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How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership

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ABSTRACT

Employee creativity is critical to organizations' growth and is largely dependent on team dynamics. However, teams generally fail to encourage members to share their diverse knowledge, especially those that may cause disagreement among team members, as conflict often occurs in a team context. However, the issue of how to enhance employee creativity from the perspective of team leader in a team context is largely understudied. This study aims to explore the cross-level links between the transformational behavior of team leader and employee creativity in a team context. We propose a three-path cross-level mediating model in which two critical team-level process variables, i.e., team conflict and knowledge sharing, are involved. Using multi-level structural equation modeling, we found that team conflict and knowledge sharing served as two sequential mediators between the cross-level links. This study highlights the critical role of transformational leadership as cross-level enabler for employee creativity.

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1. Introduction

To facilitate employee creativity, one of the prevalent human resource practices is to organize employees into small groups. In groups, members can share their distributed knowledge to enhance their creative capabilities, which in turn help their organization create innovative products and services (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Wang & Noe, 2010). It is evident that knowledge sharing among employees is critical to organizational creativity and innovation (Carmeli, Gelbard, & Reiter-Palmon, 2013; Gilson, Lim, Luciano, & Choi, 2013; Grant, 1996; Van Wijk, Jansen, & Lyles, 2008; Wang & Noe, 2010). However, placing employees into groups does not always result in effective knowledge sharing and organizational innovation. One key reason may lie in team conflict.

In a team context, conflict is often inevitable, and it can sometimes be a salient antecedent to team effectiveness (De Dreu & Van de Vliert, Using Conflict in Organizations, 1997; Hempel, Zhang, & Tjosvold, 2009). Though conflict is generally regarded as negative so as to be avoided, a certain type of conflict could be beneficial to organizations. In general, two types of team conflict are widely recognized: task (cognitive) conflict, and relationship (emotional) conflict. *Task conflict* could contribute to employee knowledge sharing and creativity by triggering an exchange of information and an exploration of diverse and even opposing opinions as well as a re-evaluation of the status quo

and a scrutiny of the task at hand (De Dreu & West, 2001). Unlike task conflict, *relationship conflict* often causes negative psychological reactions, including strain, frustration, anger, and fear, which often hurt employee creativity (De Dreu, 2006). Meanwhile, the two types of conflict often coexist in the same team because task conflict often triggers relationship conflict when people adhere to opposite opinions and perspectives, thus difficult to tease apart the distinctive effects of the two types of conflict on information sharing and performance (Bai, Han, & Harms, in press; Simons & Peterson, 2000). Hence, understanding and then managing the processes and results of different types of team conflict in team context is worthy serious examination.

Bearing the above points in mind, this paper will focus on the specific role of transformational leadership to explain the complex links between team conflict, knowledge-sharing, and creativity process. Transformational leadership has been generally understood as a contextual element influencing and interacting with team dynamics at multiple levels of analysis. Previous studies have devoted considerable attention to the multi-level relationships between transformational leadership and employee outcomes, e.g., job performance, job satisfaction, and organizational citizenship behavior (e.g., López-Domínguez, Enache, Sallan, & Simo, 2013; Tse & Chiu, 2014; Wang & Howell, 2010; Zhu, Newman, Miao, & Hooke, 2013). There is also a growing interest in the link between transformational leadership and employee creativity. *Employee creativity* can be defined as “the production of novel and useful ideas concerning products, services, processes and procedures by a team of employees working together” (Shin & Zhou, 2007, p. 1715). Despite the growing interest, the primary attention has been

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on the direct main or moderating effect of transformational leadership on employee creativity (e.g., Herrmann & Felfe, 2013, 2014; Hirst, Van Dick, & van Knippenberg, 2009; Pieterse, Van Knippenberg, Schippers, & Stam, 2010; Wang & Rode, 2010) or the indirect effect via individual-level psychological mechanisms, such as creative self-efficacy (Gong, Huang, & Farh, 2009), follower dependency (Eisenbeiss & Boerner, 2013), individual differentiation (Tse & Chiu, 2014), intrinsic motivation and psychological empowerment (Chen, Li, & Tang, 2009; Gumusluoglu & Ilsev, 2009; Jung, Chow, & Wu, 2003; see Rosing, Frese, & Bausch, 2011 for the most recent review). In contrast, the team-level mechanisms explaining “how employees working together to create” are understudied (see Eisenbeiss et al., 2008 as an exception for innovation climate as a mediating process). As defined, employee creativity is not only a function of individual talents or intrinsic motivations, but also a result of how team members interact with each other in a dynamic process (Gisber-López, Verdú-Jover, & Gómez-Bras, 2013). Echoing the call from Dionne, Yammarino, Atwater, and Spangler (2004) that “expanding our understanding of specifically how transformational leadership components can be linked to team performance through various teamwork processes” (p. 182), we specifically focus on the effect of transformational leader on the group-level cognitive and emotional processes, which in turn contribute to individual-level creativity.

In light of the important roles of team conflict and knowledge-sharing in team processes in general, and employee creativity in particular, the purpose of this study is to answer the question: *how would transformational leadership enhance individual employee creativity via cross-level mechanisms?* By addressing this gap in the existing research, our study seeks to make three key contributions. First, we attempt to enrich the research on the complex effects of transformational leadership on team conflict, knowledge sharing, and employee creativity. Creativity research has often been criticized as being confined to individuals as a micro-level analysis, thus limiting our understanding about how creativity develops through higher-level mechanisms (Anderson et al., 2004). Our cross-level model responds to the repeated calls for more research on team dynamics (e.g., Avolio and Yammarino, 2002; Eisenbeiss et al., 2008), with a special attention to the critical role of transformational leadership. Specifically, the study will show that transformational leadership fosters employee creativity by influencing interpersonal motivation and capability in a team context via the intensive interaction between members in a team (Shih, Chiang, & Chen, 2012). Second, to further open the black box of team dynamics, we focus on two core process-related variables, i.e., team conflict and knowledge sharing, as two cross-level mediators, in tandem, between transformational leadership and employee creativity. The proposed three-path cross-level mediating process via team conflict and knowledge sharing can enrich our understanding about the cross-level mechanisms for leadership-creativity link. In other words, we posit that transformational leadership can shape employee creativity indirectly through the mechanisms of team conflict and knowledge sharing.

Third, to embed our study in the macro-level context, we conduct our study in the special context of China not only as an emerging economy but also a unique culture as compared to the West, thus from an “emic” perspective (Tsui, Wang, & Xin, 2006). In general, those cultures that value *personalized relationship* as the cultural norm (e.g., interpersonal harmony) have been framed as collectivists (Chen & Chen, 2009; Hempel, Zhang, & Tjosvold, 2009; Triandis, McCusker, & Hui, 1990). Scholars have evoked this *relational orientation* as an explanation for the Chinese preference for interpersonal harmony as well as their bias against interpersonal conflict (Tjosvold, Poon, & Yu, 2005; Xin & Pearce, 1996). Hence, the need for closure, the emphasis on harmony (Leung, Brew, Zhang, & Zhang, 2011), and the focus on avoiding any open face-to-face confrontation (Bond, Hewstone, Wan, & Chiu, 1985; Chen & Tjosvold, 2002) may make the typical forms of team conflict among the Chinese different from those in the West. Further, it is worth noting that China has been widely known for its lack of creativity

in the past, yet the country has been undertaking major steps to transform its model of economic development from that of “Made in China” to that of “Created in China” (Keane, 2006). It is interesting to learn about how creativity can be fostered in the context of modern China.

2. Theoretical background and hypotheses development

2.1. The link between transformational leadership and employee creativity

Employee creativity is central to the long-term survival of an organization because employee creativity generates novel and potentially useful ideas to create new, and/or improve existing, products, services, processes, and routines (Shalley, Gilson, & Blum, 2000). Nowadays, rather than confined to R&D staff, employee creativity has been extended to all employees who can directly or indirectly contribute with their novel ideas, so creative ideas may be generated by every employee in any position at any level of an organization. Previous studies have regarded creativity as a function of employee's personal traits and cognitive capabilities (e.g. Gong, Cheung, Wang, & Huang, 2012; Oldman & Cummings, 1996), but the more recent research has been shifting the priority toward the team level with a special focus on various contextual factors that may trigger or hinder employee creativity in a team context (e.g., Eisenbeiss et al., 2008; García-Morales et al., 2012; Shalley et al., 2004).

Transformational leadership is described as a style by which leaders inspire followers through vision with a sense of mission to broaden and elevate the interests of their followers by fostering the awareness and acceptance of the collective interests over the followers' own self-interests (Bass, 1985; Li, Bai, & Xi, 2012; Wang & Howell, 2010). Transformational leadership can influence employee creativity through each of its four facets (the four “I”s). *Idealized influence* characterizes the degree to which leaders are perceived as being an inspiring role model through their personal accomplishments, charismatic characteristics and exemplary behavior. This “I” has two forms: (1) the “idealized attributes” for leaders earn trust and respect, and (2) “idealized behaviors” for leaders to demonstrate how to sacrifice their own interests for advancing the interests of their team. *Inspiration motivation* depicts the extent to which leaders present an arousing vision that emphasizes the importance of tasks, promotes a strong sense of cohesion and collective purpose, and expresses higher expectations on followers. *Intellectual stimulation* entails encouraging followers to challenge existing assumptions, reframe problems and to approach old situations in new ways. New ideas and creative solutions are solicited from followers without fear of public criticism of individuals' mistakes. *Individualized consideration* refers to the extent to which leaders pay attention to and adapt their support to accommodate the unique needs of each follower.

Notably, prior studies fail to produce the consistent evidence for a relationship between transformational leadership and employee creativity. For example, Jaskyte (2004) found non-significant correlations between transformational leadership and innovative work, while Herrmann and Felfe (2013) reported the positive effect of transformational leadership on creativity. Even though meta-analyses studies (e.g., Hammond, Neff, Farr, Schwall, & Zhao, 2011; Kahai, Sosik, & Avolio, 2003; Rosing, Frese, & Bausch, 2011) showed the equivocal results for such a relationship, we adopt the position for a positive link based upon three major reasons. First, transformational leaders can identify and articulate a shared vision, which facilitates the development of novel ideas in pursuit of a shared vision. In an empirical study conducted by West and Anderson (1996), it was found that the clearer a team's goal was, the higher the level of employee creativity achieved. Second, transformational leaders provide the necessary intellectual stimulation (Chen, Li, & Tang, 2009), for example learning opportunities (Andriopoulos, 2001). They show their employees new approaches to investigating old problems, thus cultivating their followers' innovation capabilities and in turn increase the probability that creative solutions

emerge (Bass, 1990; Bass & Riggio, 2006; Herrmann & Felfe, 2013). Finally, inspirational motivation encourages team members to perceive the task as an exciting challenge instead of an unachievable threat so as to build the confidence in finding novel solutions.

2.2. A cross-level process model

Over the past few decades, various studies have reported the connection between transformational leadership and employee creativity, either the main or moderating effect or via individual-level psychological mechanisms. For instance, the studies of Wang and Rode (2010), and Pieterse et al. (2010) showed a significant and direct effect of transformational leadership on employee creativity. Meanwhile, other studies, such as Shin and Zhou (2003), found that an individual's intrinsic motivation mediated the relationship between transformational leadership and employee creativity. Chen et al. (2009) also manifested the similar mediator (intrinsic motivation) as the individual psychological mechanism. Gong et al. (2009) and Gumusluoglu and Ilsev (2009) found this positive influence was mediated by creative self-efficacy and psychological empowerment, respectively. These studies have provided valuable insights into the role of transformational leadership. However, we know little about the cross-level process of enhancing employee creativity by transformational leadership in a team context. Hence, as suggested by Mumford and Licuanan (2004), more studies are needed to further investigate how transformational leadership influences followers' creativity through diverse team-level processes.

To build a cross-level process model for the interlink between transformational leadership and employee creativity, we posit that two team-level process variables, i.e., team conflict and knowledge sharing, are among the most salient to creativity in a team context. *Team conflict*, as one essential variable that explains the cognitive and emotional interactions between team members, has aroused intensive attention and reaction in recent studies on employee creativity (e.g., De Dreu, 2006; Farh et al., 2010). Early conflict research treated conflict as a negative factor for team performance (e.g. Hackman & Morris, 1975). Yet Deutsch (1973) and Walton and Dutton (1969) suggested that low levels of conflict might be beneficial. Later, researchers started to recognize the positive influence of conflict. Jehn (1994, 1995, 1997) systematically differentiated task and relationship conflict. Examples of task conflict are the disagreements over the critical decisions related to resource distribution, task solution, performance evaluation, among others, and also those decision-making criteria and procedures, including subjective judgment and interpretation. Examples of relationship conflict are the disagreements over personal styles and tastes, political preferences, or moral values. Many scholars claim that task conflict can be beneficial to creativity because it increases group members' tendency to scrutinize task issues (Shalley, Zhou, & Oldham, 2004; Hülsheger, Anderson, & Salgado, 2009) from diverse perspectives and engage in a deep and deliberate processing of task-relevant information (De Dreu, 2006; De Dreu & West, 2001). However, unlike the consistent evidence on the negative impact of relationship conflict, findings on the relationship between task conflict and employee creativity are largely mixed, either positive (e.g. Kurtzberg & Mueller, 2005; Song, Dyer, & Thieme, 2006), reversed U-shaped (e.g., De Dreu, 2006; Farh et al., 2010), or non-significant (e.g., Hülsheger et al., 2009). Specifically, De Dreu and Weingart (2003) argued that task conflict would arouse work stress, psychosomatic complaints and feelings of burnout. De Wit, Greer and Jehn (2012) explained that the negative effects of task conflict on outcomes occur when people interpret challenges of their viewpoints by other group members as a negative assessment of their own abilities and competencies, and task conflict may also be a distraction of resources away from making direct their contributions to task performance. Finally, a more prevailing argument is the high correlation between task and relationship conflict. Although task conflict could provide different perspectives and information, when not

purposely managed, task conflict will trigger relationship conflict during debate or even quarrel among members (Bai, Han, & Harms, in press; Dijkstra, van Dierendonck, & Evers, 2005; Simons & Peterson, 2000). Hence, more research is called for to clarify the complex effect of conflict on creativity (De Dreu, 2008; Hülsheger et al., 2009).

In addition, *knowledge sharing*, which refers to the process of exchanging information, knowledge, and ideas, has become a critical variable for explaining cross-level processes (Birasnav, 2014; Lee, Gillespie, Mann, & Wearing, 2010). The primary advantage of knowledge sharing among team members is the expansion and enrichment of the collectively shared pool of available information, knowledge, and ideas at the team level. An access to such a pool enables teams to achieve not only the higher quantity of information, knowledge, and ideas, but also the higher quality in terms of diversity to stimulate and inspire creative solutions than those available to each individual alone. Dougherty Munir, and Subramaniam (2002) argued that creativity relies heavily on the sharing of knowledge, which facilitated creative solutions. Empirical report by Kamaşak and Bulutlar (2010) also showed that knowledge sharing had a significant and positive effect in innovation process. In this sense, knowledge sharing in a team context is an essential part of the process of organizational creativity and innovation (Carmeli, Gelbard, & Reiter-Palmon, 2013; Gilson, Lim, Luciano, & Choi, 2013).

Further, we posit that the above two process variables, i.e. team conflict and knowledge sharing, do not act as two parallel mediators between transformational leadership and employee creativity, but serve as two sequential mediators in tandem with each other. Specifically, the indirect effect of transformational leadership on employee creativity would be first mediated by team conflict (both task and relationship conflict), and then mediated by knowledge sharing later. In sum, we propose a set of three-path cross-level mediating mechanisms toward an integrative theoretical model (see Fig. 1 for details). The specific causal links among the key variables in the model will be explained in more detail next.

2.3. Transformational leadership and team conflict

In the review of Atwater and Bass (1994), transformational leaders are taken as in the position to manage team processes such as conflict. Even though the theory of transformational leadership has originated from the West (Bass, 1985; Bass & Avolio, 1994), it has drawn much attention from the Chinese scholars, due to the theory's special attention to interpersonal relationship (e.g., caring for employee's individual needs), and collective orientation (e.g., fostering team cooperation) (e.g., Bai, Li, & Xi, 2012; Felfe et al., 2008; Wang, Law, Hackett, Wang, & Chen, 2005). It seems reasonable to expect that team leaders' relationship-oriented transformational behaviors will be more effective in the Chinese society than in the West (Bai, Li, & Xi, 2012; Felfe, Yan, & Six, 2008). Within the Chinese relationship- and collectivism-oriented society, we argue that transformational leadership style is negatively related to task conflict due to several reasons. First, transformational leadership is well-known to transcend followers' own self-interests into organization's collective interest by communicating a shared vision to team members (Bass, 1985). A shared vision contributes by reducing the divergence of views and the accompanying conflict (Howell & Hall-Merenda, 1999). In this collective-oriented team climate fostered by transformational leadership, team members are likely to commit to maintaining a cooperative atmosphere and a positive affective tone; as a result, they might be afraid of task conflict (which may trigger relationship conflict) to break the team harmony and shared identity (De Dreu, 2008). Evidence also shows that Chinese usually prefer cooperation rather than competition to avoid conflict (Chan, Huang, & Ng, 2008; Fu et al., 2008). Second, the individualized consideration dimension of transformational leadership reveals the fact that such leaders are sensitive to their subordinates' needs (Cherulnik, Donley, Wiewel, & Miller, 2001). Chinese people have been considered collectivists

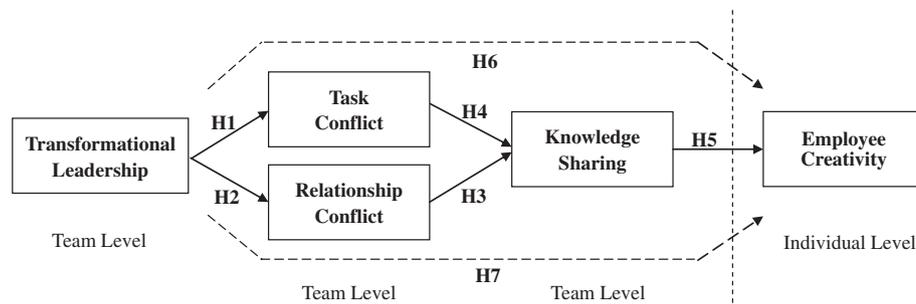


Fig. 1. A three-path cross-level mediating process model of transformational leadership to employee creativity.

who value interpersonal harmony, respect, and face-giving (Leung, 1997; Chen & Tjosvold, 2002). Since interpersonal conflict does not exist in the absence of emotions, and open conflict can often indicate disrespect and induce feelings of a loss of face (Bodtker & Jameson, 2001; Tse, Francis, & Walls, 1994), transformational leaders are aware of the possible consequences to each member from task conflict as accompanied by the negative emotions of anxiety, frustration, and disrespect (i.e., relationship conflict). In other words, transformational leaders in China tend to avoid task conflict so as to uphold team cohesion and individual's self-esteem. Third, transformational leaders often behave as examples for team members (Li et al., 2012; Podsakoff et al., 1990). The virtues of being altruistic and aware of others' emotional needs often flow from the team leaders to team members. By acting as the role models, transformational leaders show how followers can gain benefit from cooperating rather than sticking to rigid perspectives (i.e., inducing high level of task conflict). Hence, we expect the following as our first hypothesis:

H1. Transformational leadership is negatively related to task conflict.

We further argue that transformational leadership is also negatively related to relationship conflict by playing the role of reducing the intragroup emotional collision. Relationship conflict is concerned with the awareness of interpersonal or emotional incompatibilities (Doucet, Poitras, & Chênevert, 2009) among team members. A lack of effective conflict management toward interpersonal relationship can amplify tensions in a team and undermine the development of team climate and members' emotional bond with the team. Without effective leadership, team members are likely to pursue their own personal interests and goals. Individuals' weak commitment to a collective goal can lead to individual-centric behaviors at the expense of the goals of others (Zhang, Cao, & Tjosvold, 2011). Effective leadership, such as transformational leadership, establishes organizational trust within a team (Bai et al., 2012; Li et al., 2012). The enhanced organizational trust can reduce the second-guessing about other members' motives for disagreement, thus reduce the negative potential of turning task conflict into relationship conflict.

When a team is led by a transformational leader, followers are motivated to rely on the group's shared interests rather than self-interests. A high identification with the team enables the members to equate their own success with that of their team so as to commit to their shared goals (Boehm, Dwertmann, & Bruch, in press; Tse & Chiu, 2014). In this sense, the shared identification will largely reduce the occurrence of interpersonal or emotional incompatibilities in team interaction (Han & Harms, 2010). Moreover, transformational leaders also act as friendly mentors toward their subordinates (Sosik, Godshalk, & Yammarino, 2004). Members tend to identify with the leader and hence are likely to turn to their leader for personal advice. In addition, as indicated by Leung et al. (1996), the motivation to achieve harmony is naturally rooted in the Chinese cultural traditions. Finally, with the intention of avoiding conflict and their leader's coordination efforts,

employees can find it easier to forgive (Zhang, Cao, & Tjosvold, 2011). Hence, we expect the following as our second hypothesis:

H2. Transformational leadership is negatively related to relationship conflict.

2.4. Team conflict and knowledge sharing

As mentioned earlier, we posit that team conflict and knowledge sharing do not act as two parallel mediators between transformational leadership and employee creativity, but serve as two sequential mediators in tandem with each other. There are three reasons for this sequential order. The first reason is that we frame task conflict as the necessary input or source of new knowledge that must be initially created or generated before being shared later, and we also frame relationship conflict as the required precondition for knowledge sharing. In this sense, we regard knowledge sharing as the output or outcome of team conflict. Second, while transformational leadership can shape both team conflict and knowledge sharing, we argue that team conflict requires a more direct managerial influence than knowledge sharing. Third, as both team conflict and knowledge sharing shape employee creativity, we posit that knowledge sharing directly shapes employee creativity, while team conflict indirectly affects employee creativity. Due to the above reasons, we propose the order from team conflict to knowledge sharing, rather than the other way around.

Specifically, we expect a negative association between relationship conflict and knowledge sharing. It has been argued that interpersonal relationships are key to team performance (Sunder, 1987; Zaheer, McEvily, & Perrone, 1998). In particular, unfriendly relationships obstruct knowledge creation and transfer (Abrams, Cross, Lesser, & Levin, 2003; Hansen, 1999; Levin & Cross, 2004; Levin, Whitener, & Cross, 2006). Relationship conflict tends to focus on interpersonal disputes and often leads to cynicism, dislike, distrust, hostility, and other unpleasant emotions (Panteli & Sockalingam, 2005). Building upon prior research, we argue that relationship conflict acts as a major barrier to knowledge sharing behavior. In particular, relationship conflict damages exchange ties, diminishes trust and weakens relationships among team members, which results in a lower degree of willingness to openly communicate, knowledge share and learn (Langfred, 2007). Moreover, Jehn and Chatman (2000) suggested that, when distracted by personal events, employees will spend more time dealing with relationship conflict, thus creating a vicious cycle. Such processes erode the scarce time and energy that should be spent on key task-specific activities (e.g., exchange of knowledge). Hence, we expect the following as our third hypothesis:

H3. Relationship conflict is negatively related to team knowledge sharing.

Task conflict describes disagreements over the critical decisions related to resource distribution, task solution, performance evaluation,

among others, and also those decision-making criteria and procedures, including subjective judgment and interpretation (De Dreu, 2006). Although scholars argue that task conflict could contribute to team performance since team members can provide more information and perspectives during team discussion, evidences show that, when task conflict is not well managed, it often brings negative effects (Bai et al., in press; De Dreu, 2008; De Dreu & Weingart, 2003; De Wit, Greer, & Jehn, 2012; Simons & Peterson, 2000). In their meta-analysis, De Dreu and Weingart (2003) found that task conflict was generally harmful to team process and team performance. They gave the explanation that task conflict would arouse work stress, psychosomatic complaints and feelings of burnout. These negative emotions would reduce the level of energy that is needed to perform cognitive tasks associated with information sharing and learning (LePine, LePine, & Jackson, 2004), and make it difficult for members to focus their available cognitive resources on solving problems (Cohen, 1980). In addition, De Wit et al.'s (2012) meta-analysis found that task conflict would significantly reduce team trust, team commitment and identification, and they explained that people often interpret the challenges to their viewpoints by other group members as a negative assessment of their own abilities and competencies, which will lead to hostility and confrontation, so members would put more time and attention on fighting back rather than sharing and accepting knowledge. Further, scholars also witness the high correlation of task and relationship conflict. Simons and Peterson (2000) summarized that almost all studies including task and relationship conflict would report significant positive correlations between the two (with the mean correlation at 0.47). It is obvious that task conflict tends to increase the risk of relationship conflict among members (Bai et al., in press; Dijkstra, Van Dierendonck, & Evers, 2005; Simons & Peterson, 2000). Largely due to the negative effect of relationship conflict on knowledge sharing, task conflict would also be destructive to knowledge sharing given the co-occurrence of the two types of team conflict. Hence, we expect the following as our fourth hypothesis:

H4. Task conflict is negatively related to team knowledge sharing.

2.5. Theoretical background and hypotheses development

Creative solutions require a more comprehensive exchange of diverse ideas among team members (Ipe, 2003). From one perspective, some scholars argue that creativity should be framed as a complex and dynamic process to involve various task-related and social exchanges in a team context, instead of simply being imposed upon employees by top management (Unsworth, 2001; Woodman, Sawyer, & Griffin, 1993). In this sense, knowledge sharing is highly salient and imperative to employee creativity in a team context due to the fact that knowledge sharing can provide the necessary means for employees to acquire useful information, knowledge and ideas held by other team members. In fact, creativity is often achieved by combining team members' diverse information, knowledge and ideas. This process is referred to as "knowledge integration" (Dahlin, Weingart, & Hinds, 2005; Du Plessis, 2007). At the same time, sharing knowledge can also diminish the probability of "reinventing the wheel", thus more efficiently exploiting existing knowledge by avoiding redundant activities (Dahlin et al., 2005; Du Plessis, 2007). Hence, we expect the following as our fifth hypothesis:

H5. Knowledge sharing is positively related to employee creativity.

2.6. A three-path cross-level mediating process

A team led by a transformational leader is reported to be a collective climate for innovation (Gumusluoglu & Ilsev, 2009), because transformational leaders, "through their actions and behaviors, contribute to the substance of an organization's culture" (Tsui, Wang, & Xin, 2006,

p. 115). Meanwhile, positive team climate helps enhance employees' identification with the shared team values. Emphasizing cooperative goals (Zhang, Cao, & Tjosvold, 2011), transformational leaders target at reducing harmful emotional factors in the team. Since relationship conflict is generally taken as one of detrimental factors for team process, it involves negative emotions and threatens one's personal identification and feeling of self-worth (Pelled, 1996), and in turn weakens individual commitment to a team. Conversely, the less relationship conflict that employees experience, the less reduction of team identification and commitment they share. By providing individualized support, transformational leaders also pay close attention to each member's special needs and offer individualized feedbacks (Bass, 1985). In these circumstances, transformational leaders stress the importance of communication among team members and advocate the shared identity in the team as a whole. Moreover, transformational leaders emphasize the organization's interests over the individual's own interests, and encourage higher commitment to the team. They are the leaders who may resolve relationship conflict between subordinates in order to create greater harmony within the team. In a harmonious climate, the team members feel team support, so they are willing to share their information, knowledge and ideas with other team members. In general, with the above team-building efforts, transformational leaders can directly reduce relationship conflict, thus providing the conducive context for knowledge sharing in an indirect manner, which will ultimately enhance employee creativity. Hence, the three-path process becomes our sixth hypothesis:

H6. Relationship conflict and knowledge sharing mediate the relationship between transformational leadership and employee creativity.

As we argued earlier, transformational leaders in Chinese context tend to reduce task conflict. By providing collective identification and being sensitive to members' emotional needs, transformational leaders help reduce the negative effect of task conflict (Eisenbeiss, Van Knippenberg, & Boerner, 2008). Specifically, Hüttermann and Boerner (2011) argued that team members' high dependency on their leader could reduce their tendency of expressing opinions and criticizing others' ideas, which result in a lower level of task conflict. In addition, Chinese share the tendency to avoid conflict for team harmony. As a result, transformational leaders in China put effort in reducing the level of task conflict. By reducing task conflict, transformational leadership reduces the emotional loss in team process so as to enhance the willingness to share knowledge and information among members. This helps formulate a climate of team learning and sharing, which often inspires thoughtful consideration of criticism and results in the creation of alternative or innovative solutions (Janis, 1982). The influential procedure presents as a three-path mediation process. Hence, we expect the following as our seventh and last hypothesis:

H7. Task conflict and knowledge sharing mediate the relationship between transformational leadership and employee creativity.

3. Method

3.1. Sample and data

We collected data from 196 part-time EMBA students enrolled in a business school in China as well as their direct subordinates. Each team consisted of one EMBA student and six of his/her subordinates. These teams were from different companies. The survey for supervisors asked the EMBA students to evaluate the creativity of their subordinates. The survey for subordinates asked them to report the supervisor's transformational leadership, team task and relationship conflict, and knowledge sharing among team members. All respondents were assured of confidentiality. The completed questionnaires were mailed directly and independently to the researchers. Hence, we had two

data sources from both supervisors and subordinates so as to avoid the bias of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In total, we had a usable sample of 349 subordinates and 78 supervisors paired data (the average team size was 4.47 and the response rate was 39.8%). The average age of the subordinates was 33.42 (SD = 7.03); the average tenure was 8.81 (SD = 6.73); about 65% were males. For the supervisors, the average age was 40.15 (SD = 5.49); the average tenure was 12.74 (SD = 7.63), and 84.6% were males.

3.2. Measurement

All items were rated on 7-point scales ranging from “strongly disagree” (as 1) to “strongly agree” (as 7). Transformational leadership was measured with the 23-item scale from Podsakoff et al. (1990). Sample items were “my leader has a clear understanding of where we are going” and “my leader gets the group to work together for the same goal”. The Cronbach's alpha was 0.92. Jehn's (1995) 8-item team conflict was used to evaluate the degrees of task conflict and relationship conflict. Sample items were “there are frequent disagreements about the task we are working on in my work group” for task conflict and “muchanger is present in my work group” for relationship conflict. The Cronbach's alphas for task conflict and relationship conflict were 0.88 and 0.95, respectively. Faraj and Sproull's (2000) 4-item scale was used to measure the extent of knowledge shared by team members. Sample item was “people in our team share their special knowledge and expertise with each other”. Farmer et al. (2003) 4-item scale was used to assess the individual creativity. Sample items were “this employee tries new ideas or methods first” and “this employee generates ground-breaking ideas related to the field”. The Cronbach's alphas were 0.93 and 0.97, respectively.

3.3. Data analytic strategy

The hypothesized model was hierarchical by nature, with the dependent variables individual-level construct and the predictor and mediators as team-level constructs. The data structure was also hierarchical in nature with employees nested within teams. We therefore conducted multilevel structural equation modeling (M-SEM) which explicitly takes into account this cross-level data structure as well as the information richness of the multiple-item constructs. To reduce the model complexity, for transformational leadership, we treated its dimensions as indicators (Wang et al., 2005). Before the simplification of transformational leadership, a CFA analysis for the second-order transformational leadership construct with 23 items loaded to respective dimensions was conducted, and the results supported its dimensional structure ($\chi^2 = 469.21$, $df = 224$; RMSEA = 0.08; CFI = 0.93; IFI = 0.93), thus, we are confident to simplify the construct of transformational leadership. We tested mediation by inspecting statistical significance of structural coefficients making up a meditational pathway (Kenny, Kashy, & Bolger, 1998).

Table 1
Results of the multilevel confirmatory factor analyses^a.

Model	Factors	χ^2	df	$\Delta\chi^2$	RMSEA	CFI	IFI
Baseline model (5-factor model)	TFL, task and relationship conflict, & knowledge sharing at team level, and creativity at individual level	384.46	201		.051	.96	.96
RM1	Combine TFL and task conflict	615.47	205	231.01(4)*	.076	.90	.90
RM2	Combine TFL and relationship conflict	739.27	205	354.81(4)*	.086	.86	.86
RM3	Combine task and relationship conflict	534.67	205	150.21(4)*	.068	.92	.92
RM4	Combine TFL and knowledge sharing	588.49	205	204.03(4)*	.073	.91	.91
RM5	Combine task conflict and knowledge sharing	642.41	205	257.95(4)*	.078	.89	.89
RM6	Combine relationship conflict and knowledge sharing	723.59	205	339.13(4)*	.085	.87	.87
RM7	Combine all four team-level variables	1116.94	210	732.48(9)*	.111	.75	.75

^a $N_{level1} = 349$, $N_{level2} = 78$. TFL for transformational leadership.

* $p < 0.05$.

3.4. Analyses of measurement model

Table 1 presented the results of the multilevel CFA of all the variables. The fit statistics indicated that the baseline model with the five factors (transformational leadership, task conflict, relationship conflict, and knowledge sharing at team level, and creativity at individual level) had a good model fit ($\chi^2 = 384.46$, $df = 201$; RMSEA = 0.051; CFI = 0.96; IFI = 0.96). In addition, all of the items loaded significantly onto their respective factors. As shown in Table 1, all alternative rival models had worse fits than our baseline model, indicating that the six factors were distinct constructs. A summary of the descriptive statistics and correlations among all the level-1 and level-2 variables was presented in Table 2.

3.5. Aggregation of team-level variables

The next step was to check the viability of the team-level variables, including transformational leadership, task conflict, relationship conflict, and knowledge sharing. We computed r_{wg} values using uniform null distribution for these variables and obtained median values of 0.85 for transformational leadership, 0.89 for task conflict, 0.90 for relationship conflict, and 0.86 for knowledge sharing. These r_{wg} values were above the conventionally acceptable r_{wg} value of 0.70 (James, Demaree, & Wolf, 1993). Additional evidence was collected following the suggestions of Bliese (2000). We first conducted one-way analysis of variance and found between-groups variance for all four variables significant at 0.001 level. We then obtained the following values of the inter-rater reliability index (ICC1) and the reliability of group mean index (ICC2): for transformational leadership, ICC1 = 0.45 and ICC2 = 0.79; for task conflict, ICC1 = 0.41 and ICC2 = 0.76; for relationship conflict, ICC1 = 0.49 and ICC2 = 0.81; for knowledge sharing, ICC1 = 0.40 and ICC2 = 0.75. All of these values were comparable to the median or recommended ICC values of team-level constructs reported in the literature (Schneider, et al., 1998). On the basis of these results, we concluded that aggregation was justified.

3.6. Hypotheses testing

Before examining parameter estimates to test hypotheses, we sought for the best-fitting structural model among a set of structural models. The model comparison procedure was common in studies using SEM technique to choose the final model for hypothesis testing (Anderson & Gerbing, 1988; Mayer & Gavin, 2005; Wang et al., 2005). First we chose the full mediation model (transformational leadership → two types of conflict → knowledge sharing → employee creativity) as our baseline model and compared it with partial mediation model (adding the direct links from transformational leadership to knowledge sharing and creativity and the direct links from team conflict to creativity to the baseline model) and the non-mediation model (reducing the mediating links from transformational leadership to team conflict and from team conflict to knowledge sharing from the baseline model) (Atwater & Carmeli, 2009; Kelloway, 1998). The results in Table 3 showed that the partial

Table 2
Means, standard deviations and correlations of the variables^a.

Variable	Mean	SD	1	2	3	4	5	6	7
<i>Individual level</i>									
1 Employee age	33.42	7.03							
2 Employee gender	0.35	0.48	−0.24*						
3 Employee tenure	8.81	6.73	0.68*	−0.13*					
4 Employee creativity	4.99	1.37	−0.07	−0.06	−0.03	(0.97)			
<i>Team level</i>									
1 Supervisor age	40.15	5.49							
2 Supervisor gender	0.15	0.36	−0.25*						
3 Supervisor tenure	12.74	7.63	0.47*	−0.09					
4 Transformational leadership	5.64	0.66	−0.02	0.03	−0.22	(0.92)			
5 Task conflict	2.89	0.79	−0.02	−0.01	0.05	−0.23*	(0.88)		
6 Relationship conflict	2.09	0.82	−0.15	−0.02	0.06	−0.50*	0.56*	(0.95)	
7 Knowledge sharing	5.41	0.91	−0.11	0.14	−0.20	0.62*	−0.12	−0.47*	(0.93)

^a N_{level1} = 349, N_{level2} = 78. Numbers in parentheses on the diagonal are Cronbach's alphas of the scales.

* p < 0.05.

mediation model ($\chi^2 = 383.45, df = 201; RMSEA = 0.051; CFI = 0.96; IFI = 0.96$) fitted the data better than the full-mediation model ($\chi^2 = 429.41, df = 205; RMSEA = 0.056; CFI = 0.95; IFI = 0.95$) with a significant chi-square reduction ($\Delta\chi^2(4) = -45.96, p < 0.05$), while non-mediation model ($\chi^2 = 468.24, df = 204; RMSEA = 0.061; CFI = 0.94; IFI = 0.94$) was worse than the baseline model ($\Delta\chi^2(1) = 38.83, p < 0.05$). We also conducted a possible rival model changing the causal sequence of conflict and knowledge sharing in baseline model, while it also yielded a worse model fit ($\chi^2 = 435.90, df = 205; RMSEA = 0.057; CFI = 0.95; IFI = 0.95, \Delta\chi^2 = 6.49$). Thus, among the models, the partial mediation model had the best model fit by comparison and was chosen as the final model to test our hypotheses. The path coefficients were shown in Fig. 2.

H1 and H2 argued that transformational leadership was negatively related to both task and relationship conflict. As shown in Fig. 2, the effects of transformational leadership on task conflict and relationship conflict were both negative (β s = −0.33 and −0.45, respectively, $ps < 0.05$), which supported H1 and H2. H3 and H4 predicted the negative associations of relationship and task conflict with knowledge sharing. Fig. 2 showed that relationship conflict was negatively ($\beta = -0.19, p < 0.05$), while, task conflict was positively ($\beta = 0.23, p < 0.05$) related to knowledge sharing. Thus, H3H3 was supported, while H4 was not H5 predicted that knowledge sharing would have positive relationship with employee creativity. The result in Fig. 2 confirmed the positive relationship with a significant impact of knowledge sharing on creativity ($\beta = 0.39, p < 0.05$).

For the three-path mediation hypotheses of H6 and H7, first, during our model comparisons, we rejected the non-mediation model and the full-mediation model, finally the results supported a partially mediation model. In addition, all the coefficients of the mediating links were

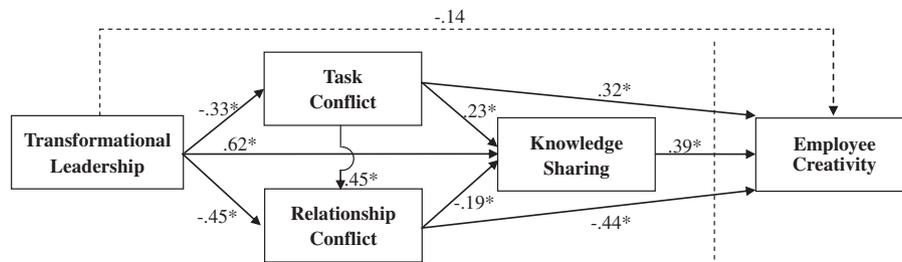
significant in Fig. 2. Thus, the model comparison results supported the mediating roles of team conflict and knowledge sharing between transformational leadership and employee creativity. Second, we followed Baron and Kenny's (1986) mediation test procedure. Baron and Kenny suggested a mediation test procedure with four steps: (1) independent variable (X) should be significantly related to dependent variable (Y); (2) independent variable (X) should be significantly related to mediators (M); (3) mediators (M) should be significantly related to dependent variable (Y); (4) after mediators (M) are controlled for, the relationship between X and Y should be weakened. We conducted another multilevel SEM model only with transformational leadership and creativity included to test the first step ($\chi^2 = 96.43, df = 36; RMSEA = 0.069; CFI = 0.98; IFI = 0.98$). The results showed that transformational leadership was significantly related to employee creativity when not controlling for team conflict and knowledge sharing ($\beta = 0.32, p < 0.05$), satisfying the first step. We have proved that transformational leadership was significantly related to team conflict and team conflict was significantly related to knowledge sharing, as well as the significant relationship between knowledge sharing and employee creativity in Fig. 2, satisfying the second and third steps. When both X and M were introduced in Fig. 2 to influence Y, the relationship between transformational leadership and creativity became insignificant ($\beta = -0.14, p > 0.1$ in Fig. 2), satisfying the fourth step. Hence, H6 and H7 were supported. A third method to test the mediation is by the recent Hayes and Preacher (2010) bootstrapping approach. Hayes and Preacher (2010) introduced the bootstrapping approach for estimation of indirect effects in multi-step mediation. The bootstrapping approach was superior to other mediation testing methods as it doesn't need the assumption of a normally distributed sampling distribution for the indirect effect and could calculate the significance and effect

Table 3
Comparisons of structural models^a.

Models	χ^2	df	$\Delta\chi^2(df)$	RMSEA	CFI	IFI
Full mediation model: TFL → task & relationship conflicts → knowledge sharing → employee creativity	429.41	205		.056	.95	.95
Partial mediation model (Fig. 2): TFL → task & relationship conflicts → knowledge sharing → employee creativity + TFL → knowledge sharing & employee creativity + task & relationship conflicts → employee creativity	383.45	201	−45.96*(4)	.051	.96	.96
Non-mediated model: TFL, task & relationship conflicts, and knowledge sharing → employee creativity	468.24	204	38.83*(1)	.061	.94	.94
Rival model: TFL → knowledge sharing → task & relationship conflicts → employee creativity	435.90	205	6.49	.057	.95	.95

^a N_{level1} = 349, N_{level2} = 78. TFL for transformational leadership.

* p < 0.05.



a $N_{level1}=349$; $N_{level2}=78$. Transformational leadership, task and relationship conflict, and knowledge sharing are at team level; employee creativity is at individual level. * $p < 0.05$.

Fig. 2. Results of hypothesized model^a a $N_{level1} = 349$; $N_{level2} = 78$. Transformational leadership, task and relationship conflict, and knowledge sharing are at team level; employee creativity is at individual level. * $p < 0.05$.

size of the indirect effect (Hayes and Preacher, 2010). The bootstrapping results (bootstrapping = 1000) showed that the indirect effect of transformational leadership on creativity through team conflict and knowledge sharing was significant ($z = 0.31$, the confidence interval was [0.18, 0.47]). The results of bootstrapping approach not only provided more evidence for the mediation H6 and H7, but also showed a significant and positive, but indirect, effect of transformational leadership on employee creativity.

4. Discussion

4.1. Theoretical implications

This study bears several theoretical implications. The first and biggest theoretical contribution is the proposed new process model where transformational leadership enhances employee creativity via the team-level mechanisms of team conflict and knowledge sharing. Beyond replicating the previous empirical studies on the positive effect of transformational leadership on employee creativity (e.g., Eisenbeiss et al. 2008; Gumusluoglu & Ilsev, 2009), our study has further opened the black box of leadership-creativity link by evoking team conflict and knowledge sharing as two core team-level mechanisms in a cross-level process within a team context. Our findings suggest the future research direction of incorporating more team-level variables, such as team cohesiveness, team trust, team potency, team morale, among others, to further contextualize the research on the leadership-creativity link in particular and employee creativity in general.

Second, in our cross-level process model, team conflict and knowledge sharing (as two salient cross-level mechanisms) mediate the link between transformational leadership and employee creativity, in a sequential order from team conflict to knowledge sharing. Methodologically, our research model represents a cross-level mediation method to describe multiple cross-level processes. The multi-level research method design closely responds to the need for additional multi-level studies in the areas of leadership and creativity. Theoretically, the two team-level process variables do not act as parallel, but sequential, mediators. Our model not only depicts a more precise cross-level process from transformational leadership to employee creativity, but also serves as a reminder of the possibility of a multi-path mediation process beyond a parallel mediation process for future research on leadership and creativity.

Third, we have found that transformational leadership has a negative effect on both task conflict and relationship conflict in the Chinese context. One possible explanation of this result is the special context of Chinese cultural traditions. Under the relationship-oriented (*guanxi*) social value of interpersonal harmony, the Chinese people would avoid conflict, rather than openly debate with, team members. It is reasonable to assume that in the Chinese society, people tend to avoid any open task conflict in the form of face-to-face confrontation (Bond, Hewstone, Wan, & Chiu, 1985; Chen & Tjosvold, 2002; Tjosvold,

Law, & Sun., 2006). However, this does not suggest that the Chinese team members do not have diverse opinions or disagreements over task-related issues; it only means that the Chinese do not want to openly debate over any issues in the form of face-to-face confrontation. We have also found that task conflict has both positive (directly) and negative (indirectly through relationship conflict) effects on knowledge sharing, which is contrary to our negative hypothesis. It seems that the constructive function of task conflict should not be neglected. A possible explanation based on our finding is that task conflict, as its complex nature, could provide some cognitive benefits to team process (the direct effect to knowledge sharing). Task conflict describes disagreements over the critical decisions related to resource distribution, task solution, performance evaluation, among others, and also those decision-making criteria and procedures, including subjective judgment and interpretation (De Dreu, 2006). When there exist contradictory views about tasks, team members can spontaneously provide more information or knowledge to support their own opinions and persuade other members. Substantially, members gain useful knowledge from each other. Hence, the scope of shared cognitive information can be enlarged in the process of task conflict. However, at the same time, task conflict could trigger relationship (often emotional) conflict, which would also be detrimental to the willingness to share knowledge because dislike, frustration, and disharmony happen among team members (De Dreu, 2008; Simons & Peterson, 2000). Due to the strong association with relationship conflict, the positive effect of task conflict can be greatly reduced by relationship conflict (shown by the total correlation of task conflict and knowledge sharing in Table 2 as non-significant, $r = -0.12$, $p > 0.1$). Hence, it is critical to remedy the connection between task conflict and relationship conflict (Bai et al., in press; Simons & Peterson, 2000).

4.2. Practical implications

The findings of this study also contribute to managerial practices. While earlier research has shown the positive effects of transformational leadership on employee behavior, such as organizational citizenship behavior and knowledge sharing (Carmeli, Atwater, & Levi, 2011), our study is unique in terms of further demonstrating the new critical role of transformational leadership in enhancing individual creativity in a team context. It may be of particular importance to have transformational leaders in work teams where the followers are typically highly competent and independent. In these cases, the leaders need to be more actively involved, but in a more hands-off manner.

Our study also supports previous research showing that knowledge sharing can facilitate creative performance (Carmeli, Gelbard, & Reiter-Palmon, 2013). Though education and technology training can facilitate knowledge sharing and individual creativity, other factors that directly or indirectly relate to HRM may be important factors for individual creativity. For instance, knowledge sharing can be added as one dimension of employee evaluation system. In this way, the evaluation system is not

only a supervising device, but it is also a means of motivating employees. Even when employees formulate contrary opinions, they may still be willing to exchange their knowledge and ideas, because they believe knowledge sharing is important to team development and team performance.

Notably, in this study, a leader's behavior does play a critical role in facilitating knowledge sharing and individual creativity. Selecting and delegating the leader of a team, and especially knowledge-intensive teams, becomes an essential part of HRM practice. Selection methods should include evaluating attitudes and past behaviors as regards conflict management and knowledge management tactics.

Finally, our empirical results show that transformational leaders could reduce both task conflict and relationship conflict. However, task conflict in general could be beneficial to knowledge sharing in a team context, if its association with relationship conflict is properly managed. In this sense, transformational leaders need to purposely initiate manageable, task-related debates to offer a climate conducive to knowledge sharing, while at the same time trying their best to avoid relationship conflict. Well-designed transformational leadership programs should be developed, to train leaders how to engage in appropriate behaviors. Our findings highlight the importance of helping transformational leaders distinguish between task conflict and relationship conflict. In particular, one insight from this study is that transformational leadership can potentially reduce the task conflict, yet task conflict is evidenced to be beneficial to employee creativity. Hence, this finding suggests that managers should not only adjust the way they lead and work with their Chinese employees, but also adopt proper task conflict management techniques. For that purpose, it may be necessary to integrate the special transformational leadership training into the general management training programs. This is especially true in the Chinese context, where traditional culture values harmony more than conflict.

4.3. Limitations and future research directions

Our study is not without its own share of limitations. First, we only focused on transformational leadership as the sole antecedent. Further studies should incorporate other leadership behaviors, such as transactional leadership or empowering leadership. Second, the cross-sectional design of our research is also a limitation. Even though prior conceptual and empirical studies support our findings that task conflict has a positive impact on knowledge sharing, which in turn leads to higher-level employee innovativeness, future research still needs to adopt a longitudinal design to further examine the three-path cross-level mediating process. Third, we only had the sample from China. On one hand, the unique sample will make a significant contribution to our understanding of the cross-level process between leadership and creativity in the Chinese context. On the other hand, as we argued earlier, the Chinese have different viewpoints about conflict in contrast to those in the West, so the findings could be different in the Western context. Hence, replication studies should be conducted in diverse cultural contexts to determine the accuracy of our findings in generalizable terms. Fourth, this study focused on the team-level mechanisms of team conflict and knowledge sharing as three-path mediating variables for the purpose of closing a research gap, we did not include individual-level mechanisms in our study to compare against the team-level ones. Future empirical investigations should incorporate both team-level and individual-level variables (e.g., intrinsic motivation and self-efficacy) so as to compare the roles of individual-level and team-level variables. Fifth, we measured the output of employee creativity with a qualitative scale, rather than that of quantitative creative performance. Herrmann and Felfe (2014) suggested that the role of leadership for follower creativity depends on the measure of creativity output. We encourage future creativity studies could include both measures to see if they have high correlation. Finally, there may be some other contextual variables that could act as moderators and mediators. For instance, the meta-

analysis by Burke et al. (2006) showed that leadership is more salient to team performance when task interdependence is higher. In this sense, other team or even organizational-level variables, such as team trust, reward systems, and task interdependency, should be incorporated into an expanded model as additional mediators or moderators.

5. Conclusion

In this study, we unveil a critical part of the complex intra-group process where transformational leadership manages conflict, facilitates knowledge sharing, and finally enhances individual creativity in a team context. Our research fills the existing gaps in literature by unfolding a cross-level process with cross-level mechanisms (e.g., team conflict and knowledge sharing) as a new perspective to understand individual creativity in a team context. Further, this perspective enjoys the unique advantage of understanding the cultural differences in conflict style and conflict management. In a context where the cultural traditions value social harmony (e.g., the Chinese context), conflict management may require different approaches in contrast to the other context where conflict is more accepted. Accordingly, future research should move toward a greater emphasis on cross-level processes and cultural differences in organizational behaviors, especially in a team context.

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