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# The influence of leader-member exchange differentiation on work unit commitment: the mediating role of support climate[1]

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**Abstract**

We investigated whether the influence of LMX differentiation (the extent to which the quality of the leader-member relationships within a work unit varies) on work unit commitment is mediated by support climate. We tested this mediated relationship in a sample composed of 30 health care units. The results obtained showed that LMX differentiation measured at Time 1 was negatively related to work unit support climate measured one year later (Time 2), which in turn was positively related to work unit commitment measured at Time 2. The negative indirect effect of LMX differentiation on work unit commitment through support climate was statistically significant. Our study contributes to having a better understanding of the role of LMX differentiation in work unit functioning.

**Keywords:** leader-member exchange theory; leader-member exchange quality; LMX differentiation; support climate; work unit commitment

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**A influência da diferenciação das relações líder-membro no comprometimento com a unidade de trabalho: o papel mediador do clima de apoio**

**Resumo**

Investigámos se a influência da diferenciação de LMX (o quanto a qualidade das relações de líder-membro dentro de uma unidade de trabalho varia) no comprometimento com a unidade de trabalho é mediada pelo clima de apoio. Testámos essa relação mediada em uma amostra composta por 30 unidades de saúde. Os resultados obtidos mostraram que a diferenciação da LMX medida no Tempo 1 foi negativamente relacionada ao clima de suporte da unidade de trabalho medido um ano depois (Tempo 2), que por sua vez foi positivamente relacionado ao comprometimento com a unidade de trabalho medido no Tempo 2. O efeito indireto negativo da diferenciação da LMX no comprometimento com a unidade de trabalho por meio do clima de apoio foi estatisticamente significativo. O nosso estudo contribui para uma melhor compreensão do papel da diferenciação do LMX no funcionamento da unidade de trabalho.

**Palavras-chave:** teoria de troca líder-membro; qualidade de troca de líder-membro; diferenciação de LMX; clima de apoio; comprometimento de unidade de trabalho

## INTRODUCTION

Leadership is a key process in understanding how work units' function and perform. Different theories have been developed to advance knowledge about the leadership phenomenon. One theory that has stimulated considerable research in recent decades is the leader-member exchange (LMX) theory (Graen & Cashman, 1975; Graen & Uhl-Bien, 1995). This theory posits that leaders develop distinct relationships with their subordinates depending on the quality of the exchanges involved. High quality LMX relationships are characterized by exchanges of both material and non-material resources, where partners tend to show high levels of mutual respect, trust, affection and obligation (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Schiemann, 1978; Graen & Uhl-Bien, 1995; Liden, Wayne, & Stilwell, 1993). Low quality LMX relationships are characterized by transactional exchanges based on the specifications of the employment contract. In the latter case, partners generally show low levels of mutual respect, trust, affection and obligation. The extent to which there are distinct quality relationships within a unit is referred to as LMX differentiation (Henderson, Liden, Glibowski, & Chaudhry, 2009). LMX

differentiation is a fundamental element of LMX theory (Erdogan & Bauer, 2014). However, empirical research at the work-unit level on the relationship between LMX differentiation and unit outcomes is still scarce (Ma & Qu, 2010), and it has mainly focused on examining interaction effects between LMX-differentiation and other work-unit characteristics. For instance, Liden, Erdogan, Wayne and Sparrowe (2006) did not find a direct relationship between LMX differentiation and work group performance. However, they found two first-order interactions showing that LMX differentiation interacted with task interdependence and with the LMX median, so that the relationship between LMX differentiation and work group performance was positive when groups' task interdependence was high and their LMX median was low. In Stewart and Johnson's (2009) study, LMX differentiation was not directly associated with work group performance. However, the relationship was positive when gender diversity and aggregate LMX were high. Boies and Howell (2006) found an interaction effect between teams' mean LMX and LMX differentiation on team conflict and team potency (although the sign was contrary to the one expected). Finally, Le Blanc and González-Romá (2012) found that LMX differentiation was positively related to affective commitment and performance only in work units with a low LMX-quality median. Hence, previous research has mainly focused on the boundary conditions (i.e., moderators) of the LMX differentiation-unit outcomes relationship, but it has not paid attention to the possibility that certain variables (i.e., mediators) link LMX differentiation to unit outcomes (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). In other words, only few studies have examined whether LMX differentiation and unit outcomes are *indirectly* related through hypothetical mediators (Li & Liao, 2014; Sui, Wang, Kirkman, & Li, 2016). This gap in the literature seriously limits the understanding of the relationship between LMX differentiation and work unit outcomes because the mechanisms underlying this relationship may remain hidden. Therefore, in order to contribute to filling this gap, the goal of this study is to determine whether the relationship between LMX differentiation and a relevant work unit outcome (work unit commitment) is mediated by work unit support climate. Our research model is shown in Figure 1.


*Figure 1*. The research model.

We conceptualized support climate as the unit members' shared perception of the extent to which the relationships among unit members are characterized by interest, concern and support. We chose support climate as a plausible mediator

for several reasons. First, as we will see later in more detail, some studies suggest that LMX differentiation can create problems in the relationships among peers (Erdogan & Bauer, 2010; Sherony & Green, 2002). These difficulties should be mirrored in work unit support climate and transmitted to other variables through this climate variable. Thus, work unit support climate is a plausible mediator of the LMX differentiation-work unit outcomes relationship. Moreover, this climate facet is crucial to work units' effectiveness (Kopelman, Brief, & Guzzo, 1990). To accomplish their goals in changing and complex environments, unit members must help each other solve the problems they encounter in their jobs and within their units.

Work unit commitment is defined as the shared psychological attachment unit members feel for their work unit. This psychological attachment is based on identifying with and internalizing work unit goals and values (O'Reilly & Chatman, 1986). We chose unit commitment as the key outcome variable in this study because goal achievement in work units involves a large amount of coordinated effort that is facilitated when unit members share a high level of commitment with their unit. Thus, unit commitment is a key collective construct for work unit effectiveness (Aubé & Rousseau, 2005).

Our study attempts to make three specific contributions to the literature. First, this investigation can help to improve our understanding of the mechanisms underlying the LMX differentiation-work unit commitment relationship by showing one of the mediators linking these two constructs. Second, we contribute to the development of LMX theory at the collective level. Graen and Uhl-Bien (1995) proposed four stages in the development of LMX theory. Stage 4 focuses on "how differentiated dyadic relationships combine together to form larger systems of network assemblies" (Graen & Uhl-Bien, 1995, p. 233); thus, at this stage the focus is on higher-level LMX constructs. Specifically, "Stage 4 involves investigating … the effects of differentiated relationships on … the entire structure" (p. 234). By examining the influence of LMX differentiation on two work unit properties (support climate and commitment), we provide empirical evidence to support the extension of LMX theory at higher levels of analysis. Third, we contribute to extending the integration of LMX and climate theories initiated by Kozlowsky and Doherty (1989) by showing how LMX differentiation is related to work unit support climate. Previous research has shown that LMX differentiation is related to climate strength (i.e., within-unit agreement in climate perceptions; Cogliser & Schriesheim, 2000), but its relationship with climate intensity (i.e., the aggregate score on a given climate dimension) has been investigated less.

Moreover, from a practical perspective, an improved understanding of the LMX differentiation-work unit commitment relationship may be useful in designing strategies for better managing teams based on LMX propositions and findings. For

instance, if LMX differentiation is found to be negatively related to work unit commitment via a negative relationship with support climate, unit managers should learn how to minimize differentiated leader–member relationships within their teams.

### *LMX differentiation and support team climate*

As a shared perception, support climate emerges at the work unit level through interactions among work unit members (Ashforth, 1985; Moran & Volkwein, 1992; Schneider & Reichers, 1983). Through these interactions, unit members communicate, confront and discuss their interpretations of work events, and they develop a shared interpretation of their work setting. Work unit members engage in this sense-making process because it gives them the opportunity to compare their own perceptions with those of their peers through a social verification process (Zohar, 2010), and it helps them to understand a complex and changing environment.

Our first hypothesis posits that LMX differentiation is negatively related to work unit support climate. LMX differentiation creates status differences within the work unit based on the quality of the leader-member relationships (Liden et al., 2006). Unit members with a high-quality relationship are considered to have a high status within the unit, whereas unit members with a low-quality relationship with their leader are considered to have a low status. We argue that as LMX differentiation increases, the associated status differences within the unit will hamper the unit's support climate. This relationship can be based on the similarity-attraction paradigm, which posits that individuals tend to be attracted to others who are perceived as like them (Berscheid & Walster, 1978; Byrne, 1971; Green, Anderson, & Shivers, 1996). People prefer to interact with other individuals who have (or are perceived to have) characteristics (e.g., sex, age, tenure, status), beliefs and attitudes like their own (Barsade & Gibson, 1998; George, 1996; Williams & O'Reilly, 1998), due to the reinforcing value of similarity. Similarity provides positive reinforcement for one's attitudes and beliefs, while dissimilarity is seen as frustrating. When unit members have similar LMX relationships with their leader (i.e., there is low LMX differentiation), they will also have a similar status within the unit. According to the similarity-attraction paradigm, this similarity will foster attraction among unit members, which in turn will promote interest and concern for similar others. Therefore, as LMX differentiation decreases, the unit's support climate will increase. In contrast, as LMX differentiation increases, unit members' attraction to other unit members (with distinct LMX relationships with their leader) will decrease, deterring behaviors of interest and concern for other unit members and causing the work unit's support climate to go down. Previous research conducted at the dyadic level is congruent with this

rationale. Sherony and Green (2002) found that the dissimilarity between the LMX relationships that two coworkers had with their leader was negatively related to the quality of the relationship between these two coworkers. This finding suggests that, at the unit level of analysis, when there is high variability in LMX relationships (i.e., high LMX differentiation), relationships among unit members have poorer quality and are less supportive (Erdogan & Bauer, 2010). Therefore, based on the arguments and findings presented above, we posit the following:

*Hypothesis 1:* LMX differentiation is negatively related to work unit support climate.

***Support team climate and work unit commitment***

Our second hypothesis posits that work unit support climate is positively related to work unit commitment. As stated above, work unit commitment is conceptualized as the shared psychological attachment unit members feel for their work unit. This psychological attachment is based on identifying with and internalizing the work unit's goals and values (O'Reilly & Chatman, 1986). Work unit commitment emerges as shared psychological attachment at the unit level through several processes, such as socialization and social interaction. Through formal (e.g., planned training courses) and informal (e.g., on-the-job assignments, and help and guidance from coworkers while solving work problems) socialization tactics, work unit members learn and internalize the goals and values of their work unit (Van Maanen & Schein, 1979). By means of these learning and internalization processes, socialization tactics implemented in work units foster members' psychological attachment to their unit. Social information processing theory (Salancik & Pfeffer, 1978) posits that employees' attitudes and beliefs are like those of other coworkers with whom they interact. According to this theory, within a given work unit, members influence the attitudes and beliefs of their coworkers by providing relevant information about an object or situation (e.g., the work unit's goals and values) and by rewarding the adoption of this information (e.g., providing contingent social and instrumental support). Therefore, based on social information processing theory, the emergence of shared attitudes at the unit level (such as work unit commitment) is expected and rewarded (Burkhardt, 1994). Previous studies have provided empirical evidence showing that work unit members tend to share their levels of work unit commitment (González-Romá, Peiró, & Tordera, 2002; Kirkman & Rosen, 1999; Le Blanc & González-Romá, 2012).

The expected positive relationship between work unit support climate and work unit commitment is based on the following rationale. In work units with a high support

climate, relationships among unit members are characterized by interest, concern and help. These supportive relationships can promote psychological attachment to the work unit (i.e., commitment) because they foster a sense of belonging among unit members that contributes to fulfilling their affiliation and social needs (O'Reilly & Chatman, 1986; Ostroff & Bowen, 2000). Supporting the aforementioned relationship, in a sample of work units from a regional public health service, González-Romá et al. (2002) found that support climate was positively related to organizational commitment. Therefore, based on the arguments and findings presented above, we posit the following:

*Hypothesis 2:* Work unit support climate is positively related to work unit commitment.

### *A hypothesized mediated relationship*

Taking Hypotheses 1 and 2 into account, we expect LMX differentiation to have a negative indirect "effect" on work unit commitment through work unit support climate. Moreover, we posit that the expected mediation will be full. Full mediation is congruent with the input-processes-output (I-P-O) model (McGrath, 1984) and the input-mediator-output-input (IMOI) model (Ilgen, Hollenbeck, Johnson, & Jundt, 2005), in which processes and mediators (e.g., work unit support climate) are posited to transmit the influence of work unit inputs (LMX differentiation) on work unit outcomes (commitment). Moreover, in a recent study, Le Blanc and González-Romá (2012) observed that the direct relationship between LMX differentiation and work unit commitment was not statistically significant. Therefore, we hypothesize the following:

*Hypothesis 3:* The relationship between LMX differentiation and work unit commitment is fully mediated by work unit support climate, so that the corresponding indirect effect is negative.

## METHOD

### *Sample and data collection*

Data were collected from a convenience sample composed of thirty health care units. These units were composed of different health professionals (e.g., doctors,

nurses, and auxiliary personnel) and had a formal unit leader or director who was generally one of the unit doctors. The health care units' leaders were contacted by a member of our research unit and invited to participate in the study. Unit members were informed about the study general goals, and confidentiality and anonymity of the data were guaranteed. Participation in the study was voluntary. Once unit members agreed to participate, a member of our research team visited each of the health care units and gathered data by means of collective administration of the questionnaire designed for this investigation.

Data were collected at two time points separated by one year. This time lag was long enough to observe significant relationships among the study variables over time, but it was mainly determined by the participating work units' availability. At Time 1, we gathered information about the leader-member exchange quality and demographic characteristics of the health care units' members. At Time 2, we collected information about demographic characteristics, support climate and work unit commitment.

The data analyzed in this study were those provided by the non-leader members of the health care units. At Time 1, 421 subjects responded to the questionnaire. The average response rate across work units was 59%. Fifty-five percent of the respondents were women. Respondents' average age was 36.3 years (SD = 7.1), and their average tenure in their health care unit was 4.7 years (SD = 3.0). At Time 2, 313 subjects responded to the questionnaire. The average response rate across work units was 49%. At this time, 58.4% of the respondents were women, the average age was 36.4 (SD = 7.6), and the average tenure in the unit was 5.5. (SD = 3.3). The average size of the health care units participating in the study was the same at both time points (26.8 members, SD = 13.9).

### *Measures*

*LMX differentiation*. LMX quality was measured at Time 1 from the health care unit members' perspective by means of Scandura and Graen's (1984) 7-item scale (e.g., "To what extent do you find your supervisor able to understand your problems and needs?", "To what extent do you think your supervisor recognizes your potential?"). Unit members answered using a 4-point response scale, where 1 was indicative of high quality LMX, and 4 was indicative of low quality LMX. Before computing LMX quality scores, respondents' scores were reversed, so that high scores were indicative of high quality LMX. Cronbach's alpha equaled .88.

Once unit members' scores on LMX quality had been obtained, within-unit standard deviation was used to operationalize LMX differentiation for each health

care unit. Higher within-unit standard deviation implies greater variability in unit members' assessments of LMX quality, representing more LMX differentiation.

Because within-unit variability measures are influenced by within-unit central tendency statistics (see Lindell & Brandt, 2000), we controlled for work units' central tendency on LMX quality scores. Given that LMX theory assumes that LMX quality can vary across leader-member relationships within a single unit, within-unit agreement is not expected. In such cases, the mean or average is not an appropriate measure (Bliese, 2000), and the median is preferred (Henderson et al., 2009; Liden et al., 2006). Thus, we computed the median LMX quality for each health care unit to represent the units' central tendency in LMX quality.

*Support climate*. Work units' support climate was measured at Time 2 by means of 4 items (e.g., "How many people in your work unit with personal problems are getting help?") selected from the FOCUS climate questionnaire (Van Muijen et al., 1999). The support climate scale of the FOCUS questionnaire is composed of eight items whose content refers to support received from coworkers and formal leaders. In order to avoid content overlapping between the LMX and support climate measures, we dropped the items referring to support received from the work units' formal leaders. Using unit members' responses, the four items were submitted to a principal axis factor analysis. The results showed that the four items loaded on a single factor that explained 50.4% of common variance. All the factor loadings were greater than .49. Cronbach's alpha for the support climate scale was .67.

To obtain a support climate score for each work unit, we aggregated work unit members' scores in this variable. Prior to aggregating, we obtained empirical evidence for aggregation by using two complementary approaches (Kozlowski & Klein, 2000): a consensus-based approach: computation of James, Demaree and Wolf's (1993) $r_{wg(J)}$; and a consistency-based approach: computation of the intraclass correlation coefficient (ICC(1)). The average $r_{wg(J)}$ across work units was .74 ($SD$ = .13, Median = .77), which indicated a sufficient level of within-unit agreement. The one-way ANOVA conducted to compute ICC(1) showed that there were statistically significant differences in support climate across work units ($F(29, 283) = 1.9$, $p < .01$). The value obtained for ICC(1) equaled .08, which is within the typical range of values (.05 – .20) suggested by Bliese (2000). Therefore, we concluded that aggregation of support climate scores at the work unit level was justified.

*Work unit commitment*. This variable was measured at Time 2 by means of a 3-item scale. Two items ("What my work unit stands for is important to me", "I am proud to tell others that I am a part of this work unit") were selected from O'Reilly and Chatman's (1986) scale. The third item ("I share the goals of my work unit") was developed by the authors of the present study. As in the case of support climate, the three items were submitted to a principal axis factor

analysis. The results showed that the three items loaded on a single factor that explained 70.5% of common variance. All the factor loadings were greater than .57. Cronbach's alpha for the work unit commitment scale was .79. To examine the discriminant validity of the support climate and work unit commitment scales, we submitted the seven items involved to a principal axis factor analysis with oblimin rotation. The results showed two factors with eigenvalues greater than 1 that explained 59.1% of common variance. The support and commitment items loaded on different factors, providing empirical evidence for the discriminant validity of the two scales.

To obtain work units' scores on work unit commitment, we aggregated work unit members' scores in this variable. Before proceeding with aggregation, we computed $r_{wg(J)}$ and ICC(1). The average $r_{wg(J)}$ across work units was .72 ($SD$ = .15, Median = .74), which indicated a sufficient level of within-unit agreement. The one-way ANOVA conducted to compute ICC(1) showed that there were statistically significant differences in work unit commitment across work units ($F(29, 277)$ = 2.04, $p < .01$). The value obtained for ICC(1) equaled .09. Therefore, we concluded that aggregation of work unit commitment scores at the work unit level was justified.

*Controls*. Considering that work unit size determines the number of interpersonal contacts within the unit, and work unit tenure may facilitate relationships among unit members, we controlled for these variables. Size data were obtained from the health care units' directors. Work unit tenure data were obtained by asking unit members how long they had been working in their current health care unit and aggregating their responses.

### *Analysis*

All the analyses carried out to test the study hypotheses were conducted at the work unit level. To test for mediation, it is important to note that Baron and Kenny's (1986) procedure has received important conceptual criticisms, especially related to the condition that X (the independent variable) must be related to Y (the dependent variable) (James, Mulaik, & Brett, 2006; LeBreton, Wu, & Bing, 2009; Zhao, Lynch, & Chen, 2010). Moreover, a simulation study showed that this procedure has low power to detect mediation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

Mediation involves a causal relationship in which an independent variable (X; LMX differentiation) impacts on a mediator (M; support climate), which in turn impacts on a dependent variable (Y; work unit commitment). To estimate these relationships (X à M à Y), two regression models are needed. First, the mediator (M) is

regressed onto the independent variable (X): $M = \beta_{0(1)} + \alpha X + \varepsilon_1$ (Equation 1; where $\beta_{0(1)}$ and $\varepsilon_1$ are the intercept and error term, respectively). Second, the dependent variable (Y) is regressed onto the mediator (M), controlling for the independent variable (X): $Y = \beta_{0(2)} + \tau X + \beta M + \varepsilon_2$ (Equation 2). The product $\alpha\beta$ is the mediated or indirect effect, whereas ($\tau$) is the non-mediated or direct effect. One can say that a relationship is mediated if: 1) X is significantly related to M (testing for $\alpha$); 2) M is significantly related to Y after controlling for X (testing for $\beta$); and 3) the mediated effect is statistically significant (testing for $\alpha\beta$) (MacKinnon, 2008).

We estimated the two regression models mentioned above by using SPSS 19. In these analyses, work units' median LMX quality was considered as a covariate whose impact was controlled for. The statistical significance of the mediated or indirect effect was tested by means of bootstrapping techniques as implemented in PROCESS for SPSS v2.11 (Hayes, 2013).

## RESULTS

Descriptive statistics and the correlations among the study's work unit variables are displayed in Table 1. As expected, LMX differentiation was negatively related to work unit support climate ($r$ = -.55, $p$ = .001), and the latter was positively related to work unit commitment ($r$ = .63, $p$ < .001). Team tenure was not significantly related to support climate ($r$ = .23, $p$ = .23), but team size was ($r$ = -.48, $p$ = .007). Therefore, we only controlled for team size when we estimated the relationship between LMX differentiation and support climate.

Table 1
Descriptive statistics and correlations among the work unit study variables

| | *Mean* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. Team tenure-T1 | 4.6 | 1.4 | | | | | | |
| 2. Team size-T1 | 26.8 | 13.9 | -.35 | | | | | |
| 3. LMX Differentiation-T1 | .53 | .16 | -.15 | .35 | | | | |
| 4. LMX Median-T1 | 2.36 | .36 | .08 | -.26 | -.25 | | | |
| 5. Support climate-T2 | 3.30 | .45 | .23 | -.48** | -.55** | .56** | | |
| 6. Work unit commitment-T2 | 3.76 | .33 | .05 | -.34 | -.18 | .53** | .63** | |

*Note.* $N$ = 30 work units. **$p$ < .01; *$p$ < .05, two tailed.

Hypothesis 1 proposes that LMX differentiation is negatively related to work unit support climate. To test this hypothesis, support climate at Time 2 was regressed

on LMX differentiation at Time 1, controlling for LMX median and team size, both measured at Time 1. The results obtained are displayed in Table 2. The regression coefficient estimating the relationship between LMX differentiation at Time 1 and support climate at Time 2 was negative and statistically significant ($\beta$ = -.37, $p$ = .016). LMX differentiation accounted for an additional 11% of the explained variance in support climate. This increase in R-squared was statistically significant ($\Delta F$ (1, 26) = 6.6, $p$ = .016). These results provide empirical support for Hypothesis 1.

Table 2
*Regression analyses to estimate the relationship between LMX differentiation at Time 1 and work unit support climate at Time 2*

| Predictors | Step 1 | Step 2 | Step 3 |
|---|---|---|---|
| Team size T1 | -.48** | -.36* | -.25 |
| LMX median T1 | | .47** | .41** |
| LMX differentiation T1 | | | -.37* |
| $R^2$ | .23** | .44** | .55** |
| $F$ | 8.57** | 10.6** | 10.7** |
| $\Delta R^2$ | | .21** | .11* |
| $\Delta F$ | | 9.9** | 6.6* |

*Note.* $^{**}p < .01$; $^{*}p < .05$ (two-tailed). The regression coefficients shown are standardized.

Hypothesis 2 proposes that work unit support climate is positively related to work unit commitment. To test this hypothesis, work unit commitment at Time 2 was regressed on support climate at Time 2, controlling for LMX differentiation and LMX median, both measured at Time 1. The results obtained are displayed in Table 3. The regression coefficient estimating the relationship between support climate and work unit commitment was positive and statistically significant ($\beta$ = .61, $p$ = .005). Work unit support climate explained an additional 18% of the explained variance in work unit commitment. This increase in R-squared was statistically significant ($\Delta F$ (1, 26) = 9.24, $p$ = .005). These results render empirical support for Hypothesis 2.

Table 3
*Regression analyses to estimate the relationship between work unit support climate and work unit commitment at Time 2*

| Predictors | Step 1 | Step 2 |
|---|---|---|
| LMX median T1 | .52** | .25 |
| LMX differentiation T1 | -.05 | .22 |
| Work unit support climate T2 | | .61** |

| | | |
|---|---|---|
| $R^2$ | .29** | .47** |
| $F$ | 5.44* | 7.81** |
| $\Delta R^2$ | | .18** |
| $\Delta F$ | | 9.24** |

*Note.* $^{**}p < .01$; $^{*}p < .05$ (two-tailed). The regression coefficients shown are standardized.

Hypothesis 3 posits that the relationship between LMX differentiation and work unit commitment is fully mediated by work unit support climate, so that the corresponding indirect effect would be negative. To test Hypothesis 3, we first checked whether the conditions for mediation were met. The results presented above showed that the independent variable (X; LMX differentiation) was related to the mediator (M; support climate), which in turn was related to the dependent variable (Y; work unit commitment), after controlling for the independent variable. Thus, we concluded that the two first conditions for mediation were met. Then, we tested the statistical significance of the mediated or indirect effect ($\alpha\beta$ = -.59, in unstandardized metric[4]). To do so, we used bootstrapping techniques. The number of bootstrap samples extracted to compute the bias-corrected 95% confidence interval was 1000. The results obtained showed that the lower and upper limits of this interval were -1.27 and -.23, respectively. Because the 95% confidence interval for the indirect effect did not include the value of zero, we concluded that the indirect or mediated effect was statistically significant. Therefore, the third condition for mediation was also met. Moreover, because LMX differentiation at Time it was not directly related to work unit commitment (see Table 3), we concluded that the mediation was full. Taken together, these results provide empirical support for Hypothesis 3[5].

## DISCUSSION

The goal of the present study was to ascertain whether the relationship between LMX differentiation and work unit commitment was mediated by work unit support

4 We use a non-standardized metric here because it is the metric used by PROCESS to estimate indirect effects and the corresponding confidence intervals.

5 Taking into account that previous studies found an interaction effect between LMX median and LMX differentiation on work unit outcomes (e.g., Le Blanc & González-Romá, 2012; Liden et al., 2006), we also investigated this interaction effect. The results obtained showed that the interaction term composed of LMX median and LMX differentiation was not related to either support climate or work unit commitment, and that the indirect effect of LMX median on work unit commitment mediated by support climate was not moderated by LMX differentiation.

climate. The results obtained provide empirical evidence supporting the hypothesized mediated relationship, and show that LMX differentiation is negatively and indirectly related to work unit commitment through its negative relationship with work unit support climate.

### *Implications for theory and research*

The findings reported here have important theoretical implications. First, our study shows that work unit support climate is one of the mechanisms linking LMX differentiation and work unit commitment, and it suggests a theoretical explanation for it. Our theoretical rationale proposed that LMX differentiation produces status differences within the work unit between members with high and low quality LMX relationships (Liden et al., 2006). According to the similarity-attraction paradigm (Berscheid & Walster, 1978; Byrne, 1971; Green et al., 1996), these differences decrease attraction and interaction among work unit members and discourage behaviors of interest and concern for other unit members, which is mirrored in a low support climate within the unit. Thus, LMX differentiation has a negative influence on work unit support climate. Work units with low support climates cannot fulfill the affiliation and social needs of their members, which in turn dampens their psychological attachment (i.e., commitment) to their work unit. Our results at the work unit level are in line with previous findings obtained at the dyadic level showing that the dissimilarity between the LMX relationships of two coworkers with their leader was negatively associated with the quality of the relationship between the two coworkers (Sherony & Green, 2002). Taken together, all these findings suggest that LMX differentiation may be harmful to relationships among work unit members.

Second, our study contributes to developing LMX theory at higher levels of analysis by showing that one of its key higher-level constructs (LMX differentiation) significantly impacts two work unit properties: it is directly related to work unit support climate and indirectly related to work unit commitment. Moreover, our study provides a theoretical explanation for the relationships observed. The results reported here and those obtained by previous studies (e.g., Boies & Howell, 2006; Le Blanc & González-Romá, 2012; Liden et al., 2006; Stewart & Johnson, 2009) point out that the prospects of LMX research at higher levels of analysis are promising and will contribute to leading LMX theory into its fourth, team-level stage of development (Graen & Uhl-Bien, 1995). In our opinion, LMX differentiation plays a prominent role in this fourth stage (Henderson et al., 2009).

Third, previous research on LMX differentiation carried out at the work unit level of analysis has mainly focused on examining direct and interaction effects

on work unit outcomes (e.g., Boies & Howell, 2006; Le Blanc & González-Romá, 2012; Liden et al., 2006; Stewart & Johnson, 2009). Together with Li and Liao's (2014) and Sui et al.'s (2016) findings, our study shows that mediation models can contribute to improving our understanding of the role played by LMX differentiation in work units' functioning. One of the advantages of mediation models is that they require a careful examination and justification of the linking mechanisms involved. By elaborating and testing mediation models for LMX differentiation, we can gain more fine-grained knowledge about its impact on work unit properties. In this regard, future research could examine whether the relationship between LMX differentiation and work unit performance is mediated by work unit cohesion. The results presented here and our theoretical rationale suggest that LMX differentiation may be detrimental to work unit members' attraction to or liking of the work unit (i.e., cohesion; Evans & Jarvis, 1980), and the relationship between cohesion and work unit performance is well-documented in meta-analyses (e.g., Beal, Cohen, Burke, & McLendon, 2003). Future studies could also consider work unit conflict and justice as potential mediators of the relationship between LMX differentiation and work unit outcomes (see Martin, Thomas, Legood, & Russo, 2018). Differential treatment of team members by the leader can negatively affect justice within the work unit and trigger conflict.

Fourth, our study contributes to extending the integration of LMX and climate theories initiated by Kozlowsky and Doherty (1989). These authors showed that by developing high quality relationships, leaders can have a relevant influence on individual perceptions of climate (i.e., psychological climate). Later, Cogliser and Schriesheim (2000) extended the LMX-climate relationship to a higher level of analysis by showing that LMX differentiation was negatively related to climate strength (i.e., within-unit agreement in climate perceptions). Our study contributes to strengthening this extension by showing that LMX differentiation is also negatively related to climate intensity (i.e., mean score) in support climate. These results suggest that LMX differentiation shapes work unit climate through different pathways.

### *Practical implications*

Our study findings have clear practical implications for managing work units. First, work unit managers should be informed about and made aware of the dysfunctional consequences that LMX differentiation can have on supportive relationships among work unit members. This knowledge can improve their interest and motivation in learning how to deal with this leadership issue. Second, considering

the observed positive influence of the LMX median on subsequent support climate, and to prevent the dysfunctional consequences of LMX differentiation, work unit managers should be trained to develop high quality relationships with all the members of their work unit. This can be quite challenging, especially in large work units. Fortunately, previous research has shown that LMX training is not difficult to implement, and LMX interventions can be based on introducing behaviors that are easy to perform (e.g., Graen, Novak, & Sommerkamp, 1982; Graen, Scandura, & Graen, 1986; Scandura & Graen, 1984). For instance, Graen et al. (1982) trained managers to improve LMX quality by having one-to-one conversations with their work unit members, in which managers: 1) show interest in members' concerns and work expectations; 2) practice active listening; 3) refrain from imposing their point of view; and 4) share their own work expectations. Interestingly, this LMX-based intervention yielded improvements in productivity and work attitudes in a series of studies (Graen et al., 1982, 1986; Scandura & Graen, 1984).

### *Limitations*

Our study has some limitations that should be kept in mind when interpreting its findings. First, our sample of work units was small, which means that we had low statistical power to test our hypotheses. Nevertheless, the results obtained supported all the study hypotheses. Second, the study sample was composed of only one type of work unit (health care units), limiting the generalizability of our findings. Future studies should test the mediation model investigated here using other types of work units operating in different sectors. Third, all the data analyzed were gathered from the same source (work unit members), which might have contributed to inflating the relationships among the study variables. However, by measuring LMX differentiation and support climate at two different time points separated by one year, we reduced this concern in estimating the relationship between these two variables. Fourth, the time lag between the two measurement points (Time 1 and Time 2) was considered long enough to observe significant relationships among the study variables over time. However, it was mainly determined by practical reasons (i.e., the participating work units' availability). Unfortunately, there is no sound theoretical and empirical knowledge to determine the appropriate lag among the study variables. This is important because an inappropriate lag could result in an underestimation of the relationships observed (Mitchell & James, 2001). And fifth, support climate and work unit commitment were measured at the same time point, which did not allow us to draw sound conclusions about their causal relationship. For instance, based on similarity-attraction theory, it is also plausible that a similar, shared attachment to

the work unit could promote interaction, interest and concern for other work unit members. To overcome this issue, future studies should test the mediation model investigated here by measuring the three key constructs at different time points.

Despite these limitations, by showing the relationships between LMX differentiation and support climate and work unit commitment, our study contributes to developing a research line focused on testing mediation models in an attempt to better understand the role of LMX differentiation in work unit functioning.

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