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**Are You Really Doing Good Things in Your Boss' Eyes?****Interactive Effects of Employee Innovative Work Behavior and Leader-Member Exchange on Supervisory Performance Ratings****ABSTRACT**

Organizations increasingly depend on employee efforts to innovate. However, the quality of relationships between leaders and employees may affect the recognition that employees receive for their innovative work behaviors. Drawing from a social cognition perspective, we tested a model in which leader-member exchange (LMX) moderates the impact of employee innovative work behavior on supervisory ratings of employee performance. Results from two multi-source studies combining self, colleague, and supervisor ratings consistently showed that employees receive more favorable performance ratings by engaging in innovative work behavior when they have high quality LMX relationships. Moreover, we found that this interactive relationship was mediated by leader perceptions of innovative employee efforts, providing support for a moderated mediation model. Implications for the literatures on performance appraisal, LMX, and innovation are discussed.

As organizations operate in increasingly dynamic and fast-paced business environments, their ability to quickly adapt and advance their processes, products, and services has become a key factor for success (Janssen & van Yperen, 2004). Accordingly, researchers and practitioners are increasingly interested in understanding employee innovative work behaviors, defined as employees' intentional efforts to generate, promote, and realize innovative ideas in order to benefit work performance, the group, or the organization (Janssen, 2000; West & Farr, 1989). As a key driver of innovative employee behavior, effective leaders foster the creation and implementation of new ideas by setting inspirational goals, fostering a climate of learning, and facilitating productive exchange among employees (Alfes, Truss, Soane, Rees, & Gatenby, 2013; Basu & Green, 1997; Shalley, Zhou, & Oldham, 2004).

Despite considerable progress in understanding the role leaders play in fostering organizational innovation, several important questions have remained open for investigation. First, whereas accumulating evidence demonstrates that leaders foster employee innovative work behaviors, little is known about a second aspect of leader involvement: leaders' role in *assessing* innovative employee efforts. Research into this question is important because evaluating employee behavior is a fundamental leadership task (Arvey & Murphy, 1998; Bernardin, Thomason, Buckley, & Kane, 2016). Leader assessments of their employees affect key HR-related processes in organizations such as promotions, bonus payments, and layoffs (Bratton & Gold, 2012). Moreover, as many studies in the domain of human resource management involve supervisory ratings of employee behavior as a key variable, it is important to understand the degree to which supervisor ratings actually reflect employee behavior or whether they are influenced by leader *interpretations* of such behavior.

Second, although it is generally recognized that innovative work behavior is inherently ambiguous, extant research has produced little understanding of how innovative work behavior is actually *perceived* by others. While generally benefitting the functioning of the

organization, innovative work behavior requires employees to challenge the status quo and to deviate from accustomed procedures (Frese & Fay, 2001). Yet, when employees spend time and resources on activities not prescribed in their job descriptions, their supervisors may not truly understand what they are really doing (Mainemelis, 2010). For example, when trying to generate or implement new solutions to work-related problems, employees may spend time browsing the internet to search for relevant information, or talking with colleagues to gather feedback on and support for novel ideas. This can easily be perceived as a counter-productive use of work time and resources, even though it represents positive, solution-oriented work behavior. Thus, to understand how and why innovative work behavior affects performance evaluations, it is important to examine how this behavior is actually interpreted by others.

Third, research suggests that because of its ambiguous nature, innovative work behaviors can incur both benefits and costs for the innovative employee in terms of positive or negative reactions by others (Anderson & Gasteiger, 2006). This is crucial because negative reactions may undermine employees' willingness to engage in future innovative efforts (Pichler, 2012). However, little is known about the factors that tilt others' reactions toward the positive or the negative side. As Janssen, van de Vliert, and West (2004) aptly noted, "we lack comprehensive theory and research that can clarify why individual employees sometimes gain the profits, and other times pay the costs, for taking an innovative approach" (p. 131). Moreover, Janssen et al. speculated that leaders may be an important factor in these dynamics—yet, to date this assumption has remained largely untested. This is an important limitation because identifying contingencies of leadership influence can advance our understanding of how supervisors arrive at their performance evaluations, and thus can aid organizations in reducing potential shortcomings in their performance measures.

Fourth, performance evaluations can be influenced by the social context between supervisors and subordinates (Ferris, Munyon, Basik, & Buckley, 2008; Lefkowitz, 2000; Sosik & Megerian, 1999). For example, previous studies have found that supervisors provide

higher performance ratings when employees are similar to them (e.g., regarding personality, age, or gender; Tsui & O'Reilly, 1989; Varma & Stroh, 2001), when supervisors have positive sentiments toward the employee (Antonioni & Park, 2001; Cardy & Dobbins, 1986; Levy & Williams 2004), or when the spatial distance between the supervisor and employee is relatively small (Ferris et al., 1994; see also Ferris et al., 2008). However, these studies have largely focused on the effects of the social context between the supervisor and the employee and neglected the influence that employee behavior may have on performance evaluations. This is an important gap because it is likely to result in an incomplete understanding of supervisory performance evaluations. Indeed, it is a central tenet of the social perception literature that our evaluations of others are shaped by the *interplay* of the social context (i.e., social ties with another person) *and* the behavior of the other person (Ross & Nisbett, 1991) rather than the social context by itself. Our study addresses this gap in the literature by examining the interactive effect of employee innovative work behavior and the social context between supervisors and employees on supervisory performance evaluations. Given the crucial role of employee innovation for organizational viability, it is important to understand how employee innovative behavior is reflected in supervisory appraisals (West, 2012).<sup>1</sup>

The present paper addresses these open issues by examining the relationship between employee innovative work behavior and supervisory perceptions and evaluations. Specifically, by building on theories of social cognition, we test the argument that the quality of supervisor-subordinate relationships (i.e., leader-member exchange or LMX, Graen & Uhl-Bien, 1995) influences leader perceptions of their employees' behaviors and, in turn, the evaluations of employee performance (see Figure 1). With this focus, our study is among the first to empirically examine how employee innovative efforts may affect supervisory performance evaluations. Moreover, we contribute to a more comprehensive understanding of employee innovation—beyond the prevailing focus on its role as an outcome of organizational processes (Zhou & Shalley, 2008).

LMX summarizes the social relationships that exist between leaders and followers, and thus directly reflects the immediate social context (Ilies, Nahrgang, & Morgeson, 2007). We chose to focus on LMX for three reasons. First, leader-member relationships are explicitly interpersonal and formed over many dyadic episodes (Graen & Uhl-Bien, 1995). Hence, they capture the essence of the social dynamics between leaders and their employees (Gerstner & Day, 1997). Second, by distinguishing between in-groups and out-groups, LMX theory closely aligns with cognition-based theories of performance evaluations which is a dominant perspective in the appraisal literature (Levy & Williams, 2004). This provides the opportunity to theoretically integrate these two perspectives. Third, LMX is one of the key characteristics that differentiate employees in their leaders' eyes. Indeed, leaders develop relationships of different quality with each employee (Maslyn & Uhl-Bien, 2001). Accordingly, LMX should offer a useful lens to understand how supervisors perceive and make sense of ambiguous employee behaviors such as innovative actions.

### **Employee Innovative Work Behavior and Performance Evaluation**

Employees engage in innovative work behavior to improve the effectiveness and efficiency in performing their job roles (Welbourne, Johnson, & Erez, 1998). Perceived work-related problems, external demands, or change in general are the main instigators of innovation (Drucker, 1985). Given that innovative work behavior tends to benefit work performance, the team, or organization, it seems plausible that employees also benefit from showing these behaviors by receiving such things as social recognition or favorable appraisals.

Past research has implicitly assumed a positive relationship between subordinate innovative work behavior and supervisor performance ratings (Yuan & Woodman, 2010). This view is based on the notion that innovative work behavior represents subordinates' drive to perform their jobs better and to offer more contributions to the organization (Crant, 2000). Further, when employees help the organization to innovate its processes and products, they

expand their responsibilities to help ease the task burden on their colleagues and supervisors (Janssen, 2000; West & Sacramento, 2012). Hence, employees expect that such behavior should be appreciated and rewarded (Wayne, Shore, & Liden, 1997). Indeed, in the workplace, employees trade behaviors that benefit the organization and its members for recognition and higher ratings of their performance (Konovsky & Pugh, 1994). Finally, engaging in innovation helps employees build a good reputation in the organization which may lead to favorable perceptions from their supervisors and increase their performance ratings (Wayne & Liden, 1995; Yuan & Woodman, 2010). We hypothesize:

*Hypothesis 1:* Subordinate innovative work behavior is positively related to supervisor performance ratings.

### **The Moderating Role of LMX**

A central assumption underlying the link between innovative work behavior and performance ratings is that supervisors can accurately interpret and evaluate such behavior. However, as noted earlier, perceptions of employee behaviors may also be influenced by the social context in which these behaviors occur (Ferris et al., 2008; Lefkowitz, 2000). Moreover, innovative work behavior provides a particular challenge to appraisals given its ambiguity and the fact that it deviates from accustomed ways of getting tasks done (Amabile, 1988; Kanter, 1988). As such, this behavior is difficult to predict and often surprising (Grant, Parker, & Collins, 2009). Yet, unexpected behaviors or events prompt a sense-making process (Morgeson, Mitchell, & Liu, 2015), where individuals seek additional information to interpret and understand these behaviors and events (DeNisi, Cafferty, & Meglino, 1984).

Supervisors have relationships of varying quality with different subordinates (Graen & Uhl-Bien, 1995). Relationship quality not only reflects a given relationship but also affects interactions between supervisors and subordinates (Dienesch & Liden, 1986; Green & Mitchell, 1979). LMX theory broadly distinguishes between two categories of employee relationships: in-group and out-group employees. The in-group category comprises

employees with whom the supervisor has high LMX relationships. These are characterized by mutual trust, support, and loyalty. In contrast, the out-group category comprises subordinates who have low LMX quality, where relationships and exchanges are relatively impersonal, limited, and contractual in nature (Graen & Uhl-Bien, 1995).

Prior research indicates that the differentiation between in-group and out-group employees may affect the perception and interpretation of others' actions (Feldman, 1981). For example, Schriesheim, Neider, and Scandura (1998) found that subordinate satisfaction was affected by supervisor willingness to delegate tasks *and* the quality of the supervisor-subordinate relationship. In-group employees (i.e., employees in high LMX relationships) reacted positively to supervisory delegation whereas out-group employees (i.e., employees in low LMX relationships) responded negatively to supervisor delegation. The authors suggested (yet did not examine) that employees in the in-group and out-group had a different perception of supervisory behaviors. Whereas high LMX employees may view the delegated tasks as developmental, the authors argued that low LMX employees may view them as punitive (see also Furst & Cable, 2008). Given these findings, we believe that drawing on and extending this focus on social perception processes in the context of LMX may not only enhance the understanding of employee reactions to their leaders, but may also hold a key to understanding supervisory evaluations of their employees. Indeed, individuals in powerful (i.e., leadership) positions tend to have a less accurate perception of others' intentions as they are more likely to focus on their own perspective and expectations (Galinsky, Magee, Inesi, & Gruenfeld, 2006).

Theories of social cognition provide insight into how categorizations may affect supervisor perceptions. These theories focus on how people process and apply information in their social environment (Fiske & Taylor, 2013; Turner, 1982; White & Carlston, 1983). Indeed, similar to LMX theory's notion of in-groups and out-groups, social cognition theory suggests that supervisor perceptions of their employees is largely influenced by



categorization processes (Fiske & Taylor, 2013). Specifically, the theory maintains that supervisors cognitively sort employees into different categories and these categories subsequently affect how supervisors perceive and interpret their employees' behaviors. As a consequence, information processing about an employee not only reflects the employee's actual behavior but is also influenced toward the general social category the employee (cognitively) belongs to. Aptly summarizing this view, Feldman (1981, p. 130) noted that, "when an employee is assigned to a category, further memory-based judgments of that employee are colored by the category prototype" (i.e., by the expectations and attributes that are seen as being typical for this social category). This process shapes supervisors' views toward more favorable or more unfavorable perceptions of actual employee behaviors.

By building on theories of LMX and social cognition, we expect that the LMX-based categorization into in-group and out-group members also influences how leaders perceive employee innovative behaviors. For example, in-group employees have been found to be more likely to engage in behaviors related to organizational innovation (Scott & Bruce, 1994). Hence, supervisors' image (or cognitive prototype) of an in-group employee is likely to include the notion of innovative work behavior and, thus, supervisors should be likely to perceive employees' behaviors in line with this prototype. In contrast, out-group employees engage less in such innovative work behaviors (Ilies et al., 2007). Thus, supervisors should have less positive expectations about these employees and their likelihood to engage in (successful) innovative actions.

Accordingly, when supervisors observe ambiguous behaviors typically involved in generating and promoting novel ideas (such as talking to others or surfing the internet), they may less readily infer that a low LMX employee is trying to develop solutions to work-related problems. Consequently, if the employee is part of the out-group, such behaviors may be perceived as a deviation from the status quo and as interrupting and disturbing established routines. Thus, as the supervisor may misperceive (at least some of)

their employees' innovative efforts, the relationship of innovative work behavior and supervisory performance ratings should be less pronounced for low LMX employees. In contrast, given that innovative work behaviors are in concordance with supervisor expectations of high LMX employees, these behaviors should be more readily perceived as positive, work-related efforts and thus should have a more positive relationship with supervisory performance ratings. We therefore hypothesize:

*Hypothesis 2:* The positive relationship between subordinate innovative work behavior and supervisor performance ratings is stronger for employees in high quality LMX relationships than for those in low quality LMX relationships.

### **Study 1**

#### *Method*

#### **Participants and Procedure**

Data were collected in an engineering company in China from three independent sources: subordinates' innovative work behavior was rated by their colleagues, supervisors provided performance ratings for each of their subordinates, and each subordinate rated their LMX relationship with the supervisor. We collected the data as part of a training course for managers of the company. Thirty-three team leaders agreed to participate in the study after a brief introduction of the research purpose. Team size ranged from 2 to 13, with an average of 5.97 subordinates ( $SD = 2.48$ ). The supervisors completed their survey during the course. Moreover, we asked them to hand-deliver a survey package to each of their employees after the class. These packages included the employee survey, a pre-stamped envelope marked with the university's address to return the survey, and a cover letter. The letter asked employees to complete the survey and ensured them that their responses would be confidential and never be seen by their leaders or colleagues. The employee survey included the name of the employee as well as the names of all of their team members, so that employees could rate the innovative work behavior of their colleagues. Employees were

allowed by their supervisors to complete the survey during their work time.

We received completed questionnaires of 143 employees and 29 leaders. The data included 795 cross-ratings of employee innovative work behavior with an average of 5.56 peer-ratings per employee. Consistent with previous research and in order to ensure adequate aggregation statistics, we only used employees with at least three colleague responses (Colquitt, Noe, & Jackson, 2002; Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009). Our final sample consisted of 143 team members and their leaders from 29 teams (response rate = 72.6%). Of the subordinates, 104 (73%) were male and 39 (27%) were female. Their average age was 40.25 ( $SD = 8.55$ ). One hundred eleven (77%) had graduated from technical school / high school and 32 had a college degree (23%). Of the supervisors, 24 (83%) were male and 5 (17%) were female. The average age was 41.55 ( $SD = 5.17$ ). Sixteen (55%) had graduated from technical school / high school and 13 (45%) from college. The average dyadic tenure between supervisors-subordinates was 5.11 years ( $SD = 5.16$ ).

### Measures

All items were translated from English into Chinese and back-translated into English by two bilingual researchers (Brislin, 1980). One researcher provided the initial translation, the other worked on the back-translation. Comparisons between the original and back-translated versions showed only minor variations, which were resolved through discussion.

**Innovative work behavior.** We assessed innovative work behavior with three items from Janssen's (2000) widely-used 9-item scale. As each subordinate had to rate all other team members on this variable, we followed the procedure of previous research and developed a shortened scale to reduce potential fatigue and motivation problems (Johnson et al., 2012). Janssen's scale is widely used as a unidimensional indicator of innovative work behavior that taps the aspects of idea generation, idea promotion, and idea realization. Hence, to create a short measure that includes all three aspects of innovative work behavior, we conducted a pilot study and, from each of the three aspects, used the items with the highest

factor loadings. This approach is in line with previous studies (e.g., Grant et al., 2009). These three items were, “Searching out new working methods, techniques, or instruments” (idea generation), “Mobilizing support for innovative ideas” (idea promotion), and “Transforming innovative ideas into useful applications” (idea realization). Participants responded to each item on a 7-point scale (1 = “*never*” to 7 = “*always*”;  $\alpha = .83$ ).

We calculated the inter-rater reliability of innovative work behavior to check whether ratings of innovative work behavior from different colleagues could be aggregated to form an overall score for each employee (Bliese, 2000). ICC[1] represents the proportion of total variance that can be explained by group membership; ICC[2] indicates the reliability of team means. Both indicators were at the higher end of typical results in applied field study (ICC[1] = .22, ICC[2] = .63; Bliese, 2000) and averaged scores differed significantly across employees ( $F(168, 791) = 2.70, p < .01$ ). This provides justification of the aggregation of colleagues’ ratings.

**LMX.** We measured subordinate perceptions of LMX with the 7-item scale by Graen and Uhl-Bien (1995). Sample items included, “How well does your leader understand your job problems and needs?” and “How would you characterize your working relationship with your leader?” Five of the items are anchored with a unique description related to the question asked, and for all 7 items, the high end was labeled with the most positive description (e.g., “*a great deal*” or “*extremely effective*”;  $\alpha = .85$ ). Response were made on a 7-point scale.

**Job performance.** We assessed job performance with five items by Wayne and Liden (1995). Sample items were, “This subordinate is superior to other subordinates that I have supervised before” and “Rate the overall level of performance that you observe for this subordinate.” Supervisors rated subordinates on a 7-point scale, each anchored with a unique description corresponding to the question asked. For all five items, the high end was labeled with the most positive description (e.g., “*strongly agree*” or “*outstanding*”;  $\alpha = .80$ ).

**Control variables.** Dissimilarity in supervisor-subordinate demographic

characteristics can influence performance ratings (Tsui & O'Reilly, 1989; Varma & Stroh, 2001). Hence, we controlled for demographic dissimilarities between supervisors and subordinates. Following Tsui and O'Reilly (1989), gender dissimilarity and educational dissimilarity were coded as 0 when the dyad had the same gender or educational level, and they were coded as 1 when the dyad had different gender or educational levels. Age dissimilarity was computed as the absolute difference between the supervisors and subordinates (in years). In addition, we controlled for duration of the dyadic relationship (in years) between supervisors and subordinates.

### *Results*

Means, standard deviations, and correlations among variables are shown in the left part of Table 1. Because subordinates were nested within work teams and each supervisor provided ratings for multiple team members, we used Hierarchical Linear Modeling (HLM) to test our hypotheses. Prior to the analyses, all independent variables were grand-mean centered (Liao & Chuang, 2012). First, we calculated a one-way ANOVA to test whether performance ratings varied across different supervisors. Results show that the between-supervisor variance in supervisors' performance ratings was significant,  $F(28, 114) = 6.127, p < .001$ . The ICC[1] value was .51, indicating that supervisors accounted for approximately 51% of the total variance. We then estimated three models: The first model included the control variables; the second model added the main effects of LMX and innovative work behavior; in the last model, we added the interaction term (i.e., the product of innovative work behavior and LMX). For an interaction to be interpretable, this product term needs to be significant (Aiken & West, 1991; Snijders & Bosker, 2012).

In line with Hypothesis 1, results indicated that innovative work behavior was positively related to supervisor performance ratings ( $b = .48, SE = .10, p < .01$ ; Model 2). Supervisors provided higher performance evaluations for employees who engaged in innovative work behavior. In addition, we found a significant interaction between innovative

work behavior and LMX. The coefficient for the interaction term was positive ( $b = .18$ ,  $SE = .08$ ,  $p < .05$ ; see Model 3), suggesting that higher levels of LMX were associated with stronger relationships between innovative work behavior and performance ratings. To further understand the nature of the interaction, we conducted simple slope analyses at high and low levels of the moderator (plus / minus 1  $SD$ ). As can be seen in Figure 2, factoring in LMX strengthened the relationship between employee innovative work behavior and supervisory performance ratings: Among employees in high LMX relationships, innovative work behavior was more strongly related to supervisor performance ratings ( $b = .66$ ,  $SE = .12$ ,  $p < .001$ ) than for employees in low LMX relationships ( $b = .36$ ,  $SE = .13$ ,  $p < .01$ ). These findings are in line with our second hypothesis.<sup>2</sup>

### ***Study 1 Discussion***

Results of Study 1 indicate that employee innovative work behavior is related to supervisory performance ratings, but that this link is stronger for employees in high rather than in low LMX relationships. This provides initial support for the hypothesis that the relationship between employee innovative work behavior and supervisory ratings of performance is contingent on the LMX relationship between supervisors and subordinates.

These findings contribute to our understanding of performance evaluations by showing that the impact of LMX not only affects subordinate (innovative) performance (as is often hypothesized in LMX research) but also suggests that LMX influences how leaders evaluate innovative employee performance. These findings are also important for our understanding of innovation because they support the idea that the benefits that subordinates receive from engaging in innovative work behavior depend on the environment that they operate in, specifically, on the relationship with their supervisor.

Although the results of Study 1 are consistent with our hypotheses and are based on a comprehensive study design involving three data sources (employees, coworkers, and supervisors), there are also limitations: First, participants in Study 1 were recruited from a

single organization. This may give rise to concerns about the generalizability of our findings. Second, employee innovative work behavior was assessed by peer ratings. Although an employee's colleagues are often in a good position to observe the employee's innovative work behavior, the colleagues may not be aware of all the nuances in the employee's innovative work behavior (e.g., when compared to employees' own knowledge about their innovative work behaviors; Morrison, 1994).

Third, Study 1 focused on the interactive effect of innovative work behavior and LMX but did not test the processes that may underlie this interaction. However, identifying mediating processes is a central step for theory testing and development (Preacher, Zyphur, & Zhang, 2010). In Study 2, we thus sought to address this limitation. Specifically, our previous theoretical arguments suggested that leader evaluations of employee innovative work behavior vary because LMX influences leader *perceptions* of employee efforts. Indeed, it is a tenet of the social cognition perspective that supervisor information processing mediates the relationship between employee behaviors and performance ratings and that these perceptions are influenced by the category to which an employee cognitively belongs (Ferris et al., 2008). As noted before, innovative work behaviors are more aligned with supervisor expectations of a high LMX employee than a low LMX employee and, accordingly, supervisors should be more likely to recognize innovative work behaviors from employees in high LMX relationships. Hence, the relationship between innovative work behaviors and supervisor perceptions of employee innovative work behaviors should be more pronounced for high LMX employees, which in turn, should strengthen the link between employee innovative work behavior and supervisor performance evaluations. In sum, this reasoning suggests a moderated mediation model such that leader perceptions of employee innovative efforts mediate the interactive effect of employee innovative work behaviors and LMX on supervisory performance evaluations. We hypothesize:

*Hypothesis 3.* Employee innovative work behavior is positively related to supervisory

performance ratings via a conditional indirect effect such that the effect on supervisory performance ratings is moderated by LMX quality and mediated by supervisor perceptions of employee innovative work behavior.

To test this hypothesis and to provide a constructive replication of our earlier results we conducted a second study.

## **Study 2**

### *Method*

#### **Participants and Procedures**

We collected data from full time employees and their supervisors in a variety of Chinese organizations. Data were collected in a part-time MBA program, generally taught on weekends. We invited 177 subordinates to complete a survey that included ratings of innovative work behavior and LMX. Additionally, we asked them to provide their direct supervisor name, mailing address, and contact telephone number. To collect supervisory performance ratings and perceptions of employee innovative work behavior, we mailed a survey to each supervisor with a pre-stamped envelope marked with the university's address to return the survey, and a cover letter. After four weeks we sent reminders to those supervisors who had not returned the surveys. We received complete surveys from 132 supervisor-subordinate dyads. Chi-square tests and *t*-tests did not indicate significant differences in demographic variables between subordinates whose supervisors responded and those whose supervisors did not respond, alleviating concerns about non-response bias.

The participants came from a variety of industries including engineering (19%), finance (16%), and IT (15%). Eighty-one of the employees were male (61%) and 51 were female (39%). Their average age was 30.21 years ( $SD = 3.57$ ). Ninety-three held a bachelor degree (71%), and 39 (29%) had a graduate degree. Of the supervisors, 102 were male (77%) and 33 were female (23%). Their average age was 40.05 years ( $SD = 6.22$ ). Seventy-one (54%) held a bachelor's degree and 61 (46%) held a graduate degree. Average duration of the



dyadic relationship between the subordinates and supervisors was 2.56 years ( $SD = 2.04$ ).

### Measures

To measure *innovative work behavior*, subordinates answered the 9-item scale by Janssen (2000;  $\alpha = .91$ ). We also used Janssen's (2000) 9-item scale to measure *supervisor perceptions of subordinate innovative work behavior* ( $\alpha = .94$ ). A sample item is: "This employee searches out new working methods, techniques, or instruments." As in Study 1, we measured *LMX* from the subordinates with the 7-item scale by Graen and Uhl-Bien, 1995;  $\alpha = .86$ ). Moreover, we assessed supervisor ratings of *job performance* with the same 5-item scale as in Study 1 (Wayne & Liden, 1995;  $\alpha = .90$ ). Finally, as in Study 1, we controlled for demographic dissimilarity in gender, age, and education as well as for dyadic tenure.

### Results

Means, standard deviations, and correlations among variables are shown in the right part of Table 1. To test our hypotheses, we conducted hierarchical regression analysis (Aiken & West, 1991). Prior to the analyses, all model variables were standardized and the interaction was calculated based on these standardized variables. We estimated three regression models. In the first model, we included all control variables. The second model included the main effects of innovative work behavior and LMX. In the third model we added the interaction term of innovative work behavior and LMX.

Results revealed that employee innovative work behavior was positively related to supervisor performance evaluations ( $b = .28$ ,  $SE = .08$ ;  $p < .01$ ; see Model 2 in Table 3). Specifically, in support of Hypothesis 1, employees who engaged in innovative work behavior (as perceived by the employees themselves) received higher performance evaluations from their supervisors. Moreover, a significant moderation effect indicated that the influence of innovative work behavior on job performance ratings was significantly influenced by LMX ( $b = .21$ ,  $SE = .08$ ,  $p < .05$ ; see Model 3 in Table 3). To examine the nature of this interaction, we conducted simple slope analyses at high and low values of the

moderator (plus / minus 1 *SD*). The slopes are shown in Figure 3a. Results indicate that the relation between employee innovative work behavior and supervisor performance ratings was stronger when employees had a high LMX relationship with their supervisor ( $b = .46$ ,  $SE = .10$ ;  $p < .001$ ) rather than a low LMX relationship ( $b = .04$ ,  $SE = .12$ ,  $p = .72$ ). Taken together, these findings support Hypothesis 2.

To test Hypothesis 3, we conducted moderated mediation analysis following the recommendations of Muller, Judd, and Yzerbyt (2005). According to this procedure, three conditions must be met to support moderated mediation. First, the interaction of the independent variable and the moderator needs to significantly relate to the mediator variable. Second, the mediator must significantly predict the outcome variable when controlling for all independent variables and the interaction term. Finally, the conditional indirect effect needs to differ significantly from zero as indicated by bootstrapping analysis.

The results of the first two steps are reported in Table 3. They show a significant interaction of employee innovative work behavior and LMX on supervisor perceptions of employee innovative work behavior ( $b = .21$ ,  $SE = .09$ ,  $p < .05$ ; see Model 4). Subsequent simple slope analyses indicate that employee innovative work behavior is only related to supervisor perceptions of employee innovative efforts for employees in high LMX relationships ( $b = .47$ ,  $SE = .12$ ,  $p < .001$ ). In contrast, when LMX was low, employee innovative work behavior was not significantly related to supervisor perceptions of employee innovative efforts ( $b = .04$ ,  $SE = .14$ ,  $p = .76$ ). Figure 3b depicts the interaction.

In the next steps, and as shown in Model 5, supervisor perceptions of employee innovative work behaviors were significantly related to supervisor ratings of employee performance. Employees received higher performance ratings if the leader perceived them as engaging in innovative work behaviors ( $b = .50$ ,  $SE = .07$ ,  $p < .001$ ).

In a final step, we examined the conditional indirect effect based on 5,000 bootstrap samples and 95% confidence intervals (CIs). In high LMX dyads, the positive relationship

between employee innovative work behavior and supervisor performance evaluations was mediated by supervisor perceptions of employee innovative efforts (*indirect effect* = .22, *SE* = .07, *CI* = [.12 to .38]). In contrast, supervisor perceptions of innovative work behavior did not play a mediating role when LMX was low (*indirect effect* = .02, *SE* = .08, *CI* = [-.12 to .21]). Taken together, these results provide support for Hypothesis 3.<sup>3</sup>

### **General Discussion**

It has been widely acknowledged that employee innovation is crucial for organizational viability and success. In the present study we thus set out to explore whether employee innovative work behaviors are perceived and appreciated in supervisory performance ratings and how this link is influenced by the relationship quality between supervisors and subordinates. Across two multi-source studies, we found that employees who engaged in innovative behaviors received higher performance ratings from their supervisors. However, this relationship was stronger for high LMX employees than for those in low LMX relationships. These findings have important theoretical and practical implications.

### **Theoretical Implications**

First, our study contributes to the understanding of the link between dynamics of LMX and innovative employee performance. Extant research has largely focused on how leaders can foster employee innovative performance, particularly through positive supervisor-subordinate interactions in high LMX relationships (Basu & Green, 1997; Ilies et al., 2007; Shalley et al., 2004). In contrast, our research suggests that LMX not only affects actual employee behavior but also influences how innovative employee actions are evaluated by their supervisor. More precisely, the present study is the first that shows, in a moderated mediation model, that LMX may influence the link between employee behaviors and supervisor perceptions which, in turn, shapes supervisor ratings of employee performance. This finding is important because it provides support for a cognitive perspective on performance evaluations suggesting that leader categorization processes shape how they

perceive and assess innovative employee efforts (Levy & Williams 2004). Moreover, this finding is interesting and relevant as it links a major leadership theory (i.e., LMX theory) with the literature on performance evaluations (Ferris et al., 2008). Indeed, both the literatures on leadership and on performance evaluations have largely developed in separate streams—mainly because employee performance is often theorized and studied as an outcome of leadership dynamics. In contrast, our findings show that leadership theories can also inform our understanding of how leaders perceive and evaluate employee behavior.

Second, our results provide important insights into the validity of supervisor ratings of employee behavior. Supervisor ratings have been the gold standard to assess innovative performance and other employee behaviors in research and practice (Shalley, Gilson, & Blum, 2009). However, depending on the LMX quality between supervisor and subordinate, this assessment of employee innovative performance may not be ideal as not all innovative work behaviors are recognized as such. In future studies, researchers may seek to complement supervisor ratings with self-ratings and ratings by other sources to get a more complete assessment of innovative performance.

Finally, our study also contributes to a better understanding of employee innovation. Existing research has largely focused on how organizational dynamics shape employee innovative work behavior (Anderson et al., 2004; Zhou & Shalley, 2008). Our study takes a different perspective and contributes to the innovation literature by focusing on innovative work behavior as an independent variable. Researchers have argued that innovative work behavior may not necessarily be beneficial for individuals who engage in it, even though it fosters the viability and advancement of the organization (Grant, 2016). Our study clarifies and refines this notion by finding that employees are not equally rewarded for their innovative efforts in terms of higher performance ratings. Moreover, we were able to provide initial evidence for Janssen et al.'s (2004) assumption that supervisors play a central role in employees' experiencing returns on their innovative efforts. Thus, our findings extend prior

research which largely focused on leaders who foster innovation, but neglect their role in assessing and rewarding employee innovative efforts.

### **Practical Implications**

The findings of this study are also relevant for practitioners. Most organizations rely on supervisory ratings as a central source of information on employee performance. Indeed, this data forms the basis of important HR-related decisions including promotions and layoffs (Bratton & Gold, 2012). Moreover, supervisory performance appraisals are a key driver of employee motivation. Yet it may actually have a demotivating effect if employees in low LMX relationships feel that their efforts are not appropriately rewarded (Pichler, 2012). Hence, imprecise performance evaluations can cause significant harm to organizational viability and success.

There are at least four ways to systematically reduce the influences of inaccuracies in supervisor perceptions. First, in view of the present findings, it seems advisable for organizations and HR professionals to raise leader awareness of a) the ambiguous nature of innovative work behavior and b) the role of their relationships with subordinates in perceiving this ambiguity. Past research suggests that raising awareness is a key way of reducing the impact of misperceptions and misinterpretations (Russo & Shoemaker, 2001). Workshops and video training could demonstrate the ambiguous nature of (innovative) employee behaviors, and may thus be particularly effective. Such programs can effectively complement frame-of-reference trainings discussed in the appraisal literature that seek to reduce raters' idiosyncrasies on performance ratings (Roch, Woehr, Mishra, & Kieszczyńska, 2012).

Second, to increase objectivity, HR professionals can assist leaders in evaluating subordinate performance by providing rating scales and rater trainings. Rating scales and the respective training are, of course, already implemented in many organizations—particularly in large corporations with sufficient resources and sophisticated personnel development

departments. They are, however, less common in small and medium sized enterprises and some public organizations (such as hospitals) which account for the majority of the work force in many countries (Hausman, 2005; West, Guthrie, Dawson, Borrill, & Carter, 2006). Moreover, for organizations that use ratings scales, it is important to point out that frequent leader training is crucial to ensure that scales are used correctly (Roch et al., 2012). Such training can help overcome supervisor reluctance to assess their subordinates and can reduce influences that impede supervisor ratings (Prowse & Prowse, 2009).

Third, organizations might also invest into efforts that objectively assess innovative performance. This could be done, for instance, by counting submitted suggestions for improvement or patents—although this would of course only be feasible in contexts in which such outcomes are relevant. Other organizations may seek to participate in competitions that award innovative efforts. These external competitions could also be used for awarding individual employees with distinctions that would be automatically recognized in performance appraisals (Gilson et al., 2009).

Finally, whenever there are multiple leaders in a single environment, such as in matrix organizations, the two (or more) leaders can independently rate subordinate performance and then discuss their (sometimes differing) views. Such appraisals from multiple raters can create more valid evaluations than appraisals by just one supervisor (Tetlock & Gardner, 2015). In organizations with relatively wide spans of control in which a supervisor leads and assesses twenty and more subordinates, the appraisals can be supported by one or two experienced subordinates. These subordinates would be responsible for monitoring the performance of a subgroup of employees to assist their leaders in making more reliable performance assessments. Indeed, several organizations have begun to use colleagues' assessments and feedback, rather than solely supervisory views, to evaluate the performance of their employees (Grant, 2016).

### **Strengths, Limitations, and Future Research**

We found the proposed moderating effect of LMX on the innovation-performance relationship in two samples, using different sampling schemes, and different sources for measuring innovative work behavior. Despite these strengths, there are also some limitations. First, as several scholars have pointed out, the links between employee behaviors, LMX, and performance appraisals are dynamic and complex (Lefkowitz, 2000; Ferris et al., 2008). In this paper, we focused on two central assumptions in the performance appraisal literature: the idea that employee behaviors affect supervisory ratings (Levy & Williams, 2004) and the notion that relationship quality between leaders and subordinates may influence supervisor perceptions of employee behaviors (Feldman, 1981; Ferris et al., 2008). However, this is not to say that no other links exist. For example, besides the link from innovative work behavior to performance evaluations, it seems possible that, over time, supervisory performance evaluations may also influence employee willingness to engage in innovative actions. Moreover, another potential link may exist between innovative work behavior and work performance on the one side and LMX on the other side (e.g., innovative work behaviors may contribute to better LMX relationships). Nevertheless, we would like to note that our model follows the theoretical assumptions and empirical findings of previous work—that employee behaviors mainly influence supervisory ratings (e.g., Allen & Rush, 1998; Rotundo & Sackett, 2002). Moreover, even though we cannot rule out that innovative work behaviors and work performance affected LMX, our data suggest that these effects would not be large. Specifically, not all links between (innovative) work performance and LMX were significant and most correlations were rather low (with  $r$  between .15 and .35 for a shared variance of .02 to .12). Nevertheless, it would be desirable for future research to provide further insights into the complex links between employee behaviors, LMX, and performance ratings and to uncover additional or reciprocal effects.

A second limitation relates to our measures of employee innovative work behaviors. In

both studies we used subjective indicators, based on colleague-ratings in Study 1 and based on employee self-report in Study 2. The fact that we found consistent results despite using different sources bolsters our confidence in these findings as different ratings sources may be aware of different nuances of employee behaviors (Morrison, 1994). Nevertheless, since our study is the first to show the moderating effect of LMX on the appraisal of innovative work behavior, it would be interesting for future research to also draw on objective measures of employee innovative behavior such as patents or research output.

Third, the means of some variables in our studies were relatively high (e.g., the mean for innovative work behavior in Study 1 and the mean for LMX in Study 2), suggesting that there were relatively few employees who had low ratings. However, there are several indicators suggesting that this may not be a serious problem in the present study. First, we found that Study 1 and Study 2 showed very similar results—even though the means of innovative work behavior and LMX varied considerably between the studies. Hence, the level of the mean did not seem to have a strong influence on the results. Second, the standard deviations of all variables in our model showed good dispersion in both studies with *SDs* over .70. This suggests that our data were not influenced by ceiling effects. Finally, mean values like the ones in our study are not uncommon. Indeed, several recent studies report similar scores (e.g., Eisenberger et al., 2010; Nishi & Mayer, 2009; Shin, Kim, Lee, & Bian, 2012; Wu, Parker, & De Jong, 2014). Nevertheless, future research could address this issue by examining the relationships we study among employees with very low levels of innovative work behavior. From a theoretical perspective, neither LMX theory nor theories of social cognition would predict that the moderation would not hold true for employees with low innovative work behavior. However, as our samples included rather few cases with low innovative work behavior, only future research can directly address this issue.

Fourth, participants of the present research were recruited in Mainland China. Hence, one might wonder whether the findings would generalize to other cultural contexts. Yet,



existing leadership research has found remarkably consistent findings between Eastern and Western cultures (e.g., Chen, Lam, & Zhong, 2007; Hackett, Farh, Song, & Lapierre, 2003). This consistency has been attributed to the fact that many Chinese organizations operate globally and have adopted Western management styles and ideas (Lin, Cai, & Li, 2001). Nevertheless, it might be interesting to also test this model in other cultural contexts.

Besides these limitations, there are several other promising avenues for future research. For example, it may be interesting for future studies to examine how employee behaviors, relationship variables, and performance appraisals affect each other over time—including potential reciprocal effects. Longitudinal studies may offer interesting insights into these dynamics. Another fruitful avenue for future research may be to examine the boundary conditions for the influence of LMX on appraisals of innovative work behaviors. For example, the influence of LMX on the innovative work behavior-performance appraisal link may depend on the utility of innovative work behavior as seen by the leader (Campbell et al., 1990). Because not all innovative work behavior will prove to be successful in the long run, it seems possible that innovations are implemented first but taken back later because they did not deliver the expected positive results (Anderson, Potočnik, & Zhou, 2014). This, in turn, may impact supervisors' evaluations of employees' innovative work behaviors. Finally, the link between innovative work behavior and performance appraisals may be curvilinear and follow an inverted U-shape rather than a linear form. While very low innovative work behavior might be interpreted as insufficient motivation / skill, very high innovative work behavior could be seen as wasting time—especially for employees without a track record of success in innovation. Even though we could not find support for such curvilinear effects in our data, it may be interesting to reexamine this idea in larger datasets with higher power. As these points suggest, the link between innovative work behaviors and performance evaluations offers a variety of interesting research questions. We hope that our study can inspire future research to further examine these interesting dynamics.

### **Conclusion**

Employee willingness to engage in innovative work behavior has become a crucial factor for organizational success. This would suggest that leaders should uniformly encourage, support, and reward these important work behaviors. Integrating LMX and social cognition theories, we proposed and found that employees receive the most favorable performance ratings when they engage in innovative work behavior *and* have high quality relationships with their supervisors. This interactive effect was mediated by leader perceptions of innovative work behavior, providing important insights into the process whereby putatively positive employee behaviors are rewarded. Our research not only offers important theoretical implications for the LMX and performance management literature, it also has significant implications for how organizations evaluate potentially ambiguous employee behavior. We hope that our research helps guide organizations toward more accurate perceptions of their employees' true potential and stimulates additional research exploring the intersection of employee behavior and the social context.

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### Endnotes

<sup>1</sup> Of course, this is not to say that innovative work behavior is the only aspect of employee actions that influences supervisory performance ratings. Other forms of employee behavior, such as task performance or supporting colleagues, can affect performance ratings as well (Rotundo & Sackett, 2002). However, given the importance of innovation for organizational viability, it is puzzling how little is known about how employee innovative behavior is reflected in supervisory appraisals (West, 2012).

<sup>2</sup> Based on the suggestion of an anonymous reviewer, we also examined whether the relationship between innovative work behavior and LMX may follow a curvilinear form such that employees may engage in too little or too much of innovative work behavior. The results of Studies 1 and 2 did not provide support for this relationship. Neither the quadratic term of innovative work behavior nor the interaction of this quadratic term with LMX were significant. While these results do not indicate a curvilinear effect, it should be noted that curvilinear effects, and especially moderated curvilinear effects, have low statistical power and may require larger sample sizes (Judge, 2008).

Moreover, it may be interesting to note that LMX was significantly related to ratings of employee performance when considering the bivariate correlation between these two variables. This is in line with previous findings (e.g., Kim, Liu, & Diefendorff, 2015; Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). However, LMX was only marginally related to ratings of employee performance in the regression, after adding the other predictors, interaction term, and control variables. This may be due to effects of statistical power, given the relatively large number of variables. However, in line with the reasoning of our paper, this finding may also indicate that the link between LMX and performance ratings is not straight-forward and that it may be subject to important boundary conditions such as the

innovative performance of employees.

<sup>3</sup> As a supplementary analysis, we have also examined whether LMX is a stage two moderator that influences the link between supervisor perceptions of employee innovative work behavior and supervisory performance evaluations (e.g., based on leniency effects for high LMX employees; Furst & Cable, 2008). The results did not provide support for this stage 2 moderation—the interaction between supervisor perceptions of innovative work behaviors and LMX did not significantly relate to supervisory performance evaluations.

Table 1

*Descriptive Statistics and Correlations for Study 1 (Left of the Diagonal) and Study 2 (Right of the Diagonal)*

	Study 1		Study 2		1	2	3	4	5	6	7	8
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>								
1 Age dissimilarity	7.12	6.93	9.83	6.51	--	.03	.06	-.02	.09	.14	.06	.13
2 Gender dissimilarity	0.27	0.44	0.39	0.49	-.05	--	-.01	.05	-.10	-.05	.04	.07
3 Education dissimilarity	0.47	0.50	0.54	0.50	.16	.01	--	.20*	-.02	-.10	-.10	-.09
4 Dyadic tenure	5.11	5.16	2.56	2.04	-.16	-.13	-.05	--	.14	-.02	-.04	-.03
5 Innovative work behavior	5.61	0.75	4.67	1.04	.09	-.15	.02	-.22*	--	.32***	.15	.34***
6 Supervisor perceptions of Innovative work behavior	--	--	5.02	1.10	--	--	--	--	--	--	.31***	.65***
7 LMX	5.31	0.85	4.92	0.79	-.05	-.05	-.04	-.04	.25**	--	--	.28**
8 Performance Evaluation	5.58	0.72	5.43	0.90	-.03	-.20*	-.11	-.01	.49***	--	.35***	--

*Note.*  $N = 143$  subordinates (Study 1) and 132 subordinates (Study 2)

\*\*\*  $p < .001$ , \*\*  $p < .01$ ; \*  $p < .05$ , two-tailed.

Table 2

*Hypothesis Tests for Study 1 (Hierarchical Linear Model): Linking Innovative Work Behavior and Supervisor Performance Evaluations*

<i>Variables</i>	Model 1		Model 2		Model 3	
	DV: Performance		DV: Performance		DV: Performance	
	Evaluation		Evaluation		Evaluation	
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Intercept	5.54**	.11	5.51***	.09	5.49***	.09
Age dissimilarity	-.00	.01	-.00	.01	.00	.01
Sex dissimilarity	-.15	.13	-.12	.12	-.13	.12
Education dissimilarity	-.09	.14	-.09	.11	-.11	.11
Dyadic duration	-.01	.02	-.00	.01	-.00	.01
LMX			.11	.06	.11	.06
Innovative work behavior (IWB)			<b>.48***</b>	<b>.10</b>	<b>.51***</b>	<b>.08</b>
IWB x LMX					<b>.18*</b>	<b>.08</b>
<i>Variance Components</i>						
Between-supervisor variance		.279		.179		.167
Within-supervisor variance		.267		.220		.214
$\Delta$ Pseudo $R^2$		.043		.176		.027

Note.  $N = 143$  subordinates.

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ , two-tailed.

Table 3

*Hypothesis Tests for Study 2 (Hierarchical Regression Analysis): Linking Innovative Work Behavior and Supervisor Performance Evaluations*

<i>Variables</i>	Interactive Effects on Performance Evaluations						Moderated Mediation Analysis			
	Model 1		Model 2		Model 3		Model 4		Model 5	
	DV: Performance Evaluation		DV: Performance Evaluation		DV: Performance Evaluation		DV: Supervisor perceptions of IWB		DV: Performance Evaluation	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Intercept	5.43 <sup>***</sup>	.08	5.43 <sup>***</sup>	.07	5.40 <sup>***</sup>	.07	4.99 <sup>***</sup>	.08	5.42 <sup>***</sup>	.08
Sex dissimilarity	.12	.08	.08	.07	.09	.07	-.05	.08	.10	.06
Age dissimilarity	.06	.08	.09	.07	.07	.07	.12	.08	.03	.06
Education dissimilarity	.12	.08	-.05	.07	-.04	.07	-.06	.09	-.01	.06
Dyadic duration	-.01	.08	-.05	.08	-.04	.07	-.03	.09	-.03	.06
LMX			.20 <sup>**</sup>	.07	.18 <sup>*</sup>	.07	.25 <sup>**</sup>	.09	.06	.06
Innovative work behavior (IWB)			<b>.28<sup>***</sup></b>	<b>.08</b>	<b>.25<sup>***</sup></b>	<b>.07</b>	<b>.26<sup>**</sup></b>	<b>.09</b>	.13 <sup>*</sup>	.06
Supervisor perceptions of IWB									<b>.50<sup>***</sup></b>	<b>.07</b>
IWB x LMX					<b>.21<sup>*</sup></b>	<b>.08</b>	<b>.21<sup>*</sup></b>	<b>.09</b>	.11	.07
<i>R</i> <sup>2</sup>	.03		.19 <sup>***</sup>		.23 <sup>***</sup>		.22 <sup>***</sup>		.47 <sup>***</sup>	
$\Delta R^2$			.16 <sup>***</sup>		.04 <sup>*</sup>		.03 <sup>*</sup>		.24 <sup>***</sup>	

*N* = 132 subordinates

Note. <sup>\*\*\*</sup> *p* < .001; <sup>\*\*</sup> *p* < .01; <sup>\*</sup> *p* < .05, two-tailed.

*Figure 1.* Theoretical Model Linking Innovative Work Behavior and Supervisor Ratings of Employee Performance

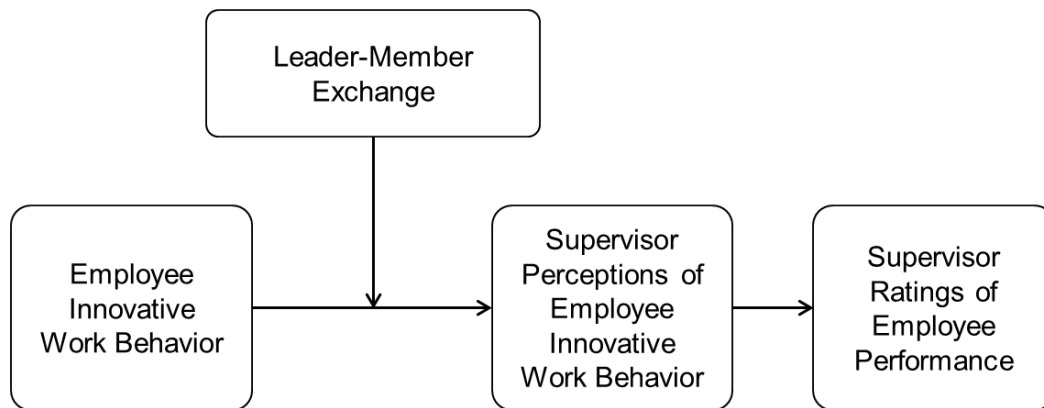




Figure 2. The Interactive Effects of Innovative Work Behavior and LMX on Job Performance Ratings (Study 1)

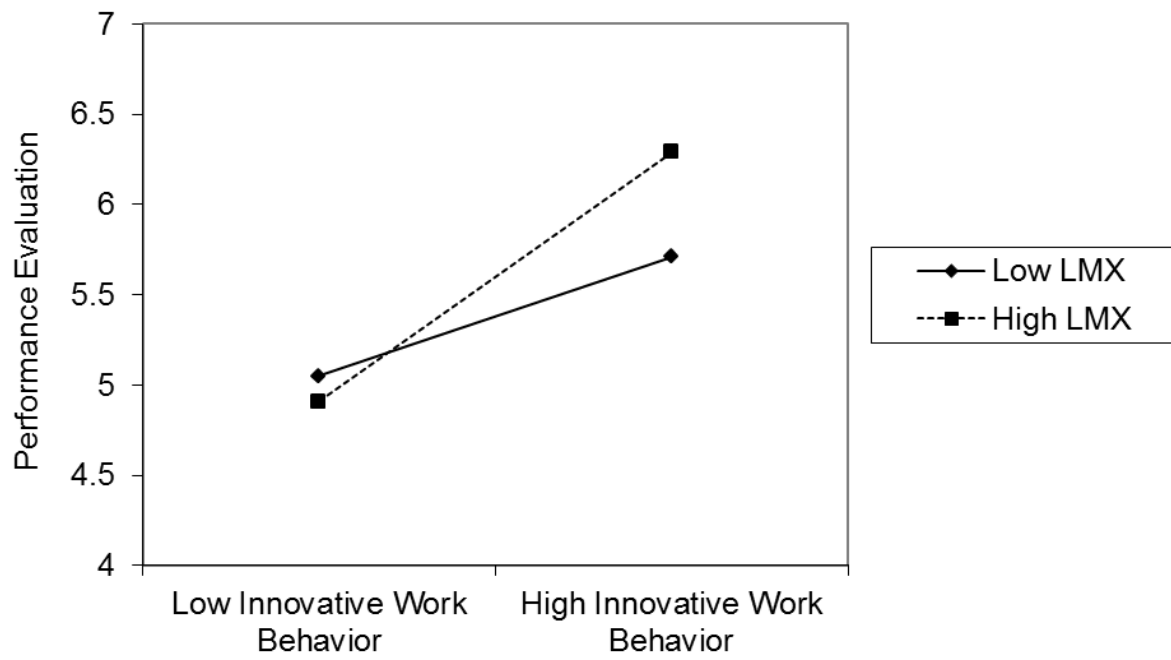


Figure 3a. The Interactive Effects of Innovative Work Behavior and LMX on Job Performance Ratings (Study 2)

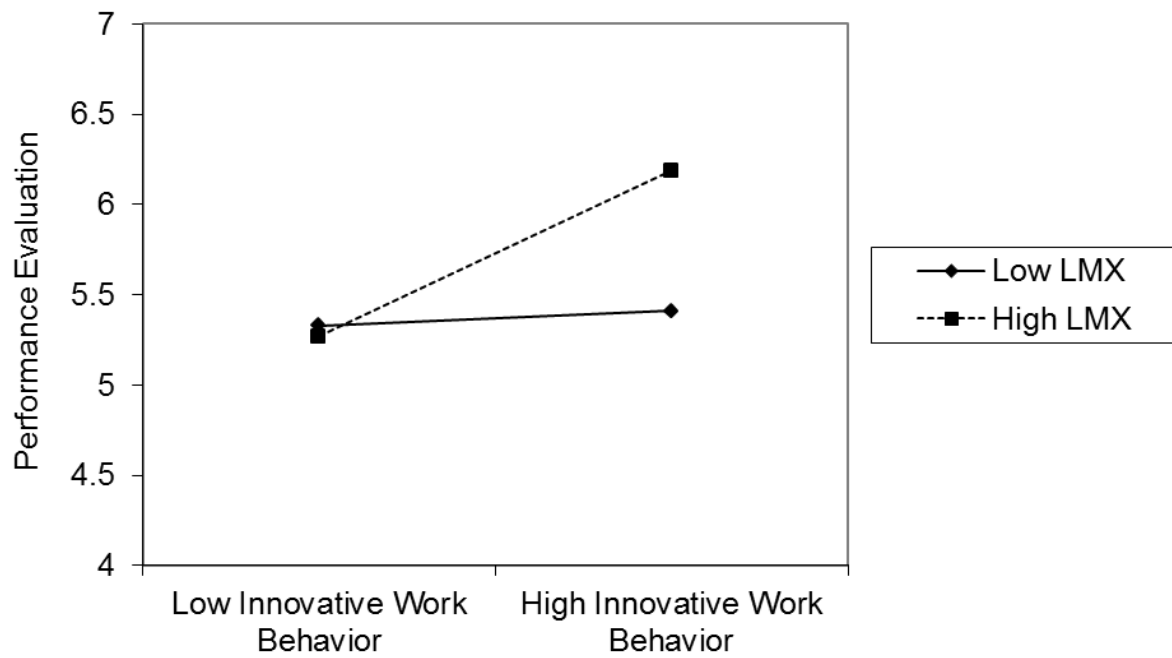


Figure 3b. The Interactive Effects of Innovative Work Behavior and LMX on Supervisor Perceptions of Innovative Work Behavior (Study 2)

