

**Exploring process of LMX from the perspective of attachment style**

by

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## **Abstract**

The adult attachment theory has been introduced to leadership research recently, and leader-member exchange (LMX) has been a popular construct to study the relationship between leader and follower. This dissertation reviewed how employees with different attachment styles form different qualities of LMX under different leaders. I hypothesized that different levels of leaders' benevolence would activate the followers' attachment strategies differently while followers' leader-member exchange social comparison (LMXSC) and proactive behaviors would mediate the process of LMX formation. A theoretical model was proposed. The participants were 342 employees nested under 93 leaders (i.e. teams) from a variety types of organizations in east coast of China. Results supported the mediation role of LMXSC between attachment anxiety and LMX but not the mediation role of proactive behaviors or for attachment avoidance. The overall model showed fair model fitness. Theoretical and practical implications as well as future directions are discussed.

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## **List of Abbreviations**

LMX	Leader-Member Exchange
LMXSC	Leader-Member Exchange Social Comparison
OCB	Organizational Citizenship Behavior
TP	Task Performance



## **Introduction**

In the workplace, one of the most common relationships is the dyadic relationship between an employee and his or her supervisor (Lee, Park, Lee, & Lee, 2007). Leader-member exchange (LMX) has become a popular approach due to its focuses on the dyadic and relational component. The fundamental focus of LMX implies the importance to study the process from the perspective of relational variables, however this has not been well studied (Thomas, Martin, Epitropaki, Guillaume, & Lee, 2013). The power differential on dyadic relationship between leader and member parallels the parent-child relationship, especially in Asian culture. Attachment theory, originated from parent-child relationship, therefore, may provide insights for studying the process of LMX (Martin, Epitropaki, Thomas, & Topaka, 2010; Harms, 2011; Richards & Hackett, 2012).

This dissertation reviewed the literature on LMX theory including the development, empirical evidence, and measures as well as attachment theory including Bowlby's work, Ainsworth's work, adult attachment style, and workplace attachment style. Next, the dissertation discussed the parallel process of how LMX is built from the attachment prospective—focusing on the role of leaders (benevolent leadership) and followers (cognitive and behavioral as mechanisms) in the process. A field study in China was proposed and tested. Results showed some promising directions such as the mediation role of cognitive mechanisms. This dissertation contributes to the LMX literature by introducing attachment theory into LMX research systematically and exploring the process of LMX development, which addresses the recent calls to study process model of LMX (e.g., Day & Miscenko, 2015). At the same time, the dissertation explores how to help build better leader-member relationship.

## **Leader-Member Exchange (LMX) Theory**

Effective leadership can make organizations thrive and prosper (Legood, 2013). Much of the previous research in leadership simply characterized leadership as a top-down process, criticized by Martin and colleagues (Martin, Epitropaki, Thomas, & Topakas, 2010). Instead, leadership should be a reciprocal relationship with both the leader and the follower playing active roles in the relationship (Martin, Epitropaki, Thomas, & Topakas, 2010). The classical leadership system needs to be expanded beyond the leader level to the follower and relationship levels (Hollander, 1978; Graen & Uhl-Bien, 1995; Graen & Uhl-Bien, 1991).

### ***Development of LMX***

Proposed by Graen and his fellow researchers (Dansereau, Cashman, & Graen, 1973; Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975; Graen, 1976) and originated from Vertical Dyad Linkage (VDL) approach (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975), leader-member exchange (LMX) theory “incorporates an operationalization of a relationship-based approach to leadership,” and the relationship-based approach become one of the most popular approaches to understand workplace leadership (Graen & Uhl-Bien, 1995). The central argument of LMX is that it is a dyadic relationship and it is the only leadership perspective that emphasizes on mutual influence within the leadership process. It also assumes a differentiated relationship with different follower (Graen & Uhl-Bien, 1995).

The norm of reciprocity of the LMX framework could be interpreted by social exchange theory (Blau, 1964; Graen & Cashman, 1975). Within the relationship between leader and follower, there are numerous resources to be exchanged (Liden & Maslyn, 1998). The exchange of the reciprocate resources could be cognitive and behavioral, and they are crucial to the process of LMX development (Dienesch & Liden, 1986). Researchers proposed models to map the

process of LMX development, such as Role-making model and Leadership Making Model (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995), however, there has been only limited support for the developmental process (Martin, Epitropaki, Thomas, & Topaka, 2010). Next we are going to discuss the existing evidence and the reasons for limited evidence.

### ***Empirical evidence of LMX***

Majority of the research on LMX has been narrowed to establish theories by focusing on identifying antecedents and outcomes (Graen & Uhl-Bien, 1995; Legood, 2013). Examples for antecedents are member characteristics of locus of control (e.g., Kinicki & Vecchio, 1994; Martin, Thomas, Charles, Epitropaki & Mcnamara 2005), cognitive style (Allinson, Armstrong & Hays, 2001), self-efficacy (Murphy & Ensher, 1999), personality traits (Bernierth, Armenakis, Feild, Giles, & Walker, 2007), leader agreeableness (Nahrgang, Morgeson, & Ilies, 2009), leader intuitiveness (Allinson et al., 2001), and leader affectivity (Day & Crain, 1992). Furthermore, it has been empirically shown that LMX correlates with many important organizational outcomes such as citizenship behavior (Wayne & Green. 1993; Ilies, Nahrgang, & Morgeson, 2007), performance (Gerstner & Day, 1997; Liden & Graen, 1980), attitudes (Graen, Orris, & Johnson, 1973; Graen, Novak, & Sommerkamp, 1982; Gerstner & Day, 1997), and turnover (Graen, Liden, & Hoel, 1982).

Nevertheless, the variables that could influence the LMX development process were overlooked (Martin, Epitropaki, Thomas, & Topaka, 2010). Two areas proposed by Graen and Uhl-Bien (1995)—the dyadic partnership building process and LMX at group/networks level were neglected and left for theories, therefore were called for future study repeatedly (e.g., Liden et al., 1993; Graen & Uhl-Bien, 1995; Scandura, 1999; Martin, et al., 2010; Yukl, 2010). A few exceptions have tested some factors such as the role of effort (Maslyn & Uhl-Bien, 2001) and

trust (Legood, 2013). The lack of integrated theories, the demanding methodologies, and the assumption of LMX stability might be the reason to hinder the development. The current dissertation attempts to integrate the theories of LMX from a substantial perspective—attachment theory as well as designs a multilevel and multiple-time study to address the first two concerns. As for the stability of LMX, there hasn't been a final conclusion yet. Some researchers argued that the LMX quality is stable over time except the initial period (Liden, Wayne, & Stilwell, 1993; Bauer & Green, 1996; Nahrgang, Morgeson, & Ilies, 2009; Legood, 2013). While empirical evidence showed unexplained variance in LMX construct that might be due to the instability over time and we need to test what causes the variance over time (Fincham, Harold & Gano-Phillips. 2000).

We only observed limited empirical research testing the process of LMX development, not to mention how minimal the research was conducted on contextual variables (Dirks & Ferrin, 2002). Testing the mediators and moderators (contextual variables) therefore becomes the focus of this dissertation project. Then what are the variables that can explain the variance appropriately?

For the reciprocal relationship between leader and follower, variables that embody interpersonal relationship might have considerable impact on the quality of LMX. Due to the relational nature of LMX, it is necessary to identify the relational and/or dyadic process variables (e.g., perceptions on LMX, behaviors to build relationships) which could be interpreted as the mechanisms of LMX development. Moreover, the majority of the LMX research tested the determinate role of leader on LMX, while the followers play a role in the process as well (Dienesch & Liden, 1986; Schyns & von Collani, 2002; Martin, et al., 2005; Lapierre, Hackett, & Taggar, 2006). For example, in Dulebohn, Bommer, Liden, Brouer and Ferris's (2012) meta-

analysis, researchers tested interpersonal relationship—trust, as antecedents of LMX, but they only focused on how leaders influence the followers and tested the leader’s trust instead of followers’. To fill up the gap of lacking relationship variables and neglecting followers’ perspective, the current paper investigates how followers’ cognitions and behaviors on interpersonal relationships influence the quality of LMX. Note that to better study the concept of LMX, the current study is interested in the evaluation of LMX from both leaders’ and followers’ sources.

To better understand the process of leader-follower relationship, Thomas, et al. (2013) proposed to use the reference (such as methodology) from the research in relationship science, especially from close relationship. The internal working model of attachment theory represents relationship knowledge structure well, which could help advance theories in LMX area (Thomas, et al., 2013).

### ***Measures of LMX***

There had been various measures on LMX, including different number of dimensions, different number of items (from two to 25; cf. Schriesheim, Castro, & Cogliser, 1999; Weitzel & Graen, 1989; Dienesch & Liden, 1986). Initially, the Leader Behavior Description Questionnaire (LBDQ), developed by Ohio State research team, was popular in the research of LMX by Graen and colleagues (e.g., Graen, Dansereau, & Minami, 1972; Dansereau, Cashman, & Graen, 1973; Graen, Dansereau, Minami, & Cashman, 1973). Supervisory Attention scale, Negotiating Latitude, Leader Acceptance, Leader-Boss Linking-Pin Quality scale and etc. were then being used in the LMX empirical research (e.g., Graen & Cashman, 1975; Graen, Dansereau, Haga, & Cashman, 1975; Cashman, 1976; Dansereau, Graen, & Haga, 1975; Schiemann, 1977). Later, a 7-item scale was developed and reported in Scandura and Graen (1984) and was widely adopted

in the LMX research (Schriesheim, Castro, & Cogliser, 1999). Hui, Law, and Chen (1999) translated and validated the Chinese version of LMX7, which will be used in the current dissertation.

### **Attachment Theory**

First proposed by John Bowlby (e.g., 1969; 1973; 1982) and further developed by Mary Ainsworth (e.g., 1978), the attachment theory was become one of the most influential conceptual frameworks to better understand the phenomenon of not only infants or children but also adults. Attachment style describes the characteristics of relationships between infants and caregivers during the times of stress, uncertainty, and fear (Ainsworth, Blehar, Waters, & Wall, 1978; Mikulincer & Shaver, 2007). Attachment style posits that people are born with an innate tendency to draw the attention and maintain the proximity to attachment figures for the purpose of defending against threats, and the level of attachment figures' availability and responsiveness result in the level of a sense of security (Bowlby, 1973, 1980, 1982; Mikulincer & Shaver, 2005).

### ***Bowlby's Work***

British psychoanalyst John Bowlby, followed Freud's footsteps, largely enriched the psychoanalytic theory by creating and flourishing the attachment theory which help to explain relationships with caregivers during early childhood and further lasting effect on adulthood. The initial ideas about attachment theory was seeded from Bowlby's experience with maladjusted children as a school volunteer. The maladjusted children's different responses interested him to learn more about how children develop attachment to their parents.

Built on the evolutionary basis, people's behavioral system is built for the purpose of survival and reproduction. Bowlby borrowed the concept and propose the attachment behavior system contains primary attachment strategies and secondary strategies, which are formed to

increase the likelihood of survival. When there are signals such as environmental threats and stressors, the attachment strategies are activated (Bowlby, 1969; Bowlby, 1982). Note that, besides real dangers, clues of danger (e.g., darkness, noises) and attachment-related signals (e.g., isolation, loss of attachment figure) may also activate the system. Proximity seeking behaviors, as primary attachment strategy, are normally innate such as crying, reaching out for infants and could be more complex and flexible for adults. When the attachment figures, which could be caregivers for infants and children and relationship partners for adults, are unavailable, inattentive, or unresponsive, the secondary strategies (e.g., hyperactivating strategies, deactivating strategies) are utilized to deal with distress. For adults, mental representations of proximity could also substitute real proximity seeking behaviors to provide a safety or security sensation. As long as the needs for safety or security are satisfied, the system is deactivated.

Bowlby (1969; 1982) also proposed cognitive operations of the attachment process. First, the environment and the persons' inner state are monitored and evaluated to show whether there are threats or distress. Next, attachment figures' responses are appraised to see whether they fulfill the needs of security. Last, the behaviors are evaluated to see whether they are effective. The cognitive processes chronically build a person's working models for others and for selves (Young, 1964; Bowlby, 1982).

### ***Ainsworth's work***

Laid on the foundation by Bowlby, Ainsworth and colleagues further develop and validate the attachment theory. She proposed the concept "secure base" and identified three patterns of attachment styles using "Strange Situation".

In Ainsworth's (1940) dissertation "an evaluation of adjustment based on the concept of security", secure base was proposed as a central construct for attachment theory. Infants use their

caregivers (attachment figures) as secure base that they can depend on and from which they can gradually explore the world by learning new skills and forming interests in other fields.

In the laboratory study, Ainsworth developed an assessment procedure for infants to observe their interactions with parents (attachment figures), which allowed her to identify the three patterns of attachment styles empirically and systematically. The three attachment styles are secure, anxious/ambivalent, and avoidant (Ainsworth, et al., 1978). Specifically, with consistently sensitive and responsive mothers, infants securely attached to them and could confidently explore their environment. When mothers exhibited inconsistency support, infants anxiously attached to and occupied with their mothers which precluded exploration. When mothers appeared to reject proximity consistently, infants avoidantly attached to their mothers and avoided seeking contact with their mothers (Ainsworth, et al., 1978). This classification of attachment patterns are accordance to Bowlby's theories.

### ***Adult Attachment Style***

Bowlby (1969) also linked the attachment system to other functions in a variety of life situations across life span. Focus of the research on attachment theories has shifted to adulthood as well. Researchers argued that the attachment style is stable throughout adulthood (Mikulincer & Shaver, 2005; Fraley, 2002; Richards & Hackett, 2012). Self-verification theory (SVT; Swann & Buhrmester, 2012) could explain the stability theoretically: individuals' solicited behavior from others maintains coherently and consistently in their mental models, no matter whether the models of self-concepts are positive or negative (Swann, Rentfrow, & Guinn, 2003).

Later, Shaver and colleagues' (e.g., Rubenstein & Shaver, 1982; Shaver & Hazan, 1984) research on adult loneliness found the importance of attachment theory in conceptualizing loneliness and therefore introduced the attachment framework in studying romantic relationships



(Hazan & Shaver, 1987). More applications of attachment frameworks were conducted in the studies of adult emotion regulations, close relationships, emotions etc. (e.g., Mikulincer & Shaver, 2003; Shaver & Mikulincer, 2002).

### ***Workplace Attachment Style***

Hazen and Shaver (1987, 1988, 1990) and Poper and Mayseless (2003) extended the theory into adult partnerships and adult relationships in the contexts of work and organization, keeping the three patterns—secure, anxious, and avoidant. According to Bowlby’s theory of attachment, infants show innate tendency to seek a protector to attach on when they explore the environment because the exploration process could be dangerous (Bowlby, 1969, 1973, 1980, 1988; Ainsworth, et al., 1978). Preserving the instinct, employees in organizations try to look for secure base at work as well, and the leaders could play the role of attachment figure (Hazan & Shaver, 1990).

Researchers argued that attachment anxiety and attachment avoidance could better represent the underlying structure of attachment (Fraley & Waller, 1998). Therefore, recent work on adult attachment has focused on these two insecure patterns of attachment (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2005): individuals who are high in attachment anxiety tend to stress about personal relationships including getting support and acceptance as well as tend to depend on others but not showing trust to others; while individuals who are high in avoidant attachment tend to avoid close relationships and suppress desire for relationships. Researchers further postulated that the leadership schemas might be impacted by people’s early childhood experience and urged to apply the theories of attachment into the study of leaders, especially the relationship between leader and follower. The following section will explore to incorporate the literature of attachment theory and LMX.

## *Measures*

Ainsworth used natural observation of mother-infant dyads to preliminary determine the type of attachment styles. The initial category could be conceptualized with two functions— anxiety (e.g., lack of confidence exploring without mother around and being angry after reunions) and avoidance (e.g., not comfortable with closeness and self-reliance,) and the three types were derived from this two-dimension region. After her remarkable work, numerous other measures in various forms were developed and used for early childhood attachment styles, such as *Q*-sort descriptions by parents and teachers, doll play scenario test, interviews and self-report questionnaires.

The measures of attachment style in adulthood were then developed after the concept was introduced to adulthood studies and the coding system from Ainsworth was kept. Hazan and Shaver (1987) were the pioneers in examining the styles of romantic attachment, by choosing one from the three patterns' descriptions about their romantic relationships. However, the classification artifacts may lead to measurement error, which makes the measure unstable (Fraley & Waller, 1998; Scharfe & Bartholomew, 1994). Therefore, measures using continuous scales were suggested. Popular measurements are Adult Attachment Questionnaire (AAQ; Simpson, 1990) with two dimensions (i.e., anxiety and avoidance), Adult Attachment Scale (AAS; Collins & Read, 1990) with three factors (i.e., discomfort with dependency, discomfort with closeness, and anxiety), Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) with five factors (low confidence, discomfort with closeness, demand on approval from others, preoccupation, and prioritize other achievements before relationships) loaded on two larger factors (i.e., anxiety and avoidance), and interview and Relationship Questionnaire (RQ; Bartholomew, 1990) for two dimensions (i.e., anxiety and avoidance). Most recent one which

has been validated and frequently used was the Experiences in Close Relationships Scale (Brennan et al., 1998). Using a large sample with more than 900 students, the structure of the measure showed to have two higher-order factors (anxiety and avoidance) with lower-order factors.

As for the measures in Chinese, several measures have been translated. For instance, AAS (Wu, Zhang, & Liu, 2004), AAQ (Li & Fu, 2001), and ECR (Li & Kato, 2006) have been validated by the structure and with different criteria, which could be used in the future studies.

### **Attachment and LMX**

With the parallel structure between dyad parent-child relationship and dyad leader-follower relationship, it is possible and necessary to investigate the LMX development based on the theory of attachment, for the following reasons. The construct LMX has the nature that is dyadic, dynamic, and interpersonal, therefore it is critical to explore the construct from the literature on dyadic relationships. Researchers proposed to use the most common dyadic relationship, parent-children relationship, as a formwork to study the construct (Hall & Lord, 1998; Keller, 2003; Keller & Cacioppe, 2001; Popper, Mayseless, & Castelnovo, 2000). Attachment theory, derived directly from parent-children relationship, could be used to interpret the dyadic relationship. Moreover, the relationship between leader and follower involves the affectional bond, which is necessary to evoke the attachment system (Keller, 2003). Specifically, the leader-follower relationship meet the provisions of "offer a sense of worth or competence" and "provide guidance" to become affectional bonds, based on Ainsworth's (1991) work. Followers could get gratification and sense of accomplishment from their leaders at work. For instance, Hazan and Shaver (1990) argued that people who are high in attachment anxiety could satisfy their attachment needs from work.

Furthermore, as the attachment styles could extend to adult years and the internal working models developed in early life have an impact in adulthood (Hazan & Shaver, 1987; Mikulincer & Shaver, 2005), researchers assume one's attachment style could affect the propensity to initiate and sustain relationships in the workplace as well (Richards & Hackett, 2012). In the process of developing exchange relationship with leaders, follower's attachment style plays a significant role. For instance, empirical studies have shown that the prediction of attachment styles on relationship related outcomes yield significant beyond the "Big Five" personality factors (e.g. Nofle & Shaver, 2006).

Particularly in the Asian culture, the parallel between leader and follower is in accordance with the parallel between parent and child. The uniqueness of Asian culture could be concluded as high power distance (i.e., inequalities are acceptable by the society), high collectivism (i.e., value the interest of the group), high masculinity (i.e., value the achievement and success), and low uncertainty avoidance (i.e., comfortable with ambiguity; Hofstede, 1980). Additionally, paternalism (i.e., authority and responsibilities for the subordinate) and Confucian Dynamism (i.e., accept and respect hierarchy) are also considerable factors when discussing leadership in Asian cultures (James, Chen, & Cropanzano, 1996; Hofstede, 1983).

Specifically, in the leader-follower scenario, the high power distance implies the inequality and clear distinguish between the role of leader and follower. Leaders are given the higher position and entitled the privilege to make decision, rule, be powerful, and be authoritative, therefore makes the leader's role paralleled to an authoritative parent. The character of collectivism makes the leadership process become a group process which value the interest of the whole team rather than individuals. In this mutual obligation scenario, the leaders become a moral constraint and are responsible to take care of the subordinates, which

coordinates the role of considerate parents (Cox, Label, & Mcleod, 1991). The sense of paternalism makes it acceptable for followers to be restricted by the leaders' authority and to be willing to obey the leaders. Deeply rooted by Confucianism, people in a lower position learns to respect and obey the people in higher hierarchy, while people in a higher position learns to provide moral guidance, protection, and consideration to the people in lower hierarchy (Yammarino & Jung, 1998). These characteristics of the Asian society, overall, make the link of studying LMX based on attachment theory legible (Erez, 1994; Graen & Wakabayashi, 1994; Hofstede, 1980, 1991; Kashima & Callan, 1994; Redding et al., 1994; Swierczek, 1991; Triandis, 1994; Wang, 1994).

Surprisingly, in terms of empirical evidence, there has been only one study tested the relationship between attachment style and LMX (i.e., Richard & Hackett, 2012). Richard and Hackett tested the main effect of attachment style on LMX quality and the moderation effect of emotion regulation on this process. However, they ignored the mechanisms of how employees with different insecure attachment styles develop different LMX qualities and how the leaders as attachment figures play the role in the process. The following section will further investigate the leaders' role in activating attachment system, the relationship between different attachment styles and LMX, and mechanisms underlying them. Figure 1 illustrates the attachment and LMX development model presented in this paper.

### ***Leaders' Role***

In the studies of LMX, researchers noted that the contextual factors received limited attention and called for more research to examine the contextual factors (Dulebohn, et al., 2012). Within a working group, all the followers work under the same leader and the shared leader

contributes a lot in the working environment. In this section, leaders' role as the contextual factor will be discussed.

As discussed earlier, the operation of attachment system is complex with the goal of proximity or protection. The setting of the goal described whether the attachment system is activated or deactivated. To test the goal, a person appraises the situation first to determine whether it is stressful, threatened, or secured. The attachment system is deactivated if individuals perceive the security or protection. Nonetheless, the perception of stressful or threatened normally activates the attachment system and after the system is activated the individual will adopt the secondary attachment strategies to achieve the goal of perceiving proximity or protection. The unavailable or irresponsible of attachment figures could trigger the perception of insecure.

In the leader-follower scenario, analogous to the parent-child relationship, follower's role is parallel with the "child" who needs to seek support and guidance from the leader while the leader's role is parallel with the "parent" who provides a secure base and create safe haven (Popper & Mayseless, 2003). As early as 1939, Freud proposed the metaphor of the leader as a father. Hence the dyadic leader-follower relationship is parallel with child-parent relationship where the attachment concept originated (Ainsworth, et al., 1978). It is accepted that the parent plays a key role in the development of the child-parent relationship. Similar to the child-parent relationship, the styles the leader displays have an impact on whether followers could perceive security and safety. Accordingly, by investigating from the attachment perspective, we can better understand the role of leaders ("parent") in the LMX ("child-parent relationship") development processes.

Applying the insights from the studies in good parenting, we can better understand how a good leader can help followers grow and develop good relationships. As Freud (1939) argued, the essence of a great leader lies in the characteristics of great parents. As the attachment theory states, children need the sense of security before they could start to explore the environment, and the insecure attached babies manifest their insecure characteristics when they are in distress (Mikulincer & Shaver, 2005). The response of parents results in the sense of security. Similarly, in the work context, leaders fulfill the role of the attachment figure and their response could reduce potential risks and uncertainties while establish a supportive environment (Parker, Bindl, & Strauss, 2010; Cassidy & Shaver, 2008). Drawing from parenthood literature and fitting the Asian culture that is specific to the current dissertation, the concept of benevolent leadership matches the context impeccably.

#### *Paternalistic Leadership*

Benevolent leadership is one of the three dimensions of paternalistic leadership (the three dimensions are authoritarianism, benevolence and morality). This dimension refers to leaders' favor granting (*shi-en* in Chinese) behaviors including individualized concern, understanding, and forgiving (Farh & Cheng, 2000). Though originating in Eastern culture, this dimension parallels with the individualized care dimension in the western literature (e.g., relationship-oriented transformational leaders show the behavior of facilitating collaboration and providing individualized support; Cheng, Chou, & Farh, 2000). Most importantly, benevolent leadership could unexceptionably present the "great parent" features and provide the followers sense of security at the maximum extent.

Benevolent leader's characteristics of "fatherly consideration" could relieve insecure attached followers' psychological trauma from inconsistency or rejecting responses in childhood.

Leaders' concern of followers will help the followers change their mindset that the attachment figure will not be available when they need. Their behaviors will also change followers' negative views on others and offer them a new image that others can be dependable. In other words, benevolent leaders inspire trust from followers.

Moreover, benevolent leaders are sensitive to followers' views (Farh & Cheng, 2000). Their sensitivity can support the broaden-and-build cycle of security attachment, which facilitate followers' growth. An important point of the growth is to build the feelings of being accepted. Especially for anxious attached individuals, they have negative views of themselves and regard themselves as unlovable. Leaders' benevolence can gain them the feelings of being liked and being valued. If the benevolence of the leaders is perceived by the anxious attached followers, their secondary hyperactivating attachment strategy will less likely be activated. As long as they perceive they get approval by leaders the same as other followers in the working team, they will feel less unfair and perceive an appropriate social comparison on LMX.

Leaders' consideration on followers, furthermore, can provide them secure base and make followers feel less distress so that they could actively explore the environment. Especially for avoidantly attached followers, when the leaders manifest benevolence to make the followers perceive less risk and cost or perceive the secure base from their leaders, their avoidant secondary attachment system will less likely to be activated and secondary attachment strategies will be less likely to be adopted. The secondary attachment strategies for avoidance people are generally deactivating behavioral strategies which they tend to avoid interactions to protect themselves from further harms. In a perceived safe and low risk working environment, these followers are more likely to conduct proactive behaviors to build and maintain the relationships.



On the other hand, if the leaders don't show benevolent leadership (i.e., not considerate and not sensitive), followers' sense of insecurities will be activated. They will become less likely to show their vulnerability to their leaders, generate more biased views of themselves and of others, feel more distressed, and less likely to actively explore (Maylesess & Popper, 2007). In sum, the benevolent leadership should facilitate the LMX forming process for insecure attached followers. The following sections will discuss the direct and indirect effects of attachment styles on LMX when the attachment system is activated.

### ***Direct Effects of Attachment Style on LMX***

Attachment anxiety and avoidance have shown a negative association with relationship satisfaction in the non-work contexts (Mikulincer & Shaver, 2007). Similarly, in the work context, the assumption is made that attachment anxiety and avoidance will harm the quality of the relationship.

Attachment anxiety is characterized as having a negative view of self and being over dependent on relationships (Hazan & Shaver, 1990; Mikulincer & Shaver, 2005). Anxious attached employees at the work place care about their relationships, but they are concerned too much about their interpersonal relationships. They also tend to be hyper-sensitive to any emotional and social cues from others (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006). Their excessive desire to merge with others and to be close with others may scare people away (Mikulincer & Shaver, 2007), which will make it hard to build a relationship and lead to low LMX quality. Therefore,

**Hypothesis 1a.** There will be a negative relationship between attachment anxiety and LMX.

Individuals with attachment avoidance, on the other hand, are characterized to have a negative model of others (Griffin & Bartholomew, 1994) and tend to avoid intimate relationships (Brennan et al., 1998; Collins & Read, 1990). Employees who are high in attachment avoidance prefer to work alone and consider relationships interfering with work (Hazan & Shaver, 1990). Their deactivating strategy leads to the lack of interactions and will then lead to low LMX quality. Therefore,

**Hypothesis 1b.** There will be a negative relationship between attachment avoidance and LMX.

The negative correlations between attachment anxiety/avoidance and LMX have been verified by Richards and Hackett (2012) empirically. However, the differentiation in the mechanisms between these two insecure attachment styles was less clear (Mayseless, 2010). The following sections will discuss the different mechanisms for attachment anxiety and avoidance. Since the internal working models of relationships based on attachment theory serve to organize affects, cognitions, and behaviors in close relationships (Frazier, Gooty, Little, & Nelson, 2014), the following discussion will also be on different levels. Accordingly, drawing from the main characteristics of insecure attachment styles, employees' social comparisons on the LMX (i.e., cognition level) and the proactive behaviors (i.e., behavior level) to build and maintain the relationship will be discussed as mechanisms.

### ***Social Comparisons of LMX as Mechanism***

To develop a good quality LMX with leaders, followers' perceptions of the relationship plays an important role. The relationship of a person with caregiver in early childhood largely impacts the formation of this person's cognitive schema. As noted by researchers, social comparison is a good starting point to learn the process of relationship building since it is an

inevitable feature of human relationships (Thomas, et al., 2013). Normally in the working groups, employees work together with other employees and share the same leaders. This context makes the comparison salient in influencing the relationship. Within workgroups, every employee tries to assess whether they or their coworkers are closer to the leader while they are simultaneously perceive LMX differently even though they work in the same group. The perceived LMX variability could be measured using followers' perceived comparisons between their own relationships with the leaders and other team members' relationships with the leader. This perceived discrepancy of the relationship is leader-member exchange social comparison (LMXSC). From different origins, anxious and avoidently attached employees' perceptions on LMXSC in turn will impact their relationship with leaders.

Attachment anxiety is characterized by overdependence on relationships and a negative view of oneself (Bowlby, 1973; Mikulincer & Shaver, 2005). This originates from their caregivers' response inconsistency—sometimes they appear attentive, responsive, and trustworthy and sometimes they don't. To obtain more attention in this situation, infants tend to be anxious and hyper-activate attempts. Their preoccupation with relationship, fear of rejection, and high demand for approval, will cause their perceptions that they are unlovable and incapable (Brennan, et al., 1998; Wei, Heppner, & Mallinckrodt, 2003).

Extending their characteristics into the workplace, according to Hazan and Shaver (1990), anxious attached individuals have a strong tendency to maintain relationships but are always concerned or worried about their interpersonal relationships. Their excessive needs for reassurance about relationships cause their feelings of underappreciation. Together with their naturally negative views about themselves (Griffin & Bartholomew, 1994), in the process of

social comparison, after controlling the real relative LMX, they perceive worse relationship with their leaders comparing to other teammates' (i.e., low LMXSC). Thus,

**Hypothesis 2a.** There will be a negative relationship between attachment anxiety and LMXSC.

Attachment avoidance, on the other hand, is characterized by self-reliance and a negative view of others (Bowlby, 1973; Griffin & Bartholomew, 1994). This is also originated from caregivers' responses in early childhood—caregivers consistently fail to be attentive, reliable, and responsive. Such experiences cause infants to avoid attracting caregivers' attentions and save themselves from further mistreatment relationships (Collins & Read, 1990; Brennan et al., 1998). “As attachment styles retain over time and continue to be influential throughout life,” (Fraley, 2002), they don't believe in others and avoid building intimate relationships in their adulthood.

Extending into the workplace, avoidantly attached employees tend not to fully trust their leaders due to their negative views of others. They also try to avoid interactions with their leaders because of their tendencies toward self-reliance. Previous preliminary evidence further notes that avoidantly attached followers tend to have negatively biased perceptions of their leaders and are difficult to be satisfied and to be lead (Davidovitz, Mikulincer, Shaver, Izsak, & Popper, 2007; Thomas, et al., 2013). Therefore, even though they have different motivations and reasons from anxious attached followers, avoidantly attached followers also perceive their relationship with their leaders to be worse than other employees' relationships with leaders (i.e., low LMXSC).

**Hypothesis 2b.** There will be a negative relationship between attachment avoidance and LMXSC.

Social comparisons of LMX, in turn, contribute to LMX development. Since LMXSC is measured from the beholders' own perspectives, their perceptions of LMX have a powerful effect on the actual exchange with their leaders (Thomas, et al., 2013). As a dynamic process, the development of quality LMX is influenced by how the followers assess this relationship. Besides, the concept of LMXSC is drawn from the roots of LMX theory and it is crucial to explore LMX under the social context of LMX differentiation. For anxious and avoidantly attached followers, their insecure and biased assessment on the relationship will impede them from forming a healthy exchange with their leaders, and thus impair the development of good quality LMX.

**Hypothesis 3a.** LMXSC mediates the relationship between attachment anxiety and LMX.

**Hypothesis 3b.** LMXSC mediates the relationship between attachment avoidance and LMX.

In the leadership literature, there is little known about leader-follower schemas such as the followers' perceptions of the relationship (Thomas, et al., 2013). Studying the LMXSC as the mechanism of the relationship between different attachment styles to LMX will help researchers better understand the process of LMX development.

### ***Behaviors as Mechanism***

Follower's behaviors also impact his or her relationship quality with the leader and is driven by his or her attachment style. This section focuses on the proactive behaviors of followers to build and maintain the relationships including relationship building behaviors, feedback seeking, and *Laguanxi* behaviors, which features the proactive behavior in Chinese context.

Due to inconsistent responses received from caregivers in childhood, anxious attached infants make a concerted effort to please their caregivers. They try hard to maintain the

relationships by making strenuous efforts to avoid rejection. Extending to their adulthood in the workplace, followers with high attachment anxiety are more likely to engage in proactive behaviors for several reasons. Firstly, anxious followers strive to get leaders' attention and are eager to initiate and maintain relationships with their leaders. They act proactively to meet that purpose (Bowlby, 1969; Bowlby, 1982; Mikulincer & Shaver, 2007). Secondly, with a fear of rejection, anxious attached employees are more likely to seek out feedback from leaders to avoid rejection (Hazan & Shaver, 1990; Hardy & Barkham, 1994). They are also more inclined to conduct the relationship building behaviors to be liked by the leaders. Thirdly, since anxious attached followers tend to have negative views about themselves, they need excessive reassurance through the proactive behaviors to offset their biased views.

Previous empirical study showed a negative association between attachment anxiety and feedback seeking behavior (Allen, Shockley, & Poteat, 2010) Allen et al. (2010) used the sample of doctoral student protégés and their mentor professors to show a negative relationship between students' anxiety and feedback-seeking behavior. This is under a different situation from the employees' and leaders' relationship in the workplace. In graduate school, the mentor professor has strong decision-making power on the fate of a graduate student. Therefore, doctoral student protégés have to pay a higher cost and tend to refrain from proactive behaviors. In the workplace, with reduced psychological cost, I expect anxious attached followers will perform more proactive behaviors.

**Hypothesis 4a.** There will be a positive relationship between attachment anxiety and proactive behaviors.

In contrast, avoidantly attached infants experience consistent evasive responses from caregivers, which cause their negative views of others and high self-reliance. In the workplace,

followers with attachment avoidance tend to reveal fewer proactive behaviors for the following reasons. Firstly, since they have negative biased views on others while they believe themselves more capable than others (Mikulincer & Shaver, 2007), they are suspicious and fearful of others' motives and they tend not to show vulnerability to others or look down on themselves to be negative (Mikulincer & Shaver, 2004, 2005). Therefore, they are inclined to resist interacting with others to avoid harm. Secondly, followers higher in attachment avoidance prefer to work on their own and devote themselves to their work (Hazan & Shaver, 1990). They reported that they "feel nervous when not working" and social relationships interfere with their work (Hazan & Shaver, 1990). Therefore, they distance themselves away from relationships, including relationships with leaders, by performing fewer proactive behaviors.

Empirical studies show inconsistent results of the effects of avoidant attachment style on proactive behaviors (Wu & Parker, 2014; Richards & Schat, 2011). Among them, Richards and Schat (2011) showed that attachment anxiety is correlated with higher levels of support seeking while attachment avoidance is correlated with lower levels of support seeking behaviors. Even though their study did not focus on proactive behaviors for relationships, it still provided some clues and evidence for the current propositions. Wu and Parker (2014) suggested further studies to clarify the effects of insecure attachment on proactive-related behaviors. In the current context, I expect

**Hypothesis 4b.** There will be a negative relationship between attachment avoidance and proactive behaviors.

Proactive behaviors in turn, facilitate the development of relationships between leader and follower (London, 2003). As Dulebohn, Bommer, Liden, Brouer, and Ferris (2012) argued, the evolution of relationship is impacted by their behaviors over time. In the leader-follower

situation, proactive behaviors by followers could help them gain a better impression (Ashford, & Tsui, 1991; Edwards, 1995). Followers' proactive behaviors could impress their leaders because they show the leaders their efforts in building and developing the relationships and they show their leaders they are concerned about the relationships (Ashford & Tsui, 1991; Edwards, 1995). Such behaviors could also gain them more interactions with their leaders. Therefore, from the behavioral perspective, compared to the followers who are more passive, followers who act proactively are more likely to develop a better LMX quality. In addition, proactive behaviors could help reduce uncertainty for both dyadic partners. Proactive behaviors should gain the followers more information such as expectation from the leader (Morrison, 1993), reaction from the leader, which could enhance the understanding of the leaders (Morrison & Bies, 1991). In previous empirical studies, subordinates' feedback seeking behaviors have shown to be helpful in reducing role ambiguity between supervisors and subordinates (Ashford & Cummings, 1985; Brown, Ganesan, & Challagalla, 2001). Overall, the more interaction they initiate with leaders and the more information they gain from their leaders, the more chance they have to gain a good quality LMX.

**Hypothesis 5a.** Proactive behaviors mediate the relationship between attachment anxiety and LMX.

**Hypothesis 5b.** Proactive behaviors mediate the relationship between attachment avoidance and LMX.

### ***LMX on Organizational Outcomes***

Even the focus of LMX is the dyadic relationship between leader and follower (Dansereau, et al., 1975; Graen, 1976), the good quality of LMX benefits other organizational outcomes. The core foundation of LMX based on the social exchange and reciprocity



frameworks. When the followers perceive a positive signs from their leaders, they are more likely to evoke reciprocate functional behaviors in the work contexts (Blau, 1964; Connell, 2005). When perceive a good quality of exchange with leaders, followers are more motivated to show kindness and to engage in behaviors that benefits the people and organizations. Specifically, followers are more likely to perform in reciprocate ways that could be clearly recognized (Gouldner, 1960) including contextual and task performance (i.e., OCB and task performance; (Katz & Kahn, 1966; Levinson, 1965; Moorman, 1991). Furthermore, there has been extensive research on the positive relationship between LMX and OCB (e.g., Wayne & Green, 1993; Ansari, Bui, & Aafaqi, 2007; Hackett & Lapierre, 2004; Ilies, Nahrgang, & Morgeson, 2007) as well as between LMX and performance (e.g., Gerstner & Day, 1997; Liden & Graen, 1980; Dunegan, Uhl-Bien, & Duchon, 2002; Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). Therefore, the following hypothesis intents to replicate the positive relationship between LMX and OCB as well as LMX with task performance.

**Hypothesis 6.** LMX has a positive relationship with (a) organizational citizenship behavior (OCB) and (b) task performance.

To sum up the mechanisms, perception and behaviors are mutually joint factors to influence the relationship building process. Only by taking consideration of different mechanisms, we can interpret the process as a whole. For example, the anxious attached followers conduct a lot of proactive behaviors, but still get a low LMX. Meanwhile, their affective and cognitive reactions play a role as well. Since they input excessive efforts, it is difficult for them to perceive fair reciprocation (i.e., low LMXSC) and hard for them to trust their leaders, which leads to strained relationships. There will also be interactions between leader characteristic (environment) and follower characteristic on the effects of cognition, behavior, and

ultimate relationship quality. Wu and Parker's (2014) study tested the leaders' support in facilitating followers' proactive behaviors, results showed the effects only when employees are low in attachment security rather than high in attachment security.

## **Method**

### **Sample**

Participants were employees and their direct supervisors from various organizations in central part of China. Participants were from various industries. Forty part-time students from a large university were recruited as volunteers to contact working teams in various local organizations. The 42 students contacted 104 teams with 104 leaders and their 400 subordinate employees. 384 were collected as valid responses (96% response rate). The time two measure was conducted three month later. There were 16 employees leave their jobs during the three months (turnover rate was 4%). We excluded eight teams due to their high turnover rate among the team and five teams due to their loose team type. Therefore, there were 93 teams (i.e., leaders) with 342 employees (i.e., members; 86% response rate).

Among the 342 employees, there were 169 females (49%) and were averagely 29 years old with  $SD = 5.85$ . There were 17 (5%) employees obtained high school or lower degree, 131 (38%) obtained associate degree, 173 (51%) obtained college degree, and 18 (5%) obtained graduate-level degree. The average working tenure was 7.1 years with  $SD = 5.8$  and average working tenure at the current position was 3.7 years with  $SD = 3.8$ . As for the position level of these employees, majority of them ( $n = 311$ , 91%) were general employee, 19 of them (6%) were low-level manager, five (1.5%) were middle-level manager.

Among the 93 teams, the type of the organization varies: 23 (25%) were from state-owned business, 29 (31%) were from private enterprise, 33 (36%) were from joint venture

enterprise or foreign-owned enterprise, and 6 (7%) were from government agencies. The size of the teams varies from 2 to 12 (mean=4.2,  $SD = 1.9$ ) and majorities were 3 or 4 members (77 teams with 83%). The distribution of types of the working team are: 20 (21%) were administrative/management/human resource-related, 29 (31%) were technology/research and development/finance-related, 21 (23%) were marketing/sales/customer service/customs/execution-related, and 23 (25%) were manufacturing and other-related.

Among the 93 leaders, 55 (59%) were male and average age was 35 ( $SD = 7.6$ ). As for education level, two (2%) obtained high school or lower, 24 (26%) obtained associate degrees, 56 (60%) obtained college degrees, and 8 (9%) obtained graduate level degrees. Their average tenure was 13.2 years with  $SD = 8.2$  and average tenure for the current position was 7.7 years with  $SD = 6.5$ .

### **Development and Validation of ECR Chinese Measure**

The Chinese version ECR was translated by subject-matter experts (SMEs) and tested in various samples including students and employees to validate.

#### ***Development of Chinese version adult attachment styles***

The Chinese version of attachment styles (ECR-C) were translated by subject-matter experts (SMEs) from the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998). The version we used was Richards and Schat's (2011) general version adapted from Brennan et al.'s romantic relationship version. The SME group included three professors and three doctoral students who are bilingual—fluent in both English and Chinese. The bilingual SMEs maintained the content equivalence from the emic and etic perspective when translated the items (emic refers to the culture specific perspective while etic refers to the common parts between two cultures; Brislin 1976, Triandis & Brislin 1984). The process was iterative,

including multiple rounds of independent translations and group discussions by the SMEs, to make sure the translation was precise and adaptable in the Chinese culture.

The initial version was then distributed to 30 students and teachers on campus. Besides their responses on the multiple choices in the survey, their opinions and suggestions were also collected to improve the measure. Two round of revises were conducted. For instance, the expression of item three “I am very comfortable being close to others” doesn’t make a lot of sense when translating into Chinese, therefore a reverse expression was developed to match the same meaning of the English version; the term “keep pulling back” in item 11 and the term “get others to show interest in me” in item 24 need more interpretation in Chinese to make sense (the final measure and keys to the measurement see appendix II & III).

### ***Validation of Chinese version ECR***

Student sample. College students ( $n = 620$ ) were recruited to test the reliability and validity of the initial revised measure. Researchers identified some ambiguous items from the results of some moderate Cronbach’s alphas (see Table 1) and item analyses (see Table 2). The results of factor analysis also provided us information about the how to improve the qualities of the items. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .85, which showed the appropriateness of the intercorrelation matrix to conduct the factor analysis. The Exploratory Factor Analysis (EFA) using maximum likelihood and oblimin rotation method showed eight factors with eigenvalues larger than one, however only explained 40 percent of the variance. Details about the structure matrix is in Table 3 and we identified the dimensions and improved the items based on the results of EFA. The correlation between this ECR version with validated AAQ Chinese version showed initial evidence for construct validity (Table 4). The correlation of ECR and some prevalently used measures (e.g., Wei, Sun, & Huo, 2011) that had shown

relationships with attachment showed the criterion-related validity of this ECR-C (Table 5; Du, Huang, & Li, 2015).

General sample. A convenience sample with more than 1000 adults was recruited from the general population through online survey. The online survey was set to force response for each questions and we cleaned the data by the following criteria: (a) the email address provided was invalid; (b) response time was less than 2 minutes or more than 40 minutes; and (c) individuals who repeat the same number for more than 5 times continuously. There were 880 completed individuals in our analysis. Among the sample, 73.4% were females and age distributed as: less than 20 (4.1%), 21-25 (35.8%), 26-30 (14.3%), 31-40 (34.5%), and more than 40 (11.3%).

Specifically, we tested the structure of attachment based on the confirmatory factor analysis (CFA) model from Richards and Schat (2011). Richard and Schat' (2011) model consists two second-order factors (attachment anxiety and attachment avoidance) with three first-order factors for each second-order factors. Attachment anxiety includes preoccupation with relationships, fear of rejection, and jealousy; while attachment avoidance includes avoidance of intimacy, discomfort with closeness, and self-reliance (see appendix III for how each item was defined). The statistics software Amos was used to test the CFA structure. Results indicated adequate fit after deleting item 3 and item 19 (avoid intimacy sub-dimension under avoidance) and deleting item 4 (preoccupation sub-dimension under anxiety) and item 12 (fear rejection sub-dimension under anxiety):  $\chi^2(423) = 1637.407$ , RMSEA = .057, CFI = .881, TLI = .869. The problematic items were adjusted by SMEs before used in the current study.

## **Procedure**

There were two waves of surveys. Both employees and the leaders participated in the two waves. The surveys were distributed by the unit of working teams. The first-wave employee-survey included employees' demographic information, adult attachment styles, and employee-rated leader-member exchange. The first-wave leader-survey included demographic information about the leader and basic information about the team. Participants were provided with a gift worth 25 CNY for the first wave survey.

Second wave was conducted three month later and both employees and their team leaders were invited. Employees' measures contained leader-member exchange social comparison (LMXSC), proactive behavior measures (feedback seeking, relationship building, and Laguanxi), perceptions on leaders' benevolence, and leader-member exchange (LMX). Leaders' measures contained LMX, organizational citizenship behavior (OCB), and task performance (TP). The leader's version varies by the number of the team because the leader had to rate each member of the team on their OCB and TP as well as specific relationship with each member (i.e., LMX). Both the leader and employees were provided with small gifts worth 30 CNY.

## **Measures**

***Demographic information.*** Demographic information for the employees includes gender, age, degree (1= high school or lower degree; 2 = associate degree; 3 = college degree; and 4 graduate-level degree), working tenure in years, working tenure for the current position in years, and position (1= general employee; 2 = low-level manager; 3 = middle-level manager; 4 = high-level manager; and 5 = other). For the team, which was answered by the employees, we measured organizational type (1 = state-owned business; 2 = private enterprise; 3 = joint venture enterprise or foreign-owned enterprise; and 4 = government agencies), size of the team, team type (1 = administrative/management/human resource-related; 2 = technology/research and

development/finance-related; 3 = marketing/sales/customer service/customs/execution-related; 4 = manufacturing-related; and 5 =other-related). For the leaders, the demographic information includes, gender, age, degree (same scale as the employees'), tenure in years, and tenure for the current organization in years.

**Attachment styles.** Attachment styles were measured by the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998) for general relationships (Richard) with 37 items, in which 19 for anxiety and 18 for avoidance. A sample item for attachment anxiety is "I worry about being abandoned" while a sample item for attachment avoidance is "Just when other people start to get close to me I find myself pulling away". There were one reverse item for attachment anxiety and seven reverse items for attachment avoidance. Employees' level of agreement will be rated from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha coefficient for the attachment anxiety measure was .92 and .82 for the attachment avoidance measure.

**Benevolent leadership.** Benevolent leadership will be measured using the benevolent dimension of paternalistic leadership scale (Cheng, Chou, & Farh, 2000). There are 11 items and employees will rated their supervisors on a 7-point Likert scale (from 1 = *strongly disagree* to 7 = *strongly agree*). One sample item is "My supervisor ordinarily shows a kind concern for my comfort." The alpha coefficient was .95 in the present sample.

**Leader-member exchange social comparison (LMXSC).** LMXSC was translated to Chinese from Erdogan's (2002) measure, which was also validated in Vidyarthi, Liden, Anand, Erdogan, and Ghosh's (2010) study. There are 6 items with a 5-point Likert scale (from 1 = *strongly disagree* to 5 = *strongly agree*) and a sample item is "relative to the others in my work

group, I receive more support from my manager.” The alpha coefficient was .90 in the present sample.

**Feedback Seeking.** Feedback seeking will be measured by a Chinese version of Ashford & Black’s (1996) scale. There are three items (1 = *to no extent* to 5 = *to a great extent*) and a sample item is “ask you about his/her performance after a task is done.” The alpha coefficient was .83 in the present sample.

**Relationship Building Behavior.** Ashford and Black’s (1996) relationship building behavior measure will be used. There are three items (e.g., “tried to spend as much time as you could with your boss?”), measured by a 5-point Likert scale (1 = *to no extent* to 5 = *to a great extent*). The alpha coefficient was .81 in the present sample.

**Laguanxi.** Wang and Kim’s (2013) measure of *Laguanxi* will be used. There are five items measured from 1(*to no extent*) to 5 (*to a great extent*), and a sample item is “spend time with you after work.” The alpha coefficient was .78 in the present sample.

**Leader-member exchange (LMX).** LMX will be measured by Hui, Law, and Chen (1999), which is adapted from Scandura and Graen (1984). Self-rated version will be measured both at time one and time two. There are 7 items and a sample item is “My supervisor would help me with difficulties at work even that will sacrifice his own benefit.” Leader-rated leader-member exchange will be adapted from the self-rated version and a sample item is “I would like to help my follower with the difficulties at work even I need to sacrifice my own benefit.” The scale is from 1(*strongly disagree*) to 7(*strongly agree*). The alpha coefficients were .87, .89, and .79 for time 1 followers’ rating, time 2 followers’ rating, and time 2 leaders’ rating, respectively in the present sample.



**Organizational Citizenship Behavior (OCB).** OCB will be measured (Lam, Hui, Claw, 1999) with 16 items. One sample item is “I would like to adjust my own work plan if my coworkers need to ask for a leave.” The scale is from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha coefficient was .93 in the present sample.

**Task Performance.** Task performance will be measured by the Chinese version (Wang, Zhan, McCune, & Truxillo, 2011) of Janssen and Van Yperen’s (2004) scale. The measure contains five items with a sample item “he/she fulfill all the obligations required from the job.” Task performance will be rated by the leaders. The scale is from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha coefficient was .90 in the present sample.

## **Data Analyses**

Due to the structure of the data—employees nested into working group (or under leader), we examined the necessity to conduct multilevel analyses first. Even though the measures were all measured in individual level, treating the measures as independent may produce unreliable errors and misspecification (Hox, 2002; Snijders & Bosker, 1999). The  $\eta^2$  and ICCs for dependent variables were listed in Table 7 and Table 8, which showed the appropriateness of using multilevel analysis. Hence, mixed model analysis, multilevel Sobel test, multilevel bootstrapping, and multilevel SEM were used to test the hypotheses through R packages and Mplus.

### **Linear Mixed Model**

First, consider the following general linear model,

$$Y_i = \alpha + X_i\beta + e_i, \text{ for } i=1, \dots, n$$

where  $X_i$  is the explanatory variable and  $Y_i$  is the corresponding response variables. The parameter  $\alpha$  is an intercept parameter while  $\beta$  is a slope parameter. Inferences concerning the

parameter  $\beta$  are of interest. The assumption for errors is they are independent and identically distributed following some distribution  $F$ .

When the design uses nested data, the independent errors assumption is no longer valid. Therefore, different approaches need to be used. In this case, linear mixed model could be used to estimate fixed effects and the variance-covariance matrix. The linear mixed effect model is given by

$$y = X\tau + Zu + e$$

where  $y$  is the outcome variable vector,  $\tau$  is the fixed effects coefficients with  $(n * p)$  fixed effect predictor matrix  $X$ ,  $u$  is the random effect coefficient with  $(n * q)$  matrix  $Z$  representing random effects, and  $e$  is the vector of random errors.

Likelihood procedure is used in estimation for the mixed models. The assumptions are normality of the errors and random terms. The idea of Likelihood procedure is to maximize the likelihood to observe the actual data. Patterson and Thompson (1971) then introduced the method of residual (or restricted) maximum likelihood (REML) estimation, which adjusts to avoid yielding negative variance in ML on fixed effects.

The R package nlme could be used for estimation. In lme() command, fixed effects and random effects (in the parentheses) could be specified.

### ***Mediation Test***

Sobel test was used to test the indirect mediation effects by R. Three regression models among the relationship between IV, mediator, and DV are examined:

$$\text{Model 1: } Y = \gamma_1 + \tau X + \varepsilon_1$$

$$\text{Model 2: } M = \gamma_2 + \alpha X + \varepsilon_2$$

$$\text{Model 3: } Y = \gamma_3 + \tau' X + \beta M + \varepsilon_3$$

Where  $X$  is the IV,  $M$  is the mediator, and  $Y$  is the DV. Model 1 regards the relationship between IV and DV, denoted by  $\tau$ ; model 2 regards the relationship between IV and mediator, denoted by  $a$ ; and model 3 regards the relationship of IV and M on DV, where  $\tau'$  denotes the relationship between IV and DV after put mediator in the regression model. The change from  $\tau$  to  $\tau'$  indicated the mediation effect (see Figure 2). In the current project, the group-centered variables were used to test the within-group mediation effects.

Bootstrapping is also used to test the indirect effects, which is a method of resampling with replacement. 5000 times of resampling will be used in the current project using r package bootstrapping. Confidence intervals were provided for the bootstrapping indirect effects.

### ***Multilevel SEM***

Due to the clustered nature of the data structure, traditional structural equation model is not appropriate because the assumption of independence is violated. In this case, there's within-cluster dependence, we chose the multilevel SEM to test the whole theoretical model. Mplus software was used.

## **Results**

The descriptive statistics including means, standard deviations, and correlations among variables are presented in Table 6. For details about means and distribution see the participant section under method. From the information of the mean, the leader's age, education, and tenure are larger than employees' age, education, tenure, and tenure in current position (34.5 vs. 29 years, 2.77 vs. 2.57, 12.93 vs. 7.12, 7.74 vs. 3.69). The correlations were also differentiated by between group effect (see Table 7) and within group effect (see Table 8). The  $\eta^2$  and ICCs were indicated on the diagonals of Tables 7 and 8. The current study focused on the within-group effects, therefore, as can be seen from the within-group effect table. After ruling out the between

group effects, some demographic information showed significant correlation with measured variables. There is a negative correlation between gender and avoidance ( $r = -.21$ ) as well as between gender and LMXSC ( $r = -.12$ ) just as there is negative correlation between age and education ( $r = -.21$ ). There is, however, a positive correlation between age and tenure ( $r = .87$ ), the current position ( $r = .48$ ), as well as age and position ( $r = .16$ ). The data showed a negative correlation between age and feedback seeking ( $r = -.13$ ), relationship building ( $r = -.15$ ). Education showed a negative correlation with tenure ( $r = -.28$ ), tenure in the current position ( $r = -.26$ ), positive correlation with feedback seeking ( $r = .17$ ), relationship building ( $r = .19$ ), laguanxi ( $r = .17$ ), leader-rated LMX ( $r = .11$ ), and task performance ( $r = .14$ ). Tenure in the current position indicated a positive association with position ( $r = .22$ ) and LMXSC ( $r = .13$ ) while a negative association existed with attachment anxiety ( $r = -.21$ ), feedback seeking ( $r = -.15$ ), and relationship building ( $r = -.15$ ). Position is significantly positively correlated with LMXSC ( $r = .14$ ); the type of organization is related with attachment avoidance ( $r = .13$ ) and the type of team is related to time-one LMX ( $r = -.11$ ). The results showed that males are more likely to form attachment avoidance and less likely to perceive negative social comparison compared to females. The older the employee usually indicated a lower level of education, which implied younger subjects to be better educated. Results also showed that older employees tended to have higher tenure rates and lower frequencies of proactive behaviors; however, the higher the education they receive, the shorter they are tenured and more proactive behaviors. These indicated a higher turnover rate and higher proactive behaviors for higher educated and younger people. Tenure and tenure in the current position are also positively correlated with position, which indicated the longer they work in the company, the higher position they will retain.

In terms of the research variables, attachment anxiety is positively correlated with attachment avoidance ( $r = .17$ ), negatively correlated with benevolent leadership ( $r = -.16$ ), negatively correlated with time-one LMX ( $r = -.12$ ) and time-two LMX ( $r = -.21$ ). Attachment avoidance doesn't show any significant correlation with other research variables. Benevolent leadership showed significant positive correlation with time-one LMX ( $r = .27$ ), time-two LMX ( $r = .62$ ), LMXSC ( $r = .47$ ), relationship building ( $r = .12$ ), laguanxi ( $r = .18$ ), leader-rated LMX ( $r = .16$ ), difference between time 1 and time 2 LMX ( $r = .33$ ), OCB ( $r = .17$ ), and task performance ( $r = .18$ ). Time-one LMX showed significant positive correlation with LMXSC ( $r = .28$ ), feedback seeking behavior ( $r = .11$ ), relationship building behavior ( $r = .17$ ), laguanxi ( $r = .20$ ), leader-rated LMX ( $r = .17$ ), time-two LMX ( $r = .40$ ), OCB ( $r = .17$ ), task performance ( $r = .12$ ), and negative correlation with LMXD ( $r = -.53$ ). LMXSC showed positive correlation with relationship building ( $r = .15$ ), laguanxi ( $r = .18$ ), leader-rated LMX ( $r = .17$ ), time-two LMX ( $r = .50$ ), OCB ( $r = .19$ ), and task performance ( $r = .16$ ). Feedback seeking is positively correlated with relationship building ( $r = .60$ ), laguanxi ( $r = .64$ ), leader-rated LMX ( $r = .45$ ), OCB ( $r = .47$ ), and task performance ( $r = .38$ ). Laguanxi is positively correlated with leader-rated LMX ( $r = .60$ ), time-two LMX ( $r = .19$ ), OCB ( $r = .54$ ), and task performance ( $r = .45$ ). Leader-rated LMX is significantly associated with time-two LMX ( $r = .56$ ), OCB ( $r = .26$ ), and task performance ( $r = .17$ ) while OCB is positively correlated with task performance ( $r = .59$ ). Results from the correlation table indicated the associations of adult attachment anxiety with other research variables and the associations among outcome variables (e.g., LMXSC, proactive behaviors, OCB, and task performance). The correlations are moderate and provide some evidence for the relationship between research variables.

## **Hypothesis Testing**

Linear mixed model was used due to the clustered nature of the current sample as well as the significant ICCs for the outcome variables. The R is used for estimating the fixed effects of the linear mixed model (i.e., `lme ()` in `nlme` and `lme4` packages). In the formula, both random effects on intercept and slope were modeled. Results showed significant negative effect of attachment anxiety on time-two LMX (R codes: `lme (LMX_F_t2 ~ at_anxiety, random = ~1 + at_anxiety | Lid, data = LMXdata.c, control = list (opt="optim"))`);  $\beta = -.17, p < .01$ ; scatterplots see Figure 3), but the estimated slope of attachment avoidance on LMX was not significant ( $\beta = -.06, p = .4$ ); therefore, hypothesis 1 was partially supported. The scatter plot between attachment anxiety and LMX are shown in Figure 2. Hypothesis 2 proposed the negative association between attachment styles and LMXSC. the results showed a marginal negative association between attachment anxiety with LMXSC ( $\beta = -.07, p = .10$ ) and between attachment avoidance with LMXSC ( $\beta = -.06, p = .10$ ); therefore, hypothesis 2 was partially supported.

Mediations from attachment styles to LMX through LMXSC were then tested. R was used again for both Sobel and bootstrapping tests. For the Sobel test, the package ‘multilevel’ was used (e.g., `sobel (pred = LMXdata$w.at_anxiety, med = LMXdata$w.LMXSC_F, out = LMXdata$RLMX_t2)`). The group-centered variables were used for the mediation test because the dissertation project was only interested in the within-group effects. Results showed significant indirect effect. Specifically, the regression of LMX on attachment anxiety in was significant without the mediator LMXSC ( $b = -.21, t_{(187)} = 8.55, p < .001$ ); the regression of LMXSC on attachment anxiety was significant ( $b = -.08, t_{(187)} = -2.13, p < .05$ ); the regression of LMX on mediator LMXSC, after controlling for attachment anxiety in was also significant ( $b = -.50, t_{(187)} = -4.68, p < .001$ ); and controlling for LMXSC, the regression of LMX on attachment was significant ( $b = -.17, t_{(187)} = -4.12, p < .001$ ). The results of sobel test showed partial

mediation in the model ( $z = -2.07, p < .05$ ). Bootstrapping for 5000 resampling for within-group effects was also conducted (R codes: `TDAT<- LMXdata [,c ("w.at_anxiety", "w.LMXSC_F", "RLMX_t2")]`; `theta<-function(x, DATA){SOBEL.OUT< sobel (pred =DATA[x,1], med = DATA[x,2], out=DATA[x,3]) bootstrap (1:nrow(TDAT), theta, TDAT, nboot=5000)` and the test showed significant indirect effects (95% *CI* is [-0.090, -0.004]). Therefore, hypothesis 3 was supported. The mediation effect from attachment avoidance to LMX through LMXSC was not significant due to nonsignificant results from H1b and H2b. Thus, hypothesis 3b was not supported.

Results regarding the association between attachment styles (i.e., attachment anxiety and attachment avoidance) and proactive behaviors (i.e., feedback seeking, relationship building, and *Laguanxi*) were non significant (detail results see Table 9). Mediations from attachment styles to LMX through proactive behaviors were not supported as well. Therefore, hypotheses 4 and 5 were not supported. Supported hypothesis 6a and 6b, LMX has significant positive relationship with OCB ( $\beta = .16, p < .01$ ) and task performance ( $\beta = .17, p < .01$ ).

### **Model Testing**

The whole model was tested in multilevel SEM due to the clustered nature of the data. All the variables collected were on an individual level, therefore all the variables were modeled for within and between effects. However, the interest of the current dissertation is on within-effect, only the within-effect results were shown in the following section. The model showed fair fitness:  $\chi^2 (df = 44) = 522.73, CFI = .82, RMSEA = .11, SRMR = .07$ . See figure 5 for the within-group effect coefficients. After controlling for time one LMX, benevolent leadership, and the interaction term of anxiety and benevolent leadership, the association between attachment anxiety and LMXSC become non-significant.

## **Discussion**

This dissertation proposed a theoretical model linking the literature of attachment style and literature of LMX as well as empirically analyzing the model in workplace relationships. Specifically, rooted from the characteristics of different attachment styles, this dissertation proposed the negative association between attachment insecure (i.e., anxiety and avoidance) and leader-member exchange (LMX) quality. It also proposed the cognitive (i.e., LMXSC) as well as behavioral (i.e., proactive behaviors) mechanisms. Further, the dissertation proposed the moderation role of benevolent leadership. Clustered data in working groups was collected. Results supported some hypotheses such that attachment anxiety had only a marginally negative association with LMXSC and a significantly negative association with LMX. The indirect effect from attachment anxiety to LMX through LMXSC was also significant. However, other direct effects or indirect effects (i.e., mediation) were not significant. The overall model was not strong because the link between attachment anxiety and LMXSC became non-significant. Moreover, the interaction term of attachment anxiety and benevolent leadership was not significant.

### **Theoretical Implications**

LMX is a critical approach to study dyadic relationships between leaders and followers in the workplace, which positively associates with various important individual and organizational outcomes (Gerstner & Day, 1997; Liden & Graen, 1980; Graen, Liden, & Hoel, 1982; Scandura & Graen, 1984; Wayne & Green, 1993; Ilies, Nahrgang, & Morgeson, 2007; Dulebohn, et al., 2012). It is, therefore, important to better understand the process of LMX. This study also addressed the call of studying the process of LMX (e.g., Day & Miscenko, 2015), especially in eastern cultures. Under the hierarchical structure in Chinese culture, the relationship between leader and follower could be better paralleled with the caregiver-child relationship. The cognitive



and behavioral mechanisms were proposed from the theories of attachment styles. Even though the proactive behaviors didn't show significance in mediation, other behavioral indicators should still be examined. Overall, this dissertation showed most promise when placing workplace relationship studies within the attachment styles paradigm.

### **Practical Implications**

This dissertation also provided pragmatic value in improving interpersonal relationships within organizational settings. As the paper discussed different mechanisms for different attachment styles, interventions of different perspectives should benefit different employees. Organizations could potentially implement different practices that target specific employee samples, such as targeting cognition for anxious employees and targeting promoting initiative behaviors for avoidant employees. It is also necessary for the leaders to be aware that employees with different attachment styles possess different characteristics and have different mechanisms to influence their relationships with leaders. By increasing the leaders' understanding of followers' motives of their expressions, leaders could better response to followers' different reactions.

This model could be utilized to generalize among different settings and different populations because any follower will face the situation of dealing with the relationship with their leaders and other people at work. Take for example, the series of recent incidents in Chinese hospitals have highlighted the stressed relationship between patients and doctors, which could be accounted for by the perceptions about the relationship or the behaviors toward the relationship. If practitioners could take specific considerations for specific issues, we could find out the real problems of the relationship and resolve the disharmony.

Employees with different attachment styles might also show different coping styles. Coping plays a considerable role in dealing with stress in the workplace, especially for new employees.

The dissertation investigated the application of adult attachment style from the organizational behavior perspective; however, with the dramatic development of professional caregivers, it might also be possible to investigate criteria using adult attachment style within selection contexts. By supplementing the parents' role, professional caregivers of infants play an important role in shaping their attachment security. Also, the professional caregivers for older children or adults might need to consider the match of attachment styles.

### **Strengths and Limitations**

The dissertation used a rigorous design to test the theoretical model. Specifically, employee data was collected and the sample is diverse in different types of industries and organizations, which increases the adaptability of the current sample to other sceneries. Second, the data has two different waves, which reduced the common method variances. Third, the data was from multiple sources including employees and their direct supervisors, which made the data more objective. Moreover, the data was collected in nested structures and the multilevel analyses were conducted for all the tests.

Nevertheless, limitations also exist such as the measurement issue regarding the adult attachment style as well as other potential mechanisms in the theoretical model, which might cause the non-significance of the model.

### **Future Directions**

Measures of adult attachment style could be further discussed and developed. A potential issue with the current project is that the measure was a general adult attachment style while all

the other measures are specific to the workplace. In the current project, a working context specific attachment measure might be more appropriate to study the relationship within the organizational setting. Future research could investigate further on the context-free and context-specific measures of adult attachment styles.

Other mechanisms should also be measured besides those tested for the cognitive level and behavioral level such as those at the affective level. For instance, people with high level of attachment insecurity have problems forming trust with others while trust is an important foundation to form good quality of LMX. Thus, testing trust as a mechanism in future research is suggested. Furthermore, behavioral mechanism other than proactive behaviors should also be tested since the measure in the current project didn't support the hypotheses.

Another potential direction is to study the leaders' attachment styles. Attachment styles from both parties should be considered and be matched. Davidovitz, Mikulincer, Shaver, Izsak, and Popper (2007) tested the role of leaders' attachment style in a military context for performance and it should be further extend to study the leader-follower relationship under more common organizational settings.

Furthermore, the proposal discussed the facilitating effect of benevolent leadership on the LMX-building process from the attachment perspective. Unfortunately the moderating role was not significant. Other contextual factors such as the working environment, perceived working safety, employee voice, and error allowance might be potential factors to be tested based on the theories of attachment activation process. After contextual factors are identified, it might be advantageous for HR practitioners to consider incorporating them in practice.

The current project's argument focused on dyadic relationships, but it is also suggested an extension to include the group process. Future research could study the whole group dynamics

instead of leader-follower relationships. It could also be extended to other interpersonal situations. The work-family balance might also be studied. Even though peoples' working models seem to be stable throughout adulthood, people might still show differentiation in attachment styles under different contexts—such as the work-family differentiation. The attachment security under different contexts might be supplementary with each other.

In sum, only a small number of studies have examined the role of attachment styles in workplace outcomes (Harms, 2011), and fewer have examined the role of attachment in LMX and LMX process related variables (Richard & Hackett, 2012; Wu & Parker, 2014; Richards & Schatt, 2011; Frazier, et al., 2014; Davidovitz, et al., 2007; Wu & Parker, 2014). The proposal reviewed and suggested a model that develops LMX from the attachment perspective. It also provided a new insight by cross-fertilize attachment research on understanding LMX processes. Besides, the leaders' role is taken into consideration and the moderation view helps us find more breakthroughs for practical HR practices. The proposed model interprets how leaders' benevolence and the followers' attachment styles interplay with each other and provide great potential avenues for future research.

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**Table 1**  
*Initial Version ECR-C Reliability:  $\alpha$  Coefficient*

Dimensions	Pre-occupation	Fear of rejection	jealousy	<b>Anxiety</b>
Reliability	.77	.66	.71	.85
Items	7	5	6	18
Mean	4.02	2.84	3.77	3.60
Dimensions	Avoidance of intimacy	Discomfort with closeness	Self-reliance	<b>avoidance</b>
Reliability	.68	.73	.56	.78
Items	6	7	5	18
Mean	3.50	3.50	3.54	3.71

**Table 2**  
*Initial Version ECR-C Item-analysis: Item-total Correlations*

Preoccupation	a2	a4	a6	a8	a10	a14	a22r
	.726**	.683**	.683**	.697**	.561**	.654**	.515**
Fear of rejection	a12	a16	a20	a24	a26		
	.685**	.732**	.606**	.583**	.642**		
Jealousy	a18	a28	a30	a32	a34	a36	
	.655**	.628**	.704**	.608**	.636**	.608**	
Avoidance of intimacy	a1	a9	a15r	a19r	a25r	a27r	
	.676**	.729**	.667**	.541**	.444**	.643**	
Discomfort with closeness	a3r	a5	a7	a11	a13	a17	a23
	.420**	.693**	.717**	.490**	.675**	.661**	.662**
Self-reliance	a21	a29r	a31r	a33r	a35r		
	.593**	.674**	.585**	.496**	.663**		

Notes. \*\*  $p < .01$

**Table 3**  
***Summary of Exploratory Factor Analysis Results for Initial Version ECR-C***

Item	Factor Loadings							Fact
	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	
14	.46							
4	.40							
21		.69						
1		.67						
9		.45						
15r			-.93					
27r			-.63					
16				.69				
12				.65				
26				.65				
23				.64				
17				.49				
5					-.61			
7					-.60			
13						.67		
3r						.52		
19r						.51		
30						.46		
28						.44		
36						.41		
20						.41		
32								
34								
24								
18								
25r								
29r								
31r							.62	
33r							.52	
35r								.60
2								.57
8								.51
6								.42
10								.42
22r								
11								
Eigenvalues	2.06	1.53						
% of var	25.75	19.12						

*Note:* Factor loadings over .40 are showed.

**Table 4**  
***Correlation between ECR-C Initial Version and AAQ Chinese Version***

	ECR-C Anxiety	ECR-C Avoidance	AAQ Anxiety	AAQ Avoidance
ECR-C Anxiety				
ECR-C Avoidance	.07			
AAQ Anxiety	.32**	.12**		
AAQ Avoidance	.11**	.34**	.10*	

Notes. \*\*  $p < .01$

**Table 5**  
*Initial Version ECR-C Criterion-Validity*

	Depression	Socialavo	Socialwor	Lone_s	Lone_t
<i>Anxiety</i>					
Preoccupation	.337**	.199**	.321**	.339**	.325**
Rejection	.303**	.113**	.166**	.297**	.281**
Jealousy	.287**	.124**	.221**	.213**	.206**
<i>Avoidance</i>					
Intimacy	.174**	.418**	.332**	.185**	.261**
Closeness	.286**	.467**	.359**	.287**	.321**
Self-Reliance	.059	.129**	.041	.142**	.183**

*Notes.* \*\*  $p < .01$

Socialavo = social avoidance; Socialwor = social anxiety; Lone\_s = state loneliness; and Lone\_t = temporary loneliness.



**Table 6***Means, Standard Deviations, and Correlations for Study Variables*

	Mean (s.d.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1. Gender	1.50 (.50)	–																						
2. Age	29.0 (5.85)	-.00	–																					
3. Edu	2.57 (0.69)	-.09	-.07	–																				
4. Tenure	7.12 (5.79)	.02	<b>.91</b>	-.16	–																			
5. CTenure	3.69 (3.78)	.05	<b>.52</b>	.03	<b>.59</b>	–																		
6. Position	1.14 (0.54)	.05	<b>.23</b>	.03	<b>.26</b>	<b>.19</b>	–																	
7. OType	2.21 (0.98)	.06	.08	.11	.05	-.03	.05	–																
8. TType	2.77 (1.41)	<b>-.15</b>	-.04	<b>-.19</b>	-.00	-.08	.08	<b>-.18</b>	–															
9. TNo	4.19 (1.92)	<b>-.15</b>	.03	-.06	-.00	.04	<b>-.11</b>	<b>-.30</b>	<b>.28</b>	–														
10. Anxiety	3.34 (1.04)	-.07	<b>-.15</b>	.01	<b>-.16</b>	-.06	-.01	<b>-.12</b>	.01	.04	.92													
11. Avoida	3.51 (0.78)	<b>-.15</b>	-.00	.01	-.01	.07	.05	-.00	.03	.07	.19	.82												
12. BL	4.46 (1.21)	-.11	.04	.07	.03	.01	.01	<b>.14</b>	-.05	-.06	-.09	.08	–											
13. FLMX1	4.90 (0.96)	.01	.08	.10	.05	.00	.06	.04	.00	-.10	-.10	-.10	<b>.36</b>	.87										
14. LMXSC	3.10 (0.76)	<b>-.14</b>	.09	.06	.08	.08	<b>.12</b>	.07	-.03	-.07	-.08	-.02	<b>.46</b>	<b>.29</b>	.90									
15. FS	1.48 (0.90)	.09	-.08	<b>.24</b>	<b>-.12</b>	-.05	.03	.01	-.05	<b>-.12</b>	.01	-.08	.09	<b>.11</b>	<b>.19</b>	.82								
16. RB	2.03 (0.91)	.04	.01	<b>.21</b>	-.03	.01	.04	<b>.15</b>	-.11	-.11	-.06	-.02	<b>.25</b>	<b>.24</b>	<b>.23</b>	<b>.56</b>	.81							
17. LGX	1.46 (0.78)	.04	-.05	<b>.16</b>	-.08	-.07	.04	-.06	-.07	.00	-.07	-.07	<b>.27</b>	<b>.22</b>	<b>.26</b>	<b>.61</b>	<b>.78</b>	.78						
18. LLMX	5.50 (0.69)	.01	<b>.13</b>	.09	.07	.04	.08	-.01	<b>-.13</b>	.05	-.09	-.04	<b>.16</b>	<b>.16</b>	.06	<b>.16</b>	<b>.38</b>	<b>.29</b>	.79					
19. FLMX2	5.06 (0.95)	<b>-.14</b>	<b>.12</b>	.03	.09	.09	.02	<b>.13</b>	-.05	-.10	<b>-.17</b>	-.04	<b>.68</b>	<b>.45</b>	<b>.48</b>	.10	<b>.23</b>	<b>.19</b>	<b>.27</b>	.89				
20. FLMXD	0.16 (1.00)	<b>-.15</b>	.05	-.07	.04	.08	-.04	.07	-.04	.02	-.05	.06	<b>.29</b>	<b>-.53</b>	<b>.17</b>	-.00	-.01	-.03	.11	<b>.52</b>	–			
21. OCB	5.15 (0.80)	.09	.10	.09	.08	.04	.06	.10	<b>-.15</b>	.11	<b>-.15</b>	-.07	<b>.22</b>	<b>.23</b>	<b>.17</b>	<b>.29</b>	<b>.42</b>	<b>.38</b>	<b>.70</b>	<b>.26</b>	.03	.93		
22. TP	5.49 (0.94)	.05	.10	<b>.12</b>	.09	.11	.06	.07	<b>-.20</b>	-.01	-.07	.03	<b>.22</b>	<b>.12</b>	<b>.11</b>	<b>.13</b>	<b>.35</b>	<b>.30</b>	<b>.47</b>	<b>.22</b>	.09	.50	.90	
23. LGen	1.36 (0.48)	<b>.34</b>	.04	-.09	.05	-.01	.02	<b>.12</b>	<b>-.15</b>	<b>-.15</b>	-.04	-.06	<b>.19</b>	<b>.22</b>	.02	.06	<b>.20</b>	<b>.17</b>	<b>.12</b>	.10	-.12	<b>.27</b>	<b>.26</b>	
24. LAge	34.85 (7.51)	<b>.15</b>	<b>.29</b>	<b>.18</b>	<b>.30</b>	<b>.38</b>	<b>.14</b>	<b>.21</b>	<b>-.31</b>	<b>-.18</b>	-.09	-.05	-.00	.10	-.01	-.06	<b>.13</b>	-.06	<b>.19</b>	.02	-.07	<b>.13</b>	.11	
25. LEdu	2.77 (0.63)	-.07	.01	<b>.28</b>	-.05	-.01	.02	-.01	-.08	.00	-.08	-.04	.06	.13	.10	<b>.24</b>	<b>.17</b>	<b>.12</b>	<b>.12</b>	<b>.12</b>	-.01	-.07	<b>.15</b>	.08
26. LTen	12.93 (8.09)	<b>.17</b>	<b>.29</b>	<b>.16</b>	<b>.30</b>	<b>.39</b>	<b>.14</b>	<b>.19</b>	<b>-.31</b>	<b>-.19</b>	-.09	-.02	-.02	.07	-.02	-.05	<b>.15</b>	-.04	<b>.18</b>	-.01	-.07	<b>.11</b>	<b>.11</b>	
27. LCTen	7.74 (6.25)	.03	<b>.17</b>	<b>.21</b>	<b>.20</b>	<b>.41</b>	.02	<b>-.11</b>	<b>-.12</b>	-.04	-.04	.02	-.07	.02	-.06	-.04	.02	-.04	.10	-.09	-.08	.02	.09	

*Means, Standard Deviations, and Correlations for Study Variables (cont.)*

	23	24	25	26	27
23. LGen	–				
24. LAge	<b>.15</b>	–			
25. LEdu	.04	-.02	–		
26. LTen	<b>.13</b>	.97	-.07	–	
27. LCTen	-.09	<b>.60</b>	<b>-.27</b>	<b>.61</b>	–

*Note.* Numbers on the diagonal are coefficient alphas for various scales. For bold correlation coefficients,  $ps < .05$ , two-tailed. Ctenure=tenure in the current position in year; OType=organization type; TType=Team type; TNo=number of members in the team; Anxiety=Attachment Anxiety; Avoida=Attachment avoidance; BL= follower-rated benevolent leadership; FLMX1=follower-rated leader-member exchange at time one; LMXSC=leader-member exchange social comparison; FS=feedback seeking; RB=relationship building; LGX=languanxi; LLMX=leader-rated leader-member exchange at time two; FLMX2=follower-rated leader-member exchange at time two;

**Table 7***Means, Standard Deviations, and Correlations for Between Group Effect*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1.Gender	.51																							
2.Age	.05	.44																						
3.Edu	-.15	.10	.50																					
4.Tenure	.09	<b>.95</b>	-.04	.47																				
5.CTenure	.02	<b>.56</b>	.28	<b>.59</b>	.57																			
6.Position	.09	<b>.33</b>	.03	<b>.36</b>	.15	.36																		
7.OType	.08	.14	.15	.08	-.04	.09	–																	
8.TType	<b>-.22</b>	-.09	<b>-.27</b>	-.02	-.12	.13	-.18	–																
9.TNo	<b>-.21</b>	-.05	-.09	.00	.05	-.18	<b>-.30</b>	<b>.29</b>	–															
10.Anxiety	<b>-.19</b>	-.15	-.17	-.07	.06	-.08	-.25	.02	.08	.26														
11.Avoida	-.07	.06	-.17	.05	.11	.07	-.02	.07	.12	<b>.23</b>	.30													
12.BL	-.14	.10	.08	.07	.11	.02	<b>.23</b>	-.06	-.09	.00	-.05	.44												
13.FLMX1	.05	.10	.19	.08	.03	.17	.06	.03	-.16	-.09	<b>-.33</b>	<b>.48</b>	.40											
14.LMXSC	-.16	.10	<b>.21</b>	.02	.06	.09	.12	-.06	-.13	.00	-.11	<b>.46</b>	<b>.33</b>	.30										
15.FS	.18	-.03	<b>.28</b>	-.10	-.01	.01	.00	-.06	-.14	-.05	.14	.12	.11	<b>.36</b>	.71									
16.RB	.15	.17	<b>.23</b>	.08	.06	.03	<b>.20</b>	-.15	-.14	-.11	-.02	<b>.38</b>	<b>.30</b>	<b>.35</b>	<b>.53</b>	.63								
17.LGX	.11	-.02	.15	-.08	-.07	.02	-.09	-.09	.01	-.11	-.10	<b>.35</b>	<b>.24</b>	<b>.37</b>	<b>.60</b>	<b>.73</b>	.60							
18.LLMX	.01	<b>.27</b>	.09	.17	.09	.11	.01	-.16	.04	-.19	-.12	.19	.17	-.02	.04	<b>.29</b>	.11	.71						
19.FLMX2	-.21	<b>.24</b>	.09	.18	.10	.12	<b>.23</b>	-.09	.03	.00	-.09	<b>.76</b>	<b>.51</b>	<b>.43</b>	.15	<b>.37</b>	.20	<b>.33</b>	.36					
20.FLMXD	-.28	<b>.14</b>	-.09	.10	-.36	-.07	.14	-.11	-.14	-.08	.23	<b>.23</b>	<b>-.54</b>	.07	.03	.03	-.07	.15	<b>.44</b>	.34				
21.OCB	.14	.19	.14	.13	.05	.08	.14	-.20	.12	-.27	-.14	<b>.32</b>	<b>.28</b>	.19	<b>.22</b>	<b>.39</b>	<b>.29</b>	<b>.68</b>	<b>.29</b>	<b>.68</b>	-.04	.73		
22.TP	.06	<b>.25</b>	.12	.22	.19	.03	.12	-.28	-.03	-.05	.02	<b>.27</b>	.12	.07	.05	<b>.34</b>	.18	<b>.43</b>	<b>.30</b>	.16	<b>.46</b>	.56		
23.LGen	<b>.48</b>	.04	-.13	.06	-.01	.03	.11	-.16	-.15	-.07	-.10	<b>.29</b>	<b>.35</b>	.04	.07	<b>.26</b>	<b>.21</b>	.16	.18	-.20	<b>.32</b>	<b>.35</b>	–	
24.LAge	<b>.21</b>	<b>.43</b>	<b>.25</b>	<b>.43</b>	<b>.51</b>	<b>.24</b>	<b>.21</b>	<b>-.32</b>	-.18	-.17	-.08	.01	.16	.01	-.07	.18	-.08	<b>.24</b>	.05	-.12	.17	.16	.14	
25.LEdu	-.10	.01	<b>.41</b>	-.07	-.02	.03	-.01	-.09	.00	-.16	-.07	.09	<b>.20</b>	.19	<b>.28</b>	<b>.20</b>	<b>.21</b>	.13	.20	-.01	.16	.10	.04	
26.LTen	<b>.23</b>	<b>.43</b>	<b>.23</b>	<b>.44</b>	<b>.52</b>	<b>.23</b>	.19	<b>-.31</b>	-.19	-.16	-.03	-.01	.11	-.03	-.07	.19	-.07	<b>.23</b>	.01	-.12	.15	.17	.13	
27.LCTen	.05	<b>.25</b>	<b>.29</b>	<b>.29</b>	<b>.53</b>	.03	-.11	-.12	-.04	-.06	.02	-.10	.03	-.11	-.05	.03	-.05	.13	-.13	-.15	.03	.13	-.09	

*Means, Standard Deviations, and Correlations for Study Variables (cont.)*

	24	25	26	27
24.LAge	–			
25.LEdu	-.02	–		
26.LTen	<b>.97</b>	-.07	–	
27.LCTen	<b>.60</b>	<b>-.27</b>	<b>.61</b>	–

Note. Numbers on the diagonal are eta-squared,  $\eta^2$  for various scales. For bold correlation coefficients,  $ps < .05$ , two-tailed. Ctenure=tenure in the current position in year; OType=organization type; TType=Team type; TNo=number of members in the team; Anxiety=Attachment Anxiety; Avoida=Attachment avoidance; BL= follower-rated benevolent leadership; FLMX1=follower-rated leader-member exchange at time one; LMXSC=leader-member exchange social comparison; FS=feedback seeking; RB=relationship building; LGX=languanxi; LLMX=leader-rated leader-member exchange at time two; FLMX2=follower-rated leader-member exchange at time two; FLMXD=follower-rated leader-member exchange difference between time one and time two; OCB=organizational citizenship behavior; TP=task performance; LGen=leader's gender; LAge=leader's age; LEdu=leader's education; LTen=leader's tenure in year; LCTen=leader's tenure in the current position in year.

**Table 8***Means, Standard Deviations, and Correlations for Within Group Effect*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.Gender	.33																					
2.Age	-.06	.23																				
3.Edu	-.03	<b>-.21</b>	.31																			
4.Tenure	-.05	<b>.87</b>	<b>-.28</b>	.28																		
5.CTenure	.10	<b>.48</b>	<b>-.26</b>	<b>.58</b>	.41																	
6.Position	.02	<b>.16</b>	.03	<b>.19</b>	<b>.22</b>	.13																
7.OType	.00	-.04	.00	.03	.02	.00	–															
8.TType	.02	.07	.00	.04	.06	.03	<b>.00</b>	–														
9.TNo	–	–	–	–	–	–	–	–	–													
10.Anxiety	.01	.07	<b>.11</b>	<b>-.21</b>	<b>-.15</b>	.02	.08	-.01	–	-.01												
11.Avoida	<b>-.21</b>	<b>-.15</b>	<b>.13</b>	-.05	.04	.04	<b>.13</b>	-.04	–	<b>.17</b>	.04											
12.BL	-.08	-.04	.05	.00	-.09	.01	-.05	-.05	–	<b>-.16</b>	-.09	.22										
13.FLMX1	-.02	.07	.03	.03	-.01	-.01	.05	<b>-.11</b>	–	<b>-.11</b>	.03	<b>.27</b>	.18									
14.LMXSC	<b>-.12</b>	.11	-.03	<b>.13</b>	<b>.11</b>	<b>.14</b>	.04	.00	–	<b>-.12</b>	.02	<b>.47</b>	<b>.28</b>	.03								
15.FS	-.06	<b>-.13</b>	<b>.17</b>	<b>-.15</b>	<b>-.11</b>	.05	.00	.05	–	.06	-.01	.05	<b>.11</b>	.05	.60							
16.RB	-.08	<b>-.15</b>	<b>.19</b>	<b>-.15</b>	-.05	.06	-.04	.08	–	-.04	.00	<b>.12</b>	<b>.17</b>	<b>.15</b>	<b>.60</b>	.48						
17.LGX	-.07	-.08	<b>.17</b>	-.08	-.04	.05	-.02	.00	–	-.05	-.02	<b>.18</b>	<b>.20</b>	<b>.18</b>	<b>.64</b>	<b>.85</b>	.45					
18.LLMX	.01	-.05	<b>.11</b>	-.04	-.03	.06	.01	-.03	–	-.04	.04	<b>.16</b>	<b>.17</b>	<b>.17</b>	<b>.45</b>	<b>.59</b>	<b>.60</b>	.61				
19.FLMX2	-.08	.06	-.01	.04	.07	-.03	-.03	-.04	–	<b>-.21</b>	-.01	<b>.62</b>	<b>.40</b>	<b>.50</b>	.05	.05	<b>.19</b>	<b>.24</b>	.12			
20.FLMXD	-.06	-.01	-.04	.00	.07	-.02	-.07	.08	–	-.08	-.03	<b>.33</b>	<b>-.53</b>	<b>.22</b>	-.03	-.03	.02	.07	<b>.56</b>	.08		
21.OCB	.02	-.05	.04	-.02	.00	.06	-.04	.02	–	-.06	.00	<b>.11</b>	<b>.17</b>	<b>.19</b>	<b>.41</b>	<b>.47</b>	<b>.54</b>	<b>.71</b>	<b>.26</b>	.10	.62	
22.TP	.05	-.06	<b>.14</b>	-.03	.00	.01	<b>-.12</b>	-.06	–	-.09	.03	<b>.18</b>	<b>.12</b>	<b>.16</b>	<b>.27</b>	<b>.38</b>	<b>.45</b>	<b>.56</b>	<b>.17</b>	.05	<b>.59</b>	.39

*Note.* Numbers on the diagonal are intraclass correlation coefficient (ICC) for various scales. For bold correlation coefficients,  $ps < .05$ , two-tailed. Ctenure=tenure in the current position in year; OType=organization type; TType=Team type; TNo=number of members in the team; Anxiety=Attachment Anxiety; Avoida=Attachment avoidance; BL=follower-rated benevolent leadership; FLMX1=follower-rated leader-member exchange at time one; LMXSC=leader-member exchange social comparison; FS=feedback seeking; RB=relationship building; LGX=languanxi; LLMX=leader-rated leader-member exchange at time two; FLMX2=follower-rated leader-member exchange at time two; FLMXD=follower-rated leader-member exchange difference between time one and time two; OCB=organizational citizenship behavior; TP=task performance.

**Table 9**  
*Coefficients for Fixed Effects*

	Anxiety			Avoidance		
	$\beta$	<i>s.e.</i>	<i>t</i> ( <i>df</i> )	$\beta$	<i>s.e.</i>	<i>t</i> ( <i>df</i> )
LMX	-.17*	.05	-3.38 (187)	-.06	.08	-.79 (187)
LMXSC	-.07	.04	-1.64 (187)	-.06	.04	-1.60 (187)
FS	.06	.04	.44 (187)	-.03	.05	-.56 (187)
RB	-.05	.04	-1.23 (187)	-.03	.06	-.42 (187)
LGX	-.07	.04	-1.78 (187)	-.07	.06	-1.21 (187)

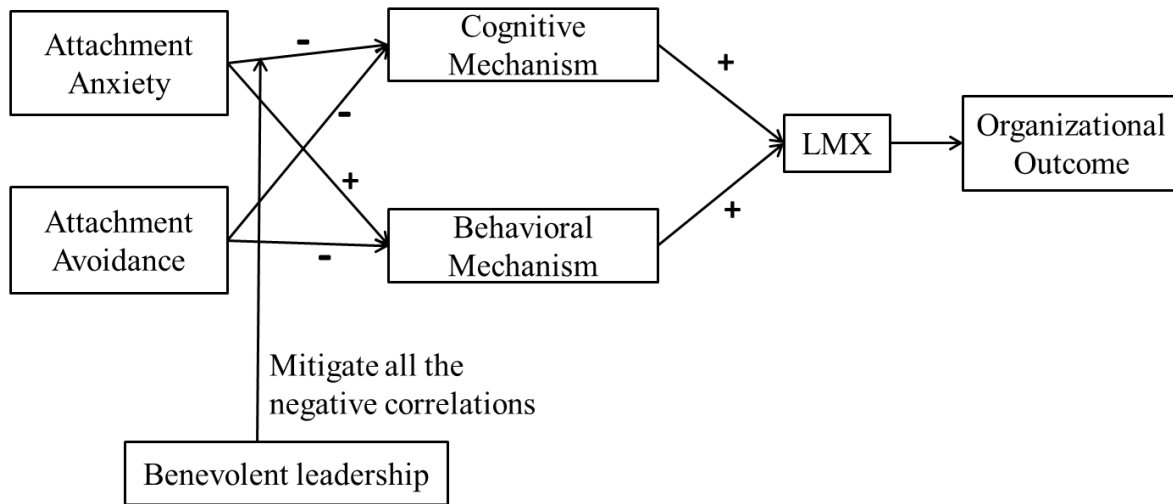
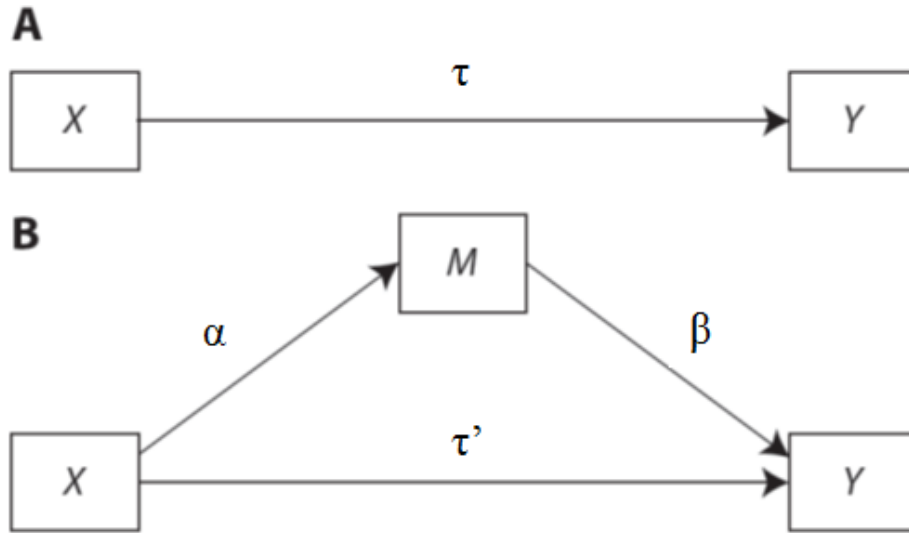


Figure 1. Attachment and LMX development theoretical model



*Figure 2.* Illustration of Sobel Test.

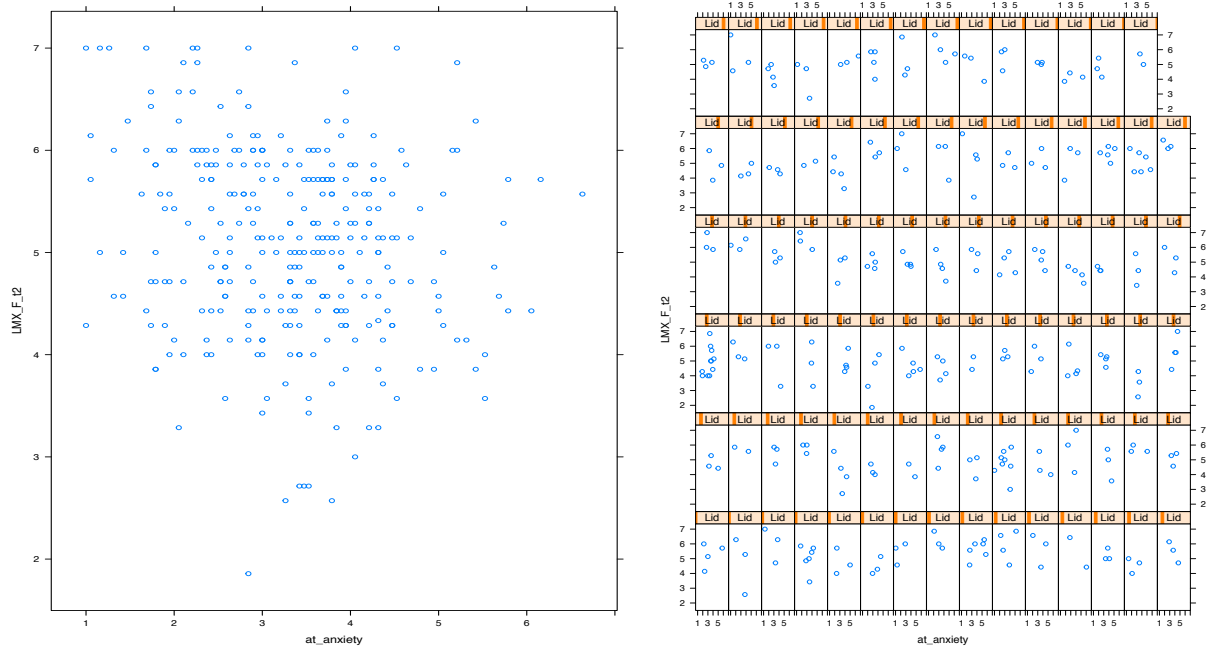
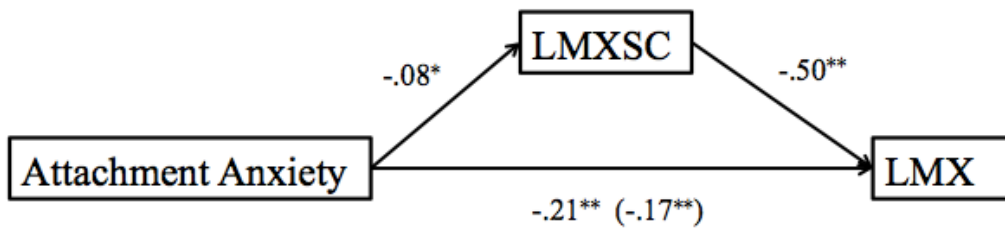


Figure 3. Scatterplot of attachment anxiety and LMX, general and by working group



*Figure 4.* Indirect effect from attachment anxiety to LMX through LMXSC.

*Notes.* LMXSC = leader-member exchange social comparison; LMX = Leader-member exchange. The regression coefficient of LMX on attachment anxiety is in parenthesis.

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



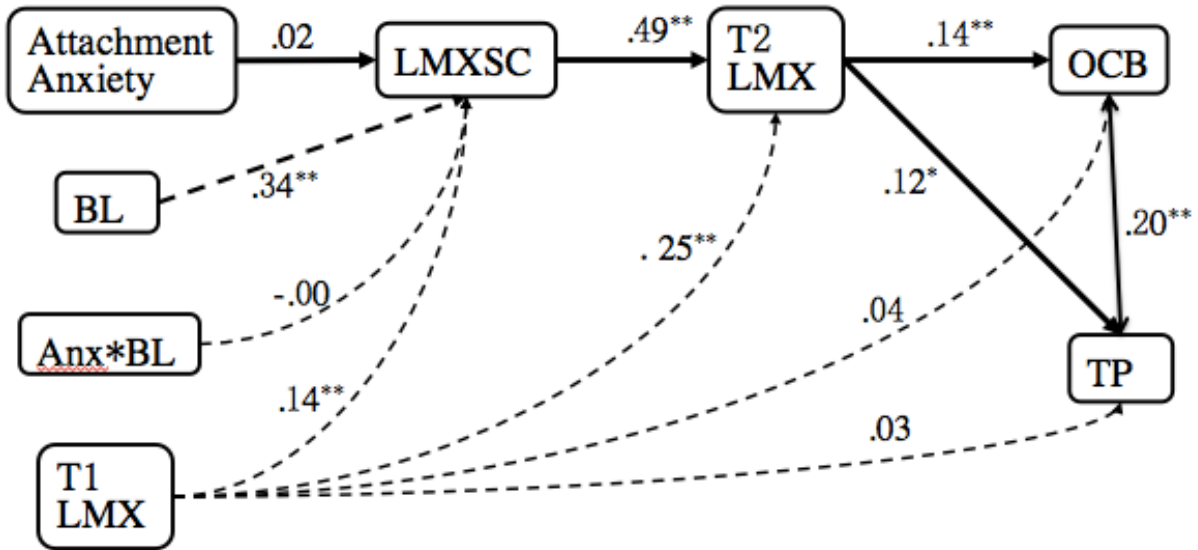


Figure 5. Multilevel Structural Equation Modeling within-group effect.

Notes. LMXSC = leader-member exchange social comparison; LMX = Leader-member exchange; BL = benevolent leadership; Anx\*BL = anxiety \* benevolent leadership; OCB = organizational citizenship behavior; and TP = task performance.  $\chi^2 (df = 44) = 522.73$ ,  $CFI = .82$ ,  $RMSEA = .11$ ,  $SRMR = .07$ . \*  $p < .05$  \*\*  $p < .01$ .

**Appendix I**  
**IRB Approval**  
 Protocol # 16-023, Hou

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS**  
**REQUEST FOR EXEMPT CATEGORY RESEARCH**

For information or help completing this form, contact: **THE OFFICE OF RESEARCH COMPLIANCE**, 115 Ramsay Hall  
 Phone: 334-844-5966 e-mail: IRBAdmin@auburn.edu Web Address: <http://www.auburn.edu/research/vpr/ohs/index.htm>

Revised 2/1/2014 Submit completed form to [IRBsubmit@auburn.edu](mailto:IRBsubmit@auburn.edu) or 115 Ramsay Hall, Auburn University 36849.  
 Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.  
Project activities may not begin until you have received approval from the Auburn University IRB.

**1. PROJECT PERSONNEL & TRAINING**

PRINCIPAL INVESTIGATOR (PI):

Name Ning Hou Title PhD Candidate Dept./School Psychology/Liberal Art  
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 Phone 844-5658 Dept. Head Dr. Peter Chen

FACULTY ADVISOR (if applicable):

Name Jinyan Fan Title Associate Professor Dept./School Psychology/Liberal Art  
 Address 225 Thach Hall, Auburn University  
 Phone 844-6493 AU Email jzf0007@auburn.edu

KEY PERSONNEL: List Key Personnel (other than PI and FA). Additional personnel may be listed in an attachment.

Name	Title	Institution	Responsibilities

KEY PERSONNEL TRAINING: Have all Key Personnel completed CITI Human Research Training (including elective modules related to this research) within the last 3 years?  YES  NO

TRAINING CERTIFICATES: Please attach CITI completion certificates for all Key Personnel.

**2. PROJECT INFORMATION**

Title: Exploring process of LMX from the perspective of attachment style

Source of Funding:  Investigator  Internal  External

List External Agency & Grant Number: \_\_\_\_\_

List any contractors, sub-contractors, or other entities associate with this project.

List any other IRBs associated with this project (including those involved with reviewing, deferring, or determinations).

FOR ORC OFFICE USE ONLY			
DATE RECEIVED IN ORC:	_____ by _____	APPROV	
DATE OF IRB REVIEW:	_____ by _____	APPROV	
DATE OF ORC REVIEW:	_____ by _____	INTERVA	
DATE OF APPROVAL:	_____ by _____		
COMMENTS:			

The Auburn University Institutional Review Board has approved this Document for use from 03/14/2016 to 03/13/2019  
 Protocol # 16-023 EX 1603

**Appendix II**  
**MEASURES (Chinese Version and English Translation)**

**Demographic Information**

Dear lady or gentleman:

Thank you very much for your willingness to participate in our survey study! The purpose of the current study is to learn your feelings at work. Please fulfill the following questionnaires by choosing one answer for each item. Please fulfill the questions based on your own feelings and current status and keep remind that there is no right or wrong answers. Please read the questions carefully before you answer them. Your response will be used for research purpose only. Thank you again for your support and corporation!

Gender \_\_\_\_\_ 1=male 2=female

Age \_\_\_\_\_

Education Degree \_\_\_\_\_ 1= high school or lower degree

2 = associate degree

3 = college degree

4 = graduate-level degree

Working Tenure \_\_\_\_\_

Working Tenure in the current organization \_\_\_\_\_

Position Level \_\_\_\_\_ 1 = general employee

2 = low-level manager

3 = middle-level manager

4 = high-level manager

5 = others

Organization Type \_\_\_\_\_ 1 = state-owned business

2 = private enterprise

3 = joint venture enterprise or foreign-owned enterprise

4 = government agencies

Number of members in the team \_\_\_\_\_

Team Type \_\_\_\_\_ 1 = administrative/management/human resource-related

2 = technology/research and development/finance-related

3 = marketing/sales/customer service/customs/execution-related

4 = manufacturing

5 = others

尊敬的女士/先生:

您好!

非常感谢您百忙之中参加我们的调研! 本调查旨在了解您在工作中的一些感受。每题都**只能选择一个答案**, 答案**无对错之分**, 我们想要了解的是您的真实状况和感受, 因此, 请仔细阅读每个问题, 并根据自己的实际情况填写。调查结果仅供科研之用, 请放心作答! 在此, 对您的支持和配合表示衷心的感谢!

第一部分 基本信息

为保证本次研究的严谨性和有效性, 在证实进入问卷调查之前, 请先填写您的个人信息:

您的性别: 1 男 2 女

您的年龄: \_\_\_\_\_

您的学历: 1 高中或以下 2 大专 3 本科 4 研究生及以上

您的工作年限(进入职场多久了, 即工龄): \_\_\_\_\_年\_\_\_\_\_个月

您在目前单位工作的年限: \_\_\_\_\_年\_\_\_\_\_个月

您的职位层次: 1 一般员工 2 基层管理人员 3 中层管理人员 4 高层管理人员 5 其他

您所在单位的性质: 1 国有企业 2 民营企业 3 合资/外商独资企业 4 事业单位/政府机关

您所在团队的人数: \_\_\_\_\_人

您所在团队的类型: 1 行政/管理 2 技术/研发 3 市场/销售 4 生产/制造 5 其他

### Leader-Member Exchange (T1 & T2, employee)

Please read the following items carefully and make choice based on your real feelings about your current organization. Please write the number that best describes your perception on the line before each question, using the following key:

1                      2                      3                      4                      5                      6                      7  
|-----|-----|-----|-----|-----|-----|-----|

Strongly  
Disagree

Disagree

Slightly  
Disagree

Neutral

Slightly  
Agree

Agree

Strongly  
Agree

\_\_\_\_\_ 1. I generally know how satisfied my leader is with what I do.

\_\_\_\_\_ 2. My leader understand my job problems and needs.

\_\_\_\_\_ 3. My leader recognize my potential.

\_\_\_\_\_ 4. My leader would use his or her power to help me solve problems in my work regardless of how much formal authority my leader has built into his or her position.

\_\_\_\_\_ 5. My leader would “bail me out” at his or her expenses regardless of the amount of formal authority my leader has.

\_\_\_\_\_ 6. I have enough confidence in my leader that I would defend and justify his or her decision if he or she were not present to do so.

\_\_\_\_\_ 7. My working relationship with my leader is effective.

请仔细阅读以下条目，并根据您在单位/公司的实际情况或真实感受做出选择，在媒体前的空格上填写相应的等级数字，来反映您同意每条语句的程度。

[1]	[2]	[3]	[4]	[5]	[6]	[7]
非常不同意	不同意	有点不同意	不确定	有点同意	同意	非常同意

\_\_\_\_\_ 1、一般说来，我很清楚我的直接上司是否满意我的工作表现。

\_\_\_\_\_ 2、我的直接上司非常了解我的问题与需要。

\_\_\_\_\_ 3、我的直接上司相当清楚我在工作上的潜力。

\_\_\_\_\_ 4、我的直接上司会运用他的职权，来帮我解决工作上的重大难题。

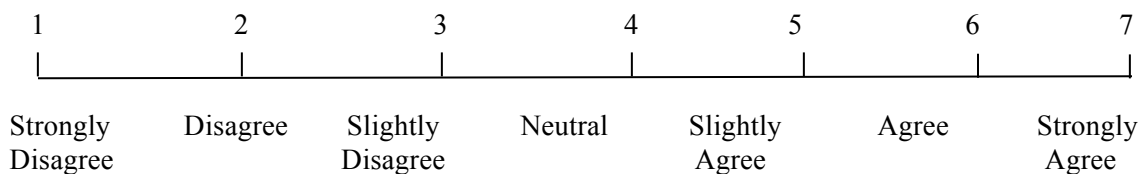
\_\_\_\_\_ 5、我的直接上司会牺牲他个人的利益，来帮我摆脱工作上的困境。

\_\_\_\_\_ 6、我很信任我的直接上司，即使他不在场，我也会为他的决策提出辩护和解释。

\_\_\_\_\_ 7、我和我的直接上司工作上的关系相当良好。

### Attachment (T1, employee)

Instructions: The following statements concern how you feel in relationships with others. We are interested in how you generally experience relationships, not just in what is happening in a specific relationship. Please indicate how much you agree or disagree with each statement.



\_\_\_\_\_ 1. I prefer not to show others how I feel deep down.

- \_\_\_ 2. I worry about being abandoned.
- \_\_\_ 3. I am very comfortable being close to others.
- \_\_\_ 4. I worry a lot about my relationships.
- \_\_\_ 5. Just when other people start to get close to me I find myself pulling away.
- \_\_\_ 6. I worry that other people won't care about me as much as I care about them.
- \_\_\_ 7. I get uncomfortable when others want to be very close.
- \_\_\_ 8. I worry a fair amount about losing my connections with others.
- \_\_\_ 9. I don't feel comfortable opening up to other people.
- \_\_\_ 10. I often wish that others' feelings for me were as strong as my feelings for them.
- \_\_\_ 11. I want to get close to others, but I keep pulling back.
- \_\_\_ 12. I often want to merge completely with other people, and this sometimes scares them away.
- \_\_\_ 13. I am nervous when other people get too close to me.
- \_\_\_ 14. I worry about being alone.
- \_\_\_ 15. I feel comfortable sharing my private thoughts and feelings with others.
- \_\_\_ 16. My desire to be very close sometimes scares people away.
- \_\_\_ 17. I try to avoid getting too close to others.
- \_\_\_ 18. I need a lot of reassurance that I am liked and appreciated by other people.
- \_\_\_ 19. I find it relatively easy to get close to other people.
- \_\_\_ 20. Sometimes I feel that I force others to show more feeling, more commitment.
- \_\_\_ 21. I find it difficult to allow myself to depend on others.
- \_\_\_ 22. I do not often worry about being abandoned.
- \_\_\_ 23. I prefer not to be too close to other people.
- \_\_\_ 24. If I can't get others to show interest in me, I get upset or angry.
- \_\_\_ 25. I tell others just about everything.
- \_\_\_ 26. I find that other people don't want to get as close as I would like.
- \_\_\_ 27. I usually discuss my problems and concerns with other people.
- \_\_\_ 28. When I'm not connected to people, I feel somewhat anxious and insecure.
- \_\_\_ 29. I feel comfortable depending on others.
- \_\_\_ 30. I get frustrated when others are not around as much as I would like.
- \_\_\_ 31. I don't mind asking other people for comfort, advice, or help.
- \_\_\_ 32. I get frustrated if others are not available when I need them.
- \_\_\_ 33. It helps to turn to others in times of need.
- \_\_\_ 34. When other people disapprove of me, I feel really bad about myself.
- \_\_\_ 35. I turn to other people for many things, including comfort and reassurance.

\_\_\_ 36. I resent it when others spend time away from me.

**依恋：** 以下陈述描述的是您在人际交往中，对于与他人关系的感受，我们感兴趣的是你对于人际关系的总体感受，而不是针对某个特定的人际关系的感觉，在每题前的空格上填写相应的等级数字，来反映您同意每条语句的程度。

---

[1]	[2]	[3]	[4]	[5]	[6]	[7]
完全不同意	比较不同意	有点不同意	说不清楚	有点同意	比较同意	非常同意

---

- \_\_\_ 1、我不喜欢向他人表露自己内心深处的感觉。
- \_\_\_ 2、我常常担心别人会不理我了。
- \_\_\_ 3、我并不担心他人和我太亲近。
- \_\_\_ 4、我常常为自己的人际关系而担心。
- \_\_\_ 5、每当他人希望与我的关系更近一步时，我就会不由自主地与其保持距离。
- \_\_\_ 6、我常常担心别人不会像我在意他们那样地在意我。
- \_\_\_ 7、当别人想与我的关系更密切时，我就会感到不自在。
- \_\_\_ 8、我很担心会失去朋友。
- \_\_\_ 9、我不习惯于向他人敞开心扉。
- \_\_\_ 10、我常常希望别人像我在乎他们一样在乎我。
- \_\_\_ 11、虽然我也想与他人建立密切的关系，但这种机会出现时，我却常常退缩了。
- \_\_\_ 12、我常常想与他人亲密无间，但这样有时会把对方吓跑。
- \_\_\_ 13、当他人与我过分亲近的时候，我会觉得紧张。
- \_\_\_ 14、我常常担心自己没有朋友。
- \_\_\_ 15、我可以很自在地与他人分享内心深处的想法和感觉。
- \_\_\_ 16、我与别人发展密切关系的愿望有时会把别人吓跑。
- \_\_\_ 17、我尽量避免与他人的关系变得过分密切。
- \_\_\_ 18、我需要不断得到他人的喜欢和肯定，心里才踏实。
- \_\_\_ 19、我不喜欢听别人说他/她自己的事情。
- \_\_\_ 20、我觉得有时我在强迫他人对我投入更多的感情和承诺。
- \_\_\_ 21、对我来说，让我依赖他人很难。
- \_\_\_ 22、通常，我不担心别人会不理我了。
- \_\_\_ 23、我不喜欢与别人的关系过于密切。

- \_\_\_\_\_ 24、我常常担心不能吸引新结识的朋友跟我继续交往。
- \_\_\_\_\_ 25、我不喜欢跟别人说自己的事情。
- \_\_\_\_\_ 26、我希望与人深交，但常常发现对方不愿意。
- \_\_\_\_\_ 27、我经常与别人讨论我所遇到的问题。
- \_\_\_\_\_ 28、朋友回电话和短信不及时，我就很容易变得焦虑和不安。
- \_\_\_\_\_ 29、我觉得依靠他人是件很正常的事。
- \_\_\_\_\_ 30、当他人不能围着我转时，我会感到有点沮丧。
- \_\_\_\_\_ 31、我不介意向他人寻求安慰、建议或帮助。
- \_\_\_\_\_ 32、当我觉得朋友应该在我身边的时候，他们却不在，这会使我非常沮丧。
- \_\_\_\_\_ 33、遇到困难时，我愿意向他人求助。
- \_\_\_\_\_ 34、当别人不喜欢我时，我就会觉得自己真的很差劲。
- \_\_\_\_\_ 35、我会在很多事情上向别人求助，包括寻求安慰和支持。
- \_\_\_\_\_ 36、当朋友们的活动没有邀请我时，我会非常生气。
- \_\_\_\_\_ 37、我会担心别人不想和我在一起。

### LMXSC (T2, employee)

Please read the following items carefully and make choice based on your real feelings about your current organization. Please write the number that best describes your perception on the line before each question, using the following key:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

- \_\_\_\_\_ 1. I have a better relationship with my manager than most others in my work group.
- \_\_\_\_\_ 2. When my manager cannot make it to an important meeting, it is likely than s/he will ask me to fill in.
- \_\_\_\_\_ 3. Relative to the others in my work group, I receive more support from my manager.
- \_\_\_\_\_ 4. The working relationship I have with my manager is more effective than the relationships most members of my group have with my manager.
- \_\_\_\_\_ 5. My manager is more loyal to me compared to my coworkers.



\_\_\_ 6. My manager enjoys my company more than he/she enjoys the company of other group members.

下面的陈述表达了在多大程度上你与所评价的团队领导的关系比你所在团队中其他成员与该领导的关系更好。请仔细阅读并判断这些陈述是否符合你自己的情况，并进行选择。

[1]	[2]	[3]	[4]	[5]
非常不同意	比较不同意	不确定	同意	非常同意

\_\_\_ 1、我与他/她（你所评价的团队领导）的关系比本团队其他成员跟他/她的关系更好一些。

\_\_\_ 2、当他/她不能出席某个重要会议时，他/她很可能会让我，而不是我们团队里的其他人替他/她参加。

\_\_\_ 3、他/她在工作中给予我的支持和帮助比他/她给我们团队其他同事的要更多一些。

\_\_\_ 4、与我们团队的其他同事相比，我更能有效地配合他/她的工作。

\_\_\_ 5、相比于我们团队里的其他同事，他/她更器重我。

\_\_\_ 6、与我们团队里的其他同事相比，他/她更喜欢带上我参加各类工作活动。

### Benevolent leadership (T2, employee)

Please read the following items carefully and make choice based on your leaders' possible behaviors. Please write the number that best describes your understanding and perception about your leader on the line before each question, using the following key:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

\_\_\_ 1. My supervisor is like a family member when he/she gets along with us.

\_\_\_ 2. My supervisor devotes all his/her energy to taking care of me.

\_\_\_ 3. Beyond work relations, my supervisor expresses concern about my daily life.

\_\_\_ 4. My supervisor ordinarily shows a kind concern for my comfort.

\_\_\_ 5. My supervisor will help me when I'm in an emergency.

- \_\_\_ 6. My supervisor takes very thoughtful care of subordinates who have spent a long time with him/her.
- \_\_\_ 7. My supervisor meets my needs according to my personal requests.
- \_\_\_ 8. My supervisor encourages me when I encounter arduous problems.
- \_\_\_ 9. My supervisor takes good care of my family members as well.
- \_\_\_ 10. My supervisor tries to understand what the cause is when I don't perform well.
- \_\_\_ 11. My supervisor handles what is difficult to do or manage in everyday life for me.

下面是一些关于领导者在日常工作中可能表现出来的行为的描述，请根据你对你的团队领导的了解和你的感受，填写你对下列每个描述的同意或不同意的程度。

[1]	[2]	[3]	[4]	[5]	[6]	[7]
完全不同意	比较不同意	有点不同意	说不清楚	有点同意	比较同意	非常同意

- \_\_\_\_\_ 1、他/她（你所评价的团队领导）与我们相处在一起时像家人一样。
- \_\_\_\_\_ 2、他/她尽心尽力地照顾我。
- \_\_\_\_\_ 3、他/她关心我的生活与起居。
- \_\_\_\_\_ 4、他/她平时会向我嘘寒问暖。
- \_\_\_\_\_ 5、我有急难时，他/她会及时伸出援手。
- \_\_\_\_\_ 6、对相处久的下属，他/她会做无微不至的照顾。
- \_\_\_\_\_ 7、他/她会根据我个人的需要，来满足我的要求。
- \_\_\_\_\_ 8、当我碰到难题时，他/她会及时给我鼓励。
- \_\_\_\_\_ 9、他/她对我的照顾会扩大到我的家人。
- \_\_\_\_\_ 10、当我工作表现不佳时，他/她会去了解真正的原因何在。
- \_\_\_\_\_ 11、他/她会帮我解决生活上的难题。

## Leader-Member Exchange (T2, leader, e.g., team size is three)

Dear leader:

Thank you very much for your willingness to participate in our survey study! The purpose of the current study is to learn your feelings about your subordinate at work. Please fulfill the following questionnaires by choosing one answer for each item. Please fulfill the questions based on your own feelings and current status and keep remind that there is no right or wrong answers. Please read the questions carefully before you answer them. Your response will be used for research purpose only.

Thank you again for your support and corporation!

The subordinate you are going to evaluate are: A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_

Please read the following items carefully and make choice based on your real feelings about your current organization. Please write the number that best describes your perception on the line before each question, using the following key:

1	2	3	4	5	6	7
-----	-----	-----	-----	-----	-----	-----
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Subordinate			Items
A	B	C	
			1. I generally know how satisfied my subordinate is with what I do.
			2. My subordinate understand my job problems and needs.
			3. My subordinate recognize my potential
			4. My subordinate would use his or her power to help me solve problems in my work regardless of how much formal authority my leader has built into his or her position.
			5. My subordinate would “bail me out” at his or her expenses regardless of the amount of formal authority my leader has.
			6. I have enough confidence in my subordinate that I would defend and justify his or her decision if he or she were not present to do so.
			7. My working relationship with my subordinate is effective.

尊敬的领导：

您好！感谢您百忙之中参加我们的调研！您将对您团队中的下属进行评定，请仔细阅读每个题目，并根据实际情况在对应的题前空格内填写一个答案，答案无对错之分。调查结果仅供科研之用，请放心作答！本调查共5个小量表，在此，对您的支持表示衷心的感谢！

您要评价的下属是：A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_

请仔细阅读以下条目，根据您对每个描述的同意程度，在每题前的空格内填写相应的等级数字。

[1]	[2]	[3]	[4]	[5]	[6]	[7]
完全不同意	比较不同意	有点不同意	说不清楚	有点同意	比较同意	非常同意

您现在评定的下属			题项
A	B	C	
			1、一般说来，他/她很清楚我是否满意他/她的工作表现。
			2、我非常了解他/她的问题与需要。
			3、我相当清楚他/她在工作上的潜力。
			4、我会运用我的职权，来帮他/她解决工作上的重大难题。
			5、我会牺牲我个人的利益，来帮他/她摆脱工作上的困境。
			6、他/她很信任我，即使我不在场，他/她也会为我的决策提出辩护和解释。
			7、他/她和我在工作上的关系相当良好。

### Proactive Behavior (T2, leader)

Please read the following items carefully and make choice based on your subordinates' behaviors in the last three months. Please write the number that best describes the frequency of your subordinates' behaviors on the line before each question, using the following key:

0	1	2	3	4
-----				
Rarely	Occasionally	Sometimes	Often	Frequently

To what extent have you \_\_\_\_\_

Subordinate			Items
A	B	C	
			1.Sought feedback on your performance after assignments?
			2.Solicited critiques from your boss?
			3.Sought out feedback on your performance during assignments?
			4.Asked for your boss's opinion of your work?
			5.Tried to spend as much time as you could with your boss?
			6.Tried to form a good relationship with your boss?
			7.Worked hard to get to know your boss
			8. Maintained an intimate relationship with you.
			9.Bought meals or gave some small presents to you.
			10.Spent time with you during holidays or after office hours.
			11.Shared your personal thoughts, problems, needs, and feelings with you.
			12.Lent a helping hand to you

请回顾在过去 3 个月的工作中，您的下属向您主动发起以下行为的频率。

[0]	[1]	[2]	[3]	[4]
很少	偶尔	有时	经常	频繁

Subordinate			Items
A	B	C	
			1、在完成一项工作任务之后，向你询问他/她在这项任务中表现如何。
			2、向你寻求指导和建议。
			3、在任务进行过程中向你询问他/她自己的工作表现如何。
			4、向你询问关于他/她自己工作表现的意见。
			5、花尽量多的时间与你相处。
			6、努力与你建立良好的关系。
			7、努力多了解你。

			8、与你保持密切的关系。
			9、请你吃饭或者送些小礼物给您。
			10、与你一起度过假日或者下班后的时光。
			11、与你分享他/她个人的想法、问题、需要和感受。
			12、可能的话，向你提供帮助。

### Organizational Citizenship Behavior (OCB)

Please read the following items carefully and make choice based on your real feelings about your current organization. Please write the number that best describes your perception on the line before each question, using the following key:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Subordinate			Items
A	B	C	He or she:
			1. Help others who have been absent.
			2. Willingly give your time to help others who have work-related problems.
			3. Adjust your work schedule to accommodate other employees' requests for time off.
			4. Go out of the way to make newer employees feel welcome in the work group.
			5. Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.
			6. Give up time to help others who have work or nonwork problems.
			7. Assist others with their duties.
			8. Share personal property with others to help their work.
			9. Attend functions that are not required but that help the organizational image.

			10. Keep up with developments in the organization.
			11. Defend the organization when other employees criticize it.
			12. Show pride when representing the organization in public.
			13. Offer ideas to improve the functioning of the organization.
			14. Express loyalty toward the organization.
			15. Take action to protect the organization from potential problems.
			16. Demonstrate concern about the image of the organization.

以下题目是你的下属在日常工作中可能表现出的行为和特点。请仔细阅读每道题目，根据你对每个描述的同意程度，在每题前的空格内填写相应的等级数字。

[1]	[2]	[3]	[4]	[5]	[6]	[7]
完全不同意	比较不同意	有点不同意	说不清楚	有点同意	比较同意	非常同意

你现在评定的下属			题项
A	B	C	他/她：
			1、帮助缺勤的同事。
			2、自愿花费时间帮助工作上遇到麻烦的同事。
			3、为适应其他员工的休假要求，愿意调整自己的工作计划。
			4、尽各种可能，使新进员工感到工作团队非常欢迎他们的加入。
			5、对同事表现出真诚的关心，并以礼相待。
			6、拿出时间帮助那些工作上或工作以外遇到困难的同

T a s			事。
			7、帮助其他同事承担其责任。
			8、与同事分享自己的拥有，来帮助同事的工作。
			9、参加未被要求但却有益于公司形象的活动。
			10、伴随公司的发展而自我发展。
			11、当其他雇员批评公司时，主动为公司辩护。
			12、对公司在公众中的任何展示都表现出自豪与骄傲。
			13、提供建议以提高公司的绩效。
			14、对公司表示忠诚。
			15、采取行动预防公司可能出现的问题。
			16、关注公司的形象

**k Performance (T2, Leader-rated)**

Please read the following items carefully and make choice based on your real feelings about your current organization. Please write the number that best describes your perception on the line before each question, using the following key:



Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
----------------------	----------	----------------------	---------	-------------------	-------	-------------------

Subordinate			Items
A	B	C	
			1. He/she normally <b>cannot</b> fulfill the obligations.
			2. He/she accomplishes all the requirements from the job
			3. He/she fulfills all the obligations
			4. He/she never ignore in-role job tasks.
			5. He/she always accomplishes all the in-role job tasks.



请仔细阅读以下条目，根据他/她（您所评定的人）的实际能力及工作表现，在每题前的空格内填写 1-7 之间的相应等级数字。

[1]	[2]	[3]	[4]	[5]	[6]	[7]
完全不同意	比较不同意	有点不同意	说不清楚	有点同意	比较同意	非常同意

您现在评定的下属			题项
A	B	C	
			1、他/她常常未能履行重要的职责。
			2、他/她完成所有正式的工作绩效要求。
			3、他/她履行工作要求的所有职责。
			4、他/她从不忽视份内的工作。
			5、他/她总是完成份内的工作。

**Appendix III  
KEYS TO THE MEASURES**

**Adult Attachment: ECR Chinese Version**

**Anxiety:**

Preoccupation: 2,4,6,8,10,14,22 R

Fear of rejection: 12, 16, 20, 24, 26, 37

Jealousy: 18, 28, 30, 32, 34, 36

**Avoidance**

Avoidance of intimacy: 1, 9, 15 R, 19, 25, 27

Discomfort with closeness: 3 R, 5, 7, 11, 13, 17, 23

Self-reliance: 21, 29 R, 31 R, 33 R, 35 R

**Proactive Behavior**

**Feedback seeking:** 1—4

**Relationship building:** 5-7

*Laguanxi:* 8-12

**Organizational Citizenship Behavior**

**OCBI:** 1-8

**OCBO:** 9-16

## Appendix IV Software Codes (R and Mplus)

### R codes

#### Input and format the data

```
LMXdataF=read.spss("/Users/ninghou/Dropbox/1. Quals & dissertation/00.
```

```
Houning_L1.sav",use.value.labels=F, to.data.frame=T)
```

```
LMXdataF
```

```
LMXdataL=read.spss("/Users/ninghou/Dropbox/1. Quals & dissertation/00.
```

```
Houning_L2.sav",use.value.labels=F, to.data.frame=T)
```

```
LMXdataL
```

```
#matrix brackets
```

```
LMXdataF1=LMXdataF[c("no", "StudentNo", "Lid", "gender", "age", "edu", "tenure", "yo
```

```
s", "positio",
```

```
.....)]
```

```
LMXdataF1
```

```
#merge file
```

```
library(MASS)
```

```
library(nlme)
```

```
library(multilevel)
```

```
LMXdata<-merge(LMXdataF1,LMXdataL, by=c("Lid"))
```

```
LMXdata
```

```

#add constant column
LMXdata$cons<-rep(1,nrow(LMXdata))

#add dummy variable BL
LMXdata$BL.d <-factor(with (LMXdata, ifelse((LMXdata$BL_F >
mean(LMXdata$BL_F,,na.rm=TRUE)),1,0)))

#Create GLMX_t1 & GLMX_t2, RLMX_t1 & RLMX_t2
LMXdata$GLMX_t1 <- ave(LMXdata$LMX_F_t1, LMXdata$Lid)
LMXdata$GLMX_t2 <- ave(LMXdata$LMX_F_t2, LMXdata$Lid)
LMXdata$RLMX_t1<-LMXdata$LMX_F_t1-LMXdata$GLMX_t1
LMXdata$RLMX_t2<-LMXdata$LMX_F_t2-LMXdata$GLMX_t2
LMXdata$GLMX_L<-ave(LMXdata$LMX_L,LMXdata$Lid)
LMXdata$GBL<-ave(LMXdata$BL_F,LMXdata$Lid)
colnames(LMXdata)

#create w.at_anxiety, w.LMXSC_F, w.LMX_F_t2 (RLMX_t2),w.OCB,w.TP
LMXdata$w.at_anxiety<-LMXdata$at_anxiety-ave(LMXdata$at_anxiety, LMXdata$Lid)
LMXdata$w.at_avoidance<-LMXdata$at_avoidance-ave(LMXdata$at_avoidance,
LMXdata$Lid)
LMXdata$w.LMXSC_F<-LMXdata$LMXSC_F-ave(LMXdata$LMXSC_F, LMXdata$Lid)
LMXdata$w.OCB_L<-LMXdata$OCB_L-ave(LMXdata$OCB_L, LMXdata$Lid)

LME
Model.1a<-lme(LMX_F_t2~at_anxiety,random=~1+at_anxiety|Lid, data=LMXdata.c,
control=list(opt="optim"))

```

```

summary(Model.1a)
predval <- fitted(model.1a)
Model.1b<-lme(LMX_F_t2~at_avoidance,random=~1+at_avoidance|Lid,
data=LMXdata.c, control=list(opt="optim"))
summary(Model.1b)
Model.2a<-lme(LMXSC_F~at_anxiety,random=~1+at_anxiety|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.2a)
Model.2b<-lme(LMXSC_F~at_anxiety,random=~1+at_avoidance|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.2b)
Model.4a<-lme(FS_L~at_anxiety,random=~1+at_anxiety|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.4a)
Model.4b<-lme(FS_L~at_avoidance,random=~1+at_avoidance|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.4b)
Model.5a<-lme(RB_L~at_anxiety,random=~1+at_anxiety|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.5a)
Model.5b<-lme(RB_L~at_avoidance,random=~1+at_avoidance|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.5b)

```

```

Model.6a<-lme(LGX_L~at_anxiety,random=~1+at_anxiety|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.6a)
Model.6b<-lme(LGX_L~at_avoidance,random=~1+at_avoidance|Lid, data=LMXdata.c,
control=list(opt="optim"))
summary(Model.6b)

```

### **Mediation**

```

#sobel test
sobel(pred=LMXdata$w.at_anxiety,med=LMXdata$w.LMXSC_F,out=LMXdata$RLMX_t2)

#bootstrap
TDAT<-LMXdata[,c("w.at_anxiety","w.LMXSC_F","RLMX_t2")]
theta<-function(x,DATA){SOBEL.OUT<-
sobel(pred=DATA[x,1],med=DATA[x,2],out=DATA[x,3])
OUT<-SOBEL.OUT$Indirect.Effect
return(OUT)}
bootmod<-bootstrap(1:nrow(TDAT),theta,TDAT,nboot=5000)
quantile(bootmod$thetastar, c(.025,.975))

```

### **Mplus codes**

```

TITLE: Multilevel Structural Equation Model with Random Intercept;
DATA: File is 00. LMXdata 3.csv;
Variable:

```

```
Names are Lid no StudentNo gender age edu tenure yos positio company
teamno type anx avo BL_F LMXSC_F FS_L RB_L LGX_L LMX_L OCB_L TP_L LMX_F_t1
LMX_F_t2 LMX_F_t2t1 noL genderL ageL eduL tenureL yosL companyL teamnoL
typeL type1 anx_BL;

Missing are all (999);

USEVARIABLES =Lid anx BL_F LMXSC_F LMX_F_t2 LMX_F_t1 OCB_L TP_L anx_BL;

CLUSTER =Lid;
```

ANALYSIS:

```
TYPE =TWOLEVEL;
```

```
ESTIMATOR =ML;
```

MODEL:

```
%WITHIN%
```

```
OCB_L on LMX_F_t2;
```

```
OCB_L on LMX_F_t1;
```

```
TP_L on LMX_F_t2;
```

```
TP_L on LMX_F_t1;
```

```
OCB_L with TP_L;
```

```
LMX_F_t2 on LMXSC_F;
```

```
LMX_F_t2 on LMX_F_t1;
```

```
LMXSC_F on anx;
```

```
LMXSC_F on LMX_F_t1;
```

```
LMXSC_F on BL_F;
```

```
LMXSC_F on anx_BL;
```

%BETWEEN%

OCB\_L on LMX\_F\_t2;

OCB\_L on LMX\_F\_t1;

TP\_L on LMX\_F\_t2;

TP\_L on LMX\_F\_t1;

OCB\_L with TP\_L;

LMX\_F\_t2 on LMXSC\_F;

LMX\_F\_t2 on LMX\_F\_t1;

LMXSC\_F on anx;

LMXSC\_F on LMX\_F\_t1;

LMXSC\_F on BL\_F;

LMXSC\_F on anx\_BL;

model indirect:

OCB\_L ind LMXSC\_F LMX\_F\_t2 anx;

TP\_L ind LMXSC\_F LMX\_t2 anx;

OUTPUT: STDYX RESIDUAL MODINDICES(3.84)