Enhancing team creative performance through social media and transactive memory system

Xiongfei Cao\textsuperscript{a}, Ahsan Ali\textsuperscript{b,}\textsuperscript{*}

\textsuperscript{a} School of Management, Hefei University of Technology, Hefei, 230000, PR China
\textsuperscript{b} School of Management, University of Science and Technology of China, Hefei, 230026, PR China

\textbf{ABSTRACT}

Effective teamwork, knowledge coordination, and knowledge creation are recognized as essential sources of team effectiveness and creativity in modern organizations. Nowadays, social media is significantly modifying the patterns in the use of technology to support knowledge management practices in teams. At the same time, the literature shows that transactive memory system (TMS), which refers to how team members share their distributed knowledge and expertise, is an important factor affecting team performance. However, minimal effort has been made to elaborate on the precise role of social media in supporting TMS for enhancing absorptive capacity (ACAP) and knowledge creation capability (KCC) of the team, which in turn might influence team creative performance (TCP). Therefore, to address this gap in the literature, a theoretical model is developed and validated. Survey data collected from 334 members of 68 knowledge work teams indicated that social media use at work has a positive relationship with TMS and both social media use at work and TMS are positively related to ACAP and KCC of the team. Results further indicated that ACAP positively influenced KCC, and both have a direct relationship with TCP. This study shows that careful investment in social media by an organization can enhance meta-knowledge of “who knows what” within teams. Finally, exploring external knowledge alone is not enough. Instead, organizations must ensure external knowledge is utilized to create new knowledge to improve TCP.

\textbf{1. Introduction}

In today’s modern economies, the increasingly complex task and decision issues have motivated organizations to use teams at all hierarchical levels. Engaging teams rather than individuals in performing complex tasks can be effective because it increases the pool of knowledge resources available to deal with dynamics challenges faced by organizations. Yet, teams often fall short of taking full use of potential knowledge resources, because it fails to effectively share and integrate distributed knowledge (Mell, van Knippenberg, & van Ginkel, 2013). The realization of this phenomenon has escalated research addressing collective knowledge management in teams. Particularly a stream of research on Transactive Memory System (TMS) (Wegner, 1987), has shaped our interest in understanding the role of team cognition for integration and utilization of knowledge. TMS is a team cognitive system developed by members to encode, store, and retrieve knowledge available in individual memories of the team members of different domains (Dai, Du, Byun, & Zhu, 2017; Ren & Argote, 2011). Through TMS, members create specialized knowledge and meta-knowledge of “who knows what” within the team (Ghobadi, 2015). The meta-knowledge together with specialization expertise creates TMS structure. Alongside, members develop communication processes to effectively utilize distributed knowledge. TMS has been applied widely to understand information processing in teams and organizations (Lewis, 2003; Liang, Moreland, & Argote, 1995). The literature indicates that well-structured TMS is positively related to desired team outcomes such as performance, learning, innovation, and creativity (Austin, 2003; Fan et al., 2016; Gino, Argote, Miron-Spektor, & Todorova, 2010; Mell et al., 2013; Ren & Argote, 2011; Zhang, Hempel, Han, & Tjosvold, 2007; Zhong, Huang, Davison, Yang, & Chen, 2012).

TMS empowers team knowledge management, facilitating knowledge work and acting as a prime factor affecting team performance. Distinct from TMS, there is an increased reliance on social media in organizations to support communication and knowledge work (Behringer & Sassenberg, 2015; Cardon & Marshall, 2015; Kane, 2017; Nissen & Bergin, 2013), but the focus of the previous studies on social...
media has been on individual or general team performance, and they overlooked the creative side of team performance. Therefore, researchers have suggested investigating how social media can affect creative performance (Sigala & Chalkiti, 2015). Furthermore, despite the important role of social media for knowledge management, no prior studies that we know of have studied the direct effect of social media on TMS, and integrated analysis of the socio-cognitive system and sociotechnological tools on knowledge management capabilities (i.e., absorptive capacity, knowledge creation capability). Thus, the focus of the present study is to develop and examine a set of hypotheses to analyze the effects of social media on TMS. This study also investigates the joint impact of social media and TMS on absorptive capacity (ACAP) and knowledge creation capability (KCC) of teams, pursuing results that might enhance team creative performance (TCP).

ACAP, which refers to the dynamic capability of the team to acquire and apply external knowledge (Cohen & Levinthal, 1990), substantially contributes to knowledge management activities and enhances organizational performance and innovation. In addition, ACAP has a considerable effect on teams by enabling them to benefit from the external knowledge and is likely to enhance team creativity by integrating internal and external knowledge (Tang, 2016). On the contrary, available knowledge resources (internal, external) are not sufficient, and teams must also pay attention to knowledge creation to perform creatively. Consequently, teams will have better opportunities to utilize knowledge management capabilities (ACAP, KCC) to enhance creative performance. Nevertheless, a gap exists in the literature about the relationship between ACAP and KCC, and how exactly ACAP effects KCC remains under-addressed. The literature contains only one paper on the combined role of ACAP and KCC (Su, Ahlstrom, Li, & Cheng, 2013) but no study has examined the link between ACAP and KCC, and their consequences on TCP. This not only limits theoretical understanding of the linkage between ACAP and KCC but also limits the implications researchers can draw for managers who want to leverage their teams benefit from these capabilities to create and utilize new knowledge. All of these factors stimulate our interest to investigate the linkage between ACAP and KCC, and their impact on TCP.

In sum, this paper aims to investigate the following research questions: (1) How can members of a team utilize social media efficiently to enhance TCP? (2) How does social media use at work influence ACAP and KCC directly, and indirectly by TMS? (3) How can social media use at work and TMS enhance TCP by increasing ACAP and KCC of the team? This study contributes to the literature in numerous ways. First, this study contributes to social media literature by analyzing knowledge management capabilities through which social media might facilitate creative side of team performance. Second, this study investigates the mediating role of TMS among social media use at work and knowledge management capabilities and make the role of TMS in efficiently utilizing social media in teams for elevating knowledge management capabilities clearer. Finally, the current study combines two knowledge management capabilities to enrich researchers and practitioners understanding of team knowledge management processes and activities, and their joint impact on TCP.

2. Theoretical model and hypotheses

2.1. Transactive memory system in teams

The concept of TMS is based on the observation of dating couples by Wegner (1987). TMS is a combination of three differentiated sub-con structs: specialization, credibility, and coordination (Moreland & Myaskovsky, 2000; Zhang et al., 2007; Zhong et al., 2012). TMS enables team members to understand the specialized expertise of other members (specialization); to develop confidence in the knowledge of the entire team (credibility); and to coordinate smoothly among members to integrate their knowledge (coordination). Initially, Wegner (1987) introduced this psychological theory for dyads, and TMS was later applied by Liang et al. (1995) to analyze its impact on team performance in a laboratory setting. Following empirical studies have also discussed the development of TMS through learning, communication, and collaboration (Hollingshead, 1998; Jarvenpaa & Majchrzak, 2008; Moreland & Myaskovsky, 2000). Meanwhile, Zhong et al. (2012) and Mell et al. (2013) established that if organizations focus on the effective utilization of TMS, it can influence team performance over time. Recent research has focused on exploring the influence of TMS on group performance in field settings. Recently, the study of Li and Huang (2013) described the relationship between TMS, team learning, and their impact on project performance. Chung, Lee, and Han (2015) explored TMS from the information management perspective. Fan et al. (2016) and Peltokorpi and Hasu (2016) examined the impact of TMS on team innovation. In his dissertation, Hanke (2006) proposed that TMS is an important contributor to team creativity.

Literature indicates that TMS has displayed the effect of a positive antecedent for team performance under diverse circumstances. Still, less emphasis has been given to exploring conditions under TMS can enhance TCP. Meanwhile, researchers and organizational practitioners are continuously investigating social media to enhance organizational knowledge management capabilities. Considering the role and importance of TMS for team outcomes, as well as the dynamic support of social media in knowledge management practices, it is highly imperative to investigate how social media can help teams develop TMS. Therefore, to increase understanding of TMS for teams, our study attempts to contribute to the literature by exploring the relationship between social media use at work and its relationship and support toward TMS. We will also scrutinize how TMS facilitates knowledge management capabilities of teams. Finally, with the exception of Hanke (2006), studies on TMS have ignored the importance of TMS for TCP. The present study will add to TMS literature by focusing on its influence on the creative context of team performance. Fig. 1 illustrates the conceptual model of this study.

2.2. Social media use at work

Social media is demonstrating greater opportunities to facilitate organizations in knowledge management activities (Zhang et al., 2015). Social media systems utilize several technological tools that work in a social platform to facilitate interaction and information exchange. 

![Fig. 1. Conceptual Model and Research Hypotheses.](image-url)
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