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THE IMPACT OF SOCIAL POWER ON TRANSACTIVE MEMORY SYSTEMS AND KNOWLEDGE UTILIZATION

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Abstract

Many organizations have attempted to develop knowledge management strategies through which they can substantially enhance their employees' ability to utilize knowledge resources dispersed across business units. While previous studies have acknowledged that social power is one of the critical factors in facilitating or constraining social interactions among individuals, few studies have examined in-depth how social power within a work group influences an individual's knowledge utilization. Given that social power in an organization determines the processes of recognizing others' knowledge and applying it to real business, the investigation of the influence of social power on knowledge utilization is of value to researchers and practitioners. Integrating the volitional model and the theory of social power, this study develops a theoretical model that explains how social power influences individuals' affect, transactive memory system (TMS), and knowledge utilization. The proposed model was tested using data collected from 206 individuals. The results of this study show that social power significantly influences an individual's affect and TMS, which in turn influences intention to utilize knowledge. Notably, this study reveals that different power bases have different effects on individuals' cognitive (TMS levels) and emotional (positive affect) aspects in relation to knowledge utilization in organizations.

Keywords: knowledge utilization, social power, theory of social power, volitional model

1 INTRODUCTION

Despite significant strides in knowledge management over the decades, organizations are still struggling to improve employees' abilities to source knowledge, reconstitute it, and then recombine and apply it to other areas (Ericsson, 1991; Raab et al., 2013;). Researchers argue that individuals often face difficulties in utilizing distributed knowledge across business units due to a lack of information about who knows what and where to locate that knowledge (Brandon and Hollingshead, 2004). These limitations impede effective knowledge transfer, sharing, and application among members within an organization (Grant, 1996), which eventually leads to failure in eliciting visible results from a huge investment in building advanced knowledge management systems.

To enhance individuals' knowledge utilization, organizations have tried to improve technical functions, e.g., embedding corporate yellow pages (Robbins and Stylianou, 2003; Alavi and Leidner, 1999) and employees' curricula vitae (Bennett and Gabriel, 1998) and providing information about who the domain experts are and who has what knowledge, in an attempt to facilitate access to expertise (Yuan et al., 2007). However, it has been acknowledged that technologically connecting knowledge seekers to related knowledge domains (Peltokorpi, 2004) is insufficient: understanding how social interactions occur in the knowledge networks determines knowledge utilization in an organization (Nonaka and Takeuchi, 1996). Even though individuals recognize who has the knowledge they seek, they encounter difficulty in utilizing the knowledge to perform their tasks (Alavi and Leidner, 2001, 2002) because of the power imbalance among work group members. Power is the ability to influence one's beliefs and actions; to add values which are needed by men in power; and to validate, consolidate or confirm the current beliefs, actions, and values. Accordingly, social power is one of the critical aspects that explain individuals' intellectual behavior (Turner, 2005). However, few studies have examined how social power among group members influences their knowledge utilization. We identify that the lack of understanding about social power and knowledge utilization limits our clear picture of *how* and *why* some individuals are better able to utilize knowledge than others in the same technical environment.

To fill this gap, this study aims to develop a theoretical model that explains how social power influences individuals' knowledge utilization in organizations. Drawing on the volitional model that explains human intellectual behavior with cognition and affect (Bagozzi, 1982, 1983), we posit that individuals' perceptions of the transactive memory system (TMS) as well as affect play an important role in enhancing individual knowledge utilization (Wegner et al., 1985; Hollingshead, 1998). Moreover, based on the theory of power (Turner, 2005), we posit that social power within a work group shapes individuals' perception of the TMS and affect, which in turn influences knowledge utilization. By integrating the volitional model and the theory of power, we empirically examine (1) how individuals' perception of the TMS and affect influence knowledge utilization and (2) how social power expedites or impedes individual knowledge utilization.

By answering these questions, this study contributes to a better understanding of the mechanisms underlying social power traits and their impact on knowledge utilization in organizations. In doing so, this study provides both academia and industry with meaningful insights. For academia, this study adds to the literature on knowledge management by providing novel insights that shed lights on the theoretical links between social power and knowledge utilization. For industry, this study provides managers or companies with prescriptive guidelines for designing competitive knowledge management strategies.

2 THEORETICAL DEVELOPMENT

One of main premises of this study is that social interactions among work group members eventually engender power imbalance, especially when a hierarchical structure exists, and the perception of social power that resides in a work group influences individual members' behavior. This conceptualization is consistent with the notion of the theory of power, which suggests that three sources of social power—

control, authority, and persuasion—influence individuals’ cognitive and emotional aspects before they form a certain intention toward a particular behavior (Turner, 2005). The other premise of this study is that an individual’s intellectual behavior is a volitional activity that is determined by his or her own intention. The volitional model proposed by Bagozzi (1982) explains how an individual’s volitional behavior can be determined by cognition and affect through intention toward the behavior. The two theories are complementary, and by integrating these two theories, we develop a conceptual framework that links social power, cognition, affect, intention, and behavior as depicted in Figure 1.

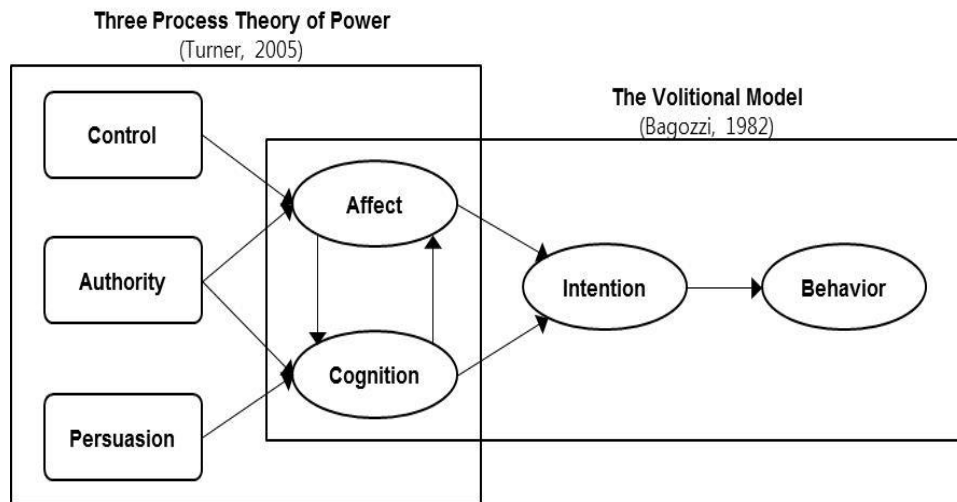


Figure 1. A conceptual framework

2.1 Knowledge Utilization

Knowledge utilization is a meta-construct that includes diverse subdimensions of knowledge-related activities, such as searching, processing, and applying knowledge, which reside in a work group and is needed for accomplishing tasks (Backer, 1991; Choo, 2006; Savolainen, 2009). It covers user behavior—connecting information sources, searching for information and the skills involved in the process, utilizing information, information literacy, information needs, context, reactions and effects, as well as results of learning (Hughes, 2006). While knowledge transfer and sharing in existing research usually focus on delivery and diffusion from the knowledge supplier’s view that knowledge is similar to typical commodities, knowledge utilization is more a reflection of the demand side of those who search for, access, process, and apply the knowledge needed to accomplish their tasks in organizations (Rich, 1981, 1997).

2.2 Affect

Affect refers to “the feeling of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act” (Triandis, 1977). The volitional model (Bagozzi, 1982) argues that individuals’ emotions influence the process of forming the intention of knowledge utilization. Applying the notion of the volitional model, it can be assumed that an individual’s intention to utilize knowledge is affected by his or her emotions generated toward knowledge utilization within a work group. In this vein, prior literature has highlighted that an individual’s positive affect exerts a significant influence on increasing his or her motivation in relation to knowledge activities (Wasko and Faraj, 2000; Osterloh and Frey, 2000; Venkatesh et al., 2003; Davis et al., 1992). These studies commonly postulate that while people can form both positive and negative

affect toward a particular act, positive affect plays a critical role in explaining individuals' intellectual behavior, especially in the context of an organization. Accordingly, this study focuses on the positive affect in relation to knowledge utilization.

2.3 Cognition: Individual Perception of TMS Levels

A TMS is a combination of memory/knowledge of two people and shared awareness of who knows what (Wegner, 1985). Transactive memory is the concept of cognitive interdependence between close relationships (Wegner, 1987), and it is defined as a shared memory system for information encoding, storing and retrieving between partners (Weger, 1987; 1995; Wegner et al., 1991). Three dimensions of the TMS have been suggested by Lewis (2003), namely, specialization, credibility, and coordination, and these have been widely used to capture the TMS levels established within a work group (Kanawattanachai and Yoo, 2007; Majchrzak et al., 2007). Since this study addresses individuals' cognition and its effect on knowledge utilization, we use an individual's perception of TMS levels as an indicator of his or her cognition toward knowledge utilization in this study.

2.4 Social Power

Social power refers to the degree of influence that an individual has within their work group as a whole. Researchers argue that social power is an influence on people via resources, punishments, or controls, as a consequence of which the needs and understandings of others are realized (Keltner et al., 2003). These resources include not only food, money, and economic opportunity but also social resources, such as knowledge, affection, friendship, and decision-making opportunity. People use social power because they want to influence or to confirm others' beliefs. Therefore, exercising social power represents one's ability to change others, to unify actions, and to make them accept the rulers' authority without resistance. Hence, researchers have considered power imbalance existing in the relation between a supervisor and a supervisee to be influential in shaping individuals' behavior (Zhang, 1997). For example, those who want to utilize knowledge may hesitate or decide to seek it due to the social power of the supervisors.

3 HYPOTHESES AND RESEARCH MODEL

Figure 2 outlines the conceptual framework that links social power, affect, and a TMS. Knowledge utilization occurs through the process of allocating, changing, integrating and adjusting knowledge that can be used through the meta-information in a TMS (Clarson et al., 1993). The theory of social power explains that social power consists of different power bases—reward, coercive, legitimate, expert, and referent power—and these different bases of power have varying influences on an individual's cognition and affect. Explaining what constitutes social power, Turner mapped the five bases of power suggested by French and Raven (1959) into three sources of social power. Reward and coercive power are categorized into control; legitimate power is categorized into authority; and expert and referent power are categorized into persuasion.

Given that a TMS is cognitive interdependence resulting from individuals' social interaction (Gardner, 2009), we posit that individuals' perception of TMS levels may be influenced by social power between team members. Drawing on the theory of power, we also posit that social power influences the levels of positive affect among individual members. With this proposed model, we investigate (1) how social power influences cognitive (perception of TMS levels) and emotional (affect) aspects, respectively; and (2) how the perception of TMS levels and the Positive Affect jointly influence behavioural intention to utilize knowledge.

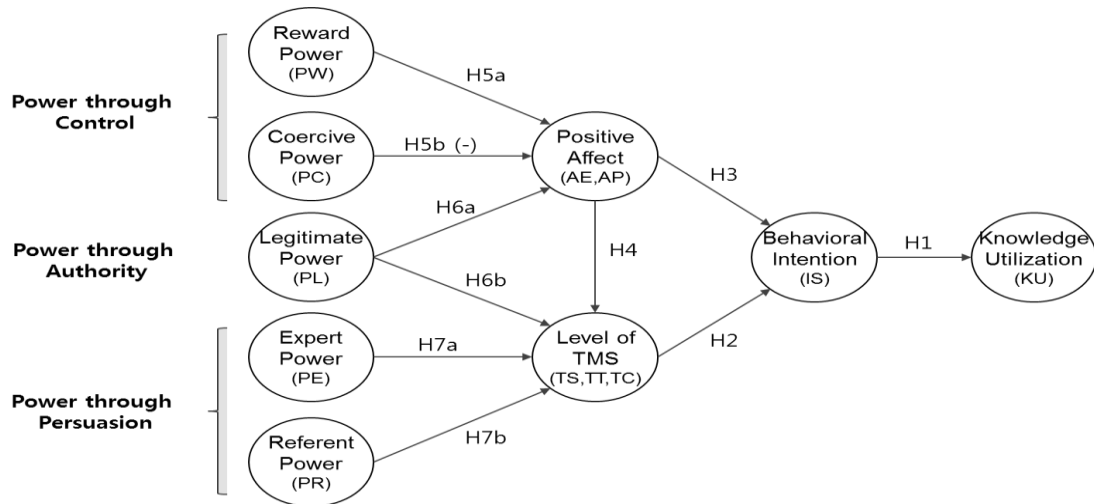


Figure 2. Research model

3.1 Intention and Knowledge Utilization

We adopt the volitional model (Bagozzi, 1982) to explore the relationships between intention to utilize knowledge and actual behavior of knowledge application. The volitional model explains that a person's volitional behavior can be predicted by his or her behavioral intention. Knowledge utilization represents individuals' volitional behavior, which includes overall knowledge-related activities needed to accomplish their tasks in an organization. According to the volitional model, we can infer

H1: An individual's intention to utilize knowledge will be positively associated with his or her knowledge utilization behavior.

3.2 TMS Levels and Intention to Utilize Knowledge

Research has shown that a TMS enhances an individual's intention to transfer, retain, and share knowledge (Yuan et al., 2010). A well-developed TMS can facilitate accessing to information (Yuan et al., 2007), and exchanging expertise between team members (Yuan et al., 2010). So it may stimulate people's motivation to utilize knowledge (Akgun et al. 2006; Hollingshead 1998; Hollingshead et al. 2002; Moreland and Argote 2003). Therefore, the higher an individual's TMS level is, the better will be his or her intention to utilize knowledge.

H2: An individual's perception of TMS levels will be positively associated with his or her intention to utilize knowledge.

3.3 Affect and Intention to Utilize Knowledge

Positive affect can increase cognitive flexibility and bring to mind more and diverse aspects of concepts (Isen et al., 1992; Kahn and Isen, 1993). The cognitive context of the outcome created by a positive affect state is likely to be more positive, larger, and more diverse than cognitive contexts at other times (Erez and Isen, 2002). Positive affect has been regarded as a factor that stimulates individuals' intention toward knowledge related activities, such as knowledge searching, exchanging, and transferring in organizations (Wasko and Faraj, 2000; Osterloh and Frey, 2000; Venkatesh et al., 2003). Davis et al. (1992) also argue that such positive affect serves to increase individuals' intention toward a particular behavior. Thus, we expect that an individual's positive affect toward knowledge utilization directly influences his or her behavioral intention to utilize knowledge.

H3: An individual's positive affect will be positively associated with his or her intention to utilize knowledge.

3.4 Affect and the TMS Levels

Positive emotion is held capable of distracting attention in a manner that could reduce forms of cognitive elaboration that might influence credibility and reactance (Lazarus, 1991; Berkowitz, 1973). Affect in groups and specific mechanisms to regulate group affective states have had important roles in promoting group survival over evolutionary history, because such positive emotions serve a coordination function through interpersonal communication and fostering social attachment and loyalty to group activities (Spoor and Kelly, 2004). The role of positive affect is to increase the accuracy in expertise recognition, sharing of knowledge, and member participation.

H4: An individual's positive affect will be positively associated with his or her perception of TMS levels.

3.5 Power through Control (Reward vs. Coercive Power) and the TMS Levels

Power can be exercised to reward team members for behaving in a particular way or coerce team members to behave in predefined ways. Coercive power is exercised through the threat of punishment and/or actual punishment for failure to conform to the leader's demands, whereas reward power is exercised through the offer of a valuable object or activity for conformance to the leader's demands (French and Raven, 1959). A manager can therefore distribute direct rewards and punishments as a form of control and might influence his or her partner's behavior simply by overt exercise of this control (Gioia and Sims, 1983).

In the exertion of coercive power, if the partner fails to fulfill the actor's demands, he or she will face miserable consequences, whereas nothing more than avoidance of an aversive consequence is gained for conformity. In the use of reward power, if the partner fulfills the actor's demands, he or she will receive a desirable consequence, whereas nothing less than the omission of a desirable consequence is suffered for failure to conform. In other words, the partner will lose a lot by not conforming to coercive power, but no distinct improvement is gained from conforming to the actor. On the other hand, the partner will gain much in the form of a desirable consequence by conforming to an actor's demands when the latter exercises reward power but there is no change in the partner's condition from failure to conform (Cravens and Worchel, 2006).

H5a: Reward power will have a positive effect on positive affect.

H5b: Coercive power will have a negative effect on positive affect.

3.6 Power through Authority (Legitimate Power) and TMS Levels

Legitimate power involves some value or standard that is accepted by the partner, by virtue of which the actor can assert his or her power (Raven and French, 1959). This view assumes that the partner accepts the actor's right to hold his or her position; by virtue of such a position, the actor will have the legitimate right to prescribe the behavior for his or her partner; in turn, the partner will feel obliged to accept this order. Authority is regarded as relatively fair and just; people are motivated to defend and bolster existing social arrangements, and they are supportive of social hierarchies even when it is not necessary for them to do so (Jost and Banaji, 2011; Jost et al., 2004). Thus, partners want to believe that the legitimate authority figures controlling their fates are benevolent; this viewpoint distorts their perception of the actors' attributes in a positive way (Steven and Fiske, 2000). When people are linked to authority, they want to believe the authority possesses positive qualities (Tyler and Sears, 1977). Even among team members, institutional-based trust is what makes them trust each other; fostering this trust is thus the institution's responsibility. Therefore, dependence on a legitimate authority leads people to have more trust and confidence and enhances the perceived favorability of outcomes because partners are more satisfied with outcomes from legitimate authorities (Toorn et al., 2011).

H6a: Legitimate power will have a positive effect on positive affect.

H6b: Legitimate power will have a positive effect on the perception of TMS level.

3.7 Power through Persuasion (Expert and Referent Power) and TMS Levels

Expert power is based on the influencee's (partner's) perception that the influencer (actor) has valuable knowledge, information, or skills in a relevant area. Expertise is a source of influence that must emanate from the participant in the dyad and cannot be delegated by a third party.

Referent power is based on the perceived attraction of members in the dyad to one another. This power's source may arise from friendship, identification with a successful model, or feelings of a shared identity (Busch and Wilson, 1976). The individual whom colleagues like, respect, and want to imitate, is the person who has referent power. The leader who manages by example, respects co-workers, and seeks collaboration will gain colleagues' trust and eventually will assume referent power (Dahl, 1957). Power through persuasion, such as expert and referent power, will positively influence the development of a TMS in specialization, trust, and task coordination.

H7a: Expert power will have a positive effect on the perception of TMS levels.

H7b: Referent power will have a positive effect on the perception of TMS levels.

4 METHODS

4.1 Data Collection and Measurement

We adopted a survey method to collect data for hypothesis test. First, we recruited 102 IT consultants and asked them to complete the survey questionnaire, which allowed us to check the psychometric properties of the scales (Straub et al., 2004). Next, we conducted a main survey targeted individual knowledge workers of IT consulting companies, including Samsung SDS, LGCNS, SKC&C, Accenture, Deloitte, E&Y, Oracle, and SAS. Most of the respondents were IT consultants who were involved in IT consulting, information system development, and system integration. We asked 400 individuals to fill out a questionnaire; 366 responses were collected. After removing 46 uncompleted questionnaires, we used 320 responses for the final analysis. All survey items for the constructs in our model were measured on a 7-point Likert scale, which ranged from 'strongly disagree'(1) to 'strongly agree'(7).

5 ANALYSIS AND RESULTS

The reliability of an instrument is the stability of an instrument across the units of observation (Straub et al., 2004). Cronbach's alpha value for examining internal consistency was calculated to assess the reliability of the measurement instruments (Kerlinger, 1986). The internal consistency of all variables in our study was higher than the cutoff value of 0.7 (Nunnally, 1978), ranging from 0.833 (knowledge utilization) to 0.949 (positive affect). This shows that the level of the reliability of our instruments seems to be acceptable.

Hypotheses 1 to 4 basically examined Bagozzi's volitional model in the knowledge utilization context. An individual's knowledge utilization behavior was highly correlated with behavioral intention to utilize knowledge (beta = 0.423, t-value = 8.019, $p < 0.001$). Contrary to our expectation, positive affect did not influence the intention to utilize knowledge. Instead, positive affect directly influenced knowledge utilization behavior (beta = .169, t-value = 3.275, $p < 0.01$). On the other hand, perception of TMS levels had a strong effect on behavioral intention (beta = .449, t-value = 6.735, $p < 0.001$).

Hypotheses 5a and 5b examined the influence of power with control coercion. As we hypothesized, the rewarding ability of the project manager positively influenced positive affect, but coercive power's negative influences on positive affect were not significant.

Hypothesis 6 examined the influence of legitimate power on both sides. Power through authority can have an influence on emotion and cognition. Its influence on positive affect was strongly supported

(beta = .454, t-value = 9.171, $p < 0.001$); individuals' perception of TMS levels was also influenced by legitimate power (beta = .217, t-value = 2.916, $p < 0.01$) at a significant level.

Hypothesis 7 tested power influence as persuasion, as we expected expert power to positively influence perception of TMS levels (beta = .139, t-value = 2.029, $p < 0.05$). We assumed that expert power will help encode a specialized knowledge directory in a project member's memory. Contrary to our expectations, referent power did not have a significant effect on the level of the TMS.

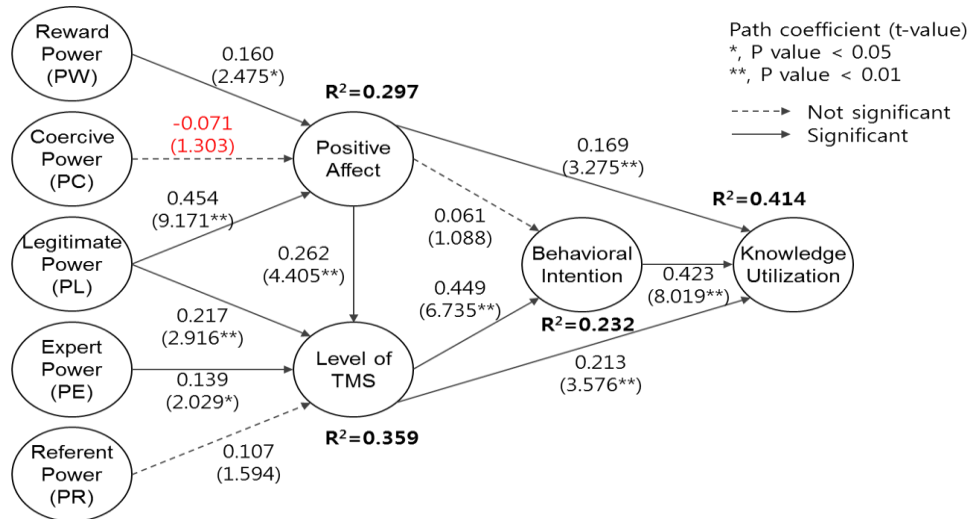


Figure 3. The results of the PLS analysis

6 DISCUSSION AND IMPLICATIONS

The main purpose of this study was to investigate how social power influences individuals' affect and TMS, which in turn determines knowledge utilization. By integrating the theory of power and the volitional model, this study theoretically linked the relations among social power, TMS, and affect to predict individual knowledge utilization. Our main findings are (1) social power exerts a significant influence on an individual's affect, through which the perception of TMS levels is also influenced; (2) social power also directly influences the perception of the TMS, which in turn influences intention to utilize knowledge; (3) in particular, reward power positively influences knowledge utilization by increasing the levels of positive affect; (4) legitimate and expert power positively influence the perception of TMS levels.

This study makes several important key contributions to the IS literature on knowledge management. These contributions have both descriptive as well as prescriptive values. In this study, we theorized how social power influences knowledge utilization in organizations; this topic has rarely been attempted in prior research. In particular, this study shows that each of the power bases has a different impact on affect and the perception of TMS levels. Thus, proper power tactics should be exerted among employees to induce a change in the target, including changes in behaviors, opinions, attitudes, goals, needs, and values.

Reward and coercive power, which represent power through control coercion, depend on the actor's ability to bestow on the partner positive and negative outcomes, respectively. Using either of these bases will induce only a superficial change in the target; that is, none of the partner's held beliefs, attitudes, or values will be changed privately. Instead, only public compliance will be obtained. As our study results showed, these power bases only influence affect, which is not connected to intention to utilize knowledge. Legitimate power is based on the partner's belief that the actor has an authorized right to exert influence and that the partner has an obligation to accept this influence. This power

influences both the partner's affect and cognition by enabling the partner to maintain an affective relationship and be trustful. Expert and referent power, which refer to power through persuasion, influence a partner to identify with the actor and to attribute superior knowledge or experiences to the actor. These bases of power also lead to private acceptance by the partner by enabling the partner to maintain a satisfactory relationship with the actor.

As stated in the Power Use Model proposed by Bruins (1996), which predicts an individual's choice of influence tactics only in terms of softness versus hardness, a partner's response (supportive vs. resistant) together with the softness versus hardness of the used tactic affects the perception of the relationship between the actor and partner in terms of knowledge works. A power tactic with appropriate power bases and influential ways should be used between team members to recognize who has expertise, is credible, and may be available to coordinate.

A TMS, developed through individuals' social interaction within a work group, plays a critical role in knowledge utilization. This provides not only the path to access the knowledge but also the perception of availability to coordinate the task. Besides the cognition of where the knowledge is located, positive affect critically influences the coordination process. This will be able to fill the gap between knowing and applying the knowledge in practice.

This research is expected to provide academic and practical contributions to the field of knowledge management. First, this study contributes to the better understanding of knowledge utilization. Departing from previous knowledge management research that focuses on the knowledge provider, we suggest a knowledge user perspective within a knowledge utilization context. Empirically, we tested the influences of social power on affect and a TMS, and their mediating effects on knowledge utilization. Understanding the influence of social power on the TMS and affect built between individuals provides a foundation that facilitates the knowledge process in an organization.

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