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Mascareno , Jesús; Rietzschel, Eric; Wisse, Barbara

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# Leader-Member Exchange (LMX) and innovation: A test of competing hypotheses

Jesús Mascareño<sup>1</sup>  | Eric Rietzschel<sup>1</sup>  | Barbara Wisse<sup>1,2</sup>

<sup>1</sup>Department of Psychology, University of Groningen, Netherlands

<sup>2</sup>Department of Management and Marketing, Durham University Business School, Durham University, Durham, UK

## Correspondence

Eric F. Rietzschel, Department of Organizational Psychology, University of Groningen, Grote Kruisstraat 2/1, 9712 TS, Groningen, The Netherlands. Phone: +31 503636357.  
Email: e.f.rietzschel@rug.nl

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In this paper, we address the relation between Leader-Member Exchange (LMX; the quality of the relationship between leader and subordinate), employee creativity (the generation of novel and useful ideas), and employee innovation (the promotion and implementation of these ideas). In the current set of studies, we test the competing hypotheses that LMX will either have a direct effect on employee innovation, or an indirect effect through employee creativity. In a field study of leader-subordinate dyads ( $N = 118$ ), we found that LMX had no direct effect on employee innovation, and that employee creativity fully mediated the relationship between LMX and innovation. In a follow-up two-wave field study of employees ( $N = 398$ ), we found that the LMX dimension *professional respect* predicted innovation through creativity, while the other dimensions did not. The results of this work indicate that research on LMX and innovation requires a multidimensional perspective, and that it may be valuable to differentiate between creativity and innovation.

## KEYWORDS

creativity, innovation, Leader-Member Exchange, leadership

## 1 | INTRODUCTION

Innovation helps organizations to maintain their competitive advantage and to remain afloat in this fast-changing world (Gunday, Ulusoy, Kilic, & Alpan, 2011; McAdam & Keogh, 2004). Although innovation is critical for competitiveness and survival, organizations find it difficult to be innovative (Kuratko, Hornsby, & Covin, 2014). Notably, as employees are seen as the driving force behind all types of innovation (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Zhang & Bartol, 2010), it is essential to understand what can be done to stimulate employees to contribute to innovation.

Leadership can be an important predictor of innovation (Hughes, Lee, Tian, Newman, & Legood, 2018; Rosing, Frese, & Bausch, 2011). Although past research on the matter has been conducted from a rather "leader-centric" perspective, where the role of the leader is seen as an active one, and that of the follower as a passive one, such a view seems misconstrued as both leadership and followership can be active roles (Hollander, 1992), and followers have determining roles in the leadership process (Pearce & Conger, 2002; Uhl-Bien, Riggio, Lowe, & Carsten, 2014). Specifically, followers may actively

engage in a series of social exchanges with their leader that over time determine the quality of their relationship (Meindl, 1995). Leader-member exchange (LMX) theory, based on role theory, captures this aspect of leadership and postulates that leaders and employees develop unique bonds through a series of work-related interactions in which both members "test" each other and learn what they can expect from each other (Graen, Novak, & Sommerkamp, 1982; Graen & Uhl-Bien, 1991, 1995; Liden, Erdogan, Wayne, & Sparrowe, 2006). We argue that the more this exchange process results in high-quality relationships between leader and employees, the more likely it is that employees display innovative behavior (Carnevale, Huang, Crede, Harms, & Uhl-Bien, 2017; Yuan & Woodman, 2010).

The relationship between LMX and innovation has been considered before, but this research has failed to provide a clear and consistent answer regarding the strength and nature of this relationship (Khalili, 2018). Indeed, some studies report a direct effect of LMX on innovation (e.g. Janssen & Van Yperen, 2004; Schermuly, Meyer, & Dämmer, 2013; Scott & Bruce, 1994; Yuan & Woodman, 2010), whereas others fail to find such direct effects (e.g. Lee, 2008; Taştan & Davoudi, 2015). How can we explain these inconsistencies? We argue

that the effects of LMX may be muddled because previous research did not clearly distinguish between creativity and innovation (Hughes et al., 2018), sometimes treating creativity as an integral part of the innovation process (e.g. De Jong & Den Hartog, 2010; Janssen, 2000) and sometimes operationalizing innovation with non-specific and global measures of creativity and innovation (e.g. Bunce & West, 1995; Scott & Bruce, 1994). Separating *creativity* from *innovation* might help to further elucidate the LMX-innovation relationship.

In this paper, we differentiate creativity from innovation, and we develop and test two competing hypotheses across two studies. The first hypothesis is that LMX will have a *direct* effect on innovation; the second hypothesis is that LMX will have an *indirect* effect on innovation via creativity. That is, it may be that LMX directly stimulates the promotion and implementation of ideas (innovation), or it may be that LMX stimulates the generation of ideas (employee creativity) which in turn boosts employee innovation. Moreover, we also focus on the different sub-dimensions of LMX, because work-related (e.g., professional respect) and more socially related (e.g., affect) LMX dimensions may differentially relate to creativity and innovation.

With this research we contribute to the leadership literature by expanding our knowledge about the role of leader-member exchange in fostering innovation, and by demonstrating the relevance of a fine-grained, dimensional approach to LMX. Moreover, this work is a response to the call for more research that clearly differentiates creativity from innovation (Černe, Jaklič, & Škerlavaj, 2013; Crossan & Apaydin, 2010; Hughes et al., 2018), and to further investigate the relationship between LMX and innovation (Khalili, 2018). Specifically, we will investigate employee creativity as a potential mediator between LMX and innovative performance (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). Beyond theoretical contributions, we believe that these results will be valuable for practitioners interested in stimulating organizational innovation by developing relevant follower behaviors and leader skills and competencies.

## 2 | THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

### 2.1 | Leader-member exchange

LMX theory was first introduced as the “vertical dyad linkage” theory (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975) and is rooted in the notion that leaders cannot rely solely on formal ties to influence the behavior of employees; instead, the leader's influence is anchored in the unique interpersonal exchange between him- or herself and an employee (Dansereau et al., 1975; Liden et al., 2006). LMX theory thus focuses on how leadership is determined by the dyadic exchange between the leader and the employee and as such offers an alternative to leadership views that are primarily based on leaders' individual traits and behaviors (Gerstner & Day, 1997).

According to LMX theory, the relationship between the leader and the subordinate is characterized by a reciprocal exchange of benefits (Yukl, 2019) which may ultimately bring about positive outcomes

for the leader, the employee and the organization (Graen & Uhl-Bien, 1995). Leaders and followers bring different kinds of resources for exchange to the relationship. Whereas leaders can provide employees with, for instance, autonomy, open and honest communications, support, and confidence, employees can do additional work, take greater responsibility, and commit to the leader's goals (Dansereau et al., 1975). Leaders and employees develop their relationship over time through a series of interactions (Bauer & Green, 1996; Nahrgang, Morgeson, & Ilies, 2009) in which they learn from experiences and learn more about each other (Gerstner & Day, 1997). Graen and Scandura (1987) proposed that the leader-member relationship develops in three sequential phases: sampling, role development, and commitment. In the sampling phase, the leader learns about the employee's capabilities in a series of feedback loops. In the role development phase, leader and employee shape their relationship through a series of implicit negotiations. Finally, in the commitment phase, mutual expectations become clear and the relationship becomes institutionalized.

In line with this perspective, empirical studies have found that the quality of the relationship develops over time influenced by a series of interactions (e.g. Bauer & Green, 1996; Liden, Wayne, & Stilwell, 1993; Nahrgang et al., 2009). Moreover, the relationship between LMX and positive outcomes has been widely documented (for reviews, see Anand, Hu, Liden, & Vidyarthi, 2011; Martin, Epitropaki, Thomas, & Topakas, 2010), showing that LMX is associated with a broad range of positive individual and organizational outcomes, varying from empowerment (Gomez & Rosen, 2001) to job satisfaction (Harris, Wheeler, & Kacmar, 2011) and from organizational commitment (Li, Zhu, & Park, 2018) to employee performance (Schriesheim, Neider, & Scandura, 1998).

### 2.2 | LMX and innovation

Several studies have examined the relationship between LMX and innovation, but with mixed results. Some studies have found a direct effect of LMX on innovation (e.g. Janssen & Van Yperen, 2004; Schermuly et al., 2013; Scott & Bruce, 1994; Yuan & Woodman, 2010). In these studies, employees who enjoyed a high-quality LMX relationship with their leaders were more innovative. For example, Scott and Bruce (1994) carried out a field study among R&D practitioners in the US and found that LMX was positively related to the individual's innovative behavior. However, other studies have found no direct effect of LMX on innovation (e.g., Agarwal, Datta, Blake-Beard, & Bhargava, 2012; Lee, 2008; Taştan & Davoudi, 2015). For example, Lee (2008) also carried out a field study among R&D professionals and found that LMX was *not* associated with innovation, and Taştan and Davoudi (2015) found in a field study that LMX was not directly related to innovation, but only indirectly through trust. All in all, existing research offers inconclusive results on the relationship between LMX and innovation. We believe that the nature of the innovation process, and the way it is commonly operationalized, may explain these conflicting results.

## 2.3 | Creativity and Innovation

The innovation process, as a whole, by definition encompasses the generation, development, promotion, and implementation of ideas (e.g., Anderson, De Dreu, & Nijstad, 2004; Perry-Smith & Mannucci, 2017; Rietzschel & Ritter, 2018; Rosing et al., 2011; West & Farr, 1990). However, a growing amount of research suggests that the transition from *idea generation* to the subsequent activities of evaluation, selection, promotion, and implementation constitutes something of a breaking point in the innovative process (see Rietzschel, Nijstad, & Stroebe, 2019, for an overview), and several studies have shown that the relation between idea generation and later stages of the innovation process is fraught with complications (e.g., Baer, 2012; Rietzschel, Nijstad, & Stroebe, 2006; Somech & Drach-Zahavy, 2013). Therefore, innovation researchers often distinguish between “creativity” and “innovation” (e.g., Bledow, Frese, Anderson, Erez, & Farr, 2009; Hughes et al., 2018; West, 2002), with the former referring to the generation of ideas and the latter referring to the subsequent selection, promotion and—especially—implementation of these ideas (Amabile, 1996; Baer, 2012; Hughes et al., 2018; West, 2002; West & Farr, 1990). The creativity and innovation stages are interdependent in that creative ideas will not have their intended effects unless they are implemented (Levitt, 1963), and innovation by necessity depends on the availability of creative ideas (Amabile & Conti, 1999). However, while creativity thus is an indispensable predictor of innovation (Axtell et al., 2000; Axtell, Holman, & Wall, 2006; Frese, Teng, & Wijnen, 1999), the two are not necessarily highly correlated (e.g., Somech & Drach-Zahavy, 2013). Indeed, creative ideas are not always implemented, very creative ideas may actually be *less* likely to get implemented than more mundane ideas (e.g., Baer, 2012), an excessive focus on idea generation may hinder idea implementation (Škerlavaj, Černe, & Dysvik, 2014), and generally successful idea implementation is dependent on various factors, and not only on successful idea generation (e.g., Perry-Smith & Mannucci, 2017; Rietzschel et al., 2019). Thus, differentiating between creativity and innovation is crucial for our understanding of the innovation process and the factors that affect it.

However, research does not always take this crucial distinction into account. Some studies have operationalized innovation as a single construct with different facets (e.g. De Jong & Den Hartog, 2010; Janssen, 2000). For example, De Jong and Den Hartog (2010) measured innovation with a scale spanning both creativity (idea exploration and idea generation) and innovation (idea championing and idea implementation). Other studies do not even acknowledge these facets (e.g. Bunce & West, 1995; Scott & Bruce, 1994), and instead use measurements that do not explicitly differentiate between creativity and innovation or use both concepts interchangeably. This is also the case in the literature on LMX and innovation. For example, in a recent meta-analysis on the relationship between LMX and creativity and innovation (Carnevale et al., 2017), it was found that LMX was more strongly related to creativity than to innovation. However, the authors also pointed out that there was a potential confound with the dependent variables, arguing that “there was a general tendency for

measures of both creativity and innovative behaviors to contain both idea creation and idea implementation content” (p. 538). As Carnevale et al. point out, this is problematic, because it may obscure important patterns in the effectiveness of different leader behaviors. For example, in a recent meta-analysis explicitly distinguishing between creativity and innovation, Lee et al. (2019) found that the effects and relative importance of different leader behaviors (such as LMX) depended on whether the outcome was creativity or innovation.

## 2.4 | Leader-member exchange, creativity, and innovation

As pointed out earlier, although there is support for a relation between LMX and innovation, the results are not consistent (Khalili, 2018). As Carnevale et al. (2017) put it: “Therefore, a very real question that needs to be asked is whether LMX is really significant in the promotion of individual innovative behavior, or whether this effect is being driven by the overlap on creativity in these measures” (p. 538). We therefore set out to investigate if LMX directly affects innovation, or if LMX perhaps affects innovation via creativity. This is an important question, because the implications of LMX directly affecting innovation versus only doing so through creativity are very different. A direct relationship would mean that the benefits exchanged in LMX are valuable for innovation specifically, that is for employees' ability to successfully promote and implement ideas. In contrast, an indirect relationship would mean that LMX is specifically beneficial for idea generation, but is in itself not helpful for the promotion and implementation of these ideas. Since research suggests that it is in the later stages of the innovative process that a lot of potential value is lost (e.g., Rietzschel & Ritter, 2018), it is essential for leaders to know whether developing LMX relations will help their followers work toward successful innovation, or whether it simply helps them generate ideas that may or may not be implemented. In the following sections we will present arguments for two competing hypotheses. First, we will argue for a direct effect of LMX on innovation. Then, we will present arguments for an indirect effect of LMX on innovation through creativity.

### 2.4.1 | Direct relationship between LMX and innovation

The first hypothesis is that LMX will predict innovation directly. Several studies have indeed found such a direct relationship (e.g. Janssen & Van Yperen, 2004; Schermuly et al., 2013; Scott & Bruce, 1994; Yuan & Woodman, 2010). As Perry-Smith and Mannucci (2017) point out, the later stages of the journey toward innovation (idea championing and idea implementation) require influence and legitimacy to convince stakeholders to push ideas forward. High-quality LMX relationships are particularly likely to yield exactly these resources. For example, employees experiencing high-quality LMX get access to valuable resources and support, such as time and

information (Sparrowe & Liden, 1997). Such resources have been found to aid in making the transition from creativity to innovation (e.g. Škerlavaj et al., 2014). Additionally, employees who are perceived as being close to a powerful and respected leader will have a more favorable reputation and greater influence within the organization (Galunic, Ertug, & Gargiulo, 2012; Sparrowe & Liden, 2005). Moreover, in high-quality LMX relationships, employees perform more efficiently (Howell & Hall-Merenda, 1999), and efficiency is a critical requirement of idea implementation (Rosing et al., 2011). Lastly, Hammond, Neff, Farr, Schwall, and Zhao (2011) found in a meta-analysis that the correlation between leadership support, a closely related construct to LMX, and idea implementation was stronger than the correlation between leadership support and idea generation. Thus, all in all, there are several reasons why LMX might directly influence employees' ability to promote and realize creative ideas (i.e., innovation).

**Hypothesis 1.** *LMX will have a direct effect on employee innovation.*

#### 2.4.2 | Indirect relationship between LMX and innovation through creativity

The second and competing hypothesis is that the relationship between LMX and innovation is due to its effects on employee creativity. Although this possibility has not yet been explicitly tested, several findings in previous research suggest that LMX may, in fact, be more strongly related to creativity than to innovation (Carnevale et al., 2017; Lee et al., 2019). For instance, there is research demonstrating indirect relations between LMX and innovation (Agarwal et al., 2012; Taştan & Davoudi, 2015). For example, Agarwal et al. (2012) found in a field study that work engagement mediated the relationship between LMX and innovation, and that LMX did not influence innovation directly. Suhaimi and Panatik (2016), after a literature review, concluded that the LMX-innovation relationship might be explained by the effect of an intervening variable. Interestingly, as mentioned earlier, most studies that have found an effect of LMX on innovation have used measures that encompass creativity, which means that creativity might play an important role in explaining this relationship. As argued by Amabile (1983), idea generation requires expertise, creative thinking skills and motivation. In fact, these are likely to be stimulated by high LMX relationships. For example, employees who have high-quality relationships with their leader are more likely to recognize their leader's competence, and will therefore be more receptive to their leader's mentorship which, in turn, will help them to develop their skills (Scandura & Schriesheim, 1994) and to engage in non-routine behaviors (Tierney, Farmer, & Graen, 1999). Furthermore, employees who have high-quality LMX relationships with their supervisor enjoy more autonomy (Scandura, Graen, & Novak, 1986) and perceive the environment to be safer to take risks (Spreitzer, Lam, & Fritz, 2010). In addition, employees who have high LMX relationships are more motivated because they perceive their work as exciting and challenging (Wang, 2016). Moreover, LMX

fosters the necessary conditions for employees to take the initiative and proactively generate ideas (Chiaburu, Smith, Wang, & Zimmerman, 2014; Kim, Hon, & Crant, 2009). Thus, earlier research and theory suggests that the relation between LMX and innovation might not be a direct one, but could plausibly be mediated by creativity, with LMX contributing to circumstances that help employees perform creatively, and creativity in turn predicting innovation.

In sum, the above may lead to the expectation that creativity functions as a mediator in the relationship between LMX and innovation. Previous studies have either not differentiated between or tended to include both creativity and innovation as effects of LMX. The current study ties LMX, creativity, and innovation together as separate variables in a single model, to explain how LMX is related to innovation.

**Hypothesis 2.** *Employee creativity mediates the relationship between LMX and employee innovation.*

### 3 | OVERVIEW OF THE PRESENT RESEARCH

To test our competing hypotheses, we adopted a multiple-study, multiple-method approach. In Study 1, a field study of supervisor-subordinate dyads, we asked subordinates to assess the quality of their relationship with their leaders and we asked leaders to assess the extent to which they considered their subordinates to be creative and innovative. Study 2, a two-wave study, aimed to replicate the results of our first study and to test if different dimensions of LMX could explain the direct and indirect relationship of LMX on innovation. Notably, with these studies we answer to the call for a clear distinction between creativity and innovation measures (Hughes et al., 2018). We obtained approval from the ethics committee of the university for both studies before data collection.

## 4 | STUDY 1

### 4.1 | Method

#### 4.1.1 | Participants and design

A total of 118 leader-subordinate dyads from Dutch organizations participated in a survey. Supervisors (28.8% female) had a mean age of 43.4 years ( $SD = 12.5$ ), a mean organizational tenure of 4.1 years ( $SD = 1.2$ ), and 66.4% had obtained a higher education degree (Bachelor degree or higher). Subordinates (56.6% female) had a mean age of 32.8 years ( $SD = 12.9$ ), a mean organizational tenure of 3.5 years ( $SD = 1.3$ ) and 51.6% had obtained a higher education degree. The majority of respondents worked in catering (19.6%), construction and installation (17.8%), or financial and business services (15.9%). Supervisors and subordinates had been in this specific hierarchical relationship for, on average, 3.3 years ( $SD = 1.3$ ).

### 4.1.2 | Procedure

Data for this study were collected as part of a study on the role of social interaction in the workplace. Potential respondents were mailed, called, or approached in person. Envelopes with paper-and-pencil questionnaires were distributed in pairs to employees and their direct supervisors. Those employees and supervisors interested in participating in the study were asked to fill in the paper-and-pencil questionnaires without consulting their colleagues, subordinates, or supervisor, and to return the questionnaires in the enclosed envelope. Each pair was numbered to enable matching of supervisor-subordinate data. Because people often filled in the questionnaires during work hours, we kept the survey short and to the point. Moreover, we stressed the fact that participation in the study was voluntary and that the data would be treated confidentially.

### 4.1.3 | Measures

#### *Leader-member exchange*

Subordinates were asked to fill out the LMX-7 scale developed by Graen and Uhl-Bien (1995) to assess their perceptions of the supervisor-subordinate relationship. A sample item was "How well does your supervisor understand your problems and needs?" Employees answered on 5-point Likert-type scales with question-specific labels (for the sample item: 1 = *not a bit* to 5 = *a great deal*). Cronbach's alpha for this scale was .83.

#### *Creativity*

To measure subordinate creativity, supervisors filled out the three-item idea generation sub-scale from the Janssen (2001) innovative work performance scale. Supervisors were asked how often (1 = *never* to 7 = *always*) their employees engaged in, for instance, "Generating original solutions to problems". Cronbach's alpha was .92.

#### *Innovation*

To measure subordinate innovation, supervisors filled out the idea promotion and idea realization subscales from the Janssen (2001) innovative work performance scale. Supervisors were asked how often (1 = *never* to 7 = *always*) their employees engaged in, for instance, "Making important organizational members enthusiastic for innovative ideas" or "Transforming innovative ideas into useful applications". Cronbach's alpha for this scale was .94.

#### *Control variables*

Consistent with previous research, we controlled for leaders' and subordinates' gender and education. Education was controlled for because it may affect the domain-relevant knowledge that is important for creativity (Amabile, 1988; Tierney et al., 1999) and because it has been found to relate to innovation (De Dreu, 2006). Education was measured using a seven-point scale (1 = *primary school* to 7 = *university degree*). Gender was dummy coded (1 = *male*, 2 = *female*) and was controlled for, because previous research on creativity and

innovation has shown that there are differences between genders (Amabile, Barsade, Mueller, & Staw, 2005; De Dreu, 2006).

## 4.2 | Results

### 4.2.1 | Preliminary analyses

Prior to conducting a regression analysis, we analyzed our mediator and outcome variables by assessing a bi-factor model. This model is a multidimensional structural model and specifies that each item loads on a general factor (labeled the "target" dimension), and each item also is an indicator of one (or more) orthogonal group factors (see Reise, Bonifay, & Haviland, 2013). This model is applicable because our creativity and innovation measures assess both a general tendency for overall innovative job performance (see Janssen, 2001) and its separate creativity and innovation components. The fit indices were  $\chi^2(118) = 47.77, p = .006, RMSEA = .08, CFI = .97$ , showing that treating creativity and innovation as separate components of a larger process provided a good fit to the data. Means, standard deviations and correlations of the study variables are shown in Table 1. LMX was significantly positively correlated with creativity ( $r = .32, p < .01$ ) and innovation ( $r = .35, p < .01$ ).

### 4.2.2 | Hypothesis testing

In order to test our hypotheses, we performed mediation analysis using the PROCESS module (Model 4) developed by Hayes (2012). In this analysis, subordinate innovation was the dependent variable, subordinate creativity was the mediator variable, LMX was the predictor variable, and both age and education (of leader and subordinate) were control variables (see Table 2). The results revealed that LMX was a significant predictor of creativity ( $b = 0.73, p < .001$ ), and that creativity was a significant predictor of innovation ( $b = 0.81, p < .001$ ). In line with Hypothesis 2, we found that the indirect effect of LMX on innovation via creativity was significant (indirect effect = 0.60, 95% CI = [0.24, 0.91]). In contrast, we found no support for Hypothesis 1: The direct effect of LMX on innovation was not significant (direct effect = 0.22, 95% CI = [-0.03, 0.48]). These effects suggest that LMX fosters innovation because LMX predicts subordinate creativity, which in turn predicts subordinate innovation. When taking the

**TABLE 1** Correlations and descriptive statistics, Study 1

	M	SD	1	2	3	4	5
1. LMX	4.10	0.54	-				
2. Creativity	4.05	1.35	.32*	-			
3. Innovation	3.89	1.33	.35*	.85*	-		
4. Gender	-	-	.06	-.01	.01	-	
5. Education	-	-	-.11	-.11	-.13	.03	-

N = 118,  
\*p < .01

**TABLE 2** Mediation regression of innovation and creativity on LMX

Mediator variable model (DV = Creativity)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>t</i>	
Constant	1.85	1.31	1.41	
LMX	.68	3.03	3.03*	
Gender employees	-.44	.25	-1.75	
Education employees	.15	.09	1.56	
Gender leaders	.13	.28	.47	
Education leaders	-.15	.10	-1.46	
Dependent variable model (DV = Innovation)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>t</i>	
Constant	-.14	.73	-.19	
Creativity	.80	.05	15.15**	
LMX	.20	.13	1.58	
Gender employees	-.02	.14	-.17	
Education employees	.03	.05	.52	
Gender leaders	.10	.16	.67	
Education leaders	-.05	.06	-.92	
Indirect effect of LMX on innovation				
	Effect	Boot SE	BootLLCI	BootULCI
Creativity	.59	.18	.24	.91

<sup>a</sup> Bootstrap (Boot) sample size = 10,000. Level of confidence interval = 95% unstandardized regression coefficients.

\**p* < .05.

\*\**p* < .01.

effects of LMX on creativity into account, LMX did not predict innovation.

### 4.3 | Conclusion

In this initial study we tested the competing hypotheses that LMX would have a *direct* effect versus an *indirect* effect (through creativity) on employee innovation. Our results offer clear support for the indirect effect, but not the direct one. Employees who experienced a high-quality relationship with their leader scored higher on perceived creativity, which in turn predicted their promotion and implementation of ideas. Thus, this study points toward the importance of relationship quality for creative and subsequent innovative behaviors of subordinates. Moreover, by showing that LMX only had a relationship with innovation via creativity, it corroborates the importance of differentiating between creativity and innovation.

## 5 | STUDY 2

The purpose of Study 2 is to replicate and extend the results from Study 1. First, we aim to replicate the results of Study 1 by testing

whether creativity mediates the relationship between LMX and innovation in a different sample. Second, we seek to extend the results from our first study by using a different LMX measure that will allow us to differentiate between various dimensions of LMX.

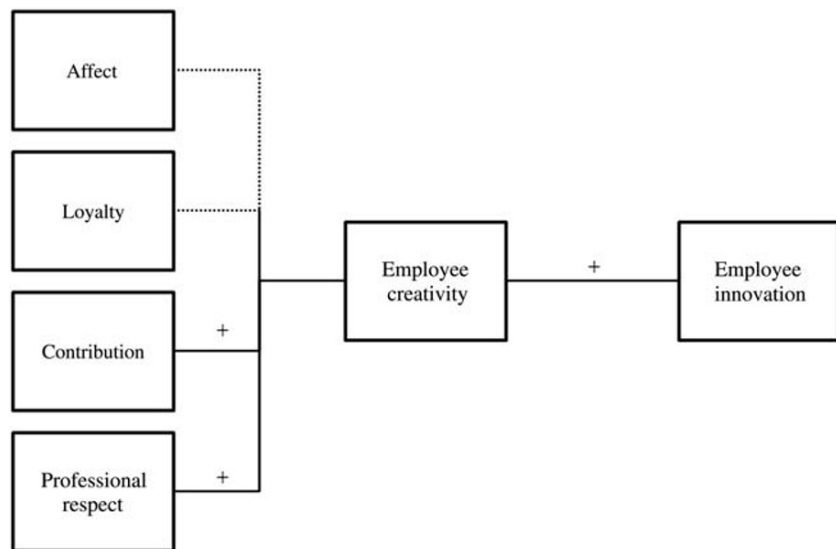
### 5.1 | LMX dimensions

Although research on leader-member exchange (LMX) theory has typically measured LMX in a unidimensional manner, research and theory suggest that followers (as well as leaders) conceptualize LMX relationships as comprising four distinct “currencies” or dimensions. These dimensions are *affect* (the extent to which employees experience affection and liking for their leader), *loyalty* (employees' perceived expressions of public support from their leaders), *contribution* (employees' willingness to exert effort in order to contribute to the mutual goals), and *professional respect* (employees' perception of leader competence, skills and knowledge; see Greguras & Ford, 2006; Liden & Maslyn, 1998). Previous studies have shown that not all LMX relationships are the same (Seo, Nahrgang, Carter, & Hom, 2018) and that different dimensions have different effects on creativity and on innovation (e.g. Lee, 2008; Olsson, Hemlin, & Pousette, 2012; Xie & Zhang, 2012). Therefore, in our follow-up study, we want to be able to differentiate between these dimensions. Specifically, we expect that particularly the *contribution* and *professional respect* dimensions of LMX will be positively related to innovation through creativity (see Figure 1).

According to Liden and Maslyn (1998), contribution and professional respect (but not affect and loyalty) may significantly correlate with broader and more overarching organizational outcome measures than merely those relevant to the leader-follower dyad. They argue that professional respect and contribution are closely tied to the effort or involvement in work-related activities (see Greguras & Ford, 2006), and hence their effects may radiate beyond the supervisor to the larger organization. In contrast, affect and loyalty relate particularly to the affective or interpersonal nature of the LMX relationship, and as such are more directly related to the supervisor than to the larger organization.

Creativity and innovation are behaviors or outcomes that are relevant to the organization as a whole, and not only (or even primarily) to the leader-follower relationship (Anderson, Potočník, & Zhou, 2014). Furthermore, creativity and innovation can be considered forms of extra-role behavior (Balkin, Roussel, & Werner, 2015; Janssen, 2000) and as such require extra effort from the employees (over and above what is formally required). Thus, following Liden and Maslyn (1998), it seems plausible to assume that particularly contribution and professional respect will have a positive relationship with creativity and innovation.

There is some empirical support for the expected relationship between professional respect and contribution on the one hand and creativity and innovation on the other. For instance, Xie and Zhang (2012) found in a field study that only the contribution and professional respect dimensions had a positive direct effect on

**FIGURE 1** Conceptual model of Study 2

innovation. With regard to professional respect, one could argue that employees will benefit from having a competent leader to motivate and guide them in the generation and implementation of ideas. Likewise, Van Minh, Badir, Quang, and Afsar (2017) found that leader competence was positively related to follower innovative performance. The authors argue that employees are more creative and innovative because they are motivated by their leader's knowledge and problem-solving abilities. Moreover, a leader with a reputation for being skilled might help employees to refine their ideas and come up with new ones by providing informational feedback and suggestions (Perry-Smith & Mannucci, 2017). Thus, professional respect may point to employees' perception of having a highly knowledgeable leader who can stimulate curiosity, provide employees with influence, guidance and technical experience in the generation and subsequent implementation of ideas.

Also, employees who are willing to contribute to the joint goals will be more willing to make an extra effort and take the initiative to generate and consequently implement ideas. Previous research has shown that employee's willingness to invest effort is positively associated with creativity (Eldor & Harpaz, 2016; also see Olsson et al., 2012). Moreover, there is evidence that personal initiative is an important determinant of creativity (Binnewies, Ohly, & Sonnentag, 2007; Herrmann & Felfe, 2014). For example, Herrmann and Felfe (2014), in an experiment, found that personal initiative was positively associated with idea quantity and idea quality. Thus, employees who are willing contribute to the mutual goals will be more likely to engage in creative and innovative activities because they are prepared to carry out the necessary activities to innovate.

Note that, although Lee (2008) found that only the loyalty dimension had an effect on innovation, there is also evidence that loyalty is not related to innovation (Olsson et al., 2012; Turnipseed & Turnipseed, 2013; Xie & Zhang, 2012). In this study, we do not expect a relationship between loyalty and innovation because, as suggested by Farrell (1983), loyalty is a more passive response from employees and does not lead employees to find new ways of doing things.

All in all, our expectations in Study 2 are twofold: firstly, we expect to replicate the results of Study 1; secondly, we expect this effect to occur only for specific LMX dimensions.

**Hypothesis 2a.** *Creativity will fully mediate the relationship between LMX and innovation.*

**Hypothesis 2b.** *The relationship between LMX and employee creativity and innovation will be found for the contribution and professional respect dimensions, but not for the affect and loyalty dimensions.*

## 5.2 | Method

### 5.2.1 | Participants and design

A two-wave survey study was conducted among employees in the United States. At baseline, in spring 2019, the sample consisted of 600 respondents. Respondents' ages ranged from 19 to 65 with an average of 37.96 years ( $SD = 9.73$ ). Respondents' tenure in their current job was 5.38 years ( $SD = 4.61$ ). The majority of respondents worked in health and welfare (11.9%), education (10.7%), or banking (8.9%). The second wave was conducted three weeks after the baseline data collection, and yielded a response rate of 66%. After data screening, a total of 311 respondents were retained.<sup>1</sup> In the second wave, 142 (45.7%) of the participants were women and ages ranged from 22 to 65 with an average of 39.44 years ( $SD = 10.06$ ). Respondents' tenure in their current job was 5.88 years ( $SD = 4.64$ ). Respondents worked in health and welfare (11.3%), education (10.9%), or retail (8.4%). To test for the selective dropout at Wave 2, we compared the respondents in our final dataset ( $N = 398$ ) to dropouts ( $N = 202$ ) using  $t$ -tests. The results showed no significant differences between both groups in terms of age:  $t(600) = 1.57, p = .118$ , gender:  $t(600) = -0.42, p = .675$ , education:  $t(600) = 0.65, p = .518$ , and tenure:  $t(600) = 1.33, p = .183$ .



## 5.2.2 | Procedure

Employees were recruited via Amazon's Mechanical Turk website to participate in a study on creativity at work. Previous research has shown that data obtained via Mechanical Turk can be as reliable as those obtained via traditional methods (e.g., Paolacci & Chandler, 2014), particularly when measures to ensure data quality have been taken. Employees were informed that the online survey was divided into two waves, that each wave would take approximately 15 minutes to complete, that the collected data would be treated confidentially, that participation was voluntary, and that they would be paid \$0.50 in the first wave and \$0.70 in the second wave. All respondents gave their informed consent. In Wave 1, employees filled out an online questionnaire assessing their idea generation, idea promotion, idea realization, perceived quality of their relationship with their supervisor, and they also answered some questions that served as demographic variables. In Wave 2, employees filled out a questionnaire assessing their idea generation, idea promotion, idea realization, and the perceived quality of their relationship with their supervisor.

## 5.2.3 | Measures

### *Leader-member exchange*

LMX was measured using the LMX-MDM 12-item scale from Liden and Maslyn (1998); each of the four dimensions is measured with three items. The dimension *affect* measures one's liking for the other dyad party. A sample item is "I like my supervisor very much as a person." *Loyalty* measures the degree of loyalty one feels from the dyad party. A sample item is "My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question." *Contribution* measures the amount of one's own effort exhibited in achieving work goals. A sample item is "I am willing to apply extra efforts, beyond those normally required, to meet my supervisor's work goals." Finally, *professional respect* measures one's professional esteem for the dyad party. A sample item is "I admire my supervisor's professional skills." Employees could indicate their agreement to the statements on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .92 for affect, .88 for loyalty, .91 for contribution, and .93 for professional respect. Cronbach's alpha for the total scale was .93.

### *Creativity*

As in Study 1, we assessed creativity with the three-item idea generation subscale from Janssen's (2001) innovative work performance scale, with items adapted to a self-report format. An example item is "How often do you create new ideas for improvements?" Participants indicated their answers on a scale from 1 (*never*) to 7 (*always*). Cronbach's alpha for this scale was .83.

### *Innovation*

Like Study 1, innovation was assessed with the idea promotion and idea realization subscales from the Janssen (2001) innovative work

performance scale, with items adapted to a self-report format. An example item is "How often do you introduce innovative ideas into the work environment in a systematic way?" Participants indicated their answers on a scale from 1 (*never*) to 7 (*always*). Cronbach's alpha for this scale was .92.

### *Control variables*

As in Study 1, we controlled for employees' education (1 = *primary school* to 7 = *PhD*) and gender (1 = *male*, 2 = *female*). In addition, to focus our analysis on the relation between LMX as measured in Wave 1 and creativity and innovation as measured in Wave 2, we controlled for creativity at Wave 1 and innovation at Wave 1.

## 5.3 | Results

### 5.3.1 | Preliminary analyses

Similarly to Study 1, we used bi-factor confirmatory factor analyses (CFA) to assess whether each of the measurement items would load significantly onto the scales with which they were associated. The results of the bi-factor model for the creativity and innovation items showed acceptable fit with the data. The fit indices were  $\chi^2(311) = 46.030$ ,  $p < .001$ , RMSEA = .071, CFI = .98. The results of the bi-factor model for LMX-scale (with its four dimensions) showed excellent fit with the data. The fit indices were  $\chi^2(311) = 46.960$ ,  $p = .39$ , RMSEA = .012, CFI = .99, suggesting that the LMX dimensions can be distinguished from each other. Means, standard deviations, and zero-order correlations of all variables in Waves 1 and 2 are provided in Table 3.

### 5.3.2 | Hypothesis testing

#### *LMX*

In order to test the direct effect of the overall LMX score on innovation as well as the indirect path between LMX and innovation through creativity, we used the PROCESS macro for SPSS (Hayes, 2012; model 4). In the model, we included LMX at Wave 1 as the independent variable, creativity at Wave 2 as the mediator, and innovation at Wave 2 as the outcome variable, while also controlling for creativity at Wave 1, innovation at Wave 1, gender, and education. The results revealed that LMX at Wave 1 was a significant predictor of creativity at Wave 2 ( $b = .73$ ,  $p = .001$ ), and that creativity at Wave 2 was a significant predictor of innovation at Wave 2 ( $b = .81$ ,  $p < 0.01$ ) (see Table 4). The test of indirect effects revealed that the effect of LMX on innovation was mediated by creativity (indirect effect = 0.59, 95% CI = [0.24, 0.91]). Interestingly, and in contrast to our earlier results, the direct effect of LMX on innovation was also significant (but very small: coefficient = 0.09, 95% CI = [0.04, 0.18]).

#### *The dimensions of LMX*

To test our multiple predictor mediation model (in which we differentiate between the four dimensions) we performed a multiple focal

**TABLE 3** Correlations and descriptive statistics, Study 2

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Affect Wave 1	3.85	1.10	-													
2. Affect Wave 2	3.81	1.11	.79**	-												
3. Loyalty Wave 1	3.93	.98	.64**	.56**	-											
4. Loyalty Wave 2	3.91	.99	.55**	.69**	.76**	-										
5. Contribution Wave 1	4.05	.84	.55**	.46**	.54**	.44**	-									
6. Contribution Wave 2	3.99	.86	.45**	.57**	.43**	.59**	.67**	-								
7. Professional respect Wave 1	3.94	1.13	.75**	.62**	.59**	.53**	.48**	.48**	-							
8. Professional respect Wave 2	3.96	1.08	.63**	.74**	.48**	.61**	.38**	.52**	.75**	-						
9. Creativity Wave 1	4.57	1.27	.25**	.18**	.27**	.16**	.32**	.26**	.16**	.11*	-					
10. Creativity Wave 2	4.48	1.21	.26**	.23**	.26**	.21**	.34**	.37**	.25**	.19**	.80**	-				
11. Innovation Wave 1	4.17	1.43	.32**	.28**	.35**	.26**	.38**	.34**	.28**	.19**	.83**	.74**	-			
12. Innovation Wave 2	4.13	1.34	.33**	.32**	.32**	.30**	.37**	.42**	.32**	.27**	.74**	.82**	.82**	-		
13. Gender	-	-	-.08	-.06	-.08	-.05	-.02	.03	-.12*	-.07	-.00	.03	-.03	-.04	-	
14. Education	-	-	-.05	-.04	.09	.08	-.11	-.05	-.03	-.07	-.04	.00	-.02	-.02	.05	-

N = 311.

\*p < .05.

\*\*p < .01.

\*\*\*p < .001.

**TABLE 4** Mediation regression of innovation and creativity on LMX

Mediator variable model (DV = Creativity W2)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>t</i>	
Constant	.43	1.14	.95	
LMX W1	.10	.22	3.35*	
Gender	.59	.09	.12	
Education	-.38	.24	.26	
Dependent variable model (DV = Innovation W2)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>t</i>	
Constant	-.42	.64	-.66	
Creativity W2	.81	.05	15.45**	
LMX W1	.22	.13	1.76	
Gender	.01	.14	.24	
Education	.03	.05	.21	
Indirect effect of LMX W1 on innovation W2				
	Effect	Boot SE	BootLLCI	BootULCI
Creativity W1	.59	.18	.24	.91

<sup>a</sup> Bootstrap (Boot) sample size = 10,000. Level of confidence interval = 95% unstandardized regression coefficients. W1 = Wave 1, W2 = Wave 2.

\**p* < .05.

\*\**p* < .01.

predictors mediation test in Mplus (Muthén & Muthén, 2007), using the regression bootstrapping method developed by Stride, Gardner, Catley, and Thomas (2015). The model contained 14 variables, namely, affect, loyalty, contribution, professional respect, creativity and innovation at both Wave 1 and Wave 2, plus control variables gender and education at Wave 1.

#### Affect

In line with our predictions, results revealed that affect was not a significant predictor of creativity ( $b = -.07$ ,  $p = .246$ ), but that creativity was a significant predictor of innovation ( $b = .57$ ,  $p < 0.01$ ) (see Table 5). Bootstrap analyses indicated that neither the indirect effect (coefficient =  $-0.01$ , 95% CI =  $[-0.16, 0.03]$ ) nor the direct effect (coefficient =  $0.02$ , 95% CI =  $[-0.07, 0.12]$ ) were significant.

#### Loyalty

As expected, results revealed that loyalty was not a significant predictor of creativity ( $b = -.07$ ,  $p = .124$ ). Bootstrap analyses indicated that neither the indirect effect (coefficient =  $-0.03$ , 95% CI =  $[-0.15, 0.00]$ ) nor the direct effect (coefficient =  $0.00$ , 95% CI =  $[-0.08, 0.10]$ ) were significant.

#### Contribution

The results revealed that contribution was not a significant predictor of creativity ( $b = -.06$ ,  $p = .247$ ). Contrary to Hypotheses 2a and 2b, we found that neither the indirect effect of contribution on innovation via creativity (coefficient =  $0.02$ , 95% CI =  $-0.03, 0.09$ ), nor the direct effect (coefficient =  $-0.01$ , 95% CI =  $-0.11, 0.08$ ) were significant.

**TABLE 5** Mediation regressions of innovation and creativity on affect, loyalty, contribution, and professional respect

Mediator variable model (DV = Creativity W2)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>p</i>	
Affect W1	-.07	.25	.246	
Loyalty W1	-.07	.12	.124	
Contribution W1	-.06	.25	.247	
Professional respect W1	.17	.00	.004	
Dependent variable model (DV = Innovation W2)				
Predictor	<i>b</i> <sup>a</sup>	SE	<i>p</i>	
Creativity W2	.57	.00	.000	
Affect W1	.03	.65	.654	
Loyalty W1	.01	.88	.883	
Contribution W1	-.01	.79	.794	
Professional respect W1	.06	.29	.289	
Indirect effects on innovation W2				
	Effect	Boot SE	BootLLCI	BootULCI
Affect W1	-.01	.07	-.07	.12
Loyalty W1	-.03	.06	-.08	.10
Contribution W1	.22	.07	-.03	.09
Professional respect W1	.16	.06	0.8	.27

<sup>a</sup> Bootstrap (Boot) sample size = 10,000. Level of confidence interval = 95% unstandardized regression coefficients. W1 = Wave 1, W2 = Wave 2.

\**p* < .05.

\*\**p* < .01.

#### Professional respect

The results revealed that professional respect was a significant predictor of creativity ( $b = .17$ ,  $p = .004$ ), and creativity—as also reported above—was a significant predictor of innovation ( $b = .57$ ,  $p < 0.01$ ) (see Table 5). In line with Hypothesis 2b, we found that the indirect effect of contribution on innovation via creativity was significant (indirect effect =  $0.16$ , 95% CI =  $0.08, 0.27$ ). Moreover, and in line with Hypothesis 2a, the direct effect of professional respect on innovation was not significant (direct effect =  $0.07$ , 95% CI =  $-0.03, 0.15$ ), consistent with full mediation.

## 5.4 | Conclusion

The results of this study supported, for the most part, our earlier findings. We again found an indirect effect of LMX on innovation: employees who reported higher quality relationships with their supervisor reported being more creative, which in turn predicted higher levels of innovative behavior. However, in this study we also found a small direct effect of our composite measure of LMX on innovation. Notably, this effect was not present when we tested the mediation at the more fine-grained level of LMX

dimensions. Further, our results show that not all dimensions relate equally strongly to creativity and innovation. As expected, professional respect had an indirect effect on innovation through creativity. Thus, employees who held their leaders in high esteem professionally indicated to be more creative and subsequently more innovative. However, contrary to our predictions, contribution was not related to employee creativity or innovation. A possible, yet speculative, explanation is that although employees may be willing to spend effort in achieving work goals, and although this may increase their willingness to perform activities that go beyond the job description (see Greguras & Ford, 2006), these activities may not necessarily be creative or innovative. For instance, it could be that employees perceive exploitative activities (focusing on execution; March, 1991) as more valuable than explorative activities (focusing on experimentation; March, 1991). Creative and innovative behaviors are by definition uncertain in terms of payoff, and as such may not be the first behaviors employees will turn to when motivated to make a contribution; instead, they may focus on investing their efforts in behaviors that are certain to be valued. Finally, as expected, affect and loyalty were not related to employee creativity or innovation.

## 6 | GENERAL DISCUSSION

Although LMX has been linked to innovation (e.g. Janssen & Van Yperen, 2004; Schermuly et al., 2013; Scott & Bruce, 1994; Yuan & Woodman, 2010) in the past, this research has not clearly distinguished creativity and innovation, and results are sometimes inconsistent (e.g. Lee, 2008; Taştan & Davoudi, 2015). Therefore, we tested two competing hypotheses to better understand the effect of LMX on innovation. Firstly, we argued that LMX could have a direct effect on employee innovation, because LMX creates essential resources for successful idea implementation. Secondly, we argued that the relationship between LMX and employee innovation might be explained by employee creativity, because LMX stimulates idea generation.

On the whole, our results offer only weak support for the “direct effect” model: Study 1 showed no support for a direct effect of LMX on innovation, and in Study 2, only a composite measure showed a small direct effect, but this effect disappeared when testing at the level of separate LMX dimensions. In contrast, we found stronger support for the “indirect effect” model. That is, our results suggest that creativity is a critical variable to explain the relationship between LMX and innovation. Employees who experience a high-quality relationship with their supervisor are more creative and in consequence are better at selling and implementing ideas both according to their leaders (Study 1) as well as according to themselves (Study 2). Importantly, Study 2 showed that not all dimensions of LMX predict innovation equally strongly. We found that only professional respect predicted employee innovation via employee creativity, while no such mediation was found for affect, loyalty, and (unexpectedly) contribution. Thus, employees who perceived their leader as competent and as having

relevant skills and knowledge were more likely to be innovative because they were more creative.

### 6.1 | Theoretical implications

This study has several theoretical implications for future research in the field of leadership and innovation. First, it expands our knowledge about the role of LMX in fostering innovation by suggesting that LMX seems to exert its effects on innovation (almost) exclusively through creativity; that is, it does not appear to predict innovation in itself. This is relevant because creativity and innovation are not always related (e.g., Škerlavaj et al., 2014; Somech & Drach-Zahavy, 2013). In these cases, working toward high LMX relationships may not be sufficient to stimulate innovation. Therefore, future research could benefit from examining what stimulates idea implementation when creativity is not related to innovation. Our results confirm the importance of differentiating creativity from innovation.

Another theoretical implication or contribution of our study is that it provides a more fine-grained view of the LMX–innovation relationship by examining the different dimensions of LMX as predictors of innovation through creativity. Of the different dimensions captured by LMX, professional respect, one of the task-oriented dimensions of LMX (Zhou & Schriesheim, 2009, 2010), was the only one that had an effect on innovation. These results are in line with previous findings that show that professional respect is closely related to innovation (Xie & Zhang, 2012). Employees who have professional respect for their leaders may be more aware of the leader's competencies, prominence, and influence within the organization. As a result, employees may feel more empowered and motivated to generate creative ideas. In addition, employees may reciprocate their leaders' competencies by developing and demonstrating their own creative skills. Thus, highly competent leaders may stimulate idea generation and consequently idea implementation (see Van Minh et al., 2017). In addition, employees who have professional respect for their leader may value and profit from the leader's central position within the organization (e.g. Venkataramani, Richter, & Clarke, 2014).

Interestingly, our results stand in contrast to those reported by Lee (2008), who found that only the loyalty dimension predicted employee innovation. One possible explanation for this difference is that in our study all LMX dimensions were included as covariates in the model to account for their effect, while in Lee's study the other dimensions were not added as controls. Another explanation could be found in the instruments that were used to measure innovation. Lee (2008) used the adaptive-innovation inventory developed by Kirton (1976) to assess cognitive styles. We used the Janssen (2001) innovative work behavior scale that captures employee behaviors. Thus, the nature of the dependent variable in these studies was quite different. Moreover, Lee (2008) collected data from R&D professionals in Singapore, whereas in our study we collected data in the Netherlands and in the United States. National cultural values permeate organizations and influence how organizations from specific cultures innovate (Shane, 1993). Previous studies have shown that

cultural differences affect innovation (e.g. Shane, 1992, 1993; Taylor & Wilson, 2012). For example, Shane (1992) examined data from 33 countries and found that individualistic and non-hierarchical cultures were more innovative than their collectivistic and hierarchical counterparts.

Our results also have implications for the literature on creativity and innovation, especially regarding the relation between these two. As explained earlier, the relation between creativity and innovation is often problematic: Creativity in itself is an insufficient condition for innovation to occur, and the successful transition from creativity to innovation often requires something more than factors stimulating creativity (e.g., Baer, 2012; Perry-Smith & Mannucci, 2017; Rietzschel et al., 2019). Thus, for example, Somech and Drach-Zahavy (2013) found that team creativity, which was predicted by member personality and team diversity, only carried over into actual implementation among teams with a favorable climate. In contrast, our results on the indirect pathway to innovation seem to suggest that creativity stimulated by LMX does carry over into innovation without the presence of other moderating variables (although we did not explicitly test that possibility in these studies). There are several possible explanations for this that would be interesting to address in future research.

One possibility is that high-quality leader-follower relations are likely to co-occur with other favorable contextual factors, such as a positive *climate for innovation* (Anderson & West, 1996). Climate for innovation has been found to be among the strongest predictors of innovation (see, e.g., Hülsheger, Anderson, & Salgado, 2009). Leaders with whom employees develop high-quality relations may be good at stimulating a positive and constructive team climate, which would enable employees to turn their ideas into implemented products and procedures. On the team level, Somech and Drach-Zahavy demonstrated that climate for innovation was essential for enabling teams to successfully implement their creative ideas. Another very plausible possibility is that such leaders are likely to provide their employees with sufficient levels of *support*, which could strengthen the relation between creativity and innovation. Škerlavaj et al. (2014) found that leader support was a crucial resource enabling employees to turn high levels of creativity into actual innovation. Thus, it may be that LMX tends to co-occur with specific other behaviors on the side of the leader that strengthen the relation between creativity and innovation.

On the employee side of the relationship, it could be that high-quality LMX stimulates employees to display specific creative behaviors that are more likely to lead to innovation. For example, employees who experience high-quality LMX with their leader might be energized to pitch their ideas more enthusiastically, which in turn may contribute to the way these ideas are received and evaluated (Goncalo, Flynn, & Kim, 2010) and therefore may contribute to their implementation. Alternatively, high-quality LMX relationships may empower or motivate employees to supplement their creative efforts with other activities that increase the likelihood of their ideas getting implemented, such as networking behaviors with other stakeholders within the organization; Baer (2012) found that such behaviors were crucial in increasing the chances of creative ideas getting implemented. All in all, these results raise some interesting questions for future research.

## 6.2 | Practical implications

The results of our study have several—tentative—practical implications. Firstly, leaders and employees striving for innovation should be aware of the importance of playing an active role in developing unique relationships with each other. Thus, leaders and employees should take the first steps towards expanding the relationships beyond formal ties by supporting, encouraging, and understanding each other's needs. It is important for both parties to realize that building such relationships can have several positive consequences, one of which is creativity (and in turn innovation). Since creativity is inherently risky but potentially valuable, it is important to realize that good supervisor-follower relationships are an important resource and not a mere luxury. The dyadic perspective of the LMX framework moreover suggests that building these kinds of relationships really needs to be done on a dyadic level; it is not enough for leaders to adopt the same style or attitude for all of their subordinates. Secondly, and relatedly, our study suggests that one of the most relevant resources for employee creativity and innovation may be professional respect. This means that leaders should develop and, especially, make accessible to employees their skills, knowledge, and competence. Employees are more creative and innovative when they perceive that the leader is highly competent because they could ask for guidance and suggestions if they need it (Van Minh et al., 2017). Moreover, leaders who are able to command high professional respect may be in a better position to provide their followers with the support, legitimacy, and influence required to move their ideas to implementation. For leaders, this means that they may have to invest effort into building, projecting, and maintaining a competent professional image toward their subordinates as well as to other stakeholders in the organization. Finally, our findings suggest that organizations can improve their employees' innovative performance by providing leaders with a training program based on LMX (Graen et al., 1982). Such training should help leaders to establish and improve unique reciprocal relationships with their employees.

## 6.3 | Limitations and future research

There are some strengths and limitations to our studies that must be taken into account when interpreting the results. We believe that an important strength of this work is the multisource, multi-method nature of the studies, which lends confidence to our results. In terms of limitations, the sample size of our first study is limited and may have reduced the generalizability of the findings. Further, this study relied on a convenience sample, which inevitably raises concerns regarding representativeness and generalizability. A strong point of this sample, however, is that it consisted of leader-follower dyads across several organizations. The sample in Study 2 was an MTurk sample. MTurk samples are generally more heterogeneous than traditionally recruited convenience samples (Huff & Tingley, 2015). However, previous research has shown that data using MTurk are at least as reliable as data obtained using

more traditional methods (Buhrmester et al., 2011; McCredie & Morey, 2018).

Another clear limitation of our studies is that we cannot draw causal conclusions because of the correlational nature of our studies. While it may seem reasonable to assume that LMX affects employees' creative and innovative behavior, this is not something we can conclude based on these data. Indeed, in principle it could be the case that employees who are creative and innovative work toward building high-quality relationships with their supervisors. For instance, it has been argued that in the initial stage of LMX development, the basis for relational consideration revolves more around the extent to which various characteristics of the leader and employee are found appealing by the two individuals. If a leader and employee both possess creativity-related characteristics, these may represent a basis for considering the further development of a high LMX relationship (see Tierney, 2015). It would be interesting to use experimental manipulations to assess the causal influence of LMX on creativity and innovation. For example, future research could manipulate the degree to which participants are exposed to LMX in different stages of an innovation task (see Rietzschel, Wisse, & Rus, 2017). However, the relational nature of LMX makes this a particularly difficult leadership construct to adequately capture in experimental manipulations.

An additional limitation of our studies is that we only captured LMX from the subordinate's perspective. Future research might assess LMX from both the leader's and the member's perspective to more fully test the relationship between LMX and innovation through creativity. Given our reasoning, it makes sense to test our hypotheses with LMX as perceived by the subordinate, but it would be interesting to see whether similar or different results emerge when capturing the other side of the leader-follower relation. Leaders and members do not always share the same perception of LMX (Choi, 2013). For example, Olsson et al. (2012) found in a field study that LMX had a positive effect on creativity when LMX was rated by the leader and a negative effect when it was rated by the leader and the employee. Therefore, future research could further uncover the relationship between LMX and innovation by considering LMX from both the leader's and the member's perspective. Leaders' perceptions of their relationship with a specific follower may well affect their behavior regarding this specific follower (e.g., providing more or less support for innovation) and hence shape the follower's creative and innovative performance in a unique way not captured by the follower's LMX perception. Moreover, this approach has proven to be helpful in overcoming common-source variance problems in LMX research (e.g. Goodwin, Bowler, & Whittington, 2009).

## 7 | CONCLUSION

In this study, we proposed and tested two competing hypotheses reflecting the potential direct and indirect effect of LMX on innovation. Our results demonstrated that the social exchange relation between leaders and followers can significantly affect innovation. Moreover, our results draw attention to the mediating role of creativity in the

relationship between LMX and innovation. These findings are particularly relevant in the current dynamic and competitive environment in which the rate of change is accelerating. Thus, we can conclude that leadership should not only be about motivating followers to be innovative, but also about helping them be creative by engaging them in meaningful relationships where valuable resources are exchanged.

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## ORCID

Jesús Mascareño  <https://orcid.org/0000-0003-2044-9529>

Eric Rietzschel  <https://orcid.org/0000-0003-2805-4935>

## ENDNOTE

<sup>1</sup> In the second wave, 398 respondents completed the online survey, but 87 respondents were not included because of poor response quality such as straightlining and extremely short response times (DeSimone & Harms, 2018; Greszki, Meyer, & Schoen, 2015; Kittur, Chi, & Suh, 2008).

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## AUTHOR BIOGRAPHIES

**Jesús Mascareño** is a PhD candidate at the University of Groningen. His research is about the determinant role of leadership in team innovation; specifically on how, when and why leaders can

contribute to the creation of teams that are both creative and innovative.

**Eric Rietzschel** is assistant professor of Organizational Psychology at the University of Groningen. His research is mainly focused on creativity and innovation, group processes and team performance.

**Barbara Wisse** is professor of Organizational Psychology at the University of Groningen and Chair of Management at Durham University (UK). Her work focuses explicitly on power and leadership processes and often revolves around topics such as ethics and morality, emotions, Dark Triad personality traits and the psychological effects of change.

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