



## Empowering teams through social network ties

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### ABSTRACT

Effective teamwork and knowledge coordination are becoming increasingly important for all kinds of organizations given the growing use of teams to tackle competitive challenges and sustain competitive advantage. In this study, we develop and validate a model of how two types of social network ties – expressive and instrumental – contribute to team efficacy and performance, mediated by three dimensions of a transactive memory system (TMS) – specialization, credibility and coordination within teams. We test the model in an empirical study drawing on data from 66 teams in a variety of organizations. The results suggest that both instrumental and expressive ties within teams can facilitate the formation of TMS and the three dimensions of TMS are all, even though to different extents, positively related to team efficacy. Team efficacy is also a powerful predictor of team performance. The findings in our study bridge the literature gap about social networks and TMS and explain the underlying process and mechanisms by which social network ties exert their influence on team outcomes. The results have implications for organizations that wish to leverage teams to take advantage of team members' differentiated expertise and coordinate their work more effectively and efficiently.

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### 1. Introduction

In today's rapidly changing and increasingly competitive business environment, teams are widely employed in organizations (Gully, Incalcaterra, Joshi, & Beaubien, 2002), since teams can increase organizational capability, flexibility and responsiveness (Griffith, Sawyer, & Neale, 2003). The increased emphasis on teams has aroused substantial interest in exploring determinants of team performance for both organizational researchers and practitioners (Kozlowski & Ilgen, 2006; Zhang, Hempel, Han, & Tjosvold, 2007). Social network approaches to team research have gained particular popularity (Balkundi & Harrison, 2006; Tjosvold, Poon, & Yu, 2005). Researchers have articulated that social ties have the potential to facilitate the flow of all kinds of resources within teams, which correspondingly determines the success of teams (Balkundi & Harrison, 2006). However, little effort has been made in previous research to pinpoint the mechanisms through which social relationships have impacted team outcomes (Balkundi & Harrison, 2006). Knowledge is indispensable to contemporary organizations, and the importance of knowledge is particularly noticeable for teams given their need to create, share and apply knowledge

(Choi, Lee, & Yoo, 2010). Accordingly, knowledge management (KM) has become an important issue in organizations since only when knowledge is managed effectively can organizations increase their innovativeness and responsiveness to competitive threats (Alavi & Leidner, 2005). In particular, knowledge sharing and application are widely recognized as the key determinants of team performance (Choi et al., 2010; Janhonen & Johanson, 2011). Previous researchers have argued that social relationships might have an impact on KM outcomes and so called for further research into the effect of relationships in KM (Argote, McEvily, & Reagans, 2003). In this study, applying the input-process-output model, we concentrate on the impact of social ties on team outcomes through the perspective of knowledge coordination processes within teams.

Two basic forms of interpersonal relationships, involving instrumental and expressive ties, have been distinguished by social network researchers (Balkundi & Harrison, 2006). These two types of ties remain theoretically distinct, as the former is work related, while the latter is more associated with socio-emotional attachment. Previous scholars have explicitly called for new research to pay attention to the expressive dimensions of relationships in networks and suggest that appropriate expressive ties for instrumental purposes might have unintended consequences on performance related outcomes (Cross & Cummings, 2004).

As knowledge is a critical asset for teams and is often distributed across team members, ensuring that the right knowledge is available to the right person at the right time is vital if teams are to be successful (Kwan & Balasubramanian, 2003). In order to address the

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issue of knowledge coordination and utilization within teams, the transactive memory system (TMS) (Wegner, 1987) has been proposed as an effective knowledge processing technique. A TMS refers to a specialized division of cognitive labor that develops within a team regarding team members' encoding, storing and retrieving of information (Wegner, 1987). Many studies have confirmed that a well-developed TMS can indeed improve team outcomes (Kanawattanachai & Yoo, 2007; Lewis, 2004; Zhang et al., 2007). TMS is considered to have three aspects: specialization, credibility and coordination (Akgun, Byrne, Keskin, Lynn, & Imamoglu, 2005; Kanawattanachai & Yoo, 2007; Lewis, 2003; Moreland & Myaskovsky, 2000; Zhang et al., 2007). These researchers argue that TMS has the potential to allow team members to develop and be aware of each other's specialized expertise (specialization), confide in each other's competence and reliability (credibility), and integrate each other's knowledge together in a coordinated manner (coordination). Most previous research simply bundled these three aspects together, which may have caused difficulties in interpreting the real meaning and effect of TMS on team outcomes. Recent studies have tried to separate these three dimensions since specialization and credibility are cognitive processes, while coordination is a behavioural process; the three aspects are thus theoretically distinct (Kanawattanachai & Yoo, 2007). In order to better understand the antecedents and outcomes of TMS, we also study these three dimensions separately.

Based on the input-process-output model of teamwork, recent studies have turned attention to another kind of intermediate mechanism – the emergent state – that underpins the impact of team input on outcomes (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Marks, Mathieu, & Zaccaro, 2001; Srivastava, Bartol, & Locke, 2006). Team emergent state is different from team processes; team processes are the means by which members work interdependently to utilize various resources through cognitive, verbal and behavioural activities, while emergent state describes “cognitive, motivational, and affective states of teams, as opposed to their member interaction” (Marks et al., 2001, p. 357). Srivastava et al. (2006) have explicitly articulated the importance of incorporating both team process and emergent state in a single model and called for future research to do so. With respect to the relationship of team processes and emergent state, researchers have argued that a team's emergent state can be influenced by team cognitive processes (Marks et al., 2001). One emergent state – team efficacy – has drawn much attention, and two recent meta-analyses (Gully et al., 2002; Stajkovic, Lee, & Nyberg, 2009) provide compelling evidence that team efficacy is significantly related to team performance. Previous research has also indicated that TMS may contribute to team efficacy (Gibson & Earley, 2007; Mannix, Griffith, & Neale, 2002), which indicate that TMS not only has a direct effect on team performance, but the effect may be also partially mediated by promoting the team efficacy. Nevertheless, little research has empirically investigated the relationship between TMS and team efficacy. However, such an investigation may help us better understand the effect of TMS on team performance and so provide more insights into how team performance can be improved. All of these factors stimulate our interest in research on the mediating effect of team efficacy on the relationship between three dimensions of TMS and team performance.

In general, in this study, we aim to answer the following research questions: (1) How do instrumental ties and expressive ties influence team outcomes through TMS and team efficacy? (2) How may TMS contribute to team outcomes through the mediating role of team efficacy? We use team efficiency and team effectiveness to evaluate team outcomes in this study. In answering these questions, this paper contributes to the previous literature in several ways. Firstly, we add to the social network literature by examining the team processes through which social networks exert their

influence on team outcomes. Secondly, we investigate the mediating role of team efficacy among TMS and team performance. Thus, the relationship between team processes, team emergent state and teamwork outcomes are much clearer. Thirdly, we separate the three dimensions of TMS so as to enrich our understanding of the development and outcomes of TMS.

Following this introduction, we review the relevant literature and justify the above arguments in a theoretical development where we construct the research model and develop the hypotheses. The empirical test of the research model will also be described. The results will then be presented, followed by the discussion of the theoretical and managerial implications, and future research directions.

## 2. Theoretical background

Several areas of literature underpin the research described in this paper: instrumental ties and expressive ties, transactive memory system and team efficacy.

### 2.1. Instrumental ties and expressive ties

The social network perspective has been increasingly adopted in recent studies of teamwork. Previous studies distinguished two different types of social ties based on the tie content, expressive ties and instrumental ties (e.g., Zhou, Siu, & Wang, 2010; Lin, 2007). Instrumental ties typically arise in the workplace and emerge based on formal work relationships. Instrumental ties are recognized as pathways of work-related advice and are typically used to facilitate the transfer of physical, informational or financial resources within units (Ibarra, 1993; Umphress, Brass, & Scholten, 2003). Team members are usually involved in instrumental ties when they gather information, advice, and expertise from other team members in order to accomplish a task. This kind of ties is utilitarian-oriented; thus they are unstable and temporary (Lee, Pae, & Wong, 2001). The main purpose of instrumental ties is work or career related. Instrumental ties are weak, which link people who differ in personal characteristics and in their expertise in vertical and horizontal division of labor in access to differentiated resources (Ibarra & Andrews, 1993). On the other hand, expressive ties involve people who exchange feelings and satisfy their need for care, social support and a sense of belonging (Berman, West, & Richter, 2002; Manev & Stevenson, 2001; Umphress et al., 2003). They are distinguished by attributes like emotional intimacy, perceived social similarity and expectations of mutual altruistic behaviour (Gibbons, 2004). Owing to these traits, expressive ties have been demonstrated to be more associated with commitment, emotional attachment and shared understanding, clear communication and acceptance of partners' suggestions (Morrison, 2002; Sias & Cahill, 1998). Expressive ties are quite useful in the workplace as they can provide psychological support for the individual such as encouragement in trying times, comfort when encountering difficulties and give advice about balancing work and life pressures. In general, instrumental ties are information and cognition based, while expressive ties are affect based. These two types of ties developed within teams are both very important for work completion and team viability.

Research about social network ties showed that both instrumental ties and expressive ties could largely facilitate knowledge sharing directly (Lin, 2006) or through the mediating role of trust (Lin, 2007; Zhou et al., 2010). Ou, Davison, Zhong, and Liang (2010) empirically validated the direct influence of social network ties on team performance and the mediating role of knowledge sharing. In two case studies on globally distributed projects, Kotlarsky and Oshri (2005) suggested that establishing social network ties can

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