Transformational-Transactional Leadership and Work Outcomes:
An Organizational Justice and Cultural Perspective

by

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Abstract

Leadership involves a process whereby leaders inspire followers and motivate them to accomplish goals. This dissertation investigates the processes and boundary conditions of effective transformational-transactional leadership by integrating multiple theories, namely, published literature related to transformational-transactional leadership, cultural value orientations, organizational justice, and organizational change. Specifically, this study investigates how and when cultural value orientations influence followers' reactions to transformational-transactional leaders and whether organizational justice explains such leaders' effectiveness (at both the team and individual levels) during times of organizational change. This research provides empirical support for the contention that transformational-transactional contingent reward leaders are universal. More importantly, this research indicates that, from the cross-level of analysis, organizational justice fully or partially mediated the relationship between transformational-transactional contingent reward leadership and work outcomes, and that perceived change frequency moderated the transformational leadership—task performance relationship. These findings shed light on the underlying process and boundary conditions for effective leadership.

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List of Abbreviations

TFL	Transformational Leadership
CR	Transactional Contingent Reward Leadership
DJ	Distributive Justice
PJ	Procedural Justice
IJ	Interactional Justice
PCI	Perceived Change Impact
PCF	Perceived Change Frequency
PWD	Power Distance
TRA	Traditionality
TMP	Team Performance
OC	Organizational Commitment
TKP	Task Performance
RCM	Random Coefficient Modeling

CHAPTER 1

INTRODUCTION

Leadership is a subject that has long excited researchers and practitioners. Although leadership has been defined in many different ways, most definitions share the assumption that it involves a process whereby leaders' intentional influence is exerted over their followers to guide, structure, and facilitate activities and relationships within a team or organization (Yukl, 2007). Leadership has elicited enormous research efforts seeking to explain its process of inspiring followers and motivating them to accomplish goals. Researchers have intensively studied leadership through trait (e.g., Judge, Bono, Ilies, & Gerhardt, 2002; Stogdill, 1974), power (e.g., Mintzberg, 1983; Podsakoff & Schriesheim, 1985), and situational (e.g., Fiedler, 1967; Yukl, 2007) approaches with findings that have been encouraging and have practical implications for improving leadership effectiveness. Bass' (1985) theory of transformational-transactional leadership represents one research area that has dominated current thinking regarding leadership research for over two decades (Dvir, Eden, Avolio, & Shamir, 2002; Judge & Piccolo, 2004).

Transformational leaders exert influence by sharing a compelling vision with followers, encouraging them to perform beyond expectations, and inspiring them to accomplish challenging goals (Bass, 1985). Transactional leaders, on the other hand, set goals, clarify followers' responsibilities, recognize task requirements for reaching desired outcomes, and exchange rewards for accomplishments (Bass, 1985). A substantial body of research has found transformational-transactional leadership to be consistently linked with work outcomes both at the individual level (i.e., follower organizational commitment, task performance, organizational

citizenship behavior) and at the team level (i.e., leader effectiveness and team performance; Bass, 1990; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996).

However, many questions remain unanswered with regard to Bass' leadership theory (Avolio, Walumbwa, & Weber, 2009; Yukl, 2007). This study focuses on four of these questions. Moreover, a growing body of literature questions the transportability of organizational theories from one society to another (Tsui, Nifadkar, & Ou, 2007). This study takes place in China and assesses whether organizational theory-based predictions established in the western society hold up in China, an eastern society.

The first question is, what is the mechanism by which transformational-transactional leaders influence work outcomes at the team level (i.e., team performance) and at the individual level (i.e., follower work-related attitudes and job performance)? Some scholars have suggested integrating the organizational justice literature with transformational-transactional leadership, because the fair exchange between leader and follower is the primary determinant of employee behavior (Li & Cropanzano, 2009; Wayne, Shore, & Liden, 1997). Moreover, others have argued that, from a social exchange perspective, organizational justice represents an important aspect of the leader-follower relationship where the leader and the follower are bound together (Graen & Uhl-Bien, 1995; Ilies, Nahrgang, & Morgeson, 2007; Masterson, Lewis, Goldman, & Taylor, 2000; Scandura, 1999; Wayne, Shore, Bommer, & Tetrick, 2002; Yukl, 2007). Organizational justice refers to the fairness of rewards (distributive justice), decision making procedures (procedural justice), and interpersonal treatment (interactional justice) between leader and follower (Cropanzano & Schminke, 2001; Tyler & Bies, 1990). In response to calls for research to investigate, in a comprehensive way, the mechanism by which leadership behaviors lead to work outcomes (Bass, 1999; Bono & Judge, 2003; Podsakoff, Bommer, Podsakoff, &

MacKenzie, 2006; Walumbwa, Wu, & Orwa, 2008; Yukl, 2007), this study investigates whether, from a social exchange perspective, organizational justice explains the process by which transformational-transactional leadership influences work outcomes at both the team and individual levels.

Second, what role do cultural value orientations play in how followers react to transformational-transactional leadership? Given the globalization of business and changes in workforce demographics, leaders are increasingly managing followers with different cultural value orientations. Cultural values are defined as a consciously and subconsciously held set of norms and beliefs that distinguish the members of one group from another (Adler, 2002; Hofstede, 2001). Recent reviews of the cross-cultural management literature (Gelfand, Erez, & Aycan, 2007; Tsui et al., 2007) indicate that cultural values influence the functioning of organizations in a systematic way, such that the cultural factors influence how people perceive, process, and interpret information, and consequently react to the information. In the leadership domain, cultural value orientations, as contextual factors, can (a) shape beliefs about characteristics of effective leadership (e.g., Javidan, Dorfman, de Luque, & House, 2006; Walumbwa & Lawler, 2003), (b) affect perceptions of organizational justice (e.g., Lee, Pillutra, & Law, 2000), and (c) consequently influence behaviors (e.g., Spreitzer, Perttula, & Xin, 2005; Walumbwa, Lawler, & Avolio, 2007).

However, much of the existing research on cultural value orientations has narrowly focused on individualism/collectivism (Gelfand et al., 2007), and lacks country-specific variables (Tsui et al., 2007). Thus, this study examines the role of power distance and traditionality in the relationship between transformational-transactional leadership and organizational justice. Power distance refers to the extent to which followers accept the fact that power is distributed unequally

and that an unequal distribution of power is the proper or acceptable way to maintain social order (Hofstede, 1983a; 2001). Traditionality refers to "the typical pattern of more or less related motivational, evaluative, attitudinal and temperamental traits that is most frequently observed in people in traditional Chinese society and can still be found in people in contemporary Chinese society" (Yang, 2003, p. 265). Power distance and traditionality are included in the study because power distance may be most relevant when examining the role of justice perceptions (Brockner et al., 2001; Lee et al., 2000), and traditionality may best capture individual diversity in cultural values in a traditional eastern society such as China (Farh, Hackett, & Liang, 2007; Hui, Lee, & Rousseau, 2004).

Third, what type of leadership is effective and what role does that type of leadership play during times of organizational change? By and large, there is a consensus that organizations have been increasingly facing competitive pressures caused by deregulation, technology development, and globalization (Burke, 2002; Burns, 2005; Huy, 2002). As a result, organizations actively or reactively pursue continuous adaptation to gain competitive advantage in a changing environment. Change perceptions (i.e., perceived change impact and perceived change frequency) concern the aspects of change that are salient to change recipients and that influence their attitudes and subsequent behaviors (Rafferty & Griffin, 2006). Perceived change impact refers to followers' perceptions concerning the extent to which change has involved modifications to the core systems of their work team, whereas perceived change frequency concerns followers' perceptions regarding how often change has occurred in their work team (Rafferty & Griffin, 2006). Research has shown that perceived change impact and perceived change frequency to be related to work-related attitudes (i.e., organizational commitment, job satisfaction) and have an

impact on the effectiveness of leadership (e.g., Herold, Fedor, Caldwell, & Liu, 2008; Rafferty & Griffin, 2006).

Although organizational change depends on leadership, there has been little integration of the two bodies of literature (Bass & Riggio, 2006; Burke, 2002; Herold et al., 2008). While Bass (1999) argued that different types of organizational contexts can create different degrees of need for leadership, Pawar (2003) and Pawar and Eastman (1997) stressed that organizational contexts can influence the nature of leadership behaviors that emerge and operate in an organization and the degree to which leadership's operation will be supported or opposed. Therefore, the integration of organizational change literature and leadership theory may help us better understand the role of leadership and leadership effectiveness during times of change.

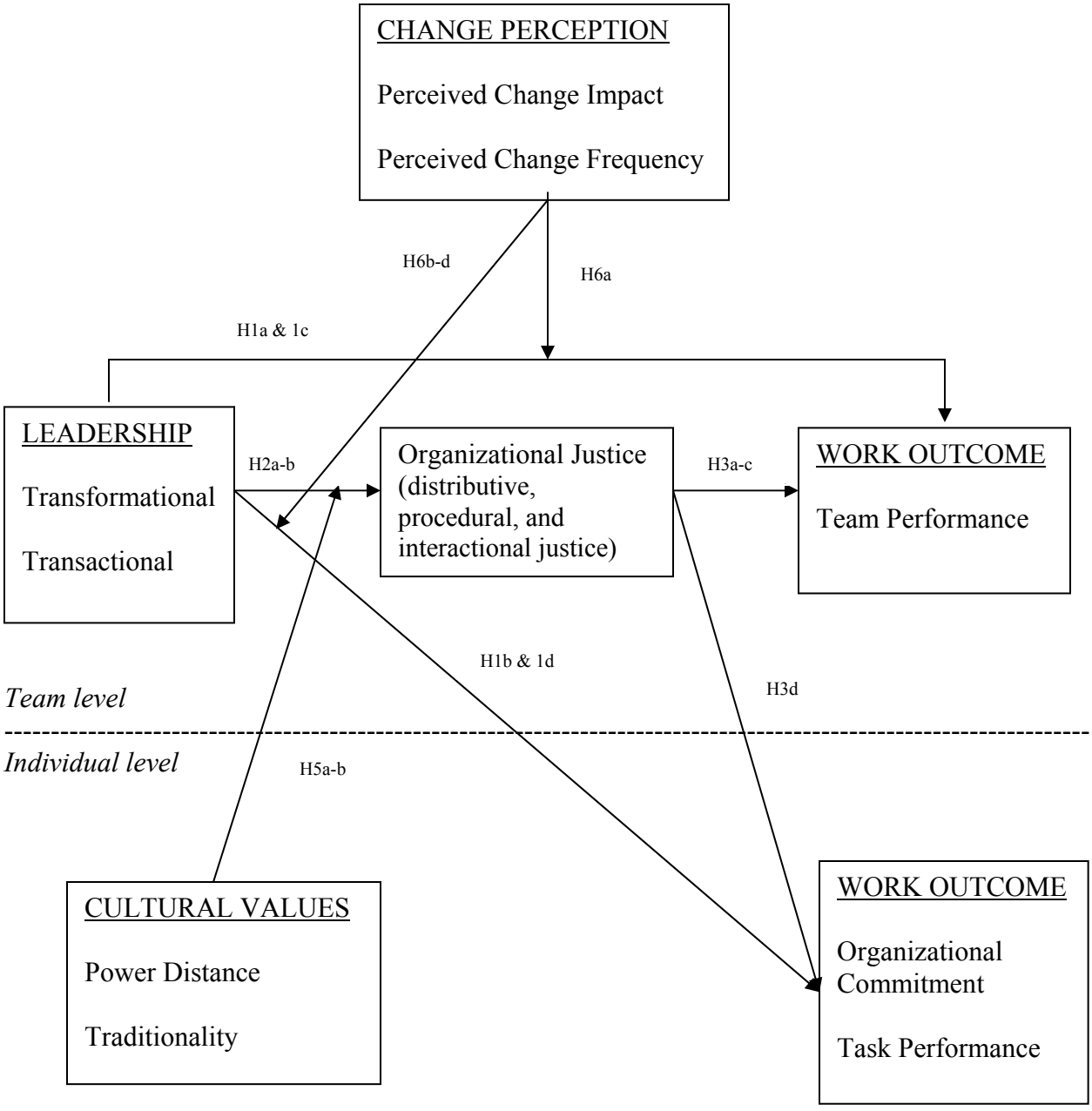
Fourth, what role does transformational-transactional leadership play and how team leaders contribute to team effectiveness? Leadership involves influencing collective processes that will ensure the effectiveness of a team or organization; leadership can be conceptualized at the individual, dyadic, group, and organizational levels (Yukl, 2007). However, most of the leadership research has focused too narrowly on dyadic processes, and "often underestimates the importance of the context in which a dyadic relationship occurs" (Yukl, 2007, p. 16). This study, in response to repeated calls for leadership research to adopt a multilevel approach (e.g., Gelfand et al., 2007; Podsakoff et al., 2006; Schriesheim, Wu, & Scandura, 2009; Tsui et al., 2007; Yammarino & Dansereau, 2008; Yukl, 2007), investigates collective processes that determine transformational-transactional leadership effectiveness at the team level, as well as the effectiveness of leadership at the individual level. At the team level, team performance is of study interest, as it measures whether a leader is effective in leading the entire team to achieve organizational goals. At the individual level, consistent with prior research, study outcomes

include follower work-related attitude (i.e., organizational commitment) and job performance (i.e., task performance). Organizational commitment refers to followers' attachment to their organization (Allen & Meyer, 1990), whereas task performance describes followers' on-the-job performance that contributes to their team's effectiveness (Farh & Cheng, 1999).

This dissertation attempts to study leadership effectiveness by integrating multiple theories and from a multi-level perspective. The theories used in this study include research from transformational-transactional leadership, cultural value orientations, organizational justice, and organizational change. This study involves two levels of analyses: at the team level and at the individual level. More specifically, this study investigates how cultural value orientations influence followers' reactions to transformational-transactional leaders and whether organizational justice explains such leaders' effectiveness (at both the team and individual levels) during times of change.

Figure 1 represents the hypothesized model that is developed to investigate the process and contextual factors that explain leadership effectiveness at both the team and individual levels.

Figure 1. Hypothesized Model



CHAPTER 2

THEORETICAL MODEL DEVELOPMENT AND HYPOTHESES

Transformational and Transactional Leadership

Built on Burns' (1978) political leadership concept, Bass' (1985) leadership theory was conceptualized within behavioral domains and differentiated between transformational and transactional leadership. Bass and Avolio (1993) argued that, although transformational and transactional leadership are distinct concepts, they are not mutually exclusive, and the best leaders are both transformational and transactional. As such, some scholars have stressed that the full-range of transformational and transactional leadership behaviors need to be studied together (Jung & Avolio, 1999; Yammarino & Dubinsky, 1994). Therefore, both transformational and transactional leadership is included in this study. Transformational and transactional leadership can be conceptualized and operationalized at both the individual and team levels. At the individual level, transformational and transactional leadership refers to a leader's behaviors toward different followers, whereas at the team level, it represents perceptions of a leader's behaviors that are shared by followers in a given team. In a team context, leaders demonstrate leadership behaviors to collectively influence and motivate followers to achieve challenging goals for the sake of the team. Therefore, in this study, both transformational and transactional leadership that capture a leader's behaviors across followers within a team are conceptualized at the team level of analysis.

The primary factors of the transformational leadership model include (a) charisma or idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d)

individualized consideration (Avolio, Bass, & Jung, 1999). According to Bass (1985), transformational leaders influence followers by motivating them to perform beyond expectations specified in the economic exchange agreement implicitly and/or explicitly. Transformational leaders share a compelling vision with followers, raise their aspirations for high achievement, activate their higher-order values (e.g., altruism), and inspire them to accomplish challenging goals. As such, followers identify with the leader and his/her vision, feel good about their work, develop a strong sense of self-efficacy, amplify their desire for success, not only for themselves but also for the sake of the entire team, and then work to perform beyond simple transactions and base expectations (Bass, 1985). Collectively, individual followers' efforts and performance contribute to team effectiveness. Therefore, such leaders are expected to motivate followers to perform above expectations and transcend their own self-interest for the sake of the team. A substantial body of literature has consistently demonstrated positive relationships between transformational leadership and work outcomes such as team performance at the team level (cf. Keller, 2005; Liao & Chuang, 2007), and follower attitudes (i.e., job satisfaction, organizational commitment) and performance (i.e., task performance) at the individual level (cf. Judge & Piccolo, 2004; Lowe et al., 1996).

Hypothesis 1a: Transformational leadership will be positively related to work outcomes at the team level (team performance).

Hypothesis 1b: Transformational leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).

Transactional leadership, on the other hand, is contingent reinforcement such that transactional leaders and followers agree on what the followers need to do to be rewarded or to

avoid punishment (Bass. 1985). The primary factors of the transactional leadership model include (a) contingent reward, (b) active management-by-exception, and (c) passive management-by-exception (Avolio et al., 1999). Among the three dimensions, contingent reward leadership has been found to be the most effective in respect to its positive relationship with leader effectiveness and follower attitudes and job performance (Judge & Piccolo, 2004; Lowe et al., 1996), whereas the latter two dimensions have not produced encouraging findings (Bass & Avolio, 1994; Judge & Piccolo, 2004; Lowe et al., 1996; Podsakoff et al., 2006). Research studies have indicated that passive management-by-exception has been found ineffective, or, rather, negatively correlated with leadership outcomes (i.e., task performance, leadership effectiveness; Judge & Piccolo, 2004; Lowe et al., 1996). In addition, active management-by-exception has been shown to be neither effective nor ineffective, or, rather, positively correlated with leadership outcomes in some cases and negatively correlated in other cases (Druskat, 1994; Judge & Piccolo, 2004; Lowe et al., 1996). This study, therefore, only includes the transactional contingent reward dimension.

Transactional contingent reward leadership, based on the economic cost-benefit assumption, involves an exchange process that may result in follower compliance with leader requests (Bass, 1985). Such leaders discuss economic exchange agreements with followers in terms of setting goals, providing direction and support, and rewarding or punishing for a specific level of performance. Furthermore, such leaders use incentive and contingent rewards in exchange for their followers' performance in meeting agreed-upon goals (i.e., task completion), or contingent punishment for failure to achieve the goals. As such, through contingent reinforcement processes, followers comply with the agreed-upon exchange agreements. Therefore, through efficient exchange processes, transactional contingent reward leaders are

expected to have a positive influence on followers' job performance and attitudes and on team performance. In addition, research has found the positive relationship between transactional contingent reward leadership and work outcomes, such as leader effectiveness and team performance at the team level, and follower performance and work-related attitudes (i.e., job satisfaction and organizational commitment) at the individual level (cf. Judge & Piccolo, 2004; Lowe et al., 1996; Walumbwa et al., 2008).

Hypothesis 1c: Contingent reward leadership will be positively related to work outcomes at the team level (team performance).

Hypothesis 1d: Contingent reward leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).

Organizational Justice as a Mediator of the Leadership-Outcome Relationship

In the organizational justice literature, there are three distinct types of justice perceptions—distributive justice (fairness of rewards), procedural justice (decision making procedures), and interactional justice (interpersonal treatment; Colquitt, 2001). Distributive justice concerns the degree of fairness in distributing organizational resources and rewards, whereas procedural justice refers to the fairness of the process by which the distributions are made (Cropanzano, Prehar, & Chen, 2002). Some studies suggested that distributive justice may be less related to leaders, possibly because resources and rewards allocations are beyond leaders' control (e.g., Cropanzano et al., 2002; Wayne et al., 2002). However, other scholars argue that follower perceptions of leader fairness in both rewards distributions and procedures appear to be a key determinant of followers' behaviors (Erdogan, Liden, & Kraimer, 2006; Farh, Earley, & Lin 1997), and studies have found both distributive and procedural justice to be related to

leaders' effectiveness (cf. Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Erdogan et al., 2006).

The third form of justice is interactional justice, which refers to the fairness of interactions that followers receive from leaders (Tyler & Bies, 1990). A leader is perceived fair to the extent that the leader considers followers' rights and deals with them in a truthful manner (Bobocel, McCline, & Folger, 1997; Moorman, 1991). As such, interactional justice pertains to the relational aspects of organizational justice in terms of how leaders behave toward the recipient of justice (Cohen-Charash & Spector, 2001). Therefore, this study includes all three forms of organizational justice.

Organizational justice has been conceptualized and operationalized at both the individual and team levels (cf. Erdogan et al., 2006; Rupp, Bashshur, & Liao, 2007; Wayne et al., 2002; Walumbwa et al., 2007; Yang, Mossholder, & Peng, 2007). At the individual level, organizational justice refers to a follower's individual perceptions of fair treatment by a leader, whereas at the team level, it represents a shared perception about the fairness with which a team has been treated by its leader. The shared perceptions among team members help them make compatible sense of the team environment and behave accordingly in similar ways (Cannon-Bowers & Salas, 2001; Li & Cropanzano, 2009; Yang et al., 2007). Research has suggested that the effects of workplace justice are more powerful when all or most of the team members have been treated fairly, as opposed to when only one or few members have been treated fairly (Naumann & Bennett, 2000; Walumbwa et al., 2007; Yang et al., 2007). Therefore, in this study, organizational justice is conceptualized at the team level of analysis.

Bass and Avolio (1990) contended that the full-range leadership model differentiates between transactional and transformational leaders. Transactional contingent reward leaders

clarify expectations, and use incentive and contingent rewards in exchange for followers' performance meeting agreed-upon goals or punish those who fail to achieve the goals. Thus, the relationship that evolves between leader and followers is predominantly based on material or economic exchange (Bass, 1985). As such, fair exchange of performance-reward or punishment is essential to maintain an efficient exchange process through which transactional contingent reward leaders influence followers, suggesting that contingent reward leadership and organizational justice should be related. Such fair exchange involves the fairness of rewards and resources followers in a given team receive (distributive justice), the fairness of decision-making procedures that determine those rewards and resources (procedural justice) in the team, and the fairness of interpersonal treatment (interactional justice) between a leader and followers in the team. In addition, research has provided empirical evidence demonstrating a positive relationship between contingent reward and organizational justice (cf. Pillai, Scandura, & Williams, 1999; Walumbwa et al., 2008).

Hypothesis 2a: Contingent reward leadership will be positively related to organizational justice (distributive, procedural, and interactional).

Transformational leaders, on the other hand, develop meaningful relationships with followers beyond a specified economic exchange agreement. Such leaders coach followers to enhance their capabilities, and stimulate followers to perform beyond agreed-upon objectives and self-interests (Bass, 1985). Therefore, transformational leadership can be viewed as "an extension" to transactional leadership (Bass & Avolio, 1990, p.70). The definition of transformational leadership suggests that leaders, in order to influence and motivate followers to perform beyond specified agreed-upon expectations, should treat followers with fairness. When a transformational leader articulates a compelling vision followers in his/her team, exhibits

attention to them, stimulates them intellectually, and encourages them to both develop and perform at levels beyond expectations, a climate of justice is created as the leader sincerely provides followers with the process control over decisions with regard to rewards and resource allocations, followers' future development, and the future of the team. As a result, followers' shared perceptions of organizational justice (distributive, procedural, and interactional) are likely to be elevated. Studies have provided evidence that transformational leadership was positively related to organizational justice (cf. Kirkman, Chen, Farh, Chen, & Lowe, 2009; Pillai et al., 1999; Wu, Neubert, & Yi, 2007).

Hypothesis 2b: Transformational leadership will be positively related to organizational justice (distributive, procedural, and interactional).

From a social exchange perspective, on the one hand, leaders evaluate followers' performance (i.e., task performance) and decide how to react to it (i.e., pay increase, personal support, punishment). On the other hand, followers observe and interpret their leaders' behaviors (i.e., transformational-transactional leadership behaviors) and decide to behave in certain ways (i.e., task performance, organizational commitment) which then influences leaders' perceptions of their competence and subsequent reward allocations and resource distributions (Yukl, 2007). This reciprocal exchange relationship should be viewed as reasonably equitable by both follower and leader (Graen & Scandura, 1987) and probably is the primary determinant of follower behavior (Wayne et al., 1997). As such, organizational justice plays an important role in the leader-follower social exchange relationship and consequently, influences follower work outcomes and collectively have an impact on team performance (Cropanzano et al., 2002; Erdogan et al., 2006; Masterson et al., 2000; Walumbwa et al., 2008). Research studies have found that followers' perceptions of fairness of rewards (distributive justice), decision making

procedures (procedural justice), and interpersonal treatment (interactional justice) were positively related to attitudes and performance outcomes, including such things as team performance and follower task performance and organizational citizenship behavior (OCB; Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Cropanzano & Schminke, 2001; Kirkman et al., 2009; Walumbwa et al., 2008; Yang et al., 2007).

Hypothesis 3a: Organizational justice (distributive) will be positively related to work outcomes at the team level (team performance).

Hypothesis 3b: Organizational justice (procedural)) will be positively related to work outcomes at the team level (team performance).

Hypothesis 3c: Organizational justice (interactional) will be positively related to work outcomes at the team level (team performance).

Hypothesis 3d: Organizational justice (distributive, procedural, and interactional) will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).

There is long-standing criticism of the leadership–outcome relationship research (Yukl, 2007), mainly because leadership theories are unable to ascertain whether leadership is "a cause, a consequence, or a coincidence of group effectiveness, satisfaction, or other valued outcomes" (Bass, 1990, p. 542). In an effort to fill this theoretical gap, some scholars have suggested integrating organizational justice theory with transformational-transactional leadership because fair economic and social exchanges between leader and follower may be the primary determinant of followers' behaviors (Masterson et al., 2000; Scandura, 1999; Wayne et al., 2002; Yukl, 2007). Perceiving their leader as fair (distributive, procedural, and interactional), followers are likely to identify with the leader and tend to perform appropriately, if not beyond base expectations. In

addition, believing their better-than-expected performance will fairly pay off, followers will reciprocate by performing better due to their perceptions of justice by their leaders. Collectively, team effectiveness can be achieved. In this sense, organizational justice (distributive, procedural, and interactional) may serve as affective linkages between leaders' behaviors and followers' responses. These linkages help explain why leaders are effective and why followers are more motivated to perform at a high level. Studies have shown positive correlations between transformational-transactional leadership and organizational justice, as well as positive correlations between organizational justice and follower attitudes and performance (cf. Kirkman et al., 2009; Pillai et al., 1999; Walumbwa et al., 2008; Wu et al., 2007).

Hypothesis 4a: Organizational justice (distributive and procedural) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).

Hypothesis 4b: Organizational justice (interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).

Hypothesis 4c: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower organizational commitment).

Hypothesis 4d: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower task performance).

Power Distance and Traditionality as Moderators of the Leadership-Outcome Relationship

The assumption that aspects of a situation influence the role requirements for leaders and leader effectiveness has dominated leadership research for decades (Yukl, 2007). According to contingency theories of leadership that take contextual factors into account and attempt to explain how the relationship between leadership and outcomes vary across situations (Yukl, 2007), cultural value orientations may serve as facilitators or barriers to leadership effects on outcomes (cf. Keller, 2006). Although Bass (1999) argued that transformational and transactional leadership are universal dimensions, there is evidence that cultural values moderate the leadership—outcome relationship (cf. Spreitzer et al., 2005; Walumbwa & Lawler, 2003).

Power Distance

Power distance refers to the extent to which individuals accept the fact that power is distributed unequally between them and their leader (Hofstede, 1983a, 2001). More importantly, in high power distance societies, individuals believe that the unequal distribution of power is the proper way to maintain social order. Although Hofstede's (2001) study aimed at the societal level, researchers have found that each of his value dimensions has a large variation among individuals within an organization or work team and these individual differences have direct effects on outcomes (Farh et al., 2007; Hofstede, 1983b; Kirkman et al., 2009; Kirkman & Shapiro, 2001). In organizations, power distance relates to the degree of formal hierarchy (Hofstede, 1983a), the strength of the need for dependence on leaders (Hofstede, 1983b), and the degree of perceptions of followers' fear to disagree with their leaders (Hofstede, 2001). Consistent with prior research in management where power distance has been studied at the individual level within the organizational domain, this study focuses on the within-team variation in power distance among followers. In particular, followers high in power distance prefer their

leader to make decisions either autocratically or paternalistically, are afraid to disagree with the leader, and tend to look to the leader for solving problems or concerns (Hofstede, 1983a).

In relating to leadership, it suggests that the norms of high power distance legitimize power differences between a leader and followers based on hierarchical positions (Brockner et al., 2001). The positions of formal power grant privileges to leaders in terms of their behaviors and decisions in distributing resources and rewarding or punishing followers. Followers who are higher in power distance are comfortable with a lower power status in their work environment as long as they have a leader on whom they can rely (Hofstede, 2001). Moreover, they tend to simply accept their leader's decisions and do not question their leader. Therefore, among followers who are higher in power distance, both transformational leadership behaviors (i.e., sharing a compelling vision with followers, intellectually stimulating them to challenge the status quo) and transactional leadership behaviors (i.e., discussing agreements with followers regarding rewards) can make them suspicious and uncomfortable, because they simply expect a specific direction but not participation (Hofstede, 2001; Javidan et al., 2006). In contrast, followers who are lower in power distance would have better responses to their leader's influence (i.e., individualized consideration, intellectual stimulation, participation), because they are encouraged by their leader to challenge assumptions, question the traditional ways of doing business, and participate in finding solutions to achieve challenging goals. Therefore, transformational and transactional contingent reward leadership behaviors tend to be more consistent with leadership expectations held by followers with lower, rather than higher, in power distance.

In relating to organizational justice, followers who are higher in power distance tend to defer to power, simply follow a leader's decisions, and have role-constrained interactions with the leader (Tyler, Lind, & Huo, 2000). Moreover, such followers are less critical to perceived

unfairness, if any, in reward allocations, personal treatment, and decision making procedures. This implies that followers higher in power distance are less sensitive to the effect of leadership on their perceptions of organizational justice. For example, in a comparison study of Hong Kong Chinese and Americans, Bond, Wan, Leung, and Wan (1985) found that the Chinese, high in power distance cultural values, were less critical of an insulter and more willing to accept insulting remarks from their leader. In contrast, the norms of low power distance reduce differences in power between a leader and followers such that the leader is likely to share power with the followers, and followers are likely to believe that they should be involved in decision-making processes (procedural justice) and question any unfair treatment (interactional and distributive justice) from the leader.

Hypothesis 5a: Power distance will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in power distance.

Traditionality

Traditionality is a China-specific construct that refers to the degree to which individuals endorse traditional Chinese values (Yang, 2003). The Chinese social structure can be described as five fundamental relationships (*wu lun*) in Confucianism: emperor-subject, father-son, husband-wife, elder-younger, and friend-friend. These five relationships specify the important relational network in Chinese society and role prescriptions as to what should and should not be done by members in the society (Hui et al., 2004; Yang, 2003). Therefore, in Chinese society, relationships of people to the social structure, as central elements, may play an important role to influence people's attitudes and behaviors.

Similar to power distance, traditionality can also be conceptualized and operationalized at the society and individual levels (Farh et al., 2007; Yang, 2003). The five oblique factors of traditionality are submission to authority, filial piety and ancestor worship, conservatism and endurance, fatalism and defensiveness, and male dominance (Yang, Yu, & Yeh, 1989). Among these five factors, submission to authority is arguably the most prominent factor, because it is the only factor correlating positively with all of the other four factors (Yang, 2003; Yang et al., 1989). Prior research has selected the submission to authority factor to measure traditionality at the individual level in organizations (cf. Farh et al., 2007; Hui et al., 2004; Spreitzer et al., 2005). Therefore, in this study, traditionality is defined as the extent to which an individual endorses the traditional hierarchical role relationships prescribed by Confucianism, a concept distinct from power distance (Farh et al., 2007).

Followers higher in traditionality see their leader as a father figure and thus, expect the leader to take care of their needs and provide specific directions in their team. Such followers highly respect their leader and value their social relationships with the leader. In fact, Farh and Cheng (1999) suggested that the leader-follower relationships may be considered as trademarks of effective leadership in traditional Chinese organizations, indicating that traditionality may impact followers' perceptions of effective leadership (cf. Spreitzer et al., 2005). Furthermore, such followers feel strong obligations to fulfill the expectations from their leader and responsibilities of their prescribed formal and social roles, suggesting that traditionality may influence followers' perceptions of organizational justice in such a way that they perceive their leader as fair, not necessarily because the leader has treated them with fairness, but more importantly because they believe in the leader and desire to satisfy their self-derived obligations and responsibilities to the leader regardless of treatments they may or may not receive fairly (cf.

Farh et al., 1997). In this sense, the relationship between leadership and organizational justice should vary according to followers' traditionality values.

Hypothesis 5b: Traditionality will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in traditionality.

Perceived Change Impact and Perceived Change Frequency as Moderators of the Transformational Leadership-Outcome Relationship

Transactional leaders clarify what performance is required to achieve existing organizational goals, what resources are necessarily for followers to complete specific tasks, and how to exchange rewards for followers' fulfillment (Bass, 1985). In a stable environment, such leadership can operate very effectively based on followers' desires and needs for designated outcomes (Bass, 1985). Transformational leadership, on the other hand, exerts influence by articulating a compelling future vision with followers, heightening their needs and desires for achievement to a level higher than the designated outcomes, and encouraging them to perform above expectations and transcend their own self-interest for the sake of their organization (Bass, 1985). Such leadership is, "at its core, about issues around the processes of transformation and change" (Bass & Riggio, 2006, p. 225). Therefore, in this section, this study only includes transformational leadership.

The phenomenon of organizational change is central to and pervades management researchers' thinking on organizations (Ford & Ford, 1994). Organizations are purposeful or goal-driven social systems that seek to attain efficiency and adaptation in a changing environment (Selznick, 1948). Attainment of efficiency requires creating a system with clear

guidelines for the choice of means to achieve goals. Adaptation (i.e., organizational change), on the other hand, requires modifying the current system and then institutionalizing new approaches into the system (Kotter, 1996). In reality, organizations often try to operate systems with relative stability or efficiency-oriented functioning, but are interrupted by long or brief periods of adaptation (Mintzberg, 1978). Effectively balancing the conflict between efficiency and adaptation may be dependent upon leadership at all levels in organizations (Burke, 2002; Eisenbach, Waston, & Pillai, 1999; Herold et al., 2008; Huy, 2002; Pawar & Eastman, 1997).

Transformational leaders bring about a change and lead the change in their organization or work team. They share a compelling future with their followers, coach and mentor them to deal with adaptation, and inspire and motivate them to commit to and engage in the change (Bass, 1985). Ideally, followers support the change and make a strong commitment to change (i.e., at the individual level), and the successful implementation of change results in a higher level of efficiency and competitive advantage (i.e., performance at both the individual and team levels). However, organizational change often disrupts followers' work routines, poses adaptation demands on them, and creates work conflicts and constraints among them in a work team. The greater these distractions are, the more cynical the followers feel about organizational change and the greater the instability and uncertainty the work team faces (Herold, Fedor, & Caldwell, 2007; Herold et al., 2008). Therefore, during times of change, change context characteristics demand leadership, because leaders, by definition, are responsible for resolving distractions, maintaining certain operational stability for efficiency, and institutionalizing adaptation for competitive advantage.

Despite the consensus that change requires leadership, the research on these two bodies of literature has not been adequately integrated (Bass & Riggio, 2006; Pawar, 2003; Pawar &

Eastman, 1997). Presumably aspects of a situation influencing the role requirements for leader and the effects of leadership on outcomes (Yukl, 2007), researchers have repeatedly called for more change contextually embedded studies on transformational leadership (Detert & Burris, 2007; Herold et al., 2008; Pawar & Eastman, 1997). The reason lies in the fact that, without clearly specifying the aspects of a change context and addressing their impact on the leadership—outcome relationship, it would be "difficult to accurately assess the effectiveness of transformational leadership" on work outcomes during times of change in organizations or teams (Pawar, 2003, p. 400).

In a change context, contextual factors may be measured by followers' perceptions of change that have a salient impact on themselves, their work, and their team. Studies have suggested that change recipients' perceptions of change impact and frequency (a) have an impact on their attitudes toward change (e.g., Herold et al., 2007; Rafferty & Griffin, 2006), (b) create needs and demands for transformational leadership (e.g., Herold et al., 2008; Pawar & Eastman, 1997), and (c) influence the relationship between transformational leadership and their attitudes toward change (e.g., Herold et al., 2008).

The definitions of perceived change impact and perceived change frequency perceptions suggest that the perceptions have an impact on change recipients and their work. In a small magnitude and infrequent change context, a work team operational system remains relatively stable, followers' work routines are rarely interrupted, and adaptation demands and work constraints and conflicts are not significant. Thus, at the individual level, followers' emotional reactions to such change tend to be minor and their needs for leadership tend to be less salient (Herold et al., 2008). In addition, at the team level, the work team performance tends to be less

impacted because the efficiency-oriented functioning of the work team largely remains uninterrupted.

However, when change is perceived frequent and large in magnitude, change places great demands on followers and their work in terms of adaptation demands, increased work load, and expenditure of energy and additional resources, which, in turn, interfere with getting their current work done (Herold et al., 2008). As a result, at the individual level, followers react more emotionally to such change and, if negative emotions are aroused, their evaluations of the consequences that the change may bring to them tend to be less than favorable (Huy, 2002). Thus, followers are much in need for leadership, and leaders' transformational leadership behaviors can play a critical role in redirecting followers' negative emotions through their leaders' self-confidence, assertiveness, and ambition (Bass, 1985; Yukl, 2007). Equally importantly, this type of change also creates uncertainty in the work team, since efficiency-oriented functioning in the work team is likely to be interrupted by adaptation demands. This team level uncertainty requires leadership, and leaders' transformational leadership behaviors can play an important role in balancing the conflict between efficiency and adaptation (Burke, 2002; Pawar & Eastman, 1997). Given that the distractions (i.e., adaptation demands, work constraints and conflicts) tend to be significant in a large magnitude and frequent change context, leadership behavior should be more salient and, therefore, more related to the level of followers' organizational commitment and their task performance (Herold et al., 2008), and ultimately the work team performance at the team level. Therefore, the effectiveness of transformational leadership on outcomes is contingent on perceived change impact and perceived change frequency.

Hypothesis 6a: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work

outcomes at the team level (team performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.

Hypothesis 6b: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower organizational commitment) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.

Hypothesis 6c: Perceived change impact will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact.

Hypothesis 6d: Perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in change frequency.

Table 1 represents a summary of the research hypotheses.

Table 1. Summary of Research Hypotheses

Hypotheses
H1a: Transformational leadership will be positively related to work outcomes at the team level (team performance).
H1b: Transformational leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).
H1c: Contingent reward leadership will be positively related to work outcomes at the team level (team performance).
H1d: Contingent reward leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).
H2a: Contingent reward leadership will be positively related to organizational justice (distributive, procedural, and interactional).
H2b: Transformational leadership will be positively related to organizational justice (distributive, procedural, and interactional).
H3a: Organizational justice (distributive) will be positively related to work outcomes at the team level (team performance).
H3b: Organizational justice (procedural) will be positively related to work outcomes at the team level (team performance).
H3c: Organizational justice (interactional) will be positively related to work outcomes at the team level (team performance).
H3d: Organizational justice (distributive, procedural, and interactional) will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).
H4a: Organizational justice (distributive and procedural) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).
H4b: Organizational justice (interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).

Table 1 continued. Summary of Research Hypotheses

Hypotheses
H4c: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower organizational commitment).
H4d: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower task performance).
H5a: Power distance will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in power distance.
H5b: Traditionality will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in traditionality.
H6a: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the team level (team performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.
H6b: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower organizational commitment) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.
H6c: Perceived change impact will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact.
H6d: Perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change frequency.

CHAPTER 3

RESEARCH METHODOLOGY

Procedure and Participants

Data were collected from two Chinese companies, Company A and Company B. Company A, located in eastern China, specializes in telecommunications, networks, and systems integration services. Company B, based in northern China, provides travel services to business and leisure travelers. Participants were full-time employees working in teams that performed identical task functions in their respective companies. Each team comprised at least three team members reporting to the same team leader.

Three sets of questionnaires were used: one for team members (i.e., non-leaders), one for team leaders, and the last for managers (i.e., superiors of the team leaders). Participants were assured the confidentiality of their responses. A coding scheme was developed to match responses from the three sets of questionnaires. Surveys were distributed and collected through the mail. Team members completed surveys that assessed transformational-transactional contingent reward leadership, organizational justice, power distance, traditionality, perceived change impact, perceived change frequency, and organizational commitment along with demographic questions. Team leaders rated their team members' task performance and completed demographic questions. Managers rated team performance of teams for which they were responsible.

For Company A, usable data were obtained from 143 team members (a 60% response rate), 43 team leaders (an 83% response rate), and three managers who oversaw the 43 teams (a

100% response rate). The average team size was 4.61, ranging from 3 to 6 team members per team leader. For team members, average age was 26.36 (ranging from 20 to 46); average organizational tenure was 2.16 years (ranging from .10 to 12); 81% were male; 34% had an associate's degree, and 66% had a bachelor's degree. For team leaders, average age was 31.33 (ranging from 24 to 41); average organizational tenure was 5.36 years (ranging from 2 to 12); 77% were male; 19% had an associate's degree, 77% had a bachelor's degree, and 5% had a master's degree.

For Company B, usable data were obtained from 108 team members (a 64% response rate), 35 team leaders (a 78% response rate), and four managers who oversaw the 35 teams (a 100% response rate). The average team size was 3.89, ranging from 3 to 5 team members per team leader. For team members, average age was 26.10 (ranging from 22 to 41); average organizational tenure was 3.36 years (ranging from .50 to 16); 66% were male; 30% had an associate's degree, 69% had a bachelor's degree, and 1% had a master's degree. For team leaders, average age was 34.49 (ranging from 26 to 43); average organizational tenure was 10.94 years (ranging from 3 to 20); 51% were male; 14% had an associate's degree, 69% had a bachelor's degree, and 17% had a master's degree.

To check the representativeness of the two samples, I compared demographic data from the respondents with demographic data of their respective companies. There were no significant differences between the respondents and the employees in the respective companies in terms of age, gender, education, and organizational tenure.

Measures

The study respondents used a seven-point rating format ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to answer all questions, unless otherwise specified. Appendix A provides a

complete list of the questionnaire items (with an exception of the Team Multi-Factor Leadership Questionnaire Form 5X). All scales, with the exception of perceived change impact and perceived change frequency, had been previously used in Chinese organizational settings and shown acceptable reliability and validity (cf. Farh et al., 2007; Lee et al., 2000; Liao & Chuang, 2007; Schaubroeck, Lam, & Cha, 2007; Yang et al., 2007).

The survey items were written in English and Chinese. In the event that Chinese version scales were not available, the method of back-translation (Brislin, 1980) was used to translate the items from English to Chinese. Two translators, being researchers in management, completed the translations independently. Discrepancies between the English and Chinese versions were identified, discussed, and reconciled to ensure semantic equivalence.

Independent Variables

Leadership. Both transformational and transactional contingent reward leadership are team-level constructs. Transformational-transactional contingent reward leadership was measured with the Team Multi-Factor Leadership Questionnaire (MLQ) Form 5X (Bass & Avolio, 1997). A Chinese version of the scale was obtained for this study from the Mind Garden, Inc. The MLQ-5X is the most widely used measure of transformational-transactional leadership behaviors (Pillai et al., 1999). The MLQ-5X consists of items with response options ranging from 0 (*not at all*) to 4 (*frequently, if not always*).

The 20-item transformational leadership scale includes sample items such as "Our supervisor spends time teaching and coaching people in our work team" and "Our supervisor talks optimistically about the future of our work team" (cf. Schriesheim et al., 2009). The dimensions and coefficient alphas for the MLQ-5X were idealized attribution (.86), idealized behavior (.82), inspirational motivation (.87), intellectual stimulation (.87), and individualized

consideration (.84). As have many researchers (cf. Judge & Bono, 2000; Liao & Chuang, 2007; Kirkman et al., 2009; Wu et al., 2007), I combined the dimensions into a single factor variable, and coefficient alpha was .96.

The transactional contingent reward leadership scale, a four-item scale, contains sample items such as "Our supervisor provides us with assistance in exchange for our efforts" and "Our supervisor expresses satisfaction when our work team meets expectations" (cf. Schriesheim et al., 2009). Coefficient alpha was .80.

Mediator Variables

Organizational justice is a shared team-level perception regarding fair treatment by a leader to his/her followers. As such, a team-level reference was considered, and a referent-shift consensus composition approach was implemented to modify those chosen original scale items (Chan, 1998; Kozlowski & Klein, 2000).

Distributive justice. Distributive justice was measured by a modified distributive justice scale developed by Niehoff and Moorman (1993). Sample items from this five-item scale include "Overall, people in my work team consider their workload to be quite fair" and "Overall, the rewards people in my work team receive are quite fair." Coefficient alpha was .90.

Procedural justice. Procedural justice was measured by a modified procedural justice scale developed by Moorman (1991). The six-item scale contains sample items such as "Our supervisor provides people in my work team with useful feedback regarding the decision and its implications" and "Our supervisor hears the concerns of all those in our work team affected by the decision." Coefficient alpha was .93.

Interactive justice. Interactive justice was measured by a modified interactional justice scale developed by Moorman (1991). Sample items from this six-item scale include "Our

supervisor considers our view point" and "Our supervisor treats people in my work team with kindness and consideration." Coefficient alpha was .90.

Moderator Variables

Power distance. Power distance refers to the extent to which followers accept the fact that power is distributed unequally between them and their leader. Power distance was measured by a scale developed by Dorfman and Howell (1988). A sample item from this six-item scale is "Subordinates should not disagree with their supervisor's decisions." Coefficient alpha was .90.

Traditionality. Traditionality refers to the extent to which followers endorses the traditional hierarchical role relationships prescribed by Confucianism. Traditionality was measured with a five-item scale. The scale was a Chinese version developed by Yang and his colleagues (1989). A sample item is "The best way to avoid mistakes is to follow the instructions of senior persons." Coefficient alpha was .85.

Perceived change impact. Perceived change impact refers to the extent to which change has involved modifications to the core systems of a given work team. Perceived change impact is a team-level variable which measures the magnitude of change in a work team. Perceived change impact was measured with a three-item scale, developed by Caldwell, Herold, and Fedor (2004). A sample item is "In our work team, changes involve changes in daily routines of team members." Coefficient alpha was .93.

Perceived change frequency. Perceived change frequency concerns followers' perceptions regarding how often change has occurred in their work team. Perceived change frequency is a team-level construct which quantifies change events in a work team. Perceived change frequency was measured with a three-item scale, developed by Rafferty and Griffin

(2006). A sample item is “In our work team, change frequently occurs.” Coefficient alpha was .89.

Dependent Variables

Team performance. Team performance refers to performance outcomes of a given work team. As in previous studies (Lam, Schaubroeck, & Brown, 2004; Schaubroeck et al., 2007), team performance was measured by using the modified individual competence measure, a three-item scale, developed by Heilman, Block, and Lucas (1992). The items of the modified scale are “This team is very competent,” “This team gets its work done very effectively,” and “This team has performed its job well.” Coefficient alpha was .80.

Organizational commitment. Organizational commitment refers to followers’ attachment to their organization. Organizational commitment was measured by using the shortened organizational commitment questionnaire, a six-item scale, developed by Mowday, Steers, and Porter (1979; cf. Brockner et al., 2001). The scale contains such sample items as “I really care about the fate of my organization,” and “I am proud to tell others that I am part of this organization.” Coefficient alpha was .88.

Task performance. Task performance describes followers’ on-the-job performance that contributes to their team’s effectiveness. A four-item, in-role task performance scale was used to measure task performance. The scale is a Chinese version developed by Farh and Cheng (1999). Sample items include “This subordinate can always fulfill the jobs assigned by the supervisor in time” and “The performance of this subordinate can always meet the requirements of the supervisor.” Coefficient alpha was .85.

Control Variables

Previous research has revealed that dyad tenure, measured by the length of the team member-team leader reporting relationship, was associated with followers' performance (cf. Howell & Hall-Merenda, 1999, Kirkman et al., 2009). In addition, team size, measured by the number of team members in the work team that a team leader had supervised, may have an influence on followers' perceptions of leadership and job performance (cf. Erdogan et al., 2006; Keller, 2006; Schaubroeck et al., 2007). In this study, dyad tenure was reported by team members, and team size was reported by team leaders. As in prior research (cf. Erdogan et al., 2006; Keller, 2006; Kirkman et al., 2009; Schaubroeck et al., 2007), this study controlled for dyad tenure and team size.

Table 2 provides a summary of the scales used in this study. This table includes the name of the scale, the source of the scale, and the number of items included in the scale.

Table 2. Summary of Measures Used in the Study

Measure	Source	*N* of items
Independent variables:		
Transformational leadership	Bass & Avolio (1997)	20
Contingent reward leadership	Bass & Avolio (1997)	4
Mediator variables:		
Distributive justice	Niehoff & Moorman (1993)	5
Procedural justice	Moorman (1991)	6
Interactional justice	Moorman (1991)	6
Moderator variables:		
Power distance	Dorfman & Howell (1988)	6
Traditionality	Yang et al. (1989)	5
Perceived change impact	Caldwell et al. (2004)	3
Perceived change frequency	Rafferty & Griffin (2006)	3
Dependent variables:		
Organizational commitment	Mowday et al. (1979)	6
Task performance	Farh & Cheng (1999)	4
Team Performance	Heilman et al., (1992)	3
	Item total	71

Data Sets

Regarding team member data, Company A and Company B samples did not differ significantly in age and education. Regarding team leader data, Company A and Company B samples did not differ significantly in education, but team leaders in Company B were older than team leaders in Company A (t= 5.75, df = 76, p < .05). Multivariate analysis of variance (MANOVA) was then performed to examine whether combining two samples into one data set was appropriate. Shown in Table 3, the results of the Levene's test of equality of error variances suggested that four variables (i.e., power distance, traditionality, perceived change impact, and perceived change frequency) failed to show equal error variances across Companies A and B at their respective levels of analysis. Therefore, I did not combine the two samples (cf. Kirkman et al., 2009; Spreitzer et al., 2005). Data analyses were conducted with the two samples separately.

However, it should be noted that this study results should be interpreted with cautions, as the two data sets may not have sufficient statistical power to detect relationships due to the small sample sizes, especially at the team level. For example, after conducting a 30-year review of the size of moderating effects of categorical variables as assessed using multiple regression, Aguinis, Beaty, Boik, and Pierce (2005) revealed that, of those 261 studies in applied psychology and management, the median observed effect size (f^2) is only .002 but the mean power to detect a small effect size (i.e., f^2 = .02; Cohen & Cohen, 1983) is .84. Their results suggest that it is likely that, over the past 30 years, numerous hypotheses regarding moderating effects have been discarded incorrectly due to observed effect sizes being smaller than their population counterparts. In this study, in both samples, the effect sizes (f^2) for the four moderators, two at the team level and two at the individual level, ranging from .001 to .009, are well below a small effect size (i.e., f^2 = .02) recommended by Cohen and Cohen (1983). Given the limited sample

sizes and rather small effect sizes in this study, it is possible that failures to find evidence supporting hypotheses may be due to observed effect sizes being smaller than their population counterparts.

Validation of Multilevel Data Structure

For all team-level variables in both samples, I performed a one-way random effects analysis of variance (ANOVA) in which the variable of interest (i.e., transformational leadership, distributive justice, or perceived change impact, etc.) was the dependent variable and team membership was the independent variable (Bliese, Halverson, & Schriesheim, 2002). Significant *F* values from the one-way random effects ANOVA indicate that team membership was a significant predictor of the variables of interest, suggesting that incorporating hierarchical structure into statistical analyses was appropriate (Bliese & Hanges, 2004). Shown in Tables 4 and 5, the *F* ratios for all the team-level variables were significant ($p < .05$) in both samples, indicating mean differences for each of the variables among teams in the two sets of data.

In addition, to assess the appropriateness of aggregating individual scores to the team level, I examined intraclass correlations (i.e., ICC(1) and ICC(2)) and within-group agreement (i.e., $r_{WG(j)}$). The ICC(1) represents the amount of variance in any one individual response that can be explained by team membership; the ICC(2) represents the reliability of the team mean; and the $r_{WG(j)}$ ratio examines whether one team member's response is basically identical to other team members' responses (Bliese et al., 2002). Acceptable ranges for aggregation are .05 to .50 for ICC(1), .70 or higher for ICC(2) and $r_{WG(j)}$ (Bliese et al., 2002; James, 1982; Lance, Butts, & Michels, 2006; LeBreton & Senter, 2008). Tables 4 and 5 show the ICCs and $r_{WG(j)}$s for all the team-level variables in both samples. Supporting aggregation to the team-level, mean $r_{wg(j)}$ indices ranged from .82 to .98 in the Company A sample and .93 to .99 in the Company B

sample, suggesting “strong agreement” to “very strong agreement” among team members within teams in both samples (LeBreton & Senter, 2008, p.836). All ICC(1)s, ranging from .15 to .44 in the Company A sample and .32 to .61 in the Company B sample , were above the median .12 that is often observed in organizational samples (Kirkman et al., 2009). However, most of the ICC(2)s were lower than desired (with exceptions of the ICC(2)s for procedural justice in the Company A sample and transformational leadership and contingent reward in the Company B sample). The low ICC(2)s may in part be due to the small team sizes in the samples (Bliese, 2000; Bliese et al., 2002). Thus, there was sufficient statistical justification to aggregate the following variables to the team-level in both samples: transformational leadership, contingent reward, distributive justice, procedural justice, interactional justice, perceived change impact, and perceived change frequency (cf. Hofmann, Morgeson, & Gerras, 2003; Kirkman et al., 2009).

Table 3. Levene's Test of Equality of Error Variances

Variable	*F*	*df1*	*df2*	*p-value*[c]
Individual-level variables:[a]				
1. Power distance	10.10	1	249	.00
2. Traditionality	16.74	1	249	.00
3. Organizational commitment	3.37	1	249	.07
4. Task performance	.00	1	249	.97
Team-level variables:[b]				
5. Transformational leadership	.00	1	76	.95
6. Contingent reward	.02	1	76	.90
7. Distributive justice	.16	1	76	.69
8. Procedural justice	.98	1	76	.33
9. Interactional justice	.00	1	76	.95
10. Perceived change impact	4.00	1	76	.05
11. Perceived change frequency	4.36	1	76	.04
12. Team performance	.93	1	76	.34

Note. [a] Company A: $N = 143$ individuals; Company B: $N = 108$ individuals.
[b] Company A: $N = 43$ teams; Company B: $N = 35$ teams.
[c] Test of the null hypothesis that the error variance of the variable is equal across Companies A and B at its respective level.

Table 4. Estimates of Nonindependence, Reliability, and Agreement (Company A)

	F	ICC(1)	ICC(2)	Average $r_{WG(j)}$
Transformational leadership	2.56***	.32	.61	.98
Contingent reward	1.57*	.15	.36	.85
Distributive justice	3.13***	.39	.68	.97
Procedural justice	3.58***	.44	.72	.98
Interactional justice	2.58***	.32	.61	.97
Perceived change impact	2.60***	.32	.62	.85
Perceived change frequency	2.18***	.26	.54	.82

Note. $N = 143$.
* $p < .05$. *** $p < .001$.

Table 5. Estimates of Nonindependence, Reliability, and Agreement (Company B)

	F	ICC(1)	ICC(2)	Average $r_{WG(j)}$
Transformational leadership	5.78***	.61	.83	.99
Contingent reward	3.82***	.48	.74	.94
Distributive justice	2.90***	.38	.66	.97
Procedural justice	3.13***	.41	.68	.98
Interactional justice	3.13***	.41	.68	.98
Perceived change impact	2.53***	.33	.61	.94
Perceived change frequency	2.43***	.32	.59	.93

Note. $N = 108$.
*** $p < .001$.

CHAPTER 4

RESULTS

Hypotheses Tests

Due to the multilevel nature of the model and data, team-level variables (i.e., transformational leadership, contingent reward, distributive justice, procedural justice, interactional justice, perceived change impact, perceived change frequency, and team performance) were analyzed at the upper-level of analysis, and the individual-level variables (i.e., power distance, traditionality, organizational commitment, and task performance) were analyzed at the lower-level of analysis.

Upper-Level Analyses

Hypotheses 1a, 1c, 2a-b, 3a-c, 4a-b, 6a were hypothesized at the upper-level (i.e., team level). Upper-level analyses of the proposed hypotheses were performed using ordinary least squares (OLS) regression using SPSS 16.0.

Upper-level analyses of upper-level mediation were performed following Baron and Kenny's (1986) mediation test procedures. To identify a mediated relationship, one should examine the following four relationships: (a) between the independent and mediator variables (I-M), (b) between the independent and dependent variables (I-D), (c) between the mediator and dependent variables (M-D), and (d) between the independent-mediator-dependent variables (I-M-D). Once these relationships have been established, a mediated model is fully supported if the direct path between the independent and dependent variables is not significant in the I-M-D

model. A mediation model is partially supported when the relationship between I-D is lower in the I-M-D model than when it is tested directly in the I-D model (Baron & Kenny, 1986).

For upper-level analyses of upper-level moderation, all team-level independent and moderator variables (i.e., transformational leadership, perceived change impact, perceived change frequency) were first grand-mean-centered in order to reduce potential multicollinearity problems (Aiken & West, 1991). Then, upper-level moderation was tested using moderated multiple regression analysis procedures outlined by Cohen and Cohen (1983). Moderated multiple regression analysis compares models with and without interaction terms. An interaction effect exists if the interaction term contributes significantly to the variance explained in the dependent variable over the main effects of the independent variables (Jaccard & Turrisi, 2003).

Cross-Level Analyses

Hypotheses 1b, 1d, 3d, 4c-d, 5a-b, 6b-d were hypothesized at the cross-level (i.e., team and individual levels). Cross-level analyses were performed using random coefficient modeling (RCM; also termed hierarchical linear modeling, or HLM, see Bliese, 2002) with the R 2.7.0 program (Bliese & Hanges, 2004). Because the study model hypothesized predictive effects of team-level variables (i.e., transformational leadership, contingent reward, distributive justice, procedural justice, interactional justice, perceived change impact, perceived change frequency) on individual-level variables (i.e., organizational commitment, task performance), intercepts-as-outcomes models were chosen to test the proposed hypotheses (cf. Kirkman et al., 2009; Walumbwa et al., 2008).

Cross-level mediation was tested using Mathieu and Taylor's (2007) procedures, which are in line with Baron and Kenny's (1986) mediation test. For the cross-level mediation tests, all the team-level and individual-level variables were standardized to facilitate comparisons of the

magnitudes of effects stemming from differently scaled variables as well as across levels of analyses (Mathieu & Taylor, 2007). Mathieu and Taylor's (2007) procedure includes four steps: (a) evaluate the significance of all applicable within- and cross-level X→y relations (X-y), (b) test the influence of X on M (X-M), (c) test the M→y relationship (M-y), (d) add X onto the equation containing M→y (X-M-y). In the above steps, X and M are the team-level independent and mediator variables, respectively, and y is the individual-level dependent variable. A cross-level mediated model is fully supported if the X→y relationship in the X-M-y model is no longer significant. A mediation model is partially supported if the X→y relationship in the X-M-y model is significant but lower than the X→y relationship in the X -y model (Baron & Kenny, 1986; Mathieu & Taylor, 2006, 2007).

Cross-level moderation was tested with an RCM model in which an outcome variable was regressed simultaneously on its respective predictor, moderators, and interaction terms along with control variables. For the cross-level moderation tests, all team-level independent and moderator variables (i.e., transformational leadership, contingent reward, perceived change impact, perceived change frequency) were grand-mean-centered to reduce potential multicollinearity problems (Aiken & West, 1991). However, for the cross-level moderation tests, where moderators were at the individual-level (i.e., power distance, traditionality), the moderators were group-mean-centered in order to remove the potential confounding effect of the between-group interaction between the independent variables (i.e., transformational leadership, contingent reward) and the moderators (Hofmann & Gavin, 1998).

The remainder of this chapter will be divided into two sections: Company A and Company B. In each section, I will first present the results of upper-level analyses which include results of upper-level mediation analyses and upper-level moderation analyses. Then, I will

present the results of cross-level analyses that include results of cross -level mediation analyses, cross-level moderation analyses of lower-level moderation, and cross-level moderation analyses of upper-level moderation. Last, a summary of research findings from both samples will be presented.

Company A

Table 6 presents means, standard deviations, reliability coefficients, and inter-correlations among the study variables. All coefficient alphas for measures used in this study well exceeded the generally accepted cutoff of .70.

As shown in Table 6, some variables (i.e., transformational leadership, contingent reward, distributive justice, procedural justice, and interactional justice) were highly correlated (≥ .70). For each pair of highly correlated variables, I conducted a discriminant validity test using the chi-square difference approach via AMOS 16.0. A model containing a unit correlation between each pair of constructs (e.g., transformational leadership and contingent reward) was compared to a model with a freely estimated covariance between the pair. All pairwise comparisons yielded results indicating that these constructs were distinct (TFL and CR: $\Delta\chi 2$ =41.39, $\Delta df = 1$, $p < .001$; TFL and PJ: $\Delta\chi 2 = 68.74$, $\Delta df = 1$, $p < .001$; DJ and PJ: $\Delta\chi 2 = 34.32$, $\Delta df = 1$, $p < .001$; DJ and IJ: $\Delta\chi 2 = 37.10$, $\Delta df = 1$, $p < .001$; PJ and IJ: $\Delta\chi 2 = 47.33$, $\Delta df = 1$, $p < .001$).

Table 6. Means, Standard Deviations, Reliability Coefficients, and Intercorrelations among Study Variables (Company A)

Variable	M^c	SD^c	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Individual-level variables:[a]																
1. Dyad tenure	1.85	1.25														
2. Power distance	3.19	1.13	-.01	(.89)												
3. Traditionality	3.92	1.05	-.17*	.55**	(.75)											
4. Organizational commitment	5.91	.63	.09	.13	.11	(.81)										
5. Task performance	5.53	.65	.01	-.06	-.05	.41**	(.83)									
Team-level variables:[b]																
6. Team size	4.61	.76	.03	.20*	.09	.06	.05									
7. Transformational leadership	2.84	.41	.12	.09	-.03	.40**	.53**	-.18*	(.96)							
8. Contingent reward	2.67	.40	.13	.02	.01	.37**	.47**	-.14	.84**	(.71)						
9. Distributive justice	5.94	.45	.05	.06	-.01	.54**	.53**	.02	.68**	.61**	(.89)					
10. Procedural justice	5.86	.49	.02	.02	-.01	.48**	.55**	-.09	.70**	.66**	.90**	(.93)				
11. Interactional justice	5.94	.44	.05	.06	.07	.47**	.55**	.03	.65**	.60**	.86**	.89**	(.88)			
12. Perceived change impact	4.74	.78	.02	.17*	.19*	.28**	.29**	.02	.21*	.17*	.18*	.22**	.24**	(.93)		
13. Perceived change frequency	4.19	.78	.18*	.29**	.20*	.00	.16	.20*	.01	.02	-.15	-.09	.01	.63**	(.88)	
14. Team performance	5.50	.62	.11	.05	.03	.31**	.28**	-.18*	.32**	.33**	.29**	.37**	.38**	.33**	.11	(.79)

Note. [a] $N = 143$ individuals. [b] $N = 43$ teams.

[c] Means and standard deviations were computed using $N = 143$ for individual-level variables and $N = 43$ for team-level variables.
Values in parentheses and on the diagonal represent coefficient alphas for the individual-level scales and team-level scales.
Scores for team-level variables were calculated as team-level means, assigned back to individuals. Correlations between individual- and team-level variables were based on $N = 143$.

* $p < .05$. ** $p < .01$.

Results of Upper-Level Analyses

Upper-level mediation analyses. Team-level data ($N = 43$) were used for upper-level analyses. Team size, a team-level control variable, was used in the analyses.

Analyses of upper-level mediation followed Baron and Kenny's (1986) mediation test. Hypothesis 1a proposed that transformational leadership will be positively related to team performance. Hypothesis 2b predicted that transformational leadership will be positively related to organizational justice. Hypothesis 3a proposed that distributive justice will be positively related to team performance. Hypothesis 3b proposed that procedural justice will be positively related to team performance. Hypothesis 3c proposed that interactional justice will be positively related to team performance. Hypothesis 4a (regarding transformational leadership) proposed that distributive and procedural justice will mediate the relationship between transformational leadership and team performance. Hypothesis 4b (regarding transformational leadership) proposed that interactional justice will mediate the relationship between transformational leadership and team performance. Table 7 summarizes the results of the tests of these seven hypotheses.

As shown in Table 7, the relationship between transformational leadership and team performance was not significant ($\beta = .42$, *s.e.* = .23, *n.s.*), indicating that Hypothesis 1a was not supported. Supporting Hypothesis 2b, transformational leadership was related to distributive justice ($\beta = .78$, *s.e.* = .13, $p < .001$, $R^2 = .47$), procedural justice ($\beta = .85$, *s.e.* = .14, $p < .001$, $R^2 = .49$), and interactional justice ($\beta = .73$, *s.e.* = .13, $p < .001$, $R^2 = .45$). As indicated in Table 7, the relationship between distributive justice and team performance was not significant ($\beta = .40$, *s.e.* = .20, *n.s.*), indicating that Hypothesis 3a was not supported. Shown in Table 7, both procedural justice ($\beta = .47$, *s.e.* = .18, $p < .05$, $R^2 = .17$) and interactional justice ($\beta = .59$, *s.e.*

Table 7. Results of Upper-Level Analyses of Upper-Level Mediation (Company A)

Step and results	β	*s.e.*	R^2
Distributive justice			
1. Team size	.08	.07	.47
Transformational leadership	.78***	.13	
Team performance			
2. Team size	-.11	.12	.11
Transformational leadership	.42	.23	
3. Team size	-.15	.12	.12
Distributive justice	.40	.20	
4. Team size	-.13	.13	.13
Transformational leadership	.21	.32	
Distributive justice	.27	.28	
Procedural justice			
5. Team size	.03	.07	.49
Transformational leadership	.85***	.14	
Team performance			
6. Team size	-.11	.12	.11
Transformational leadership	.42	.23	
7. Team size	-.12	.12	.17
Procedural justice	.47*	.18	
8. Team size	-.12	.12	.17
Transformational leadership	.04	.32	
Procedural justice	.45	.26	
Interactional justice			
9. Team size	.09	.07	.45
Transformational leadership	.73***	.13	
Team performance			
10. Team size	-.11	.12	.11
Transformational leadership	.42	.23	
11. Team size	-.16	.12	.20
Interactional justice	.59**	.20	
12. Team size	-.16	.12	.20
Transformational leadership	-.01	.30	
Interactional justice	.59*	.27	

Note. $N = 43$. Unstandardized regression coefficients are reported.

* $p < .05$. ** $p < .01$. *** $p < .001$.

= .20, $p < .01$, $R^2 = .20$) were related to team performance. Thus, Hypotheses 3b and 3c were supported.

When the relationships between the independent-mediator-dependent variables (I-M-D) were simultaneously examined, there were no significant relationships between the mediator-dependent variables (M-D; distributive: $\beta = .27$, *s.e.* = .28, *n.s.*; procedural: $\beta = .45$, *s.e.* = .26, *n.s.*). Thus, Hypothesis 4a (regarding transformational leadership) was not supported. However, for the model that interactional justice was proposed as the mediator, there were significant relationships between the mediator-dependent variables (M-D; $\beta = .59$, *s.e.* = .27, $p < .05$), thus providing support for Hypothesis 4b (regarding transformational leadership).

Hypothesis 1c proposed that contingent reward leadership will be positively related to team performance. Hypothesis 2a predicted that contingent reward leadership will be positively related to organizational justice. Hypothesis 4a (regarding contingent reward leadership) proposed that distributive and procedural justice will mediate the relationship between contingent reward leadership and team performance. Hypothesis 4b (regarding contingent reward leadership) proposed that interactional justice will mediate the relationship between contingent reward leadership and team performance. Table 8 summarizes the results of testing these four hypotheses.

As shown in Table 8, contingent reward leadership was related to team performance ($\beta = .48$, *s.e.* = .23, $p < .05$, $R^2 = .12$), thus providing support for Hypothesis 1c. Supporting Hypothesis 2a, contingent reward leadership was related to distributive justice ($\beta = .71$, *s.e.* = .15, $p < .001$, $R^2 = .37$), procedural justice ($\beta = .81$, *s.e.* = .15, $p < .001$, $R^2 = .43$), and interactional justice ($\beta = .67$, *s.e.* = .14, $p < .001$, $R^2 = .36$). As indicated in Table 8, when the relationships

Table 8. Results of Upper-Level Analyses of Upper-Level Mediation (Company A)

Step and results	β	*s.e.*	R^2
Distributive justice			
1. Team size	.07	.08	.37
Contingent reward	.71***	.15	
Team performance			
2. Team size	-.11	.12	.12
Contingent reward	.48*	.23	
3. Team size	-.15	.12	.12
Distributive justice	.40	.20	
4. Team size	-.12	.12	.14
Contingent reward	.31	.30	
Distributive justice	.24	.26	
Procedural justice			
5. Team size	.01	.08	.43
Contingent reward	.81***	.15	
Team performance			
6. Team size	-.11	.12	.12
Contingent reward	.48*	.23	
7. Team size	-.12	.12	.17
Procedural justice	.47*	.18	
8. Team size	-.11	.12	.18
Contingent reward	.16	.30	
Procedural justice	.39	.24	
Interactional justice			
9. Team size	.07	.07	.36
Contingent reward	.67***	.14	
Team performance			
10. Team size	-.11	.12	.12
Contingent reward	.48*	.23	
11. Team size	-.16	.12	.20
Interactional justice	.59**	.20	
12. Team size	-.14	.10	.21
Contingent reward	.13	.28	
Interactional justice	.52*	.25	

Note. $N = 43$. Unstandardized regression coefficients are reported.

* $p < .05$. ** $p < .01$. *** $p < .001$.

between the independent-mediator-dependent variables (I-M-D) were examined simultaneously, no significant relationships were found between the mediator-dependent variables (M-D; distributive: $\beta = .24$, *s.e.* = .26, *n.s.*; procedural: $\beta = .39$, *s.e.* = .24, *n.s.*). Therefore, Hypothesis 4a (regarding contingent reward leadership) was not supported. However, for the model that interactional justice was proposed as the mediator, there were significant relationships between the mediator-dependent variables (M-D; $\beta = .52$, *s.e.* = .25, $p < .05$). Therefore, Hypothesis 4b (regarding contingent reward leadership) was supported.

Upper-level moderation analyses. Team-level data ($N = 43$) were used for upper-level analyses. Team size, a team-level control variable, was used in the analyses.

Moderated multiple regression analysis (Cohen & Cohen, 1983) was used to test upper-level moderating effects. Hypothesis 6a proposed that perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and team performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency. Table 9 summarizes the results of testing this hypothesis.

In the first step, the control variable (i.e., team size) was entered. In the second step, the independent variable and two moderators were entered, which did not explain a significantly increased share of the variance in the dependent variable ($\Delta R^2 = .16$, *n.s.*). In the third and final step, the two interaction terms were entered to test the proposed hypothesis. As shown in Table 9, the interaction terms failed to contribute significantly to the variance explained in the dependent variable over the main effects of the independent and moderator variables ($\Delta R^2 = .01$, *n.s.*). In addition, shown in Table 9, Step 3, there were no significant relationships between the interaction terms and the dependent variable (TFL*PCI: $\beta = -.18$, *n.s.*; TFL*PCF: $\beta = .07$, *n.s.*).

Table 9.
Results of Hierarchical Regression Analyses For Upper-Level Moderation (Company A)

	Team performance		
Variables	Step 1	Step 2	Step 3
Team size	-.15	-.11	-.11
Transformational leadership (TFL)		.32	.34
Perceived change impact (PCI)		.27	.29
Perceived change frequency (PCF)		-.05	-.06
TFL x PCI			-.18
TFL x PCF			.07
R^2	.03	.20	.20
Adjusted R^2	.01	.11	.07
ΔR^2		.16	.01

Note. $N = 43$. Unstandardized regression coefficients are reported.

Thus, Hypothesis 6a was not supported.

Taken together, the upper-level analyses demonstrated that Hypotheses 1c, 2a-b, 3b-c, and 4b were supported, and Hypotheses 1a, 3a, 4a, and 6a were not supported.

Results of Cross-Level Analyses

Cross-level analyses were performed using random coefficient modeling (RCM) with the R 2.7.0 program (Bliese & Hanges, 2004). Team size and dyad tenure, a team-level control variable and an individual-level control variable, respectively, were used in the analyses.

Cross-level mediation analyses. Hypothesis 4c proposed that organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and follower organizational commitment. Hypothesis 4d proposed that organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and follower task performance. These two hypotheses were hypothesized at the cross-level such that the independent and mediator variables are at the team level, whereas the dependent variables are at the individual level. To test these two hypotheses, I followed the four-step procedure of cross-level RCM analyses of mediation outlined by Mathieu and Taylor (2007), which are in line with Baron and Kenny's (1986) mediation test.

For the X-M model, the results of testing Hypotheses 2a and 2b, in the Results of Upper-Level Analyses section, demonstrated support to the significant X→M relationships (i.e., contingent reward→organizational justice, transformational leadership→organizational justice). Step (b) (i.e., the X-M model) was satisfied. Tables 10 and 11 summarize the results of cross-level mediation analyses of Steps (a), (c), and (d) which examined the relationships in Models X-y, M-y, and X-M-y, respectively.

Table 10 presents the results of the test of cross-level mediation analyses in which transformational leadership was the independent variable. Hypothesis 1b proposed that transformational leadership will be positively related to follower organizational commitment and task performance. As shown in Table 10, testing Models 1 and 4 indicated significant cross-level relationships between team transformational leadership and individual organizational commitment ($\gamma = .37$, *s.e.* = .07, $p < .001$) and task performance ($\gamma = .57$, *s.e.* = .07, $p < .001$), indicating that Hypothesis 1b was supported. Hypothesis 3d proposed that organizational justice (distributive, procedural, and interactional) will be positively related to follower organizational commitment and task performance. As demonstrated in Table 10, testing Models 2, 8, and 14 revealed significant cross-level relationships between team organizational justice and individual organizational commitment (distributive: $\gamma = .47$, *s.e.* = .06, $p < .001$; procedural: $\gamma = .41$, *s.e.* = .06, $p < .001$; interactional: $\gamma = .42$, *s.e.* = .07, $p < .001$). Similarly, as shown in Table 10, testing Models 5, 11, and 17 revealed significant cross-level relationships between team organizational justice and individual task performance (distributive: $\gamma = .53$, *s.e.* = .07, $p < .001$; procedural: $\gamma = .53$, *s.e.* = .07, $p < .001$; interactional: $\gamma = .57$, *s.e.* = .07, $p < .001$), indicating that Hypothesis 3d was supported. The above results suggested that Steps (a) and (c) were satisfied in the cross-level mediation analyses.

Step (d) was performed by simultaneously regressing organizational commitment on both of the two team level variables, transformational leadership and organizational justice. As shown in Table 10, testing Models 3, 9, and 15, no significant relationships were found between transformational leadership and organizational commitment (Model 3: $\gamma = .07$, *s.e.* = .09, *n.s.*; Model 9: $\gamma = .11$, *s.e.* = .10, *n.s.*; Model 15: $\gamma = .16$, *s.e.* = .09, *n.s.*), whereas significant relationships were found between organizational justice and organizational commitment

Table 10. Results of Cross-Level Mediation Analyses (Company A)

	Dependent variables					
	Organizational commitment	Organizational commitment	Organizational commitment	Task performance	Task performance	Task performance
Model	1	2	3	4	5	6
Lower-level variables						
Dyad tenure	.03 (.05)	.04 (.05)	.04 (.05)	-.05 (.06)	-.01 (.06)	-.04 (.05)
Upper-level variables						
Team size	.15 (.09)[a]	.06 (.08)	.07 (.08)	.20 (.09)*	.06 (.09)	.15 (.09)
Transformational leadership	.37 (.07)***		.07 (.09)	.57 (.07)***		.37 (.10)***
Distributive justice		.47 (.06)***	.43 (.09)***		.53 (.07)***	.29 (.10)**
Model	7	8	9	10	11	12
Lower-level variables						
Dyad tenure	.03 (.05)	.06 (.05)	.05 (.05)	-.05 (.06)	-.02 (.05)	-.03 (.05)
Upper-level variables						
Team size	.15 (.09)	.11 (.08)	.13 (.09)	.20 (.09)*	.13 (.09)	.18 (.09)
Transformational leadership	.37 (.07)***		.11 (.10)	.57 (.07)***		.33 (.10)***
Procedural justice		.41 (.06)***	.34 (.09)***		.53 (.07)***	.31 (.09)***
Model	13	14	15	16	17	18
Lower-level variables						
Dyad tenure	.03 (.05)	.05 (.05)	.04 (.05)	-.05 (.06)	-.01 (.05)	-.04 (.05)
Upper-level variables						
Team size	.15 (.09)	.05 (.09)	.09 (.09)	.20 (.09)*	.05 (.09)	.14 (.09)
Transformational leadership	.37 (.07)***		.16 (.09)	.57 (.07)***		.34 (.10)***
Interactional justice		.42 (.07)***	.32 (.09)***		.57 (.07)***	.34 (.09)***

Note. $N = 143$ individuals and 43 teams. Unstandardized regression coefficients are reported.
[a] The first value is the parameter estimate and the value within parenthesis is the standard error.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Table 11. Results of Cross-Level Mediation Analyses (Company A)

	Dependent variables					
	Organizational commitment	Organizational commitment	Organizational commitment	Task performance	Task performance	Task performance
Model	19	20	21	22	23	24
Lower-level variables						
Dyad tenure	.03 (.05)	.04 (.05)	.04 (.05)	-.04 (.06)	-.01 (.06)	-.03 (.05)
Upper-level variables						
Team size	.13 (.09)[a]	.06 (.08)	.07 (.08)	.16 (.10)	.06 (.09)	.11 (.09)
Contingent reward	.35 (.07)***		.07 (.09)	.52 (.08)***		.27 (.10)**
Distributive justice		.47 (.06)***	.43 (.08)***		.53 (.07)***	.38 (.09)***
Model	25	26	27	28	29	30
Lower-level variables						
Dyad tenure	.03 (.05)	.06 (.05)	.05 (.05)	-.04 (.06)	-.02 (.05)	-.02 (.05)
Upper-level variables						
Team size	.13 (.09)	.11 (.08)	.12 (.08)	.16 (.10)	.13 (.09)	.16 (.09)
Contingent reward	.35 (.07)***		.09 (.09)	.52 (.08)***		.22 (.10)*
Procedural justice		.41 (.06)***	.36 (.08)***		.53 (.07)***	.39 (.09)***
Model	31	32	33	34	35	36
Lower-level variables						
Dyad tenure	.03 (.05)	.05 (.05)	.04 (.05)	-.04 (.06)	-.01 (.05)	-.03 (.05)
Upper-level variables						
Team size	.13 (.09)	.05 (.09)	.08 (.09)	.16 (.10)	.05 (.09)	.10 (.09)
Contingent reward	.35 (.07)***		.14 (.09)	.52 (.08)***		.25 (.09)**
Interactional justice		.42 (.07)***	.34 (.09)***		.57 (.07)***	.42 (.09)***

Note. $N = 143$ individuals and 43 teams. Unstandardized regression coefficients are reported.

[a] The first value is the parameter estimate and the value within parenthesis is the standard error.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(distributive: $\gamma = .43$, *s.e.* = .09, $p < .001$; procedural: $\gamma = .34$, *s.e.* = .09, $p < .001$; interactional: $\gamma = .32$, *s.e.* = .09, $p < .001$). The results indicated that Step (d) was satisfied for full mediation. Hypothesis 4c (regarding transformational leadership) received full support.

In a similar vein, Step (d) was performed by simultaneously regressing task performance on both of the two team level variables, transformational leadership and organizational justice. As shown in Table 10, testing Models 6, 12, and 18 revealed the relationships between transformational leadership and task performance were significant (Model 6: $\gamma = .37$, *s.e.* = .10, $p < .001$ Model 12: $\gamma = .33$, *s.e.* = .10, $p < .001$; Model 18: $\gamma = .34$, *s.e.* = .10, $p < .001$), although the relationships were reduced from the cross-level relationship in Step (a) ($\gamma = .57$, *s.e.* = .07, $p < .001$). Also, significant relationships were found between organizational justice and task performance (distributive: $\gamma = .29$, *s.e.* = .10, $p < .01$; procedural: $\gamma = .31$, *s.e.* = .09, $p < .001$; interactional: $\gamma = .34$, *s.e.* = .09, $p < .001$). The results indicated that Step (d) was satisfied for partial mediation. Hypothesis 4d (regarding transformational leadership) was partially supported.

Table 11 presents the results of the test of cross-level mediation analyses in which contingent reward leadership was the independent variable. Hypothesis 1d proposed that contingent reward leadership will be positively related to follower organizational commitment and task performance. As shown in Table 11, testing Models 19 and 22 indicated significant cross-level relationships between team contingent reward leadership and individual organizational commitment ($\gamma = .35$, *s.e.* = .07, $p < .001$) and task performance ($\gamma = .52$, *s.e.* = .08, $p < .001$). Hypothesis 1d was supported. As demonstrated earlier, Hypothesis 3d was supported. The above results suggested that Steps (a) and (c) were satisfied in the cross-level mediation analyses.

Step (d) was performed by simultaneously regressing organizational commitment on both of the two team level variables, contingent reward leadership and organizational justice. As shown in Table 11, testing Models 21, 27 and 33 revealed the relationships between contingent reward leadership and organizational commitment were not significant (Model 21: $\gamma = .07$, *s.e.* = .09, *n.s.*; Model 27: $\gamma = .09$, *s.e.* = .09, *n.s.*; Model 33: $\gamma = .14$, *s.e.* = .09, *n.s.*), whereas significant relationships were found between organizational justice and organizational commitment (distributive: $\gamma = .43$, *s.e.* = .08, $p < .001$; procedural: $\gamma = .36$, *s.e.* = .08, $p < .001$; interactional: $\gamma = .34$, *s.e.* = .09, $p < .001$). The results indicated that Step (d) was satisfied for full mediation. Hypothesis 4c (regarding contingent reward leadership) received full support.

In a similar vein, Step (d) was performed by simultaneously regressing task performance on both of the two team level variables, contingent reward leadership and organizational justice. As shown in Table 11, testing Models 24, 30, and 36 indicated that the relationships between contingent reward leadership and task performance were significant (Model 24: $\gamma = .27$, *s.e.* = .10, $p < .01$ Model 30: $\gamma = .22$, *s.e.* = .10, $p < .05$; Model 36: $\gamma = .25$, *s.e.* = .09, $p < .01$), although the relationships were reduced from the cross-level relationship in Step (a) ($\gamma = .52$, *s.e.* = .08, $p < .001$). In addition, significant relationships were found between organizational justice and task performance (distributive: $\gamma = .38$, *s.e.* = .09, $p < .001$; procedural: $\gamma = .39$, *s.e.* = .09, $p < .001$; interactional: $\gamma = .42$, *s.e.* = .09, $p < .001$). The results indicated that Step (d) was satisfied for partial mediation. Thus, Hypothesis 4d (regarding contingent reward leadership) was partially supported.

Taken together, the above cross-level mediation analyses indicated that Hypotheses 1b, 1d, 3d, and 4c were supported, and Hypothesis 4d was partially supported.

Cross-level moderation analyses. Cross-level moderation analyses were performed with an RCM model using the R 2.7.0 program. Following the procedures outlined by Bliese (2002), I tested an RCM model in which the dependent variable (i.e., organizational justice in Hypotheses 5a-b; organizational commitment or task performance in Hypotheses 6b-d) was regressed simultaneously on the independent variable (i.e., transformational leadership or contingent reward), the moderators (i.e., power distance and traditionality in Hypotheses 5a-b; perceived change impact and perceived change frequency in Hypotheses 6b-d), and the interaction terms along with two control variables (i.e., team size, dyad tenure). The cross-level moderation model is supported if the interaction term is significant. Tables 12, 13, and 14 summarize the results of the tests of cross-level moderation analyses.

Cross-level analyses of lower-level moderation. In this study, power distance and traditionality were two lower-level moderators. Hypothesis 5a proposed that power distance will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in power distance. Hypothesis 5b proposed that traditionality will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in traditionality. Tables 12 and 13 summarize the results of testing these two hypotheses.

Table 12. Results of RCM Analyses of Cross-level Moderation (Company A)

Model	37		38		39	
	Distributive justice		Procedural justice		Interactional justice	
Variables	Estimate	*s.e.*	Estimate	*s.e.*	Estimate	*s.e.*
Team size	.09*	.04	.03	.04	.09*	.04
Dyad tenure	-.02	.02	-.03	.03	-.02	.02
Transformational leadership (TFL)	.81***	.07	.89***	.07	.75***	.07
Power distance (PWD)	.01	.11	.03	.12	.01	.11
Traditionality (TRA)	-.01	.10	-.01	.11	-.01	.10
TFL x PWD	-.01	.13	-.03	.14	-.01	.13
TFL x TRA	.00	.11	.01	.11	.00	.11
R^2	.48		.50		.45	

Note. $N = 143$ individuals and 43 teams. Unstandardized regression coefficients are reported.
* $p < .05$. *** $p < .001$.

Table 13. Results of RCM Analyses of Cross-level Moderation (Company A)

Model	40		41		42	
	Distributive justice		Procedural justice		Interactional justice	
Variables	Estimate	*s.e.*	Estimate	*s.e.*	Estimate	*s.e.*
Team size	.07	.04	.01	.04	.07	.04
Dyad tenure	-.01	.03	-.03	.03	-.01	.03
Contingent reward (CR)	.74***	.08	.84***	.08	.69***	.08
Power distance (PWD)	.00	.05	.00	.05	.00	.05
Traditionality (TRA)	-.00	.05	-.01	.05	-.00	.04
CR x PWD	-.01	.12	-.01	.12	-.01	.11
CR x TRA	.00	.11	.00	.11	.00	.11
R^2	.38		.44		.37	

Note. N = 143 individuals and 43 teams. Unstandardized regression coefficients are reported.
*** $p < .001$.

Table 14. Results of RCM Analyses of Cross-level Moderation (Company A)

Model	43		44	
	Organizational commitment		Task performance	
Variables	Estimate	*s.e.*	Estimate	*s.e.*
Team size	.14*	.07	.14*	.06
Dyad tenure	.05	.04	-.04	.04
Transformational leadership (TFL)	.53***	.13	.92***	.12
Perceived change impact (PCI)	.33	.20	.64***	.19
Perceived change frequency (PCF)	-.30	.16	-.34*	.15
TFL x PCI	-.01	.19	-.55**	.18
TFL x PCF	.07	.17	.42**	.16
R^2	.26		.39	

Note. N = 143 individuals and 43 teams. Unstandardized regression coefficients are reported.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12 presents the results of the test of cross-level moderation analyses in which transformational leadership was the independent variable. As shown in Table 12, testing Model 37 in which distributive justice was the dependent variable, the RCM analysis indicated that the interaction effects were not significant (TFL*PWD: γ = -.01, *s.e.* = .13, *n.s.*; TFL*TRA: γ = .00, *s.e.* = .11, *n.s.*). Similarly, testing Models 38 and 39 in which procedural and interactional justice were dependent variables, respectively, the interaction effects were not significant (Model 38: TFL*PWD: γ = -.03, *s.e.* = .14, *n.s.*; TFL*TRA: γ = .01, *s.e.* = .11, *n.s.*; Model 39: TFL*PWD: γ = -.01 *s.e.* = .13, *n.s.*; TFL*TRA: γ = .00, *s.e.* = .11, *n.s.*). Thus, Hypotheses 5a and 5b (regarding transformational leadership) were not supported.

Table 13 presents the results of the test of cross-level moderation analyses in which contingent reward was the independent variable. As shown in Table 13, testing Model 40 in which distributive justice was the dependent variable, the RCM analysis indicated that the interaction effects were not significant (TFL*PWD: γ = -.01, *s.e.* = .12, *n.s.*; TFL*TRA: γ = .00, *s.e.* = .11, *n.s.*). Similarly, testing Models 41 and 42 in which procedural and interactional justice were dependent variables, respectively, the interaction effects were not significant (Model 41: TFL*PWD: γ = -.01, *s.e.* = .12, *n.s.*; TFL*TRA: γ = .00, *s.e.* = .11, *n.s.*; Model 42: TFL*PWD: γ = -.01, *s.e.* = .11, *n.s.*; TFL*TRA: γ = .00, *s.e.* = .11, *n.s.*). Thus, Hypotheses 5a and 5b (regarding contingent reward leadership) were not supported.

The results of cross-level moderation analyses of lower-level moderation suggested that there were no significant interaction effects for Models 37-42. Taken together, Hypotheses 5a and 5b were not supported.

Cross-level analyses of upper-level moderation. In this study, perceived change impact and perceived change frequency were two team-level moderators. Hypothesis 6b predicted that

perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and follower organizational commitment in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency. Hypothesis 6c predicted that perceived change impact will moderate the relationship between transformational leadership and follower task performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact. Hypothesis 6d predicted that perceived change frequency will moderate the relationship between transformational leadership and follower task performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change frequency. Table 14 summarizes the results of testing these three hypotheses.

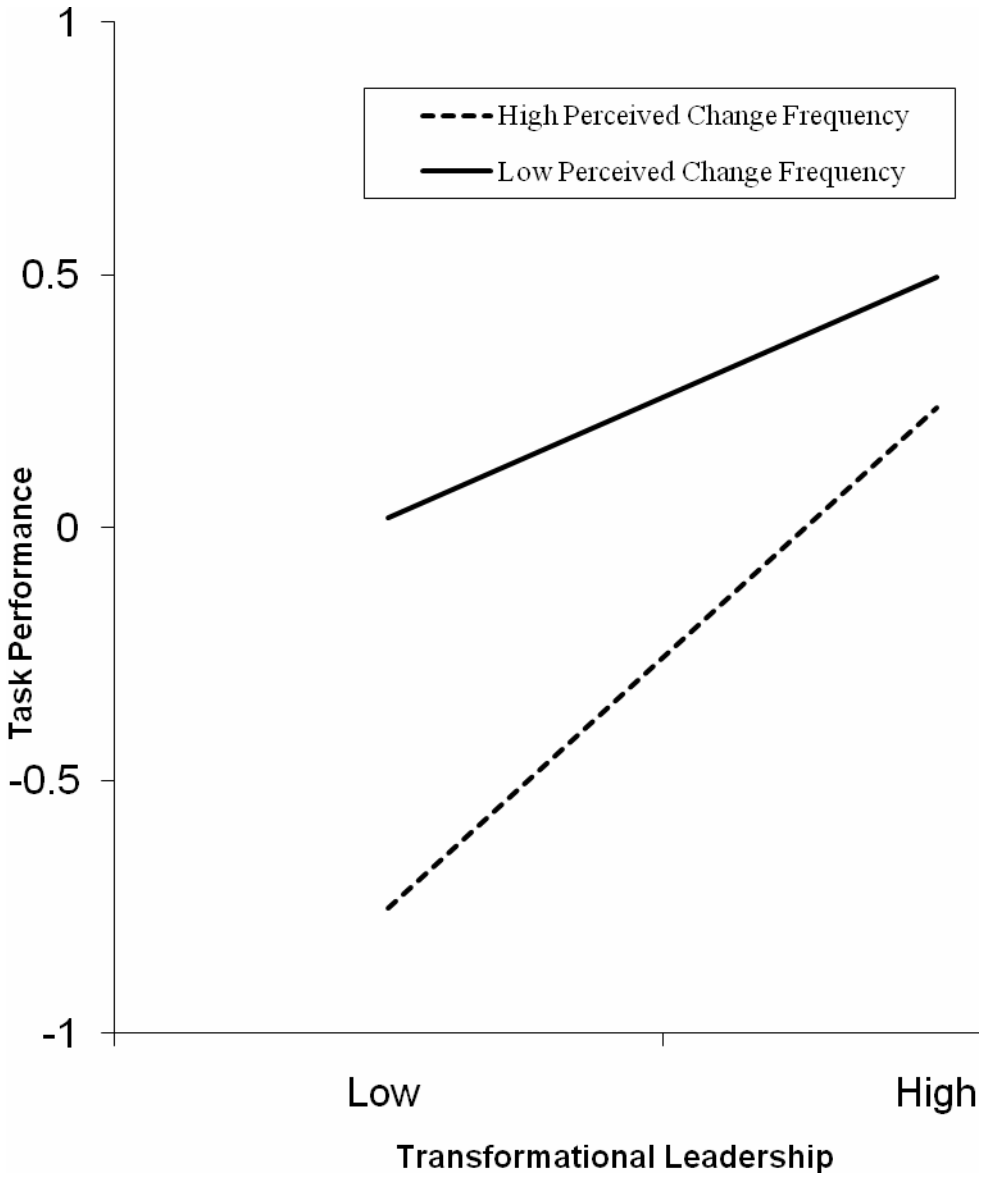
As indicated in Table 14, testing Model 43 revealed that the interaction effects were not significant (TFL*PCI: γ = -.01, *s.e.* = .19, *n.s.*; TFL*PCF: γ = .07, *s.e.* = .17, *n.s.*). Thus, Hypothesis 6b was not supported.

Shown in Table 14, testing Model 44 indicated that the interaction terms were both significant but in different directions (TFL*PCI: γ = -.55, *s.e.* = .18, $p < .01$; TFL*PCF: γ = .42, *s.e.* = .16, $p < .01$), and the model accounted for an R^2 of .39. Compared to the corresponding main effects of Model 44, the interaction terms in Model 44 contributed to a significantly increased variance explained in task performance ($\Delta R^2 = .05$, $p < .001$). For Hypothesis 6c, the interaction term (i.e., TFL*PCI) was significant but in an opposite direction to the proposed hypothesis. Thus, Hypothesis 6c was not supported. For Hypothesis 6d, the interaction term (i.e., TFL*PCF) was significant and in the same direction to the proposed hypothesis, indicating that Hypothesis 6d was supported. Figure 2 presents a plot of the interaction effect for Hypothesis 6d. Consistent to Hypothesis 6d, the relationships between transformational leadership and follower

task performance were stronger for those higher, rather than lower, in perceived change frequency.

In sum, in the Company A data, 11 hypotheses were supported, one was partially supported, and 8 were not supported.

Figure 2. Moderating Effects of Perceived Change Frequency on the Relationship between Transformational Leadership and Task Performance



Company B

Table 15 presents means, standard deviations, reliability coefficients, and inter-correlations among the study variables. All coefficient alphas for measures used in this study well exceeded the generally accepted cutoff of .70.

As shown in Table 15, some variables (i.e., transformational leadership, contingent reward, distributive justice, procedural justice, and interactional justice) were highly correlated ($\geq .70$). For each pair of highly correlated variables, I conducted a discriminant validity test using the chi-square difference approach via AMOS 16.0. A model containing a unit correlation between each pair of constructs (e.g., transformational leadership and contingent reward) was compared to a model with a freely estimated covariance between the pair. All pairwise comparisons yielded results indicating that those constructs were distinct (TFL and CR: $\Delta\chi 2$ =74.55, $\Delta df = 1$, $p < .001$; TFL and DJ: $\Delta\chi 2 = 58.28$, $\Delta df = 1$, $p < .001$; TFL and PJ: $\Delta\chi 2 = 52.87$, $\Delta df = 1$, $p < .001$; TFL and IJ: $\Delta\chi 2 = 59.88$, $\Delta df = 1$, $p < .001$; PJ and IJ: $\Delta\chi 2 = 219.27$, $\Delta df = 1$, $p < .001$).

Results of Upper-Level Analyses

Upper-Level Mediation Analyses. Team-level data ($N = 35$) were used for upper-level analyses. Team size, a team-level control variable, was used in the analyses.

Analyses of upper-level mediation followed Baron and Kenny's (1986) mediation test. Hypothesis 1a proposed that transformational leadership will be positively related to team performance. Hypothesis 2b predicted that transformational leadership will be positively related to organizational justice. Hypothesis 3a proposed that distributive justice will be positively related to team performance. Hypothesis 3b proposed that procedural justice will be positively

Table 15. Means, Standard Deviations, Reliability Coefficients, and Intercorrelations among Study Variables (Company B)

Variable	M^c	SD^c	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Individual-level variables:[a]																
1. Dyad tenure	2.48	1.50														
2. Power distance	2.56	.86	.07	(.90)												
3. Traditionality	2.71	.82	-.05	.53**	(.88)											
4. Organizational commitment	5.88	.88	-.08	.05	-.04	(.94)										
5. Task performance	5.74	.70	.04	.12	-.01	.66**	(.87)									
Team-level variables:[b]																
6. Team size	3.89	.58	.03	.29**	.12	.01	.15									
7. Transformational leadership	2.97	.44	-.14	.21*	.11	.36**	.52**	.20*	(.97)							
8. Contingent reward	2.86	.44	-.10	.26**	.09	.30**	.38**	.13	.86**	(.87)						
9. Distributive justice	5.76	.49	-.20*	-.02	-.03	.59**	.53**	.13	.71**	.53**	(.92)					
10. Procedural justice	5.50	.40	-.18	.09	-.01	.33**	.53**	.31**	.72**	.57**	.63**	(.90)				
11. Interactional justice	5.67	.47	-.18	.20*	.11	.42**	.48**	.35**	.78**	.62**	.68**	.85**	(.91)			
12. Perceived change impact	4.28	.61	-.08	-.04	-.01	.21*	.13	-.16	.19	.10	.30**	-.10	-.10	(.90)		
13. Perceived change frequency	4.01	.61	-.07	.12	.18	.14	.14	-.11	.20*	.11	.10	-.11	-.03	.80**	(.89)	
14. Team performance	5.83	.71	.00	.08	-.02	.11	.27**	.17	.52**	.50**	.30**	.43**	.33**	.20*	.08	(.81)

Note. [a] $N = 108$ individuals. [b] $N = 35$ teams.

[c] Means and standard deviations were computed using $N = 108$ for individual-level variables and $N = 35$ for team-level variables.
Values in parentheses and on the diagonal represent coefficient alphas for the individual-level scales and team-level scales.
Scores for team-level variables were calculated as team-level means, assigned back to individuals. Correlations between individual- and team-level variables were based on $N = 108$.

* $p < .05$. ** $p < .01$.

related to team performance. Hypothesis 3c proposed that interactional justice will be positively related to team performance. Hypothesis 4a (regarding transformational leadership) proposed that distributive and procedural justice will mediate the relationship between transformational leadership and team performance. Hypothesis 4b (regarding transformational leadership) proposed that interactional justice will mediate the relationship between transformational leadership and team performance. Table 16 summarizes the results of the tests of these seven hypotheses.

As shown in Table 16, the relationship between transformational leadership and team performance was significant (β = .84, *s.e.* = .25, $p < .01$, R^2 = .28), indicating that Hypothesis 1a was supported. Supporting Hypothesis 2b, transformational leadership was related to distributive justice (β = .79, *s.e.* = .14, $p < .001$, R^2 = .50), procedural justice (β = .65, *s.e.* = .11, $p < .001$, R^2 = .57), and interactional justice (β = .79, *s.e.* = .12, $p < .001$, R^2 = .65). As shown in Table 16, the relationship between distributive justice and team performance was not significant (β = .43, *s.e.* = .25, *n.s.*, R^2 = .11), indicating that Hypothesis 3a was not supported. Supporting Hypothesis 3b, shown in Table 16, procedural justice (β = .76, *s.e.* = .29, $p < .05$, R^2 = .20) was related to team performance. However, interactional justice (β = .47, *s.e.* = .27, *n.s.*, R^2 = .11) was not related to team performance, indicating that Hypothesis 3c was not supported.

When the relationships between the independent-mediator-dependent variables (I-M-D) were simultaneously examined, there were no significant relationships between the mediator-dependent variables (M-D; distributive: β = -.18, *s.e.* = .31, *n.s.*; procedural: β = .18, *s.e.* = .41, *n.s.*; interactional: β = -.40, *s.e.* = .39, *n.s.*). Thus, Hypotheses 4a and 4b (regarding transformational leadership) were not supported.

Table 16. Results of Upper-Level Analyses of Upper-Level Mediation (Company B)

Step and results	*β*	*s.e.*	R^2
Distributive justice			
1. Team size	-.01	.11	.50
Transformational leadership	.79***	.14	
Team performance			
2. Team size	.08	.19	.28
Transformational leadership	.84**	.25	
3. Team size	.15	.21	.11
Distributive justice	.43	.25	
4. Team size	.08	.19	.29
Transformational leadership	.98**	.35	
Distributive justice	-.18	.31	
Procedural justice			
5. Team size	.12	.08	.57
Transformational leadership	.65***	.11	
Team performance			
6. Team size	.08	.19	.28
Transformational leadership	.84**	.25	
7. Team size	.04	.20	.20
Procedural justice	.76*	.29	
8. Team size	.05	.20	.29
Transformational leadership	.72	.36	
Procedural justice	.18	.41	
Interactional justice			
9. Team size	.16	.09	.65
Transformational leadership	.79***	.12	
Team performance			
10. Team size	.08	.19	.28
Transformational leadership	.84**	.25	
11. Team size	.07	.22	.11
Interactional justice	.47	.27	
12. Team size	.14	.20	.30
Transformational leadership	1.15**	.39	
Interactional justice	-.40	.39	

Note. $N = 35$. Unstandardized regression coefficients are reported.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis 1c proposed that contingent reward leadership will be positively related to team performance. Hypothesis 2a predicted that contingent reward leadership will be positively related to organizational justice. Hypothesis 4a (regarding contingent reward leadership) proposed that distributive and procedural justice will mediate the relationship between contingent reward leadership and team performance. Hypothesis 4b (regarding contingent reward leadership) proposed that interactional justice will mediate the relationship between contingent reward leadership and team performance. Table 17 summarizes the results of testing these four hypotheses.

As shown in Table 17, contingent reward leadership was related to team performance (β = .79, *s.e.* = .25, $p < .001$, R^2 = .26), thus providing support for Hypothesis 1c. Supporting Hypothesis 2a, contingent reward leadership was related to distributive justice (β = .58, *s.e.* = .17, $p < .01$, R^2 = .29), procedural justice (β = .51, *s.e.* = .13, $p < .001$, R^2 = .39), and interactional justice (β = .63, *s.e.* = .14, $p < .001$, R^2 = .46). As indicated in Table 17, when the relationships between the independent-mediator-dependent variables (I-M-D) were examined simultaneously, no significant relationships were found between the mediator-dependent variables (M-D; distributive: β = .08, *s.e.* = .27, *n.s.*; procedural: β = .37, *s.e.* = .34, *n.s.*; interactional: β = -.03, *s.e.* = .32, *n.s.*). Therefore, Hypotheses 4a and 4b (regarding contingent reward leadership) were not supported.

Upper-Level Moderation Analyses. Team-level data (N = 35) were used for upper-level analyses. Team size, a team-level control variable, was used in the analyses.

Moderated multiple regression analysis (Cohen & Cohen, 1983) was used to test upper-level moderating effects. Hypothesis 6a proposed that perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and team

Table 17. Results of Upper-Level Analyses of Upper-Level Mediation (Company B)

Step and results	β	*s.e.*	R^2
Distributive justice			
1. Team size	.05	.13	.29
Contingent reward	.58**	.17	
Team performance			
2. Team size	.12	.19	.26
Contingent reward	.79**	.25	
3. Team size	.15	.21	.11
Distributive justice	.43	.25	
4. Team size	.12	.19	.26
Contingent reward	.75*	.30	
Distributive justice	.08	.27	
Procedural justice			
5. Team size	.17	.10	.39
Contingent reward	.51***	.13	
Team performance			
6. Team size	.12	.19	.26
Contingent reward	.79**	.25	
7. Team size	.04	.20	.20
Procedural justice	.76*	.29	
8. Team size	.06	.20	.29
Contingent reward	.61	.31	
Procedural justice	.37	.34	
Interactional justice			
9. Team size	.21	.11	.46
Contingent reward	.63***	.14	
Team performance			
10. Team size	.12	.19	.26
Contingent reward	.79**	.25	
11. Team size	.07	.22	.11
Interactional justice	.47	.27	
12. Team size	.13	.20	.26
Contingent reward	.81*	.33	
Interactional justice	-.03	.32	

Note. $N = 35$. Unstandardized regression coefficients are reported.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 18.
Results of Hierarchical Regression Analyses For Upper-Level Moderation (Company B)

	Team performance		
Variables	Step 1	Step 2	Step 3
Team size	.20	.10	.09
Transformational leadership(TFL)		.83**	.96**
Perceived change impact (PCI)		.44	.71
Perceived change frequency (PCF)		-.38	-.71
TFL x PCI			-.80
TFL x PCF			1.27
R^2	.03	.33	.37
Adjusted R^2	.00	.24	.23
ΔR^2		.30**	.04

Note. $N = 35$. Unstandardized regression coefficients are reported.
** $p < .01$.

performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency. Table 18 summarizes the results of testing this hypothesis.

In the first step, the control variable (i.e., team size) was entered. In the second step, the independent variable and two moderators were entered, which explained a significantly increased share of the variance in the dependent variable ($\Delta R^2 = .30$, $p < .01$). In the third and final step, the two interaction terms were entered to test the proposed hypothesis. As shown in Table 18, the interaction terms failed to contribute significantly to the variance explained in the dependent variable over the main effects of the independent and moderator variables ($\Delta R^2 = .04$, *n.s.*). In addition, shown in Table 18, Step 3, there were no significant relationships between the interaction terms and the dependent variable (TFL*PCI: $\beta = -.80$, *n.s.*; TFL*PCF: $\beta = 1.27$, *n.s.*), indicating that Hypothesis 6a was not supported.

Taken together, the upper-level analyses demonstrated that Hypotheses 1a, 1c, 2a-b, and 3b were supported, and Hypotheses 3a, 3c, 4a-b, and 6a were not supported.

Results of Cross-Level Analyses

Cross-level analyses were performed using random coefficient modeling (RCM) with the R 2.7.0 program (Bliese & Hanges, 2004). Team size and dyad tenure, a team-level control variable and an individual-level control variable, respectively, were used in the analyses.

Cross-level Mediation Analyses. Hypothesis 4c proposed that organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and follower organizational commitment. Hypothesis 4d proposed that organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent

reward leadership and follower task performance. These two hypotheses were hypothesized at the cross-level such that the independent and mediator variables are at the team level, whereas the dependent variables are at the individual level. To test these two hypotheses, I followed the four-step procedure of cross-level RCM analyses of mediation outlined by Mathieu and Taylor (2007), which are in line with Baron and Kenny's (1986) mediation test.

For the X-M model, the results of testing Hypotheses 2a and 2b, in the Results of Upper-Level Analyses section, demonstrated support to the significant X→M relationships (i.e., contingent reward→organizational justice, transformational leadership→organizational justice). Thus, Step (b) (i.e., the X-M model) was satisfied. Tables 19 and 20 summarize the results of cross-level mediation analyses of Steps (a), (c), and (d) which examined the relationships in Models X-y, M-y, and X-M-y, respectively.

Table 19 presents the results of the test of cross-level mediation analyses in which transformational leadership was the independent variable. Hypothesis 1b proposed that transformational leadership will be positively related to follower organizational commitment and task performance. As shown in Table 19, testing Models 45 and 48 indicated significant cross-level relationships between team transformational leadership and individual organizational commitment ($\gamma = .43$, *s.e.* = .11, $p < .001$) and task performance ($\gamma = .53$, *s.e.* = .09, $p < .001$). Hypothesis 1b was supported. Hypothesis 3d proposed that organizational justice (distributive, procedural, and interactional) will be positively related to follower organizational commitment and task performance. As demonstrated in Table 19, testing Models 46, 52, and 58 revealed significant cross-level relationships between team organizational justice and individual

Table 19. Results of Cross-Level Mediation Analyses (Company B)

	Dependent variables					
	Organizational commitment	Organizational commitment	Organizational commitment	Task performance	Task performance	Task performance
Model	45	46	47	48	49	50
Lower-level variables						
Dyad tenure	-.02 (.07)	.04 (.06)	.04 (.06)	.08 (.06)	.10 (.06)	.11 (.06)
Upper-level variables						
Team size	-.13 (.19)[a]	-.15 (.16)	-.13 (.16)	.06 (.15)	.12 (.15)	.06 (.14)
Transformational leadership	.43 (.11)***		-.11 (.13)	.53 (.09)***		.28 (.12)*
Distributive justice		.71 (.10)***	.79 (.13)***		.57 (.09)***	.37 (.12)**
Model	51	52	53	54	55	56
Lower-level variables						
Dyad tenure	-.02 (.07)	-.01 (.07)	-.00 (.07)	.08 (.06)	.10 (.06)	.10 (.06)
Upper-level variables						
Team size	-.13 (.19)[a]	-.21 (.19)	-.20 (.19)	.06 (.15)	-.06 (.15)	-.05 (.15)
Transformational leadership	.43 (.11)***		.12 (.15)	.53 (.09)***		.29 (.12)*
Procedural justice		.52 (.14)***	.36 (.12)**		.72 (.11)***	.46 (.15)**
Model	57	58	59	60	61	62
Lower-level variables						
Dyad tenure	-.02 (.07)	.01 (.07)	.01 (.07)	.08 (.06)	.09 (.06)	.09 (.06)
Upper-level variables						
Team size	-.13 (.19)[a]	-.31 (.19)	-.30 (.19)	.06 (.15)	-.07 (.16)	-.02 (.16)
Transformational leadership	.43 (.11)***		.08 (.16)	.53 (.09)***		.36 (.13)**
Interactional justice		.57 (.12)***	.50 (.18)**		.55 (.10)***	.22 (.10)*

Note. $N = 108$ individuals and 35 teams. Unstandardized regression coefficients are reported.
[a] The first value is the parameter estimate and the value within parenthesis is the standard error.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 20. Results of Cross-Level Mediation Analyses (Company B)

	Dependent variables					
	Organizational commitment	Organizational commitment	Organizational commitment	Task performance	Task performance	Task performance
Model	63	64	65	66	67	68
Lower-level variables						
Dyad tenure	-.04 (.07)	.04 (.06)	.04 (.06)	.05 (.06)	.10 (.06)	.10 (.06)
Upper-level variables						
Team size	-.06 (.19)[a]	-.15 (.16)	-.15 (.16)	.17 (.16)	.12 (.15)	.10 (.15)
Contingent reward	.34 (.11)**		-.02 (.11)	.38 (.09)***		.14 (.10)
Distributive justice		.71 (.10)***	.73 (.11)***		.57 (.09)***	.49 (.10)***
Model	69	70	71	72	73	74
Lower-level variables						
Dyad tenure	-.04 (.07)	-.01 (.07)	-.01 (.07)	.05 (.06)	.10 (.06)	.09 (.05)
Upper-level variables						
Team size	-.06 (.19)	-.21 (.19)	-.19 (.19)	.17 (.16)	-.06 (.15)	-.03 (.14)
Contingent reward	.34 (.11)**		.18 (.13)	.38 (.09)***		.14 (.09)
Procedural justice		.52 (.14)***	.39 (.17)*		.72 (.11)***	1.17 (.17)***
Model	75	76	77	78	79	80
Lower-level variables						
Dyad tenure	-.04 (.07)	.01 (.07)	.01 (.07)	.05 (.06)	.09 (.06)	.10 (.05)
Upper-level variables						
Team size	-.06 (.19)	-.31 (.19)	-.30 (.19)	.17 (.16)	-.07 (.16)	-.06 (.14)
Contingent reward	.34 (.11)**		.04 (.13)	.38 (.09)***		.11 (.09)
Interactional justice		.57 (.12)***	.54 (.15)***		.55 (.10)***	1.03 (.16)**

Note. $N = 108$ individuals and 35 teams. Unstandardized regression coefficients are reported.

[a] The first value is the parameter estimate and the value within parenthesis is the standard error.

* $p < .05$. ** $p < .01$. *** $p < .001$.

organizational commitment (distributive: $\gamma = .71$, *s.e.* = .10, $p < .001$; procedural: $\gamma = .52$, *s.e.* = .14, $p < .001$; interactional: $\gamma = .57$, *s.e.* = .12, $p < .001$). Similarly, as shown in Table 19, testing Models 49, 55, and 61 revealed significant cross-level relationships between team organizational justice and individual task performance (distributive: $\gamma = .57$, *s.e.* = .09, $p < .001$; procedural: $\gamma = .72$, *s.e.* = .11, $p < .001$; interactional: $\gamma = .55$, *s.e.* = .10, $p < .001$), indicating that Hypothesis 3d was supported. The above results suggested that Steps (a) and (c) were satisfied in the cross-level mediation analyses.

Step (d) was performed by simultaneously regressing organizational commitment on both of the two team level variables, transformational leadership and organizational justice. As shown in Table 19, testing Models 47, 53, and 59, no significant relationships were found between transformational leadership and organizational commitment (Model 47: $\gamma = -.11$, *s.e.* = .13, *n.s.*; Model 53: $\gamma = .12$, *s.e.* = .15, *n.s.*; Model 59: $\gamma = .08$, *s.e.* = .16, *n.s.*), whereas significant relationships were found between organizational justice and organizational commitment (distributive: $\gamma = .79$, *s.e.* = .13, $p < .001$; procedural: $\gamma = .36$, *s.e.* = .12, $p < .01$; interactional: $\gamma = .50$, *s.e.* = .18, $p < .01$). The results indicated that Step (d) was satisfied for full mediation. Thus, Hypothesis 4c (regarding transformational leadership) received full support.

In a similar vein, Step (d) was performed by simultaneously regressing task performance on both of the two team level variables, transformational leadership and organizational justice. As shown in Table 19, testing Models 50, 56, and 62 revealed that the relationships between transformational leadership and task performance were significant (Model 50: $\gamma = .28$, *s.e.* = .12, $p < .05$; Model 56: $\gamma = .29$, *s.e.* = .12, $p < .05$; Model 62: $\gamma = .36$, *s.e.* = .13, $p < .01$), although the relationships were reduced from the cross-level relationship in Step (a) ($\gamma = .53$, *s.e.* = .09, $p < .001$). In addition, significant relationships were found between organizational justice and task

performance (distributive: $\gamma = .37$, *s.e.* = .12, $p < .01$; procedural: $\gamma = .46$, *s.e.* = .15, $p < .01$; interactional: $\gamma = .22$, *s.e.* = .10, $p < .05$). The results indicated that Step (d) was satisfied for partial mediation. Thus, Hypothesis 4d (regarding transformational leadership) was partially supported.

Table 20 presents the results of the test of cross-level mediation analyses in which contingent reward leadership was the independent variable. Hypothesis 1d proposed that contingent reward leadership will be positively related to follower organizational commitment and task performance. As shown in Table 20, testing Models 63 and 66 indicated significant cross-level relationships between team contingent reward leadership and individual organizational commitment ($\gamma = .34$, *s.e.* = .11, $p < .01$) and task performance ($\gamma = .38$, *s.e.* = .09, $p < .001$), indicating that Hypothesis 1d was supported. As demonstrated earlier, Hypothesis 3d was supported. The above results suggested that Steps (a) and (c) were satisfied in the cross-level mediation analyses.

Step (d) was performed by simultaneously regressing organizational commitment on both of the two team level variables, contingent reward leadership and organizational justice. As shown in Table 20, testing Models 65, 71 and 77 revealed that the relationships between contingent reward leadership and organizational commitment were not significant (Model 65: $\gamma = -.02$, *s.e.* = .11, *n.s.*; Model 71: $\gamma = .18$, *s.e.* = .13, *n.s.*; Model 77: $\gamma = .04$, *s.e.* = .13, *n.s.*), whereas significant relationships were found between organizational justice and organizational commitment (distributive: $\gamma = .73$, *s.e.* = .11, $p < .001$; procedural: $\gamma = .39$, *s.e.* = .17, $p < .05$; interactional: $\gamma = .54$, *s.e.* = .15, $p < .001$). The results indicated that Step (d) was satisfied for full mediation. Thus, Hypothesis 4c (regarding contingent reward leadership) received full support.

In a similar vein, Step (d) was performed by simultaneously regressing task performance on both of the two team level variables, contingent reward leadership and organizational justice. As shown in Table 20, testing Models 68, 74, and 80 indicated that the relationships between contingent reward leadership and task performance were not significant (Model 68: $\gamma = .14$, *s.e.* = .10, *n.s.*; Model 74: $\gamma = .14$, *s.e.* = .09, *n.s.*; Model 80: $\gamma = .11$, *s.e.* = .09, *n.s.*), whereas significant relationships were found between organizational justice and task performance (distributive: $\gamma = .49$, *s.e.* = .10, $p < .001$; procedural: $\gamma = 1.17$, *s.e.* = .17, $p < .001$; interactional: $\gamma = 1.03$, *s.e.* = .16, $p < .001$). The results indicated that Step (d) was satisfied for full mediation. Thus, Hypothesis 4d (regarding contingent reward leadership) was fully supported.

Taken together, the above cross-level mediation analyses indicated that Hypotheses 1b, 1d, 3d, 4c, and 4d were supported.

Cross-Level Moderation Analyses. Cross-level moderation analyses were performed with an RCM model using the R 2.7.0 program. Following the procedures outlined by Bliese (2002), I tested an RCM model in which the dependent variable (i.e., organizational justice in Hypotheses 5a-b; organizational commitment or task performance in Hypotheses 6b-d) was regressed simultaneously on the independent variable (i.e., transformational leadership or contingent reward), the moderators (i.e., power distance and traditionality in Hypotheses 5a-b; perceived change impact and perceived change frequency in Hypotheses 6b-d), and the interaction terms along with two control variables (i.e., team size, dyad tenure). The cross-level moderation model is supported if the interaction term is significant. Tables 21, 22, and 23 summarize the results of the tests of cross-level mediation analyses.

Table 21. Results of RCM Analyses of Cross-level Moderation (Company B)

Model	81		82		83	
	Distributive justice		Procedural justice		Interactional justice	
Variables	Estimate	*s.e.*	Estimate	*s.e.*	Estimate	*s.e.*
Team size	-.00	.06	.12*	.05	.16*	.05
Dyad tenure	-.04	.02	-.02	.02	-.03	.02
Transformational leadership (TFL)	.77***	.08	.62***	.06	.77***	.07
Power distance (PWD)	.05	.24	.04	.19	.04	.20
Traditionality (TRA)	-.02	.17	-.02	.13	-.02	.14
TFL x PWD	-.04	.24	-.03	.19	-.03	.19
TFL x TRA	.01	.18	.01	.14	.01	.14
R^2	.51		.56		.65	

Note. $N = 108$ individuals and 35 teams. Unstandardized regression coefficients are reported.
* $p < .05$. *** $p < .001$.

Table 22. Results of RCM Analyses of Cross-level Moderation (Company B)

Model	84		85		86	
	Distributive justice		Procedural justice		Interactional justice	
Variables	Estimate	*s.e.*	Estimate	*s.e.*	Estimate	*s.e.*
Team size	.06	.07	.17**	.05	.22**	.06
Dyad tenure	-.05	.03	-.04	.02	-.04	.02
Contingent reward (CR)	.56***	.09	.48***	.07	.60***	.08
Power distance (PWD)	.02	.09	.01	.07	.02	.07
Traditionality (TRA)	-.01	.08	-.01	.06	-.01	.06
CR x PWD	-.01	.20	-.01	.16	-.01	.17
CR x TRA	-.01	.19	-.01	.15	-.01	.16
R^2	.31		.40		.48	

Note. N = 108 individuals and 35 teams. Unstandardized regression coefficients are reported.
** $p < .01$. *** $p < .001$.

Table 23. Results of RCM Analyses of Cross-level Moderation (Company B)

Model	87		88	
	Organizational commitment		Task performance	
Variables	Estimate	*s.e.*	Estimate	*s.e.*
Team size	-.05	.14	.05	.10
Dyad tenure	.00	.05	.06	.04
Transformational leadership (TFL)	.30	.23	.72***	.18
Perceived change impact (PCI)	1.11	.92	.94	.70
Perceived change frequency (PCF)	.23	.94	-.60	.71
TFL x PCI	-.78	.81	-.82	.61
TFL x PCF	-.49	.80	.50	.61
R^2	.23		.30	

Note. N = 108 individuals and 35 teams. Unstandardized regression coefficients are reported.
*** $p < .001$.

Cross-level analyses of lower-level moderation. In this study, power distance and traditionality were two lower-level moderators. Hypothesis 5a proposed that power distance will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in power distance. Hypothesis 5b proposed that traditionality will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in traditionality. Tables 21 and 22 summarize the results of testing these two hypotheses.

Table 21 presents the results of the test of cross-level moderation analyses in which transformational leadership was the independent variable. As shown in Table 21, testing Model 81 in which distributive justice was the dependent variable, the RCM analysis indicated that the interaction effects were not significant (TFL*PWD: γ = -.04, *s.e.* = .24, *n.s.*; TFL*TRA: γ = .01, *s.e.* = .18, *n.s.*). Similarly, testing Models 82 and 83 in which procedural and interactional justice were dependent variables, respectively, the interaction effects were not significant (Model 82: TFL*PWD: γ = -.03, *s.e.* = .19, *n.s.*; TFL*TRA: γ = .01, *s.e.* = .14, *n.s.*; Model 83: TFL*PWD: γ = -.03 *s.e.* = .19, *n.s.*; TFL*TRA: γ = .01, *s.e.* = .14, *n.s.*). Thus, Hypotheses 5a and 5b (regarding transformational leadership) were not supported.

Table 22 presents the results of the test of cross-level moderation analyses in which contingent reward was the independent variable. As shown in Table 22, testing Model 84 in which distributive justice was the dependent variable, the RCM analysis indicated that the interaction effects were not significant (TFL*PWD: γ = -.01, *s.e.* = .20, *n.s.*; TFL*TRA: γ = -.01, *s.e.* = .19, *n.s.*). Similarly, testing Models 85 and 86 in which procedural and interactional justice

were dependent variables, respectively, the interaction effects were not significant (Model 85: TFL*PWD: γ = -.01, *s.e.* = .16, *n.s.*; TFL*TRA: γ = -.01, *s.e.* = .15, *n.s.*; Model 86: TFL*PWD: γ = -.01, *s.e.* = .17, *n.s.*; TFL*TRA: γ = -.01, *s.e.* = .16, *n.s.*). Thus, Hypotheses 5a and 5b (regarding contingent reward leadership) were not supported.

The results of cross-level moderation analyses of lower-level moderation suggested that there were no significant interaction effects for Models 81-86. Taken together, Hypotheses 5a and 5b were not supported.

Cross-level analyses of upper-level moderation. In this study, perceived change impact and perceived change frequency were two team-level moderators. Hypothesis 6b predicted that perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and follower organizational commitment in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency. Hypothesis 6c predicted that perceived change impact will moderate the relationship between transformational leadership and follower task performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact. Hypothesis 6d predicted that perceived change frequency will moderate the relationship between transformational leadership and follower task performance in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change frequency. Table 23 summarizes the results of testing these three hypotheses.

As shown in Table 23, testing Model 87 revealed that the interaction effects were not significant (TFL*PCI: γ = -.78, *s.e.* = .81, *n.s.*; TFL*PCF: γ = -.49, *s.e.* = .80, *n.s.*), indicating that Hypothesis 6b was not supported. Similarly, shown in Table 23, testing Model 88 indicated

that the interaction effects were not significant (TFL*PCI: γ = -.82, *s.e.* = .61, *n.s.*; TFL*PCF: γ = .50, *s.e.* = .61, *n.s.*). Hypotheses 6c and 6d were not supported.

In sum, in the Company B data, 10 hypotheses were supported, and 10 were not supported.

Summary of Research Findings

Table 24 summarizes the study's research findings in both samples. In sum, eight hypotheses (H1b-d, 2a-b, 3b, 3d, and 4c) were supported in both samples, seven hypotheses (H 3a, 4a, 5a-b, and 6a-c) were not supported in both samples, and five hypotheses (H 1a, 3c, 4b, 4d, and 6d) received mixed support in the two samples.

Table 24. Summary of Research Hypotheses' Results

Hypotheses	Findings (Company A)	Findings (Company B)
H1a: Transformational leadership will be positively related to work outcomes at the team level (team performance).	Not Supported	Supported
H1b: Transformational leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).	Supported	Supported
H1c: Contingent reward leadership will be positively related to work outcomes at the team level (team performance).	Supported	Supported
H1d: Contingent reward leadership will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).	Supported	Supported
H2a: Contingent reward leadership will be positively related to organizational justice (distributive, procedural, and interactional).	Supported	Supported
H2b: Transformational leadership will be positively related to organizational justice (distributive, procedural, and interactional).	Supported	Supported
H3a: Organizational justice (distributive) will be positively related to work outcomes at the team level (team performance).	Not Supported	Not Supported
H3b: Organizational justice (procedural) will be positively related to work outcomes at the team level (team performance).	Supported	Supported
H3c: Organizational justice (interactional) will be positively related to work outcomes at the team level (team performance).	Supported	Not Supported
H3d: Organizational justice (distributive, procedural, and interactional) will be positively related to work outcomes at the individual level (follower organizational commitment and task performance).	Supported	Supported
H4a: Organizational justice (distributive and procedural) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).	Not Supported	Not Supported
H4b: Organizational justice (interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (team performance).	Supported	Not Supported
H4c: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower organizational commitment).	Supported	Supported

Table 24 continued. Summary of Research Hypotheses' Results

Hypotheses	Findings (Company A)	Findings (Company B)
H4d: Organizational justice (distributive, procedural, and interactional) will mediate the relationship between transformational-transactional contingent reward leadership and work outcomes at the individual level (follower task performance).	Partially Supported	Supported
H5a: Power distance will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in power distance.	Not Supported	Not Supported
H5b: Traditionality will moderate the relationship between transformational-transactional contingent reward leadership and organizational justice (distributive, procedural, and interactional) in such a way that the relationships will be weaker for those higher, rather than lower, in traditionality.	Not Supported	Not Supported
H6a: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the team level (team performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.	Not Supported	Not Supported
H6b: Perceived change impact and perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower organizational commitment) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact and perceived change frequency.	Not Supported	Not Supported
H6c: Perceived change impact will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change impact.	Not Supported	Not Supported
H6d: Perceived change frequency will moderate the relationship between transformational leadership and work outcomes at the individual level (follower task performance) in such a way that the relationships will be stronger for those higher, rather than lower, in perceived change frequency.	Supported	Not Supported

CHAPTER 5

DISCUSSION

Despite extensive research on leadership, more research is needed to examine the underlying process and boundary conditions (Avolio et al., 2009; Dvir et al., 2002; Yukl, 2007). The purpose of this dissertation was to investigate how and when leadership behaviors influence work outcomes such as followers' job performance and attitudes, and team effectiveness. To do so, I developed a comprehensive model by integrating multiple theories, namely, transformational-transactional leadership, cultural value orientations, organizational justice, and organizational change. Specifically, this study, from a multi-level perspective, attempted to examine: (a) whether the transformational-transactional leadership—outcome relationship is realized through organizational justice (i.e., underlying processes); (b) whether power distance and traditionality (i.e., boundary conditions) and transformational-transactional leadership jointly influence organizational justice; and (c) whether transformational leaders are effective during times of organizational change (i.e., boundary conditions).

In addition, this study also aimed at assessing the transportability of transformational-transactional contingent reward leadership theory in China, a traditional eastern society. Bass' (1985) transformational-transactional leadership has been well established in the West. Although some studies in this area have taken place in non-western societies, a growing body of literature questions the transportability of organizational theories from one society to another (Tsui et al., 2007). Therefore, this study makes a contribution to the transformational-transactional leadership literature by extending leadership research to Chinese society.

General Discussion

The objectives of this dissertation were to investigate the following four aspects of transformational-transactional contingent reward leadership: (a) leadership effectiveness in task teams (i.e., at both the team and individual levels); (b) the mechanism by which leaders influence work outcomes; (c) the role of cultural value orientations in the leadership—outcome relationship; and (d) the effectiveness of transformational leadership during times of change. Through developing a comprehensive model and empirically examining it, this study attempted to shed light on the following four topics: (a) the effectiveness of transformational-transactional contingent reward leadership from a multi-level perspective; (b) the mediating effects of organizational justice in the leadership—outcome relationship; (c) the moderating effects of power distance and traditionality in the leadership—outcome relationship; and (d) the moderating effects of perceived change impact and perceived change frequency in the transformational leadership—outcome relationship. The next four sections provide a detailed discussion of each of the four topics in terms of the study findings, and theoretical and practical implications. Study limitations and directions for future research will also be discussed.

It should be noted that cautions need to be taken. In this study, data analyses were conducted separately with the Companies A and B samples, because the results of a MANOVA suggested that the four moderator variables (i.e., power distance, traditionality, perceived change impact, and perceived change frequency) failed to show equal error variances across the two companies at their respective levels of analysis. Due to the small sample sizes and effects sizes in both samples, especially at the team level, this study may not have sufficient statistical power to provide evidence supporting a hypothesis in one of or both the two samples when in fact there is a relationship in the respective populations. For example, three hypotheses (i.e., H 3c, 4b, and 6d)

received support in the Company A sample but not in the Company B sample. One explanation for this result may be that the Company B data set (i.e., 108 individuals and 35 teams) had a smaller sample size and effect sizes, and thus statistical power, for variables of interest than did the Company A data set (i.e., 143 individuals and 43 teams). For instance, regarding Hypothesis 6d, post-hoc power analysis revealed the statistical power to detect moderating effects for perceived change impact and perceived change frequency was approximately 42% in the Company A sample, whereas it was only about 13% in the Company B sample (Cohen, 1988). This result suggests that failure to find support for Hypothesis 6d in the Company B sample does not necessarily mean that there are no moderating effects in the population to whom Company B belongs. Rather, such failure may be due to the smaller effect size, and thus statistical power, in the Company B sample than that in the population. Therefore, cautions need to be taken in this study.

The Effectiveness of Transformational-Transactional Contingent Reward Leadership

The first objective was to investigate the effectiveness of transformational and contingent reward leadership in task teams (i.e., at both the team and individual levels) in Chinese society. The study findings (with an exception of the finding of H1a in the Company A sample), drawn in China, a typical eastern society, are consistent with the transformational-transactional contingent reward leadership—outcome relationships reported for, mainly, western societies (cf. Judge & Piccolo, 2004; Lowe et al., 1996). Thus, these results confirm Bass' (1999) contention that transformational and transactional leadership are universal.

At the individual level, the study findings suggested that both transformational and contingent reward leadership were effective in motivating team members to perform at a high level and to be more committed to their organizations. This finding indicates that an effective

leader exhibits both transformational and transactional contingent reward leadership, which is in line with Bass and Avolio's (1993) contention that, although transformational and transactional leadership are distinct constructs, they are not mutually exclusive and the best leaders are both transactional and transformational.

At the team level, this study suggested that contingent reward leadership was effective in leading task teams to accomplish goals in both samples. However, regarding the effectiveness of transformational leadership on team performance, the study findings are mixed such that transformational leaders were effective in leading task teams in Company B but not in Company A. Investigation of Tables 6 and 15 reveals that, although the zero-order correlations between transformational leadership and team performance were significant in both samples (Company A: $r = .32$, $p < .01$; Company B: $r = .52$, $p < .01$) and the mean scores of transformational leadership were close in both samples, the mean scores of team size were different. I performed an independent-samples t-test (i.e., 2-tailed) to compare the mean scores of transformational leadership and team size between the two companies, as team size was used as a control variable in the hypotheses analyses. The comparisons indicated that there were no significant differences in transformational leadership between the two companies ($t = 1.36$, $df = 76$, *n.s.)*, but the mean score of team size in Company A (mean = 4.61, $SD = .76$) was significantly larger than that in Company B (mean = 3.89, $SD = .58$; $t = 4.60$, $df = 76$, $p < .001$). This result suggests that, in the Company A sample, team size may have an impact on the effectiveness of transformational leadership in teams. In addition, the nature of the task functions performed by the teams in each of the two companies was different. Company A was an information technology services organization that required team members to have a great degree of communication, coordination, and cooperation to accomplish team tasks (i.e., network and information systems integration

projects) effectively, whereas Company B was a travel services organization that might not necessarily require great interactions among team members, and the team tasks (i.e., hotel reservations) were less influenced by team processes (Stanley, Incalcaterra, Joshi, & Beaubien, 2002; Sundstrom, De Meuse, & Futrell, 1990). Therefore, task interdependency may also have an impact on the effectiveness of transformational leadership in teams (Stanley et al., 2002). Attention to team size and task interdependency may help advance our understanding on the effectiveness of transformational leadership in teams.

In this study, both transformational and contingent reward leadership were based on team members' shared perceptions of their team leaders' leadership behaviors. In both samples, the mean scores of the two leadership behaviors are comparable to those in prior studies (cf. Keller, 2006; Walumbwa et al., 2008). However, when compared the two mean scores (i.e., paired-samples t-test, 2-tailed) in each of the two samples, I found that the mean score of transformational leadership was significantly higher than that of contingent reward leadership in both samples (Company A: $t = 5.03$, $df = 42$, $p < .001$; Company B: $t = 2.81$, $df = 34$, $p < .01$). This result may be due in part to the types of the sample organizations included in the study. In this study, both Companies A and B were in the service industry, suggesting that both companies were less constrictive, or more organic, as opposed to their counterparts in the manufacturing industry (Burns & Stalker, 1961). As Bass (1985) suggested, transformational leadership may be more frequent in organizations with an organic environment. The finding of this study confirmed such a contention.

It is also worth noting that, the correlation coefficients of the two leadership behaviors and work outcomes at the individual level were different. For Company A, shown in Tables 10 and 11, two pairs of correlation coefficients were compared (Pair 1: TFL→OC: $\beta = .37$ vs.

CR→OC: β = .35; Pair 2: TFL→TKP: β = .57 vs. CR→TKP: β = .52; Cohen & Cohen, 1983). The comparisons revealed that there were no significant differences between the coefficients of the two pairs (Pair 1: t = .48, df = 140, *n.s.*; Pair 2: t = 1.36, df = 140, *n.s.*). For Company B, shown in Tables 19 and 20, two pairs of correlation coefficients were compared (Pair 3: TFL→OC: β = .43 vs. CR→OC: β = .34; Pair 4: TFL→TKP: β = .53 vs. CR→TKP: β = .38). The comparisons indicated that there were no significant differences between the coefficients of Pair 3 (t = 1.92, df = 105, *n.s.*), but there were significant differences between the coefficients of TFL→TKP and CR→TKP (t = 4.58, df = 105, $p < .01$). The results suggest that, in this study, although both transformational and contingent reward leadership were positively related to work outcomes at the individual level, transformational leadership was more effective than contingent reward leadership in motivating team members to perform at a high level in Company B.

To Chinese team leaders, the implication is that both transformational and transactional contingent reward leadership are effective in motivating team members to perform at a high level and to make a strong commitment to their organization. Chinese team leaders need to be aware that setting goals, providing direction and support, and exchanging rewards for work well done (i.e., transactional contingent reward leadership) will positively influence work outcomes at the individual level. Equally important, if not more, Chinese team leaders also need to understand that, beyond the above simple transactions, articulating a vision of the future, treating team members with individual consideration, inspiring and motivating them to accomplish challenging goals (i.e., transformational leadership) are positively associated with work outcomes at the individual level.

Mediating Effects of Organizational Justice

Despite significant progress in investigating the processes through which leaders positively influence work outcomes, further research is still needed to advance our understanding of process mechanisms (Avolio et al., 2009). In response to this call, the second objective of this study was to examine the mediating effects of organizational justice in the relationship between transformational-transactional contingent reward leadership and work outcomes at the team level (i.e., team performance) and the individual level (i.e., organizational commitment, task performance). The results of this study were mixed.

First, at the team level, mediating effects of distributive justice were not found in the leadership-outcome relationship in both samples. Although there was evidence that transformational-transactional contingent reward leadership was positively related to distributive justice, distributive justice was not associated with team performance. This result indicates that, at the team level, leaders' transformational-transactional contingent reward behaviors heighten shared perceptions of distributive justice among team members, whereas shared perceptions of distributive justice among team members do not necessarily contribute to positive team performance. Theoretically, distributive justice should be related to team performance when team leaders control the exchange of resources and rewards. However, similar to this study finding, some studies have not found the distributive justice-outcome relationship (cf. Cropanzano et al., 2002; Wayne et al., 2002). One explanation may lie in the fact that distributive justice perceptions may be influenced by organizational factors such as established policy and regulations rather than factors under a team leader's control.

Second, at the team level, mediating effects of procedural justice were not found in the leadership-outcome relationship, although there was evidence that transformational-transactional

contingent reward leadership was positively related to procedural justice and that procedural justice was associated with team performance. This result indicates that, at the team level, leaders' transformational-transactional contingent reward behaviors heighten shared perceptions of procedural justice among team members, and that shared perceptions of procedural justice among team members contribute to positive team performance. This result, however, does not imply that shared perceptions of procedural justice among team members explain how or why leaders' transformational-transactional contingent reward behaviors positively influence team performance.

Third, at the team level, mediating effects of interactional justice were not found in the leadership-outcome relationship in the Company B sample. Although there was evidence that transformational-transactional contingent reward leadership was positively related to interactional justice, interactional justice was not associated with team performance in the Company B sample. This result indicates that, at the team level, leaders' transformational-transactional contingent reward behaviors heighten shared perceptions of interactional justice among team members, whereas shared perceptions of interactional justice among team members do not necessarily contribute to positive team performance.

Fourth, however, at the team level, mediating effects of interactional justice were found in the leadership-outcome relationship in the Company A sample. This study provides evidence that shared perceptions of interactional justice among team members mediated the relationship between leaders' transformational-transactional contingent reward behaviors and team performance. This finding suggests that leaders' transformational-transactional contingent reward behaviors are effective in leading teams to accomplish goals. However, the effect of such leadership behaviors on team performance is based on the shared perceptions of interactional

justice among team members in their task teams. This is a two-fold phenomenon: first, leaders' transformational-transactional contingent reward behaviors enhance shared perceptions of fairness of interpersonal treatments among team members; second, through such shared perceptions, or underlying processes, these leaders have a positive impact on team performance outcomes. This finding is consistent with the contention that fairness to followers is one of the most valued behaviors of an effective leader (Cropanzano et al., 2002).

Fifth, at the cross level, mediating effects of organizational justice (distributive, procedural, and interactional) were found in the leadership-outcome relationship (i.e., organizational commitment). This study provides evidence that shared perceptions of organizational justice among team members mediated the relationship between team leaders' transformational-transactional contingent reward behaviors and team members' organizational commitment. This finding suggests that leaders' transformational-transactional contingent reward behaviors are effective in raising team members' commitment to their organizations. However, the effect of such leadership behaviors on team members' organizational commitment is based on the shared perceptions of organizational justice among them in their task teams. This is a two-fold phenomenon: first, leaders' transformational-transactional contingent reward behaviors enhance shared perceptions of fairness of rewards, decision-making procedures, and interpersonal treatments among team members; second, through such shared perceptions, or underlying processes, these leaders have a positive impact on team members' commitment to their organization. This finding is consistent with the contention that fair treatment between leader and foolower is the primary determinant of follower behavior (Li & Cropanzano, 2009, Wayne et al., 1997).

Sixth, at the cross level, mediating effects of organizational justice (distributive, procedural, and interactional) were found in the leadership-outcome relationship (i.e., task performance) in the Company B sample. This study provides evidence that shared perceptions of organizational justice among team members mediated the relationship between leaders' transformational-transactional contingent reward behaviors and team members' task performance. This finding suggests that leaders' transformational-transactional contingent reward behaviors are effective in motivating team members to perform at a high level. However, the effect of such leadership behaviors on team members' task performance is based on the shared perceptions of organizational justice among team members in their task teams. This is a two-fold phenomenon: first, leaders' transformational-transactional contingent reward behaviors heighten shared perceptions of fairness of rewards, decision-making procedures, and interpersonal treatments among team members; second, through such shared perceptions, or underlying processes, these leaders have a positive impact on team members' task performance outcomes. This finding is consistent with the contention that one of the most valued behaviors of an effective leader is being just to followers (Cropanzano et al., 2002).

Seventh, at the cross level, partial mediating effects of organizational justice were found in the leadership-outcome relationship (i.e., task performance) in the Company A sample. This finding implies that, although organizational justice is not both a necessary and a sufficient condition for such a leadership-outcome relationship to occur, organizational justice is potent (Baron & Kenny, 1986). This result suggests that leaders' transformational-transactional contingent reward behaviors are effective in motivating team members to perform at a high level. However, the effect of such leadership behaviors on team members' task performance is partially based on the shared perceptions of organizational justice among team members. This is a two-

fold phenomenon: first, leaders' transformational-transactional contingent reward behaviors heighten shared perceptions of fairness of rewards, decision making procedures, and interpersonal treatments among team members; second, partially through such shared perceptions, or underlying processes, transformational-transactional contingent reward leaders have a positive impact on team members' task performance. Although partial mediation was found in this study, two recent studies found full mediation effects of procedural justice in their respective leadership-outcome relationships at their respective levels of analysis (e.g., Kirkman et al., 2009; Walumbwa et al., 2008).

These study findings suggest some interesting speculations. At the team level, this study failed to provide evidence for the mediating role of organizational justice in the leadership—outcome relationship (i.e., team performance; with an exception of the significant mediating effects of interactional justice in the Company A sample), whereas at the cross level, this study showed evidence for the partial to full mediating effects of organizational justice in the leadership—outcome relationship (i.e., organizational commitment, task performance). Although team members' task performance, according to the definition (Farh & Cheng, 1999), constitutes team performance, the partial to full mediating effect of organizational justice in the leadership-task performance relationship did not hold up in the leadership-team performance relationship (with an exception of the significant mediating effects of interactional justice in the Company A sample). Realizing team members' task performance was rated by team leaders and team performance was evaluated by managers (i.e., team leaders' supervisors), task performance only explained 8% of the variance in team performance in the Company A sample and 7% in the Company B sample. This result suggests that a team leader's expectations of getting tasks done well (by team members) for the sake of the team may (or, rather, more likely) not necessarily

equate to his/her manager's expectations of getting tasks accomplished effectively (by the team leader) for the sake of the organization. The rather low predictability of task performance on team performance suggested that factors, other than individual task performance, contributed to the ratings of team performance, at least from those managers' perspective. One explanation may lie in the fact that team performance depends in part on how teams relate to other teams in the same organization (Guzzo & Shea, 1992). For instance, in the eyes of those managers, team leaders' ability to deal with inter-team conflict might play an important role in assessing team performance (Palanski & Yammarino, 2009). Tables 6 and 15 provide preliminary evidence that all the intercorrelations between transformational-transactional contingent reward leadership/organizational justice and team performance (Company A: ranging from .29 to .38; Company B: ranging from .30 to .52) are generally lower than the intercorrelations between those and task performance (Company A: ranging from .47 to .55; Company B: ranging from .38 to .53). Therefore, team performance was related not just to intra-team task performance (as measured by task performance) but also other possible factors such as inter-team relations. These other factors more likely added noise to the proposed mediation model at the team level, and consequently, no support was found. Further research is indeed needed to explore the potential other factors. In addition, at the team level, failure to detect the mediating effects of organizational justice in the leadership—outcome relationship may be due to the small observed effect sizes (see the discussion in Chapter 3 Research Methodology).

Taken together, although the findings in this section are mixed, this study generally provides support to the argument that organizational justice mediates (i.e., fully or partially) the leadership-outcome relationship at the cross-level (i.e., organizational commitment, task performance), which is consistent with the contention that fairness in the workplace may be the

primary determinant of employees' behaviors (Li & Cropanzano, 2009; Wayne et al., 1997). The findings imply that, to be effective, Chinese team leaders need to create a justice climate in task teams, a justice climate that team leaders should (a) use just decision-making procedures, (b) reward team members fairly, and (c) treat them with kindness and truthfulness.

Moderating Effects of Power Distance and Traditionality

It has been long argued that cultural value orientations can play important roles in how followers react to leadership behaviors, which, in turn, result in favorable or unfavorable work outcomes (Kirkman et al., 2009; Spreitzer et al., 2005). As such, research should examine the boundary conditions of cultural value orientations in which leadership is more or less effective in predicting behaviors and attitudes (Avolio et al., 2009). The third objective of this dissertation was to investigate the moderating effects of power distance and traditionality in the relationship between transformational-transactional contingent reward leadership and organizational justice.

The findings are somewhat surprising in that there was no evidence that power distance and traditionality moderated the team level relationship between transformational-transactional contingent reward leadership and organizational justice. These findings suggest that team members with different levels of power distance and traditionality orientations (high versus low) did not necessarily view their transformational-transactional contingent reward leaders differently, which, in turn, had no impact on their organizational justice perceptions. These findings are at odds with a recent study by Kirkman and colleagues (2009), who found that team members' power distance orientations moderated the relationship between leaders' transformational leadership (at the team level) and team members' perceptions of procedural justice (at the individual level) in such a way that the relationship was stronger for those lower, rather than higher, in power distance.

These findings are also at odds with some findings in Spreitzer and colleagues' (2005) study that superiors' traditionality orientations moderated the relationship between leaders' task-orientated dimensions of transformational leadership and leadership effectiveness. However, the findings in this study are consistent with other findings in Spreitzer et al.'s study that did not support the moderation effects of superiors' traditionality orientations in the relationship between leaders' relationship-oriented dimensions of transformational leadership and leadership effectiveness. One of the explanations given by Spreitzer et al. was that, other than traditionality, there may be other types of cultural values (i.e., collectivism versus individualism) in non-western societies that facilitate the effectiveness of the relationship-oriented dimensions of transformational leadership, because transformational leadership is a construct developed in a western society.

This study, however, measured transformational leadership with the Team Multi-Factor Leadership Questionnaire (MLQ) Form 5X, a scale different than the one (Podsakoff, MacKenzie, Moorman, & Fetter, 1990) used in the two recent studies by Kirkman et al. (2009) and Spreitzer et al. (2005). In addition, this dissertation used a different power distance scale than the one in Kirkman et al.'s (2009) study. The scale measurement equivalence between this study and the other two studies may be questionable. As a result, the findings of this study and those of the other two studies may not be comparable. Nevertheless, the comparisons shed light on and support the need for further research on cultural boundary conditions in the leadership—outcome relationship.

Furthermore, the two studies by Kirkman et al. (2009) and Spreitzer et al. (2005) used a data set combining both of their U.S. and Chinese samples, whereas this dissertation's data contain only Chinese samples albeit a relatively smaller sample size (i.e., 143 subordinates and

43 team leaders in the Company A sample and 108 subordinates and 35 team leaders in the Company B sample) than those of the other two studies (i.e., 560 team members and 174 teams leaders in Kirkman et al.'s study, 546 team members and 265 teams leaders in Spreitzer et al.'s study). Due to small effect sizes for power distance and traditionality, this study may not have sufficient statistical power to detect the moderating effects in the two samples when in fact there are moderating effects in the respective populations (see the discussion in Chapter 3 Research Methodology).

Moderating Effects of Perceived Change Impact and Perceived Change Frequency

Another boundary condition for leadership effectiveness on which this study focused is the change context in teams. Despite the consensus that change requires leadership, the two bodies of literature have not been adequately integrated (Detert & Burris, 2007; Herold et al., 2008; Pawar, 2003). Therefore, the fourth and the final objective of this dissertation was to investigate the moderating effects of perceived change impact and perceived change frequency in the relationship between transformational leadership and work outcomes at the team level (i.e., team performance) and the individual level (i.e., organizational commitment, task performance). The results of this study were mixed.

First, at the team level, moderating effects of perceived change impact and perceived change frequency were not found in the transformational leadership—team performance relationship. This finding suggests that the change context did not affect the effectiveness of transformational leadership on performance at the team level. This finding, however, is not consistent with the findings in studies conducted in the U.S. which researchers generally found support for the moderating effects of a change context in the leadership—outcome relationship at their respective levels of analysis (cf. Caldwell et al., 2004; Fedor, Caldwell, & Herold, 2006).

Second, at the cross level, moderating effects of perceived change impact and perceived change frequency were not found in the relationship between transformational leadership and team members' organizational commitment. This finding suggests that a change context did not affect the impact of the effectiveness of transformational leadership on team members' commitment to their organization. This finding, however, is contrary to the findings of studies conducted in the U.S. which researchers generally found support for the moderating effects of a change context in the leadership—commitment relationship at their respective levels of analysis (cf. Caldwell et al., 2004; Fedor et al., 2006).

Third, at the cross level, moderating effects of perceived change impact and perceived change frequency were not found in the transformational leadership-task performance relationship in the Company B sample. This finding suggests that the change context did not affect the impact of the effectiveness of transformational leadership on team members' task performance. This finding, however, is contrary to the findings of studies conducted in the U.S. which researchers generally found support for the moderating effects of a change context in the leadership—outcome relationship at their respective levels of analysis (cf. Caldwell et al., 2004; Fedor et al., 2006).

Fourth, at the cross level, moderating effects of perceived change impact were found, in the opposite direction, in the transformational leadership-task performance relationship in the Company A sample. The interpretation of this finding is that, when change magnitude is perceived high in task teams, such change context de-emphasizes the effectiveness of transformational leadership on team members' task performance. This is a rather surprising finding in that the finding is contrary to the existing leadership and change literatures (Bass, 1985; Bass & Riggio, 2006; Pawar & Eastman, 1997).

Fifth, at the cross level, moderating effects of perceived change frequency were found in the transformational leadership-task performance relationship. This finding suggests that, when frequency of change is perceived high in task teams, such change context emphasizes the effectiveness of transformational leadership on team members' task performance. This finding is in the same direction as the findings of studies conducted in the U.S. (cf. Caldwell et al., 2004; Fedor et al., 2006).

These surprising findings deserve careful consideration in future research. First, data analyses were conducted separately with the Companies A and B samples, and the effect sizes for perceived change impact and perceived change frequency are small in both samples (see the discussion in Chapter 3 Research Methodology). Consequently, this study may not have sufficient statistical power to detect the moderating effects in the two samples when in fact there are moderating effects in the respective populations. Second, to my knowledge, no study has used perceived change impact and perceived change frequency scales in an eastern culture. Although the two scales were shown to be reliable, validity of the scales may be a concern to this study.

For Company A, Table 6 provides the univariate correlations between perceived change impact and team performance ($\beta = .33$, $p < .01$), organization commitment ($\beta = .28$, $p < .01$), and task performance ($\beta = .29$, $p < .01$); and between perceived change frequency and team performance ($\beta = .11$, *n.s.*), organization commitment ($\beta = .00$, *n.s.*), and task performance ($\beta = .16$, *n.s.*). For Company B, Table 15 provides the univariate correlations between perceived change impact and team performance ($\beta = .20$, $p < .05$), organization commitment ($\beta = .21$, $p < .05$), and task performance ($\beta = .13$, *n.s.*); and between perceived change frequency and team performance ($\beta = .08$, *n.s.*), organization commitment ($\beta = .14$, *n.s.*), and task performance (β

= .14, *n.s.*). The first three significant correlations between perceived change impact and work outcome variables actually suggest that, in the Company A sample, team members' perceptions of the magnitude of change in their work teams actually showed positive associations with work outcomes at both the team and individual levels. This result implies that team members generally held a positive attitude toward the change magnitude such that their perceived change impact enhanced their commitment to their organization (i.e., organizational commitment), and improved their task completion (i.e., task performance) and team performance outcome (i.e., team performance). Similarly, the remaining two significant correlations between perceived change impact and work outcome variables suggest that, in the Company B sample, team members' perceptions of the magnitude of change in their work teams showed positive associations with work outcomes at the team level and individual level (i.e., organizational commitment). This result implies that team members generally held a positive attitude toward the change magnitude such that their perceived change impact enhanced their organizational commitment and improved team performance outcome. However, team members' perceptions of the frequency of change in their work teams showed no associations with work outcomes in both samples. When comparing findings of this study with two recent studies conducted in the U.S. (cf. Herold et al., 2007; Rafferty & Griffin, 2006), I found that the mean scores of perceived change impact and perceived change frequency were relatively close. However, in those two studies, perceived change impact and perceived change frequency generally showed direct negativity to work outcomes (i.e., change turbulence, psychological uncertainty), which is in line with the change literature that change recipients (i.e., team members) generally react negatively (Armenakis & Bedeian, 1999).

The contrary results between this study and those two recent studies suggest that (a) validation of the two measurement scales in an eastern society is needed; and (b) other factors (i.e., national culture differences between an eastern society and a western society) may have some impact on team members' perceptions of organizational change and their reactions toward change. For example, Hofstede's (2001) national culture study suggested that (a) there are systematic differences in culture and values across countries; and (b) such differences influence how people (i.e., team members) perceive information (i.e., organizational change), and consequently react to the information (i.e., organizational change). Uncertainty avoidance, one dimension of national culture, may be related to organizational change as uncertainty avoidance refers to people's tolerance for uncertainty and ambiguity (Hofstede, 2001). According to Hofstede (2001), Chinese respondents scored lower in uncertainty avoidance than did the U.S. respondents. The difference in uncertainty avoidance between the two societies may play a role in how followers perceive and react to organizational change. As a result, team members in this study viewed change less unfavorably, or, rather, more tolerantly, than their U.S. counterparts in the other two studies. Future research is needed in these two regards.

Taken together, this study provides evidence that perceived change frequency moderated the transformational leadership-task performance relationship in the Company A sample, which is consistent with the change and leadership literatures. This finding suggests that, in task teams where perceived change frequency is high, team leaders need to understand that change context requires them to exhibit strong transformational leadership, and consequently their leadership plays an important role in motivating team members to perform at high levels.

Study Limitations

This study has several limitations. First, common method bias cannot be ruled out, although some procedures were employed to help reduce such bias. For example, measures of independent variables were obtained from team members, measures of dependent variables were obtained from team leaders (i.e., task performance) and managers of the team leaders (i.e., team performance). However, measures of the independent, moderator, and mediator variables were obtained from the same source (i.e., team members). In addition, one attitudinal dependent variable (i.e., organizational commitment) was obtained from the same source (i.e., team members).

A second limitation is that this study collected data from two Chinese companies, one in IT services and the other in travel services, with relatively small sample sizes (Company A: 143 individuals and 43 teams; Company B: 108 individuals and 35 teams). Due to heterogeneity of between group error variances, data analyses were conducted with the two samples separately. The small sample sizes and effect sizes, and consequently the small statistical power, might prevent this study from finding support for hypotheses, especially at the team level.

Third, this study was based on perceptual data in that respondents provided ratings based on their subjective perceptions. In addition, the cross-sectional design of this study prevents from establishing causal direction.

Fourth, this study used perceived change impact and perceived change frequency to measure the change context in teams. To my knowledge, the measurement scales had not been validated in an eastern society. Validity of these two scales, such as content validity and criterion-related validity, may be a concern to this study.

Future Research

Future research would benefit from addressing the above study limitations and considerations in the Discussion section. First, concerning study design, future studies may longitudinally separate the measurement of the independent, mediator, moderator, and dependent variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This may help reduce common method bias, as well as establish causal direction. In addition, future research may benefit from including variables that measure task interdependency and inter-team relations, since both may have an impact on team performance. Moreover, future research might take more objective measures into consideration. For example, hard measures, such as team productivity data and actual turnover rate of a work team, might be used as behavior-based indicators of team performance and leader effectiveness, respectively.

Second, concerning data collection, this study contains two data sets with relatively small sample sizes. Future research may benefit from collecting data from one or more large organizations that help improve sample size at both the team and individual levels. Furthermore, the use of additional companies would have increased sample size as well as provided more generalizability to the results.

Third, future research may benefit from replicating this study in a western society. This study failed to provide evidence concerning the moderating effect of power distance and traditionality. In addition, the findings were not encouraging in that this study only provided evidence to support one hypothesis concerning the moderating effect of perceived change frequency in the transformational leadership—task performance relationship at the cross level. These less than encouraging results call for future research to look into other cultural value

orientations (i.e., uncertainty avoidance, collectivism versus individualism) that may have a salient impact on the strength of the leadership-outcome relationship.

Fourth, this study treated transformational leadership as a unidimensional scale. In the data set, company A was an IT company; intellectual stimulation, a dimension of transformational leadership, may be more salient to team members in this organization. Company B was a travel services company; individualized consideration, a dimension of transformational leadership, may be more salient to team members in this organization. Future research may be beneficial by studying each of the dimensions of transformational leadership and examining the relationships between the dimensions and variables of interest.

Last, this study provided some contradictory findings (i.e., the moderating effect of perceived change impact in the transformational leadership—task performance relationship versus the moderating effect of perceived change frequency in the transformational leadership—task performance relationship). Future research needs to address the validity issue of the two measurement scales (i.e., perceived change impact and perceived change frequency).

Conclusion

This study extends the existing literature on the leadership–outcome relationship in a comprehensive way. The research provides empirical support for the contention that transformational-transactional contingent reward leaders are universal. More importantly, this study makes contributions to enhance our understanding as to how and when transformational-transactional contingent reward leaders effectively influence work outcomes at both the team and individual levels. From the cross-level of analysis, the study findings indicated that organizational justice fully or partially mediated the relationship between transformational-transactional contingent reward leadership and work outcomes, and that perceived change

frequency moderated the transformational leadership—task performance relationship. These findings shed light on the underlying process and boundary conditions for effective leadership.

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Appendix A

Transformational and Transactional Contingent Reward Leadership
(five sample items from the MLQ-5X scale, Bass & Avolio, 1997)

Responses were obtained using a 5-point Likert scale where 4 = frequently, if not always, 3 = fairly often, 2 = sometimes, 1 = once in awhile, and 0 = not at all.

Our supervisor:

1. Treats everyone in our team as an individual rather than just as a member of a group. (individualized consideration)
2. Acts in ways that build our respect. (idealized influence)
3. Seeks differing perspectives from members in our team when solving problems. (intellectual stimulation)
4. Talks optimistically about the future of our team. (inspirational motivation)
5. Expresses satisfaction when our team meets expectations. (contingent reward)

For the following scales, responses will be obtained using a 7-point Likert scale where 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = moderately agree, and 7 = strongly agree.

Organizational Justice

Distributive Justice
Niehoff & Moorman (1993)

1. Overall, people in my work team feel that their work schedule is fair.
2. Overall, people in my work team think that their level of pay is fair.
3. Overall, people in my work team consider their workload to be quite fair.
4. Overall, the rewards people in my team receive are quite fair.
5. Overall, people in my work team feel that their job responsibilities are fair.

Procedural Justice
Moorman (1991)

Our supervisor:

1. Collects accurate information necessary for making decisions.
2. Provides people in my work team with opportunities to appeal or challenge the decision.
3. Generates standards so that decisions could be made with consistency.
4. Hears the concerns of all those affected by the decision.
5. Provides people in my work team with useful feedback regarding the decision and its implementation.
6. Allows people in my work team to requests for clarification or additional information about the decision.

Interactive Justice
Moorman (1991)

Our supervisor:

1. Considers our viewpoint.
2. Is able to suppress personal biases.
3. Provides people in my work team with timely feedback about the decision and its implications.
4. Treats people in my work team with kindness and consideration.
5. Shows concern for our rights as his/her subordinates.
6. Takes steps to deal with people in my work team in a truthful manner.

Power Distance
Dorfman & Howell (1988)

1. Supervisors should make most decisions without consulting subordinates.
2. It is frequently necessary for supervisors to use authority and power when dealing with subordinates.
3. Supervisors should seldom ask for the opinions of employees.
4. Supervisors should avoid off-the-job social contacts with employees.
5. Subordinates should not disagree with management decisions.
6. Supervisors should not delegate important tasks to employees.

Traditionality
Yang, Yu, & Yeh (1989)

1. The chief government official is like the head of a household. The citizen should obey his decisions on all state matters.
2. The best way to avoid mistakes is to follow the instructions of senior persons.
3. Before marriage, a woman should subordinate herself to her father. After marriage, to her husband.
4. When people are in dispute, they should ask the most senior person to decide who is right.
5. Those who are respected by parents should be respected by their children.

Perceived Change Impact
Caldwell, Herold, & Fedor (2004)

In our work team, changes involve:

1. Changes in our team's processes and procedures.
2. Changes in the way team members do their jobs.
3. Changes in daily routines of team members.

Perceived Change Frequency
Rafferty & Griffin (2006)

In our work team:

1. Change frequently occurs.
2. It is difficult to identify when changes start and end.
3. It feels like change is always happening.

Team performance
Heilman, Block, & Lucas (1992)

1. This team is very competent.
2. This team gets its work done very effectively.
3. This team has performed its job well.

Task performance
Farh & Cheng (1999)

1. This subordinate makes an important contribution to the overall performance of our work unit.
2. This subordinate can always fulfill the jobs assigned by the supervisor in time.
3. This subordinate is one of the excellent employees in our work unit.
4. The performance of this subordinate can always meet the requirements of the supervisor.

Organizational Commitment
Mowday, Steers, & Porter (1979)

1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.
2. I talk up this organization to my friends as a great organization to work for.
3. I find that my value and the organization's value are very similar.
4. I am proud to tell others that I am part of this organization.
5. This organization really inspires the very best in me in the way of job performance.
6. I really care about the fate of this organization.