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Trust and Knowledge Sharing in Virtual Teams: the Case of China

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Abstract: In this paper, we examine the potential differential effects of two types of interpersonal trust (sincerity-based trust and ability-based trust) on knowledge sharing in virtual teams in China. Our analysis suggests that sincerity-based trust is more likely to affect a virtual team member's propensity to transfer explicit knowledge to his or her teammates, while ability-based trust seems to have more pronounced influence on the propensities to seek and adopt explicit knowledge. Our analysis also reveals that sincerity-based trust and ability-based trust are both needed to jointly influence the propensities to seek, transfer and adopt tacit knowledge in Chinese virtual teams.

Keywords: trust, knowledge sharing, virtual teams, China

1. INTRODUCTION

With the prevalence of a global economy and the rapid advancements in information and communication technologies, firms around the world have increasingly formed and used virtual teams to compete effectively in the marketplace^[13,17]. To meet the new competitive challenges in today's global environment, Chinese firms have also embraced this new form of organizational structure and enjoyed operational gains from the use of virtual teams^[4,48]. To reap the strategic benefit from virtual teams and obtain high levels of team performance or effectiveness, virtual teams need to combine and integrate specialized expertise from their members through knowledge sharing activities^[24]. Effective knowledge sharing in virtual teams is harder to achieve in virtual teams than traditional forms of teams due to some limitations (e.g., lack of face-to-face contact and time zone differences) associated with the virtual environment^[37]. Prior research has shown that trust plays an important role in facilitating knowledge sharing^[37,42]. In this paper, we seek to further examine the impact of trust on knowledge sharing in virtual teams in the context of China. Our analytical approach differs from those employed in the extant literature in two ways. First, we view trust as interpersonal (dyadic) trust between two persons in analyzing the impact of trust on knowledge sharing which often takes place at the dyadic level. Previous research on the effects of trust on team activities (including knowledge sharing) and performance has focused on trust at the collective level^[3,16,37]. Second, we treat knowledge seeking and adoption as part of the entire knowledge sharing course and examine the differential effects of different types of interpersonal trust (sincerity-based trust and ability-based trust) on different processes (seeking, transfer and adoption) of knowledge sharing. The existing literature on the roles of trust in knowledge sharing in different work environments (including virtual teams) has paid scant attention to the effects of trust on knowledge seeking and adoption processes.

2. VIRTUAL TEAMS

In the literature, virtual teams are defined as "two or more persons who work together on a mutual goal or work assignment, interact from different locations, and therefore communicate and cooperate by means of information and communication technology"^[12]. Advantages of virtual teams include: 1) the reduced

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dependence of work on time and location^[17], 2) the ability to select staff from different geographic locations^[2] and avoid the hassles of bringing team members to a single location^[37], 3) reduced travel costs^[45], and 4) organizational and personal flexibilities^[36, 40]. On the other hand, virtual teams have some limitations^[36]. Perhaps the most salient drawback of virtual teams is the low frequency of face-to-face contact. Without the ability to directly observe and interact with each other, members in a virtual team face more challenges in communication and collaboration. Coupled with the influence of time zone differences, the loss of nonverbal cues make it difficult for virtual teams to develop relationships among team members, build consensus and establish shared meaning. In the next two sections, we discuss the strategic importance of knowledge sharing in virtual teams as well as the role of knowledge sharing in enhancing virtual team performance or effectiveness.

3. KNOWLEDGE SHARING IN VIRTUAL TEAMS

As knowledge resources have been widely recognized as a competitive weapon, knowledge sharing, which involves the transmission of knowledge from the initial location to where it is needed and applied^[34], plays a critical role in helping a firm generate and leverage its collective knowledge to create value that leads to competitive advantage. Since a company's diverse knowledge resources may be held by individuals working in different departments or at different geographical areas, firms have increasingly formed virtual teams with the purpose of pooling and integrating the expertise of individuals from different locations^[9]. The combined knowledge may generate new knowledge that enables a firm to develop organizational capabilities for competitive advantage^[14, 22, 26]. Effective knowledge exchanges among members in a virtual team may also increase its performance or effectiveness in that the team often needs to develop a pool of knowledge for the completion of the team assignments^[24]. There is emerging evidence that ties knowledge sharing to virtual team performance or effectiveness^[37, 46]. For example, Pangil and Chan have recently investigated the relationship between knowledge sharing and virtual team effectiveness, using data collected a survey of 167 employees with virtual team experiences in a multinational company located in Malaysia^[37]. The authors found that knowledge sharing was positively related to virtual team members' perceptions of team performance and satisfaction with their teams.

4. THE ROLE OF TRUST IN KNOWLEDGE SHARING IN VIRTUAL TEAMS

While knowledge sharing represents a key purpose of virtual teams and is critical to their success, effective knowledge sharing in virtual teams is harder to achieve in virtual teams than traditional forms of teams^[37]. Due to some communication barriers (e.g., lack of face-to-face contact and time zone differences) associated with the virtual environment, it may take considerable time before a newly formed virtual team builds team cohesiveness and good relationships among its members in order to engage in effective knowledge exchanges^[24]. Here trust can play an important role in encouraging members in a virtual team to share their specialized knowledge with their teammates^[42]. Although trust is widely viewed as one of the key antecedents of virtual team performance or effectiveness^[3, 37, 38], research on the effects of trust on knowledge sharing in virtual teams has remained scant. In their study of the influences of trust and task interdependence on knowledge sharing in different forms of teams, Staples and Webster found a positive relationship between trust and knowledge sharing for virtual teams, and the relationship was stronger when task interdependence was low^[42]. However, the study did not consider different types of trust and their differential effects on knowledge sharing in virtual teams. More recently, Pangil and Chan have investigated the relationships between three types of trust (personality-based trust, institutional-based trust and cognitive-based trust) and knowledge sharing in virtual teams^[37]. They found personality-based trust, institutional-based trust positively related to knowledge sharing. These two types of trust, on the other hand, represent collective trust^[25] which describes the common belief among team members that individuals

will behave in certain desirable manners^[11]. In the trust literature, trust is often conceptualized at the dyadic level (between two people) and interpersonal trust has been shown as an important antecedent of knowledge sharing in a variety of organizational context including the team environment^[7, 19, 20, 28]. In the next section, we review and compare the Western and Chinese views of interpersonal trust and its main types.

5. WESTERN AND CHINESE VIEWS OF INTERPERSONAL TRUST

Different definitions of interpersonal trust have been offered in the trust literature, which largely reflect the Western view of interpersonal trust. Mayer et al., for instance, defined interpersonal trust as “the willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.”^[31] McAllister viewed interpersonal trust 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.”^[32] Ng and Chua synthesized these two prevalent conceptualizations of interpersonal trust as “an individual’s confidence in the goodwill of others and the expectation that others will act in beneficial way.”^[33]

In the Chinese discourse about interpersonal trust, the equivalent word of trust in Chinese is *xing*. While *xing* can imply both *xingren* (trustworthiness) and *xingyong* (credit worthiness), researchers who compared the notion of *xing* to the Western concept of trust generally regarded *xing* as *xingren* or trustworthiness^[5, 27]. Indeed, trustworthiness is deemed as closely related to trust in the Western literature on trust^[10, 28, 31]. Furthermore, there are some similarities between the attributes of Chinese *xing* and those of Western trustworthiness. For example, Mayer et al. considered trustworthiness as encompassing ability, benevolence and integrity^[31]. Ability reflects the trustee’s skills and competencies. Benevolence refers to the belief that the trustee wants to “do good” to the trustor. Integrity describes the trustee’s adherence to a set of acceptable principles or shared values. In a similar vein, Chinese scholars view *xingren* as manifested in sincerity, honesty, credibility, reliability and capability^[25].

In the Western trust literature, trust is commonly regarded as a multidimensional construct. Lewis and Wiegert noted that interpersonal trust had cognitive and affective foundations^[29]. Based on this distinction, McAllister classified interpersonal trust into two types: cognition-based trust and affect-based trust^[32]. Cognition-based trust is based on the trustor’s assessment of the trustee’s competence and dependability. Affect-based trust, on the other hand, is formed through the emotional bonds between the trustor and the trustee as well as their mutual care and concern for each other. While acknowledging these two forms of trust were closely related, McAllister argued and empirically demonstrated that they were qualitatively different^[32]. This dichotomy of trust has been widely adopted in many studies on interpersonal trust and its impacts on cooperative behaviors including knowledge sharing^[7, 8, 19, 28, 33]. It should be pointed out here that from the Western point of view, the formation of cognition-based trust in general precedes the development of affect-based trust^[18, 32]. According to McAllister (1995), the trustor’s baseline expectations for the trustee’s reliability and dependability must be met before both sides invest further in building an emotional tie. The notion that cognition-based trust is more fundamental than affect-based trust does not necessarily hold true in the Chinese culture, as discussed below.

Chinese scholars also recognize that a similar dichotomy exist in Chinese notion of trust (*xingren*). Chen and Chen noted that interpersonal trust in the Chinese culture can be broken down into two types: sincerity-based and ability-based^[5]. While ability-based trust is very similar to the Western notion of cognition-based trust, sincerity-based trust differs slightly from the Western view of affect-based trust in that Chinese sincerity-based trust reflects one person’s true intention to form and keep a relation with another person and to have the other person’s best interest in heart^[47]. Besides being somewhat different from affect-based trust, sincerity-based trust tends to bear more influence on the development of close interpersonal relationships than ability-based trust in

China^[5, 43]. Moreover, it is more likely that Chinese people build sincerity-based trust before developing ability-based trust. In other words, a Chinese would typically evaluate the sincerity and honesty of another person before appraising his or her ability or credentials in forming relationships.

6. KNOWLEDGE SHARING PROCESSES

In general, knowledge sharing involves the transmission of knowledge from the initial location to where it is needed and applied^[34]. The knowledge sharing course typically entails the processes of knowledge seeking, knowledge transfer and knowledge adoption. Knowledge seeking is the act of requesting knowledge from the knowledge source and thus precedes knowledge transfer which is the process of moving knowledge from the knowledge holder to the knowledge seeker in most situations. In other words, before knowledge is transferred, it is usually sought and requested by the knowledge seeker who needs the knowledge. Knowledge adoption is the process of accepting and applying the knowledge transferred. After knowledge is transferred, the knowledge recipient must decide whether to adopt the transferred knowledge or not. While prior research on the impact of trust on knowledge sharing paid less attention to knowledge seeking and adoption, a recent study by Holste and Fields found that affect-based trust and cognition-based trust influenced tacit knowledge transfer and adoption to different degrees^[19]. Affect-based trust had a greater effect on willingness to transfer tacit knowledge, while cognition-based trust played a greater role in willingness to use tacit knowledge. These findings suggest that the impact of a trust type may depend on the processes in knowledge sharing. Accordingly, the potential influence of sincerity- and ability-based trust on knowledge sharing in virtual teams needs to be examined in terms of their effects on knowledge seeking, knowledge transfer and knowledge adoption.

7. KNOWLEDGE TYPES (EXPLICIT VS. TACIT)

Before delving into the differential effects of sincerity-based trust and ability-based trust on knowledge sharing processes in virtual teams, it is necessary to recognize the distinction between explicit knowledge and tacit knowledge since prior research has demonstrated that these characteristics of knowledge may influence the knowledge sharing effects of affect-based trust and cognition-based trust^[7, 20, 28]. Explicit knowledge represents knowledge that can be easily articulated and captured in documents, reports, presentations and formulas^[35]. In contrast, tacit knowledge (e.g., skills, insights and ‘gut-feelings’) is hard to articulate and document^[39] because it is “deeply rooted in action, commitment and involvement in a specific context”^[34]. Tacit knowledge is of greater strategic significance to firms because it is harder to be imitated by competition^[1, 34].

8. SINCERITY- AND ABILITY-BASED TRUST AND EXPLICIT KNOWLEDGE SHARING IN CHINESE VIRTUAL TEAMS

Since explicit knowledge is easy to capture and store, it lends itself to easy transfer in the virtual environment where a variety of information and communication technologies (e.g., email, video conferencing, collaboration software, groupware) can be used to facilitate effective and efficient transmission of data and promote communication among team members^[34]. While information and communication technologies have greatly enhanced a virtual Chinese team’s ability to move explicit knowledge from one team member to another, the willingness of individual Chinese team members to seek, transfer and adopt explicit knowledge may still be subject to the influence of sincerity- and ability-based trust. Before a member (knowledge seeker) in a Chinese virtual team initiates a knowledge request to one of his or her teammates (the knowledge holder), the knowledge seeker must trust the knowledge holder’s expertise as well as his/her ability to transfer the knowledge effectively and efficiently. In a similar vein, it is more likely for the knowledge recipient to evaluate the competence of the knowledge giver first and then his or her sincerity and honesty before adopting the

knowledge received. As Levin and Cross noted, “knowledge seekers who trust a source’s competence to make suggestions and influence their thinking are more likely to listen to, absorb, and take action on that knowledge.”^[28] Trust in the sincerity and honesty of the knowledge holder (giver) is also important to knowledge seeking and adoption in that the sincerity-based trust affects the knowledge seeker’s confidence in the knowledge holder’s sincerity and honesty in not giving wrong or misleading knowledge. However, the major consideration in knowledge seeking and adoption decisions is given to whether the knowledge holder is capable of providing the knowledge being sought. In other words, it is unlike that the knowledge seeker would request or adopt knowledge from someone not very trustworthy for his or her expertise or ability even though the knowledge seeker trusts the sincerity and honesty of the knowledge holder (giver).

While ability-based trust may have a stronger effect on the propensity to seek and adopt knowledge in a Chinese virtual team, sincerity-based trust seems to be more salient in influencing individual team members’ willingness to transfer explicit knowledge to their teammates who need it. It is evident in the extant literature that providing knowledge may carry some risks for the knowledge contributor such as losing his or her knowledge power and competitive advantage^[21]. The knowledge contributor may even lose face if the knowledge he or she shares turns out to be inadequate or inferior^[44]. Hence, knowledge hoarding is still common at workplace in China^[23, 30]. In order for a Chinese employee to give his/her knowledge to another employee, the knowledge holder must have confidence in the sincerity of the knowledge seeker and/or have close emotional bonds with him or her. In contrast, ability-based trust in the knowledge seeker is less important or even irrelevant to the knowledge holder whose main concern here is whether or not to provide the knowledge requested by the knowledge seeker. In a recent survey of 200 Chinese MBA students who held senior full-time positions in a variety of industries in China, Huang et al. found that, between affect-based trust and cognition-based trust, only the former influenced Chinese employees’ propensity to offer knowledge to others^[20].

Proposition 1: Ability-based trust positively influences the propensities to seek and adopt explicit knowledge in Chinese virtual teams.

Proposition 2: Sincerity-based trust positively influences the propensity to transfer explicit knowledge in Chinese virtual teams.

9. SINCERITY- AND ABILITY-BASED TRUST AND TACIT KNOWLEDGE SHARING IN CHINESE VIRTUAL TEAMS

Unlike explicit knowledge, tacit knowledge often entails insights, beliefs and intuitions that are difficult to articulate and tightly intertwined with the experience of the knowledge holder. Therefore, tacit knowledge is harder to codify and less transferrable than explicit knowledge. The difficulty in transferring tacit knowledge electronically has been documented in current research based on data from China. In their study of tacit knowledge transfer in the e-business setting, Cao et al. surveyed over 200 Chinese MBA students with experiences in working in virtual teams and reported that knowledge transfer in virtual teams became less effective as the tacit degree of knowledge increased^[4].

According to Nonaka, effective transfer of tacit knowledge requires a shared experience created through social collaboration between the knowledge holder and the knowledge seeker^[34]. Social collaboration can be facilitated by close and frequent social interactions even in a virtual environment^[6]. Sincerity-based trust can be conducive to the creation of social collaboration and a shared experience by promoting strong social and emotional ties between the two parties^[15, 41]. Such strong ties in turn increase openness with shared values, mental models and perceptions^[7]. Ability-based trust also contributes to tacit knowledge sharing since both sides must trust each other’s competence in order to create a shared professional experience^[7, 28]. The knowledge seeker must believe that the knowledge holder has the ability to externalize the tacit knowledge. The

knowledge holder must also have confidence in the knowledge seeker's capacity to understand and absorb the tacit knowledge. It then appears that both types of trust must be present in order for different processes of tacit knowledge sharing to be effective in Chinese virtual teams.

Proposition 3: Sincerity-based trust and ability-based trust jointly influence the propensities to seek, transfer and adopt tacit knowledge in Chinese virtual teams in a positive way.

10. CONCLUSIONS

In this paper, we examine the potential differential effects of two types of interpersonal trust (sincerity-based trust and ability-based trust) on virtual teams' sharing of explicit and tacit knowledge in the context of China. Our analysis suggests that sincerity-based trust is more likely to affect a virtual team member's propensity to transfer explicit knowledge to his or her teammates, while ability-based trust seems to have more pronounced influence on the propensities to seek and adopt explicit knowledge. Our analysis also reveals that sincerity-based trust and ability-based trust are both needed to jointly influence the propensities to seek, transfer and adopt tacit knowledge in Chinese virtual teams. While the propositions from this paper need to be verified in empirical research, the different roles played by these two types of interpersonal trust in facilitating different knowledge sharing processes in Chinese virtual teams may warrant further investigation.

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