trust between persons would affect both relationships and the extent and nature of the knowledge shared. Mooradian, Renzl and Matzler (2006) show that interpersonal trust has a positive effect on knowledge sharing within and across teams. In general, it has been observed that trust has a positive and significant effect on knowledge sharing behaviors: people who trust each other are more willing to provide their knowledge as well as accept others' knowledge (Andrews & Delahaye, 2000; Levin & Cross, 2004; Mayer & Davis, 1995;

Zaheer et al., 1998). Since previous research has indicated that trust plays an important role in the process of knowledge sharing, it has been suggested that trust is “at the heart of knowledge exchange” (Davenport & Prusak, 1998). Meanwhile, the level of trust has been found to have a positive relationship with communication effectiveness (Dodgson, 1993), since trust can improve the quality of knowledge sharing (Argyris, 1982) and reduce the costs involved (Currall & Judge, 1995).

Many researchers agree that trust is a multidimensional concept (Levin & Cross, 2004; Mayer & Davis, 1995; McAllister, 1995; Nahaipet & Ghoshal, 1998). Trust has been classified in many different ways, but interpersonal trust is often observed to have cognitive and affective foundations (Lewis & Weigert, 1985), a characteristic that is accepted by many researchers (Holste & Fields, 2005; McAllister, 1995). Based on McAllister’s (1995) research, we find the relevance of this kind of distinction towards our own research since he concentrates on the organizational environment including interactions between managers and professionals. Also, some researchers have adopted affect and cognition based trust into the knowledge sharing research (Chowdhury, 2005; Holste & Fields, 2005). Besides, Ng and Chua (2006) use affect and cognition based trust in their research focusing on group cooperation and find that these two kinds of trust are “meaningful in the Chinese context”; more importantly, they “can enhance the precision of trust research ”.

Cognition based trust can be explained as “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’” (Lewis & Weigert, 1985). That is to say, cognition based trust is always established through some understanding toward the person we are going to trust. McAllister (1995) identified the antecedents of cognition based trust as reliable role performance, cultural-ethnic similarity and professional credentials. However, Lewis and Weigert (1985) suggested that a cognitive foundation for trust is far from sufficient for a person to trust

others. Consequently, they suggested that trust constructed on an emotional base can constitute a kind of complementary foundation which can also explain “why the betrayal of a personal trust arouses a sense of emotional outrage in the betrayed” (Lewis & Weigert, 1985).

McAllister (1995) identified the antecedents of affect-based trust as citizenship and interaction frequency. Each kind of trust can have its use during the interaction among the people, as Lewis and Weigert (1985, p.972) indicated: “if all cognitive content were removed from emotional trust, we would be left with blind faith or fixed hope, the true believer or the pious faithful. On the other hand, if all emotional content were removed from cognitive trust, we would be left with nothing more than a cold blooded prediction or rationally calculated risk”.

### *Antecedents of Affect and Cognition Based Trust*

In order to achieve a better understanding of affect-based and cognition-based trust, the antecedents of each kind of trust should be explored in more detail. For the antecedents of affect-based trust, there are two significant factors: citizenship behavior and interaction frequency (McAllister, 1995).

Organizational citizenship behavior (OCB) has been investigated by many researchers since 1993, and such investigations were not only limited to organization behavior (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Organ (1988) first formally defined OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization". After a complete literature review, Podsakoff et al. (2000) summarized seven dimensions of OCB taking into consideration the fact that different researchers had not been consistent in their use of the construct. The seven dimensions are: (1) Helping Behavior, (2) Sportsmanship, (3) Organizational Loyalty, (4) Organizational Compliance, (5) Individual

Initiative, (6) Civic Virtue, (7) Self Development. For the purposes of our research, our measurements cover the first and the fifth dimensions, which are the most relevant to our research questions and also most closely accord with the Organ's definitions. Podsakoff et al. (2000) described it as "extra-role only in the sense that it involves engaging in task-related behaviors at a level that is so far beyond minimally required or generally expected levels that it takes on a voluntary flavor". Compared with Organ's definition, the two definitions have two points in common: first, the behavior is voluntary; second, the behavior is more than the basic requirement of the work.

Three antecedents of cognition-based trust can be identified: reliable role performance, cultural-ethnic similarity and professional credentials (McAllister, 1995). Each will be explained in the following paragraphs.

Reliable role performance is related to how a person implements his/her assigned work. McAllister (1995) deemed that in the work place, it is natural for people to consider how well their coworkers have performed their tasks when assessing whether their coworkers were trustworthy or not. Past performance is one of the aspects of a person's competence. Since competence-based trust will let the person be more willing to communicate with the person he trusts (Abrams et al., 2003), so reliable role performance can be considered to have a positive relationship with cognition-based trust.

Cultural-ethnic similarity is a form of social similarity between individuals which can promote the establishment of trust. McAllister (1995) proposed two reasons to support the positive relationship between culture-ethnic similarity and cognition-based trust. First, social similarity can affect levels of trust. Second, we can conclude from self-categorization theory (Turner, 1987) that persons will be more ready to trust a person in the same group rather than a person in a different group.

People with professional credentials are in a position to demonstrate that they are professionally qualified for their work (cf. McAllister, 1995). However, many studies have previously showed that ability is an important antecedent of trust (Cook & Wall, 1980; Sitkin & Roth, 1993). Mayer and Davis (1995) identified ability as a factor in their model of trust. They defined ability as a “group of skills, competencies, and characteristics that enable a party to have influence within some specific domain”.

### **Intention to Share Knowledge**

The intention to share knowledge has a direct effect on knowledge sharing behavior. In consequence, the intention to share knowledge has been the focus of many researchers who have employed the Theory of Reasoned Action (Kolekofski & Heminger, 2003) or the Theory of Planned Behavior (Ryu, Ho, & Han, 2003). This body of research suggests that factors such as attitudes toward knowledge sharing and subjective norms play an important role in knowledge sharing intentions (Bock, Zmud, Kim, & Lee, 2005; Kolekofski & Heminger, 2003; Ryu et al., 2003). Furthermore, Bock et al. (2005) found that organizational climate affects the intention to share knowledge. Moreover, Wang (2005) has proposed that ethical concerns have positive relationship on the intention to share knowledge while self-interest concerns have a negative relationship.

### **RESEARCH MODEL**

Hofstede (1998) has suggested that employees will follow their managers' instructions if they want to be members of the organization, and so “leaders' values become followers' practice”. Furthermore, as Yukl (1992) suggests, there is an assumption built into concepts of leadership such that the leader would affect his/her subordinates' task and social behavior. Indeed, different leadership styles as a manifestation of a manager's values are believed to

have different effects on employees' behavior. In China, the leader's effect on their employees is especially important. Chinese people always emphasize the power of the example. They believe that leaders have a certain responsibility to set an example to their employees. Generally speaking, one cannot ask others to do something unless one can do it oneself. Moreover, Southon et al. (2002) have proposed that management policy has a direct influence on communication culture within the company, i.e. leadership style affects employees' behavior. Thus, if managers are more inclined to consideration or initiating structure, then the subordinates of these managers will be correspondingly affected to behave in a manner that is oriented towards their managers' style.

When a manager is more inclined to consideration, he will express more concern for his subordinates and attach importance to the relationships among the groups through respecting his subordinates and paying attention to what his subordinates feel and think. This will make for a warm and caring atmosphere in the work group. Employees working in such groups will also be affected to maintain such an atmosphere by concern and care for the colleagues around them; in this way, citizenship behavior and frequency of interaction will be enhanced. Accordingly,

H1a: The manager's inclination to consideration will have a positive relationship with the colleagues' citizenship behavior towards each other.

H1b: The manager's inclination to consideration will have a positive relationship with the frequency of interaction between the colleagues.

Some researchers have induced the concept of organizational citizenship behavior into knowledge management so as to explain knowledge sharing willingness (Bock & Kim, 2002; Koh & Kim, 2004). Moreover, Smith & McKeen (2002) demonstrated that



knowledge sharing culture goes “deeper than superficial individual behaviors and captures the hearts and minds of the people in an organization”. This shows that employees in organizations with a knowledge sharing culture should endeavor to share their knowledge imitatively. Citizenship behavior is an important factor which could encourage people to perform their work. The relationship between citizenship behavior and interaction frequency has not been the focus of much research to date. Lai, Liu and Shaffer (2004) have proposed that network members who frequently contact one another may develop stronger citizenship behavior because frequency of interaction will make them more supportive towards each other. Also, it has been found that positive affectivity could constitute an antecedent of citizenship behavior (Organ, 1988) and frequency of interaction could facilitate the development of positive affectivity. Besides, citizenship behavior could be regarded as a critical factor supporting the development of a knowledge sharing atmosphere which could be established by leaders’ endeavor. Thus, we propose that

H2: The frequency of interaction between colleagues will be positively associated with citizenship behavior.

When a manager is more inclined to initiating structure, he is likely to prefer subordinates to obey a standard set of rules and procedures, stressing the implementation of a task as the most important thing. Such a manager will pay less attention to employees’ feelings and thoughts, instead considering employees as the means to carry out a task. Managers with this kind of style will create a serious atmosphere for the work group and pressure their subordinates; as a result, each employee would be affected to take the task as their most important activity. They will also develop a clear plan and prepare thoroughly to

ensure that they can complete this assigned task. Interaction facilitation behavior is deemed as one of the important aspects of leadership and this behavior would improve communication among group members (Bowers & Seashore, 1966). Hemphill and Coons (1957) even obtained this factor out of the Ohio State leadership studies. Thus, we believe frequency of interaction could also be influenced by initiating structure. In addition, two levels of communication including content level (information or topical) and relational level are found and has been shown that content level is related more to initiating structure while relational level related to consideration (Penley & Hawkins, 1985). Part of this preparation will involve interaction between employees so as to ensure that they can work effectively. Accordingly,

H3a: The manager's inclination to initiating structure will have a positive relationship with the frequency of interaction between the colleagues.

H3b: The manager's inclination to initiating structure will increase the reliability of colleagues' role performance.

Following previous research (McAllister, 1995), we hypothesize that citizenship behavior has a positive relationship with affect-based trust. McAllister (1995) suggests that "altruistic behavior may provide an attributional basis for affect-based trust", since altruistic behavior can be embodied by organizational citizenship behavior. What is more, as in previous research, it was found that organizational citizenship behavior would enhance trust between supervisor and subordinates (Deluga, 1995). Our hypothesis H3 was supported in previous research (McAllister, 1995), where citizenship behavior was identified as the antecedent of affect-based trust.

H4: The level of the colleagues' citizenship behavior directed towards their fellow employees will be positively associated with the level of the affect based trust in one another.

Since trust functions primarily in a sociological way and the base upon which it is built is also primarily social (Lewis & Weigert, 1985), we cannot ignore the functions of interactions upon which trust is built. It has also been found that interaction constitutes the main antecedents of high level of trust (Nugent & Abolafia, 2006). McAllister (1995) also identified interaction frequency as the other antecedent of affect based trust. In addition, we consider that the establishment of cognition based trust should be mutual and the frequency of interaction will help each party to know the other's ability better. Thus, we develop the following two hypotheses:

H5a: The frequency of interaction between colleagues will be positively associated with the level of their affect based trust in one another.

H5b: The frequency of interaction between colleagues will be positively associated with the level of their cognition based trust in one another.

McAllister (1995) proposed three antecedents of cognition-based trust, viz.: peer reliable role performance, cultural-ethnic similarity and professional credentials. However, given our focus on leadership style, we believe that only the first of these, peer reliable role performance, is relevant for our purposes. In our target population, cultural-ethnic similarity is expected to be high, i.e. it is controlled for by the research design that focuses on ethnic Chinese professionals working in the PRC. Likewise, given that the sample is intentionally restricted to current MBA students, all of whom are working full time in organizations, we

believe that we can control for the professional credentials of the respondents. It has previously been established (Mayer & Davis, 1995) that ability (defined as the “group of skills, competencies, and characteristics that enable a party to have influence within some specific domain”) has an important relationship with trust. Based on this definition of ability, we can find that peer reliable role performance can reflect the ability of respondents’ peers. If trust is based on peers’ ability, this implies that trustees may only be relied on in the context of their professional responsibility. It also suggests that there is a relationship between ability and reliable role performance in the context of cognition-based trust, which is more related to the tasks that one undertakes. Consequently, we consider that peer reliable role performance is an important factor, and propose:

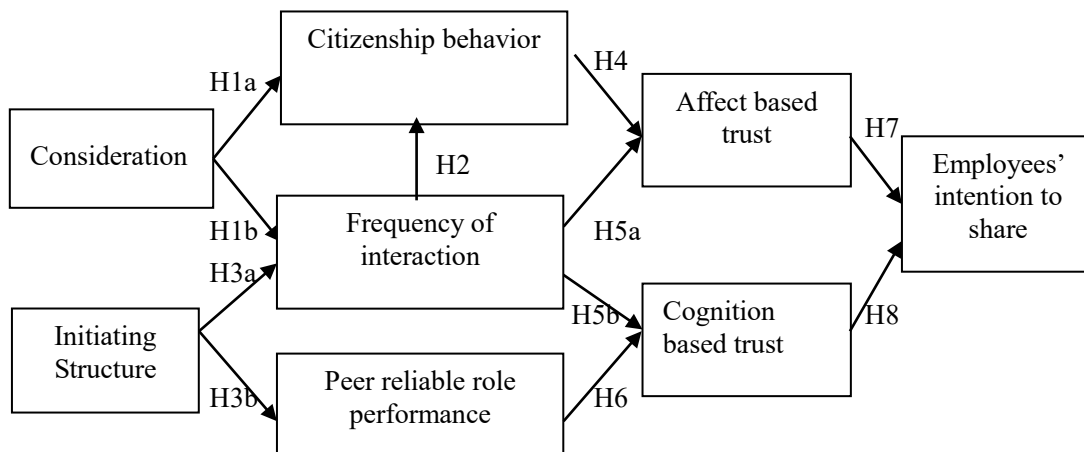
H6: The extent to which employees reliably perform their role will be positively associated with the level of the employee’s cognition based trust in his colleagues.

As we discussed in the literature review, many researchers believe that trust is an important precursor of knowledge sharing because people are more inclined to share and accept knowledge when they are in trust relationships with others. Also, research suggests that personal trust could produce cooperation, resource exchange and help employees to ignore competitive messages (Kotlarsky & Oshri, 2005; Parks & Hulbert, 1995; Uzzi, 1997). Previous research (e.g. Chowdhury, 2005; Holste & Fields, 2005) has supported the notion that cognition-based and affect-based trust has a positive relationship with knowledge sharing. Accordingly, we propose:

H7: The more a person has affect based trust towards his colleagues, the more he will have the intention to share knowledge with them

H8: The more a person has cognition based trust towards his colleagues, the more he will have the intention to share knowledge with them.

Figure 1. Research model of the influences on an employee's intention to share knowledge



## RESEARCH METHODOLOGY

### Measurement and Data Collection

An English questionnaire was first developed based on previously validated measures. 7-point Likert scales were used to measure all items, ranging from “strongly agree” to “strongly disagree”. The questions in Section A used to measure leadership style were derived from the LBDQ (Halpin, 1957). In Section B, we measured employees’ practices: citizenship behavior, frequency of interaction and peer reliable role performance; the questions were adapted from McAllister (1995). The items in Section C were adapted from McAllister (1995) too and were designed to measure the affect and cognition based trust. We used the scales from Ryu et al. (2003) to measure employees’ intention to share knowledge in section D. We focused on the intention of knowledge sharing, rather than actual behavior, because “the role

of intention as a strong predictor of behavior has been well-established in IS and reference disciplines” (Komiak & Benbasat, 2006). Finally, questions in section E are demographic. Since this survey was conducted in China, we translated the instrument into Chinese firstly and performed a back-translation so as to ensure equivalence of meaning between the English and Chinese versions. The English version of the instrument can be found in Appendix A. The Chinese version is available on request from the authors.

The study population is comprised of MBA students from a university located in Eastern China. All respondents are full time employees working in a variety of organizations and all are Chinese, thus ensuring their unique cultural characteristics. These students were chosen because they met the following sample requirements. First, all of these students have the knowledge background of knowledge sharing because they had taken some knowledge management courses. Second, they were active members in their organizations. A total of 239 individuals were invited to participate in this research (on a voluntary basis). 160 responses were returned, with a response rate of 66.95%. Out of the 160 responses, 9 responses were eliminated due to incomplete information. Thus, the final response rate was 63.18%. The demography of these samples is shown in Table 1. Meanwhile, we used the method suggested by Armstrong and Overton (1977) to test the possible non-response bias in the survey. Assuming that the last 25% of responses received would be indicative of the responses of non-responders, we compared the chi-squares of the responses from the first 25% of the respondents to that of the final 25%. No significant differences between these two groups were indicated by these tests.

*Table 1. Demographic information of respondents*

<b>Measure</b>	<b>Items</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age</b>	25 or below	14	9.27%
	26-35	125	82.78%

	36-45	12	7.95%
<b>Position</b>	Employee	44	29.14%
	Manager	51	33.77%
	Director	32	21.19%
	(Vice) President	4	2.65%
	Others	20	13.25%
<b>Org style</b>	Multinational	27	17.88%
	SOE	58	38.41%
	Private Owned	43	28.48%
	Foreign capital	7	4.64%
	Joint Venture	4	2.65%
	Others	12	7.94%
<b>Org size</b>	50 or below	20	13.25%
	51-100	15	9.93%
	101-500	46	30.46%
	501-1000	17	11.26%
	1001 or more	53	35.10%
<b>Colleagues number</b>	1--10	76	50.33%
	10--20	28	18.54%
	21 or more	47	31.13%

### Data Analysis

To test the potential common method bias, we adopted Harman's one-factor test (Podsakoff & Organ, 1986). The resulting principal components factor analysis yielded eight constructs with eigenvalues greater than one from all the measures in this study. Meanwhile, numbers

listed in table 2 show that these constructs totally accounted for 69% of the variance and each explained roughly equal variance (range = 7-10%). The first construct accounted for 10.32% of the variance. Since no general construct emerged from this analysis and one-construct did not account for the most of the variance, this indicated that common method bias was unlikely to be a major threat in our study.

*Table 2. Eigenvalues and variances of the rotated factors*

	<b>Eigenvalues</b>	<b>Variance (%)</b>	<b>Cumulative variance (%)</b>
<b>1</b>	12.199	10.315	10.315
<b>2</b>	3.240	10.176	20.491
<b>3</b>	2.508	9.810	30.301
<b>4</b>	2.174	9.149	39.451
<b>5</b>	1.799	8.180	47.630
<b>6</b>	1.450	7.267	54.897
<b>7</b>	1.182	7.232	62.129
<b>8</b>	1.109	7.229	69.359
Extraction Method: Principal Component Analysis.			

To validate our research model, a structural equation modeling technique, partial least squares (PLS) was adopted. PLS was used as it supports not only confirmatory research but also exploratory research (Gefen, 2000). Compared with other structural equation modeling techniques, it is more suitable for prediction, especially for a research model that is under development and that has not been tested extensively (Chin, 1998; Guinea, Kelley, & Hunter, 2005). Due to the dearth of studies on the relationships between managers' leadership style and employee's knowledge sharing, our research is exploratory in nature. Thus, PLS was suitable compared to other structural equation modeling techniques.



## **Measurement Model**

According to Chin's (1998) recommendations, the measurement model and structural model can be examined simultaneously in PLS. In order to validate the measurement model, we assessed content validity, convergent validity and discriminant validity. Normally, if a measure's items were selected and refined through an extensive process based on a literature review, the measure could be said to possess content validity. As previously discussed, the conventional process of our measures being chosen has proved our instrument's content validity. We used the reliability of items, composite reliability and average variance extracted (AVE) to assess convergent validity. In Appendix B, most individual item loadings meet the 0.7 criterion which was suggested by Barclay, Thompson and Higgins (1995). Although three items' loadings are less than 0.7, they were significant at the .001 level. Thus, we keep them in the model. Table 3 below showed the composite reliability values ranged from 0.864 to 0.927 which above the .70 recommended level (Fornell & Larcker, 1981).

To assess discriminant validity, we took the relationship between correlations among constructs and the square root of AVEs and items' cross-loadings into consideration. First, according to Fornell and Larcker's (1981) recommendation, the square root of AVEs should be larger than the correlations among constructs, which implies that all constructs share more variance with their items than with other constructs. Table 4 shows that the square roots of all the AVEs are greater than the correlations among constructs, indicating good discriminant validity of all the constructs. Second, the test of items' cross-loading also indicates the good discriminant validity of our measurement (Appendix B), because the loadings of the items on their own constructs are higher than their cross-loading on other constructs (Chin, 1998; Gefen, 2000; Gefen et al., 2003). Generally, the loadings per construct are much higher in PLS than in a Principal Components Analysis (PCA) (Gefen & Straub, 2005). Thus, the

loadings shown in Appendix A are different to the loadings shown in Appendix B.

*Table 3. Results of confirmatory factor analysis*

<b>Measures</b>	<b>Items</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>	<b>AVE</b>
Consideration (CON)	5	0.849	0.892	0.624
Initiating (INI)	4	0.878	0.917	0.734
Citizenship Behavior (CB)	5	0.901	0.926	0.716
Frequency of Interaction (FI)	4	0.850	0.899	0.691
Peer Reliable Role Performance (RRP)	6	0.864	0.898	0.596
Affect Based Trust (ABT)	5	0.802	0.864	0.560
Cognition Based Trust (CBT)	5	0.902	0.927	0.718
Employees' Intention to Share Knowledge (ISK)	3	0.837	0.907	0.756
AVE: Average Variance Extracted				

*Table 4. Correlations between constructs*

	<b>CON</b>	<b>INI</b>	<b>CB</b>	<b>FI</b>	<b>RRP</b>	<b>ABT</b>	<b>CBT</b>	<b>ISK</b>
<b>CON</b>	0.790							
<b>INI</b>	0.481	0.857						
<b>CB</b>	0.309	0.242	0.846					
<b>FI</b>	0.383	0.323	0.578	0.831				
<b>RRP</b>	0.283	0.380	0.524	0.505	0.772			
<b>ABT</b>	0.374	0.303	0.497	0.486	0.428	0.748		
<b>CBT</b>	0.320	0.354	0.520	0.489	0.519	0.689	0.847	

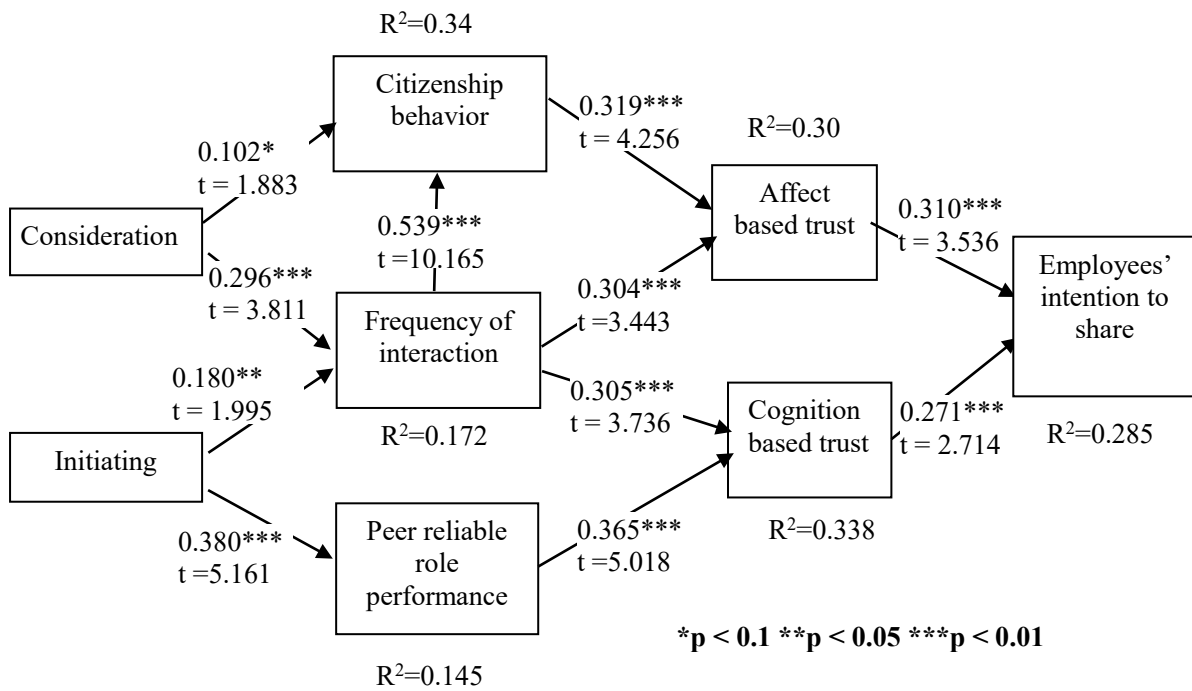
<b>ISK</b>	0.257	0.195	0.276	0.391	0.351	0.492	0.483	0.869
*The shaded numbers in the diagonal row are square roots of the average variance extracted.								

## Structural Model

After examining the measurement model, we tested the proposed hypotheses with PLS. The results of the analysis are shown in Figure 2. The betas are shown above the arrows and the number of asterisks refers to the significance level of the beta. The t-values are shown below the betas and they were tested with PLS bootstrap. The values of  $R^2$  are shown above/below the boxes. The model explained 14.5 to 34.3 percent of the variances, and all the paths are significant.

The PLS results show that all the hypotheses are supported. Managers' consideration leadership style can positively impact employees' citizenship behavior ( $\beta=0.102$ ,  $p<0.1$ ) and their frequency of interaction ( $\beta=0.296$ ,  $p<0.01$ ). Comparably, managers' initiating leadership style can positively influence employees' peer reliable role performance ( $\beta=0.380$ ,  $p<0.01$ ) and their frequency of interaction ( $\beta=0.180$ ,  $p<0.05$ ). Employees' citizenship behavior ( $\beta=0.319$ ,  $p<0.01$ ) and frequency of interaction ( $\beta=0.304$ ,  $p<0.01$ ) then increase their affect based trust, and employees' frequency of interaction ( $\beta=0.305$ ,  $p<0.01$ ) and peer reliable role performance ( $\beta=0.365$ ,  $p<0.01$ ) increase employees' cognition based trust. Meanwhile, employees' frequency of interaction can increase their citizenship behavior ( $\beta=0.539$ ,  $p<0.01$ ). Finally, all employees' affect ( $\beta=0.310$ ,  $p<0.01$ ) and cognition ( $\beta=0.271$ ,  $p<0.01$ ) based trust can increase their intention of knowledge sharing.

Figure 2. Results of PLS analysis



## DISCUSSION, CONTRIBUTION & LIMITATIONS

### Discussion of Findings

The purpose of this study is to establish how leadership style would affect employees' intention to share knowledge and to assess to what extent different leadership styles would affect subordinates' work practices in the organizations, how these work practices would in turn lead to the creation of trust between colleagues, and what the impact of this trust is on the intention to share knowledge. The present study also tests a western model in the Chinese context to see if it applies or not.

According to the results, citizenship behavior of the employees is influenced positively by managers with a consideration characteristic while peer reliable performance is influenced positively by managers with an initiating characteristic. Besides, both consideration and initiating character have a positive relationship with employees' frequency of interaction. We also find that consideration's influence on frequency of interaction is stronger than on

citizenship behavior, while initiating structure's influence on peer reliable role performance is stronger than frequency of interaction. This shows consideration is a more important antecedent of initiating structure. This result could be explained by the character of consideration leadership style: Managers with a high degree of consideration are inclined to create a warm atmosphere in organizations which may serve to encourage more interactions between the employees themselves. What is more, we could see clearly that managers do affect employees' daily practice through their leadership styles. We could also conclude that Chinese leaders do have a certain effect on employees' behavior. In China, people emphasize the function of examples. In other words, being a leader, you should demonstrate the behaviour that you expect from your subordinates, before passing the command to them through both your own action as well as your verbal request. Different leadership styles could be easily identified through leaders' behavior: caring for subordinates, being strict with work standards of the work, framing a role for an employee. Once the leadership style is established and the example has been demonstrated, subordinates will naturally have an idea of what their leaders hope them to be. If subordinates want to continue to be members, they will cooperate and act as necessary according to different leadership styles. In addition, because of a strong authority orientation in China, subordinates are generally quite willing to follow their superiors, which facilitate the influence process.

In additional, we compare the mean of initiating structure (3.133) and consideration (3.461) with a T test. The result shows that leaders' inclination to these leadership styles are significantly different ( $t=2.544$ ,  $p<0.05$ ). This shows that although most managers are inclined both to initiating structure and to consideration, the inclination to consideration is still stronger than to initiating structure. This is consistent with the Chinese way of doing things: a strong emphasis on harmonious relationships and a friendly environment (Westwood, 1997; Yang, 2005). What is more, higher inclination to consideration is also consistent with

guanxi orientation, which means that people will respect others' feelings if they want to build guanxi (Fu & Tsui, 2003). We find that these attributes all contribute to the consideration leadership style. Thus, we suggest that the tendency of Chinese culture to emphasize harmony and guanxi could account for high consideration in China.

Our findings for the positive influences of employees' citizenship behavior and interaction frequency on their affect based trust are consistent with previous research (McAllister, 1995). On the other hand, our findings suggest that peer reliable role performance has a positive relationship with cognition based trust which is contrary to previous research (McAllister, 1995). This suggests that peer reliable role performance is one of the important antecedents of cognition based trust. What is more, we also found that frequency of interaction could positively influence citizenship behavior. These results are consistent with our hypothesis, since reliable role performance could fully reflect one's ability which could lead to cognition based trust; frequent interaction could make employees more supportive towards each other, which constitute the antecedents of citizenship behavior.

Both kinds of trust were found to influence employees' intention to share knowledge, though affect based trust has a stronger influence on intention to share knowledge than does cognition based trust. This result confirms previous research findings showing that affective factors of trustworthiness are more salient in a Confucian influenced society (Tan & Chee, 2005). Confucian values are found to be one of the strongest cultural influences in Asia. Confucian values are the basis for what has come to be known as the fifth dimension of culture, first suggested by Bond and his associates (Chinese Culture Connection, 1987) as Confucian Work Dynamism, later modified by Hofstede (2001) to the Long Term Orientation dimension. Tan and Chee (2005) argue that culture will influence both trust building and perceptions of trust. Our research also indicates that affective based trust has a stronger influence than cognition based trust in China. Since China is the cradle of Confucianism, we

suggest that affective based trust is relatively more important because harmony and relationships are of great importance in society.

### **Implications for Theory and Practice**

The paper has both theoretical and practical implications. Given the lack of prior studies on the relationship between leadership style and subordinate trust, mediated by subordinate work practices, this study breaks new ground. Furthermore, by considering the development of subordinate trust in organizations in China, we demonstrate that a Western-derived theory, incorporating two types of trust building measures, can be effectively applied in the Chinese context. Finally, we find that leadership styles affect employees' intentions to share knowledge through establishing mutual trust.

Interaction frequency is an important factor mediating leadership style and the establishment of trust. Not only can it be affected by the consideration and initiating styles of leadership, but it can also influence both affect based trust and cognition based trust. Unlike McAllister (1995), we find that interaction frequency both has a greater influence on cognition based trust than on affect based trust, and also has a strong influence on citizenship behavior.

Since it has been found (and we confirm) that affect based trust has a greater influence on the intention to share knowledge than does cognition based trust, people may think that a leadership style of consideration is more effective in facilitating knowledge sharing among employees. In fact, our research suggests that the function of initiating structure is as important as consideration in stimulating knowledge sharing. This is paradoxical because prior research in Western contexts (Fisher & Edwards, 1988; Fleishman, 1973; Fleishman & Harris, 1962) has found that consideration is a more effective leadership style than initiating structure. However, based on Hofstede (2001), we suggest that high levels of Power Distance

(characteristic of the Chinese culture) could result in subordinates displaying a high degree of obedience towards their managers' orders. This may explain why the initiating structure style of leadership has a stronger effect in the Chinese context.

The practical implication of this study is that the sharing of knowledge by employees depends on heightened levels of trust between work-group members. More specifically, this trust can be cultivated by managers encouraging frequent interactions, appropriate citizenship behavior and reliable role performance. Based on our findings, we suggest that managers should adopt a 'high-high' style of leadership so as to encourage knowledge sharing. 'High-high' refers to a leadership style that is high in both consideration and initiating structure. Such a high-high leadership style has the potential to enhance both affect based trust and cognition based trust through citizenship behavior, interaction frequency and reliable role performance, finally leading to strong knowledge sharing intentions. Considering that Chinese managers are currently more inclined to consideration, we suggest that they should pay more attention to initiating structure in order to become more task oriented. This suggestion is consistent with Chinese management culture. It may sound trivial and obvious to recommend that employees engage in regular interactions with one another as a means of stimulating knowledge sharing, but our survey feedback indicates that most respondents do *not* interact with their colleagues on a regular basis (cf. McInerney, 2002; Wang & Guan, 2005). Consequently, while task-based opportunities will provide the context where knowledge sharing is appropriate, incentives from management to share knowledge will be critical as well.

Of course, we can query why employees are not interacting with their colleagues. We have no direct evidence, but based on our familiarity with the research context, we suggest that there is a combination of manager distance and employee apathy, combined with a general reluctance to accept personal responsibility for possibly negative consequences



resulting from their contributions (cf. Child, 1991). Employees are apathetic to interact given that information is seen as a personal resource (Child, 1991; Martinsons, 1991), they are neither rewarded, encouraged or otherwise motivated and lack the interpersonal trust to do so (cf. Reader, 1987). In addition, managers, who might be able to exert a useful influence on that intention to share, are perhaps too distant from their subordinates. They need to get down on the 'shop floor' where subordinates work, and encourage them directly with a mix of consideration and initiating structure, i.e. emotional support and authoritative direction.

### **Limitations**

Our study has a number of limitations. We did not integrate Chinese contextual factors into the research model, which may in part explain the low  $R^2$  score. Further, the data about leadership style is based on employees' perceptions. However, each respondent is only one member of a work group, suggesting that other (not surveyed) members' opinions about the same leaders' style may differ. Unfortunately, it was not possible to survey all members of any one work group. Furthermore, this study focuses on the intention to share knowledge among work group members as a whole, not with individual work group members. Clearly, an employee may have a stronger intention to share knowledge with some colleagues, but not others. However, the current research design is not sufficiently sensitive to assess such details. Future research should consider this issue, ideally with an in-depth, qualitative research methodology. What is more, although initiating structure and consideration could describe part of the character of Chinese leaders, there are additional aspects of their character that could be explored in future research. For instance, Li (1998) indicates that *guanxi* behavior is complementary to the leadership styles of initiating structure and consideration. Thus, it will be necessary for us to explore more aspects of the Chinese character so that we can improve our understanding of this issue in China. The survey conducted in this research only covers

two provinces in China (Anhui and Jiangsu provinces) which limits the generalizability of our findings. Finally, this study has paid more attention to general leadership style, without taking into consideration such details as the industry type, and the exact position of the respondent.

Given these limitations, we strongly encourage other researchers to undertake more research in this domain. There is a strong need to include more indigenous Chinese elements in future work. It would be useful to conduct a few case studies in organizations so as to understand how different leadership styles facilitate knowledge sharing intentions. We could also usefully learn about the attitudes of the employees themselves towards interaction in general and knowledge sharing in particular. Replicating the study in other cultures would also help to broaden our understanding of the phenomenon. Since, leadership is perceived to be “a reciprocal process between those who choose to lead and those who choose to follow” (Kouzes & Posner, 1995), future studies could usefully explore how reciprocal processes occur in the knowledge sharing context. Finally, the topic to be studied could also be broadened to actual knowledge sharing, sharing across work groups, with additional Chinese factors included such as guanxi, face and renqing.

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## APPENDIX A.

### SCALE ITEMS AND DESCRIPTIVE STATISTICS BY CONSTRUCT

Definitions provided to survey respondents		
Colleague in this questionnaire refers to those who share the same rank as you and also share a manager with you .		
Construct	Item	Loadings
<b>Initiating (INI)</b>	1. He schedules the work to be done.	0.793
	2. He sets goals for the work group.	0.857
	3. He diagnoses group deficiencies.	0.875
	4. He takes remedial action to correct deficiencies.	0.898
	(Halpin, 1957)      Mean=3.133 S.D.=1.173	

<b>Consideration (CON)</b>	1. He is friendly and approachable.	0.823
	2. He does little things to make it pleasant to be an employee.	0.869
	3. He puts suggestions made by employees into operation.	0.778
	4. He looks out for the personal welfare of employees.	0.688
	5. He treats all employees as his equal.	0.781
	(Halpin, 1957) Mean=3.461 S.D.=1.083	
<b>Peer Reliable Role Performance (RRP)</b>	1. My colleagues follow standards, rules and regulations when they perform their work	0.692
	2. My colleagues adequately complete assigned duties.	0.809
	3. My colleagues perform all tasks that are expected of them.	0.745
	4. My colleagues fulfill responsibilities specified in their job descriptions.	0.740
	5. My colleagues meet formal performance requirements of the job.	0.856
	6. My colleagues complete their work on time.	0.779
	(McAllister, 1995) Mean=2.741 S.D.=0.786	
<b>Citizenship Behavior (CB)</b>	1. My colleagues will consider the suggestions made by me.	0.833
	2. My colleagues take time to listen to my problems and worries.	0.816
	3. My colleagues willingly help me, even at some cost to personal productivity.	0.859
	4. I have taken a personal interest in my colleagues.	0.868
	5. My colleagues take into consideration my feelings.	0.853
	(McAllister, 1995) Mean=3.121 S.D.=0.930	

<b>Interaction Frequency (FI)</b>	1. I frequently initiate work-related interactions with my colleagues.	0.816
	2. My colleagues frequently initiate work-related interactions with me.	0.869
	3. I frequently interact with my colleagues at work.	0.870
	4. I frequently interact with my colleagues socially at work or informally.	0.765
	(McAllister, 1995) Mean=2.645 S.D.=0.772	
<b>Affect Based Trust (ABT)</b>	1. I have a sharing relationship with the members of my work team. We can all freely share our ideas.	0.709
	2. I can talk freely with my colleagues about difficulties I am having with my work.	0.730
	3. If one of the members of my colleagues was transferred to work in a different team, I would feel unhappy because I enjoy working with them all.	0.682
	4. If I share my problems with my colleagues, I know that they will respond constructively and caringly.	0.828
	5. I believe that the members of my work team have made considerable emotional investments in our working relationship.	0.783
(McAllister, 1995) Mean=2.913 S.D.=0.820		
<b>Cognition Based Trust (CBT)</b>	1. My colleagues approach their work with professionalism and dedication.	0.821
	2. I believe that my colleagues are well prepared and competent to do their work.	0.865

	3. I can rely on my colleagues not to make my job more difficult by careless work.	0.823
	4. I trust and respect my colleagues.	0.847
	5. I consider my colleagues to be trustworthy.	0.879
	(McAllister, 1995) Mean=2.839 S.D.=0.9640	
<b>Employees' Intention to Share Knowledge (ISK)</b>	1. I will make an effort to share knowledge with my colleagues.	0.815
	2. I intend to share knowledge with my colleagues when they ask.	0.868
	3. I will share knowledge with my colleagues.	0.922
	(Ryu et al., 2003) Mean=2.20 S.D.=0.872	

All measures employ a seven-point scale from "always" to "never" and from "strongly agree" to "strongly disagree"

S.D. indicates Standard Deviation

## APPENDIX B.

### ITEM LOADINGS AND CROSS-LOADINGS

Items	INI	CON	RRP	CB	FI	ABT	CBT	ISK
INI1	<b>0.727</b>	0.139	0.143	0.075	0.054	-0.059	0.235	0.151
INI2	<b>0.836</b>	0.089	0.154	0.024	0.051	0.115	0.084	0.047
INI3	<b>0.833</b>	0.305	0.025	0.009	0.115	0.138	0.022	-0.038

INI4	<b>0.838</b>	0.234	0.116	0.085	0.149	0.086	0.045	0.045
CON1	0.113	<b>0.749</b>	0.032	0.078	0.201	0.188	-0.033	0.157
CON2	0.199	<b>0.811</b>	-0.011	0.132	0.128	0.162	0.044	0.005
CON3	0.285	<b>0.679</b>	0.148	0.040	0.116	0.077	0.118	0.132
CON4	0.206	<b>0.668</b>	0.105	0.098	-0.018	-0.015	0.221	-0.031
CON5	0.121	<b>0.780</b>	0.003	0.055	0.092	0.072	0.024	0.112
RRP1	0.174	0.028	<b>0.627</b>	0.046	0.074	-0.034	0.291	0.154
RRP2	0.103	0.011	<b>0.802</b>	0.162	0.074	0.031	0.091	0.178
RRP3	0.081	-0.004	<b>0.720</b>	0.214	0.122	0.061	0.115	-0.001
RRP4	0.198	0.070	<b>0.523</b>	0.245	0.309	0.208	0.123	0.122
RRP5	0.180	0.089	<b>0.740</b>	0.158	0.227	0.156	0.124	0.185
RRP6	0.051	0.181	<b>0.719</b>	0.172	0.156	0.214	0.106	0.018
CB1	0.110	0.061	0.168	<b>0.701</b>	0.289	0.120	0.157	0.161
CB2	0.178	0.078	0.248	<b>0.752</b>	0.195	0.069	0.107	-0.015
CB3	-0.021	0.133	0.222	<b>0.752</b>	0.205	0.145	0.174	0.094
CB4	0.025	0.078	0.140	<b>0.770</b>	0.201	0.225	0.253	0.028
CB5	0.027	0.114	0.102	<b>0.802</b>	0.168	0.178	0.107	0.128
FI1	0.047	0.016	0.153	0.140	<b>0.741</b>	0.017	0.217	0.325
FI2	0.108	0.103	0.136	0.215	<b>0.795</b>	0.198	0.122	0.057
FI3	0.167	0.135	0.158	0.174	<b>0.816</b>	0.155	0.043	0.107
FI4	0.073	0.235	0.112	0.296	<b>0.586</b>	0.156	0.144	0.103
ABT1	0.068	0.196	0.124	0.099	0.120	<b>0.630</b>	0.138	0.207
ABT2	0.051	0.222	0.120	0.116	0.191	<b>0.666</b>	0.145	0.092
ABT3	0.000	-0.043	0.013	0.106	0.195	<b>0.612</b>	0.097	0.322



ABT4	0.166	0.074	0.043	0.209	0.075	<b>0.675</b>	0.346	0.163
ABT5	0.126	0.079	0.132	0.176	0.081	<b>0.594</b>	0.418	0.120
CBT1	0.117	0.133	0.183	0.081	0.208	0.254	<b>0.726</b>	0.096
CBT2	0.122	0.096	0.201	0.153	0.181	0.311	<b>0.667</b>	0.249
CBT3	0.117	0.099	0.138	0.244	0.163	0.113	<b>0.783</b>	0.072
CBT4	0.171	0.078	0.129	0.159	0.087	0.312	<b>0.637</b>	0.361
CBT5	0.096	0.019	0.150	0.214	0.122	0.264	<b>0.738</b>	0.228
ISK1	0.068	0.150	0.053	0.077	0.084	0.148	0.199	<b>0.719</b>
ISK2	0.064	0.057	0.103	0.031	0.140	0.117	0.127	<b>0.846</b>
ISK3	0.011	0.027	0.119	0.055	0.137	0.210	0.068	<b>0.884</b>

Note 1: SPSS was used. Extraction Method: Principal Component Analysis.