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Chen Wang

Florida International University, cwang035@fiu.edu

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

EXAMINING THE EFFECTS OF LMX DIFFERENTIATION AND LEADERS' RELATIONSHIPS WITH KEY MEMBERS ON TEAMS: A SOCIAL NETWORKS APPROACH

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

BUSINESS ADMINISTRATION

by

Chen Wang

2020

To: Dean Joanne Li
College of Business

This dissertation, written by Chen Wang, and entitled Examining the Effects of LMX Differentiation and Leaders' Relationships with Key Members on Teams: A Social Networks Approach, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Ravi S. Gajendran

Nathan J. Hiller

Chockalingam Viswesvaran

Katherine A. Frear

Hock-Peng Sin, Major Professor

Date of Defense: July 2, 2020

The dissertation of Chen Wang is approved.

Dean Joanne Li
College of Business

Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2020

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DEDICATION

To my parents.

ACKNOWLEDGMENTS

I would like to thank the 6Ps, who were my biggest support and champions throughout this adventure.

To my professors – Dr. Hock-Peng Sin, Dr. Ravi Gajendran, Dr. Nathan Hiller, Dr. Brooke Buckman, Dr. Kate Frear, Dr. Chockalingam Viswesvaran, Dr. Juan Sanchez, and Dr. Sumit Kundu – thank you for providing me with invaluable guidance and advice, for challenging and helping me in every step of the way, and for unconditionally supporting and encouraging me in becoming a better researcher and educator. I would also like to express my gratitude to my high school teacher, Ms. Xiuyun Liang, who profoundly influenced my values and made me a more resilient person.

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ABSTRACT OF THE DISSERTATION

EXAMINING THE EFFECTS OF LMX DIFFERENTIATION AND LEADERS' RELATIONSHIPS WITH KEY MEMBERS ON TEAMS: A SOCIAL NETWORKS APPROACH

by

Chen Wang

Florida International University, 2020

Miami, Florida

Professor Hock-Peng Sin, Major Professor

A key assumption in the leader-member exchange (LMX) literature is that leaders struggle with developing and maintaining high-quality exchange relationships with all of their members. As a natural consequence, leaders typically develop high-quality relationships with a select few of their followers while maintaining formal and distant relationships with others. Such differentiated relationships in teams may have negative consequences, and this dissertation examines how LMX differentiation impacts team performance by creating task and relationship conflict. Furthermore, this dissertation advances theory on LMX differentiation by arguing that not all kinds of differentiation are the same. Specifically, drawing from the literature on social networks and surrogate behaviors, I contend that leaders can mitigate the detrimental effects of LMX differentiation by developing high-quality LMX with members in key positions in team instrumental and expressive networks. I propose that through purposeful differentiation, leaders can mitigate the negative impacts that LMX differentiation has on task and relationship conflict, thereby improving team performance. Data were collected from 123 senior-level teams in a leadership development program. Results revealed that LMX differentiation had indirect negative effects on team performance via task conflict but not relationship conflict. While having high LMX with key members directly contributed to lower levels of conflict in teams, no support was found for hypotheses suggesting that such relationship qualities would moderate the relationship between LMX differentiation and either form of conflict. Despite some null findings and methodological limitations, insights from this dissertation highlight the importance of leaders developing high-quality relationships with influential members in team social networks. This dissertation also advances our understanding of LMX – and by extension, LMX differentiation – phenomena by not only examining two simultaneous team mechanisms, but also incorporating the between-member relationships surrounding leader-member relationships through team social networks. Future research should extend this theoretical framework to different types of teams and explore alternative ways of identifying key members in team social networks.

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CHAPTER I

INTRODUCTION

Over the years, leader-member exchange (LMX) theory has provided important insights into understanding how dyadic leader-follower relationships influence phenomena at the individual, team, and organizational levels. LMX theory suggests that through various interactions and exchanges of material and social-emotional resources, leaders form and sustain differential relationships with their followers (Graen & Scandura, 1987; Liden & Graen, 1980). Members[1] who develop high-quality exchange relationships with the leader tend to share mutual respect, loyalty, and trust with the leader and often receive more delegation of decision influence, resource, and support; members with low-quality relationships with their leaders, however, enjoy much less of such benefits (Erdogan & Bauer, 2010; Liden et al., 2006). An abundant amount of empirical evidence shows that high-quality LMX is positively associated with follower attitudes (Anand et al., 2011; Erdogan & Liden, 2002; Gerstner & Day, 1997) and behaviors (Dulebohn et al., 2012; Ilies et al., 2007; Martin et al., 2016; Yu et al., 2018).

Despite the benefits of forging high-quality relationships with team members, a core premise of LMX theory is that leaders struggle with developing high-quality relationships with *every* member because of their limited time and resources (Dansereau et al., 1975; Henderson et al., 2009; Hobfoll, 1989, 2011; Liden et al., 2006; Liden & Graen, 1980). Rather, leaders form high-quality relationships with a few trusted members while maintaining lower-quality and distant relationships with the rest (Graen &

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[1] I use the terms "follower" and "member" interchangeably in this dissertation.

Scandura, 1987; Liden et al., 2006; Yu et al., 2018). This variability in LMX quality among team[2] members (i.e., LMX differentiation) may have contrasting effects on teams (Henderson et al., 2008). On the one hand, having varying levels of LMX relationships among a group of followers may result in detrimental team effects due to members making social comparisons that induce negative feelings and emotions (e.g., envy; Matta & Van Dyne, 2018; Park, 2018). On the other hand, developing high-quality LMX with a few trusted members can be considered as an agentic and purposeful approach to maximize the utility of leaders' limited and valuable resources, which, in turn, enhances team outcomes (Liden et al., 2006). Indeed, although LMX differentiation may be a "natural byproduct of establishing high quality relationships with some but not all members" (Yu et al., 2018, p. 1159), the questions of whether and when LMX differentiation is "good" or "bad" for teams is still heavily debated and not clearly understood by scholars (Anand et al., 2015). Furthermore, since LMX differentiation seems to be a reality rather than an exception in the workplace, it is important that leaders are equipped with actionable knowledge that could help them effectively attenuate the negative aspects while magnifying the positive aspects of LMX differentiation.

Several limitations in the LMX literature make it challenging to address these questions. First, theorizing surrounding LMX differentiation and its impact on teams is split into two broad perspectives – the generally positive impact of LMX differentiation on *task activities* and the generally negative impact of LMX differentiation on *social systems* (Yu et al., 2018). Very few studies, however, have examined how LMX

[2] Following the guidance and examples of prior research (e.g., Guzzo & Dickson, 1996; Mehra et al., 2006b; Park et al., 2020), I use the terms "group" and "team" interchangeably.

differentiation simultaneously impacts both task and socioemotional pathways at the team level (for an exception, see Choi [2014]). Second, LMX studies have traditionally focused on the leader-follower dyad (Graen & Scandura, 1987; Liden et al., 1997), with little attention being paid to the broader work context in which other leader-follower and follower-follower relationships also coexist. When leaders develop high-quality relationships with some followers while simultaneously maintaining arm's length relationships with others, such differentiated treatments among team members are often observable to the whole group and will further influence other followers' behaviors and attitudes outside of the immediate leader-member dyad (Tse et al., 2013). Third, the majority of prior work focuses on examining how the *degree* to which a leader differentiates among team members influences team outcomes, rather than focusing on the nuances regarding *how* leaders are differentiating their relationships among followers (Martin et al., 2016). Only until recently did scholars start to examine how various patterns of LMX within teams (e.g., LMX differentiation configuration) impact collective team collective commitment and turnover (e.g., Li & Liao, 2014; Seo et al., 2018). Finally, the majority of LMX studies were based on the implicit assumption that leaders develop high-quality LMX with members who make disproportionately higher contributions so that they can carry the leader's agenda forward, and yet this assumption is unproven as many theories and research have suggested other motivations and incentives for developing high-quality relationships. For example, individuals prefer to develop and maintain high-quality social exchange relationships with those who they perceive as likable (Engle & Lord, 1997; Liden et al., 1993; Wayne et al., 1997) and those who are similar to themselves (Bauer & Green, 1996; Phillips & Bedeian, 1994;

Zhang et al., 2012). Therefore, examining *with whom* leaders actually form high-quality relationships can significantly advance our understanding of how LMX differentiation impacts team functioning and effectiveness.

The purpose of this dissertation is to, first, reconcile segmented theoretical perspectives by simultaneously examining both task- and socioemotional-related mechanisms through which LMX differentiation may affect team performance. I propose that LMX differentiation creates higher levels of task and relationship conflict within teams, which will, in turn, negatively impact team performance. Further, this study elucidates how leaders can mitigate the dysfunctional aspects of LMX differentiation – while amplifying the positive aspects – through developing high-quality relationships with the members who are themselves in key positions of influence in their teams' social networks (henceforth referred to as *key members*). Specifically, by considering the broader social context in which leader-member dyads are embedded (Graen & Uhl-Bien, 1995; Sparrowe & Liden, 1997), I draw on social network theory (Borgatti & Foster, 2003; Burt, 1992; Freeman, 1979) to move beyond just focusing on the leader-member dyadic relationships but also factor in the lateral influence among team members (Mehra et al., 2006b). I also draw on theory on surrogate behaviors (Galvin et al., 2010) to further explicate how leaders can mitigate the detrimental effects (and enhance positive aspects) of LMX differentiation through developing high-quality LMX with key members who are themselves well-connected (i.e., high *prestige* or indegree centrality), who serve as connections between team members who are otherwise weakly connected or unconnected (i.e., high *brokerage* or betweenness centrality), and who maintain core (as opposed to periphery) status through superior access to team members (i.e., high *core status* or eigenvector centrality). These hypotheses are summarized in Figure 1.

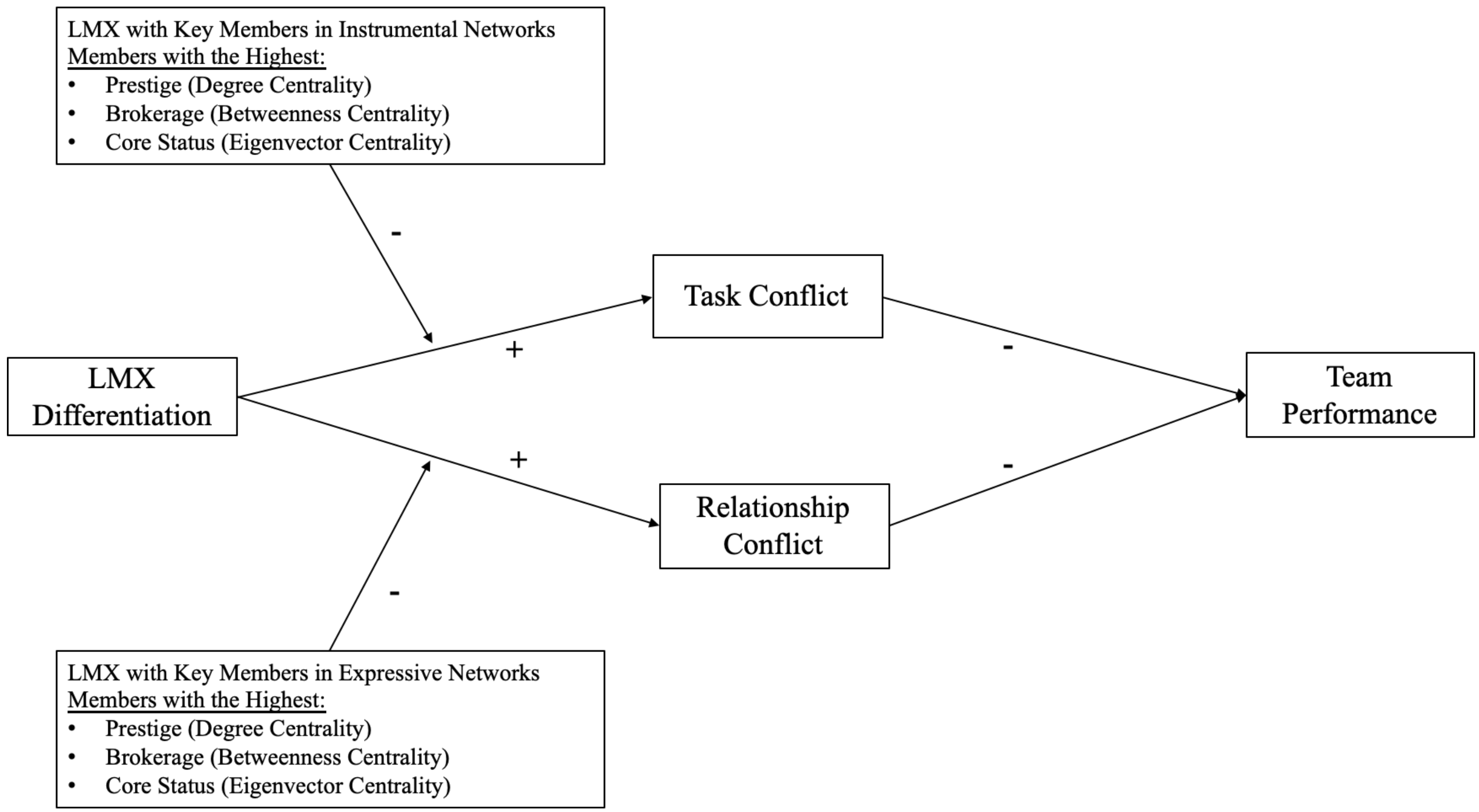
This dissertation contributes to the literature in several ways. First, this study attempts to solve the discrepancies between LMX theories and inconsistent empirical evidence by taking into account the impact of LMX differentiation on both task and social systems at the team level. Answering the call by Yu et al. (2018), this study focuses on the team-level phenomenon and embraces a dual perspective by simultaneously examining both task and socioemotional pathways through which LMX differentiation impacts teams. Additionally, I also examine the boundary conditions upon which LMX differentiation becomes less detrimental to teams.

Second, this dissertation expands the boundaries of theorizing on LMX differentiation by not only focusing on the *amount* of differentiation but also *how* leaders are differentiating within teams, echoing the notion that "not all differentiation is the same" (Seo et al., 2018, p. 479). I relax the implicit assumption that leaders will always develop high-quality social exchange relationships with the more powerful, influential, or capable members, and contend that whether LMX differentiation is functional or dysfunctional is contingent upon the degree to which leaders are able to identify and develop high-quality relationships with the potentially most impactful members in teams.

Next, in response to the criticism of lacking consideration of the broader social context in the LMX differentiation research, I take a social networks approach to portray how the relationships surrounding leader-member dyads impact the degree to which LMX differentiation influences team dynamics and outcomes. Furthermore, fulfilling the need to examine LMX differentiation from both task and socioemotional perspectives, I consider two types of team social networks (i.e., instrumental and expressive networks) when depicting the lateral member-member relationships in this study.

Finally, while research at the team level tends to treat team members as a collective of undifferentiated individuals waiting to be activated and influenced by leaders' traits and behaviors (Weber & Moore, 2014), recent studies have started to recognize that certain team members may exert disproportionally stronger impacts on team dynamics and effectiveness (e.g., Call et al., 2015; Grigoriou & Rothaermel, 2014; Humphrey et al., 2009; Li et al., 2020; Weber & Moore, 2014), especially those occupying key positions in social networks (Galvin et al., 2010; Sherf et al., 2018). This highlights the strong theoretical and practical implications that can come from treating team members as differentiated individuals and examining impactful members' (i.e., key members) roles in influencing team dynamics and outcomes as well as leadership processes.

Figure 1. Proposed Theoretical Model



CHAPTER II

LITERATURE REVIEW

Leader-Member Exchange Theory

LMX theory focuses on the relationships between leaders and followers. Originally termed Vertical Dyad Linkage (VDL; Dansereau et al., 1975; Graen, Cashman, Ginsburg, & Schiemann, 1977), LMX theory provides a framework to understand how leaders, through various interactions and exchanges of material and socioemotional resources, form and sustain differential relationships with their followers in teams (Graen & Scandura, 1987; Liden & Graen, 1980), and generate bases of leadership influence (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995; Schyns & Day, 2010). Employees with high-quality LMX usually have greater access to resources, supervisor support, and opportunities to more challenging and rewarding tasks. They are considered as “in-group” members and not only receive material resources, but also share mutual trust, respect, loyalty, openness, honesty, and obligation with their leaders (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995; Liden, Sparrowe, & Wayne, 1997). The relationships between leaders and their members with relatively low-quality LMX (also known as “out-group” members), however, are primarily based on formal employment contracts focusing on immediate reciprocation of material resources, benefits, and pay (Blau, 1964).

While LMX theories were developed to examine how leaders’ differentiated relationships with their members influence the group (Dienesch & Liden, 1986; Graen & Scandura, 1987), research on LMX has overwhelmingly focused on the leader-member *dyad*, such as the process through which leader-member relationships were developed (i.e., role taking, role making, and role routinization; Graen & Scandura, 1987) and the implications of high- and low-quality relationships for individual team member's job attitudes and performance (Anand et al., 2015; Henderson et al., 2009). Fewer studies have explored the context in which leader-member relationships were embedded (Avolio et al., 2009; Cogliser & Schriesheim, 2000; Liden et al., 2016; Sparrowe & Liden, 1997) or how leader-member dyadic relationships influenced (or were influenced by) other leader-member and member-member dyads in a broader team context (Matta, 2016).

The heavy emphasis on leader-member dyads could potentially be due to the hierarchical structure of most organizations had during the time when LMX theory was first developed in the 1980s (Dienesch & Liden, 1986). However, focusing only on leader-member dyads may not be sufficient to understand the complicated modern-day workforce phenomena, as organizations have started restructuring their work and shifted the focus from individual jobs to functional teams to better respond and adapt to an ever-changing global economic environment. As a result, besides individual performance, team effectiveness has become a central concern for most organizations (Kozlowski & Ilgen, 2006). Because teams are complicated social systems, their success is not only a function of additive abilities and performance of individual members, but also a result of leaders effectively utilizing each member's unique skillsets while maintaining a collaborative atmosphere among followers (Marks et al., 2001). In other words, in addition to examining the direct impact of high-quality LMX on individual performance, we also need to consider how the coexisting, varying levels of LMX influence team members beyond the immediate leader-member dyad and impact the team as a collective entity.

Recent research on LMX has started to examine the group-level implications of LMX relationships (Thomas et al., 2013; Tse & Ashkanasy, 2015) as well as the importance of social contexts in which LMX relationships are embedded (Anand et al., 2011). One particular focus of research of this kind is to examine the variability in the quality of LMX relationships between the leader and different group members (i.e., *leader-member exchange differentiation* or *LMX differentiation*; Anand et al., 2015; Erdogan & Bauer, 2010; Liden et al., 2006). Below, I review the literature on this concept with a focus on the implications for team performance.

Leader-Member Exchange (LMX) Differentiation

LMX theory is based on the premise that leaders develop *differentiated* exchanges with their followers, so that they can assign more challenging and important tasks to high-LMX members whom leaders trust (Dansereau et al., 1975; Henderson et al., 2009; Liden et al., 2006; Liden & Graen, 1980). LMX differentiation is defined as:

> "a process by which a leader, through engaging in differing types of exchange patterns with subordinates, forms different quality exchange relationships (ranging from low to high) with them…LMX differentiation refers to a set and outcome of dynamic and interactive exchanges that occur between leaders and members, the nature of which (transactional versus social exchange) may differ across dyads within a work group" (Henderson et al., 2009, p. 519).

While the benefits of high-quality LMX seems rather evident and "LMX differentiation is a fact of organizational life" (Erdogan & Bauer, 2010, p. 1105), scholars have yet come to a definite conclusion that LMX differentiation is beneficial to team performance (Liden et al., 2006; Yu et al., 2018). Because individuals are innately motivated to compare themselves with similar others around them (Festinger, 1954), leaders' preferential treatments towards certain members are likely to strike a chord among team members and may ultimately impair team performance (e.g., Erdogan & Bauer, 2010; Hooper & Martin, 2008; Matta, 2016; Scandura, 1999; Tse et al., 2012; Vidyarthi et al., 2010). Explanations for these findings are mainly based on equality principle of resource allocation (Leventhal, 1976b), social comparison theory (Festinger, 1954), social identity theory (Ashforth & Mael, 1989; Turner & Tajfel, 1986), relative deprivation theory (Crosby, 1976), and organizational justice theory (Deutsch, 1975). First, when leaders allocate resources and rewards based on individual effort and contribution (i.e., equity principle) as opposed to equally distribute resources among all members (i.e., equality principle), such differentiated treatment is likely to negatively affect individual team members' emotional experiences (e.g., inducing jealousy and contempt; Tse et al., 2013), self-efficacy (Tse et al., 2012), team satisfaction (Hu & Liden, 2013), job performance and organizational citizenship behavior (Vidyarthi et al., 2010). In addition, LMX differentiation can introduce relational boundaries between in-groups and out-groups, which, in turn, create tensions in resource allocation (Dansereau et al., 1975), hinder effective communication (Jablin & Sias, 2001), disrupt interpersonal trust (Liu et al., 2014), induce perceptions of injustice (Lau, 2008; Xie et al., 2019), and lead to higher levels of team conflict (Hooper & Martin, 2008).

However, it is possible that LMX differentiation can serve a strategic purpose, as developing differentiated relationships among team members may allow leaders to make effective use of their limited time and resources (Dansereau et al., 1975) and potentially improve the team's overall performance (Naidoo et al., 2011). Theories supporting this line of argument are mainly based on role theory (Katz & Kahn, 1978), social exchange theory (Blau, 1964), and equity principle of resource allocations (Deutsch, 1975; Leventhal, 1976b, 1976a, 1980). Specifically, a division of labor and team tasks (i.e., role differentiation) could help teams clarify their own and other members' roles and responsibilities, as well as more effectively utilize each member's unique technical and social skills in varying tasks (Katz & Kahn, 1978; Stogdill, 1959). In addition, leaders may assign more complicated and challenging tasks to a few "trusted assistants" or "cadre" members and more routine and mundane tasks to the rest (also referred to as "hired hands") (Liden et al., 2006). High-LMX members are more likely to feel obligated to reciprocate the favorable treatment they have received (Lee et al., 2018), sustain their effort, and show high levels of commitment to their organization (Yu et al., 2018). From the leader's perspective, by allocating the limited organizational resources (e.g., budget) and personal resources (e.g., time and energy) disproportionally to a few trusted members who they perceive as more capable and trustworthy, LMX differentiation may also help leaders reduce their cognitive overload (Dienesch & Liden, 1986; Graen & Uhl-Bien, 1995) and focus their attention on core tasks.

Resolving the Mixed Findings in the LMX Differentiation Literature

Although there seem to be different intentional and unintentional reasons for why leaders develop different quality relationships with their followers, the LMX differentiation literature sees inconsistent theoretical underpinnings and mixed empirical evidence when examining the association between LMX differentiation and team performance (Anand et al., 2015; Liden et al., 2006; Matta, 2016). In their review, Anand and colleagues (2015) noted that "[f]indings on the effects of LMX differentiation have been mixed at best" (p. 288). To better understand the influence of LMX differentiation on team performance, below, I first review studies that focused on answering the question – "whether leaders should or should not differentiate among their members" (Sparrowe & Liden, 1997, p. 545). These studies include those that (1) examined critical boundary conditions upon which LMX differentiation was deemed beneficial or detrimental, and (2) embraced both the positive and negative impacts of LMX differentiation on team performance by exploring non-linear relationships and dual processes. I then review studies that moved beyond examining *whether* leaders should differentiate and examined *how* leaders should differentiate their relationships among team members.

Boundary conditions. One of the reasons for the mixed findings of the LMX differentiation-team performance relationship is that teams are complex and unique social systems (Mathieu et al., 2019; Park et al., 2020). Scholars have examined the boundary conditions (i.e., moderators) upon which the effect of LMX differentiation on team outcomes can change (Anand et al., 2015). Such moderators include: (1) team climate and culture such as team justice climate (e.g., Erdogan & Bauer, 2010) and power distance orientation (e.g., Sui et al., 2016), (2) team characteristics such as task interdependence (e.g., Liden et al., 2006; Xie et al., 2019), team size (Sui et al., 2016), and team cohesiveness (e.g., Dotan et al., 2004), and (3) the nature of LMX within teams such as mean level of LMX (e.g., Ford & Seers, 2006; Liden et al., 2006) and median level of LMX (e.g., Le Blanc & González-Romá, 2012). Research shows that LMX differentiation becomes more detrimental in situations where differentiated treatments are more observable (especially due to frequent interactions in highly task interdependent environment) (Dunegan, Tierney, & Duchon, 1992; Tse et al., 2013; for an exception, see

Liden et al., 2006), when differentiation is not consistent with the cultural norm (e.g., collectivism; Chen et al., 2015; Sui et al., 2016) or organizational/team climate (e.g., distributive, procedural, and interactional justice; Cobb & Lau, 2015), and when the grounds for differentiation are difficult to justify (i.e., when LMX quality does not correspond with members' task performance; Chen et al., 2015).

Embracing the "good" and "bad" simultaneously. Recent studies have begun to examine the complicated nature of LMX differentiation by integrating both the positive and negative aspects into one comprehensive theoretical model. Specifically, several studies have suggested that LMX differentiation has an inverted U-shaped relationship with team overall performance (Lee & Chae, 2017; Sui et al., 2016) and creativity (Li et al., 2016), such that a moderate level of LMX differentiation is beneficial in facilitating *task* performance, but disrupts *social* harmony and relationships among team members when it is too high, akin to the principle of *too-much-of-a-good-thing* (Pierce & Aguinis, 2013). Nevertheless, in most of the studies that examined the curvilinear relationship of LMX differentiation and team performance, the benefits of LMX differentiation were still largely attributed to task-related process, whereas the detrimental effects were attributed to social comparisons and social categorization processes, as if LMX differentiation manifested on a spectrum with task benefits on one end and social costs on the other. However, LMX differentiation should influence teams on both task and social aspects regardless of its level. The paradoxical effects of LMX differentiation may lie in the trade-offs between positive instrumental benefits and negative social costs (Ames & Flynn, 2007).

One study that attempted to tackle the issue from both task and socioemotional aspects (i.e., a dual perspective) was Choi (2014). The author argued that leader-rated LMX differentiation would positively influence team performance through task-related processes (i.e., role clarity and coordination), while member-rated LMX differentiation would negatively affect group viability through socio-emotional states (i.e., relationship conflict and group potency). Although the author did not find support for the overall model, Choi's (2014) work provided an important contribution to the LMX differentiation literature by simultaneously examining the two pervasive mechanisms (both task and social systems) in organizations, which strive for both tangible performance and social cohesion (Bales, 1958; Kabanoff, 1991; Katz & Kahn, 1978).

In a slightly different vein, Yu and colleagues (2018) examined the seemingly paradoxical positive and negative aspects of LMX differentiation simultaneously by decomposing the total effects of LMX differentiation on team performance into direct and indirect pathways. In their meta-analysis, the authors found that LMX differentiation was not significantly related to team performance, though it indeed negatively impacted both team processes (e.g., coordination, team-member relationships) and emergent states (e.g., attitudes, justice climates) (Yu et al., 2018). Drawing on allocation preferences theory (Leventhal, 1976a, 1976b) and the equity/equality principle (Deutsch, 1975), the authors argued that the direct positive relationship between LMX differentiation and team performance was possibly suppressed by the negative indirect relationship through team emergent states and processes, and raised concerns that virtually no studies had modeled and tested such an approach (Yu et al., 2018).

Moving beyond the 'amount' of LMX differentiation. To date, the majority of research has still focused on examining the *amount* or *degree* of LMX differentiation and discussing whether leaders *should* differentiate, rather than examining *how* leaders were differentiating (e.g., the *pattern* or *distribution* LMX relationships; with whom do leaders develop relatively high or low quality of LMX). The LMX literature can fall short as it may have overlooked the nuanced properties of LMX differentiation (Martin et al., 2018). As pointed out by several studies (e.g., Li & Liao, 2014; Seo et al., 2018), two teams can potentially have the same level of LMX differentiation (i.e., the same mathematic value) with different patterns of LMX distribution in a team: when the leader develops significantly higher LMX with one member while maintain lower (and similar) LMX with the rest and when the leader develops *unique* leader-member relationships with each member. Therefore, traditional ways of examining levels of LMX variability by itself is insufficient to unpack the true implications of LMX differentiation on team processes, emergent states, and distal outcomes (Martin et al., 2018).

Only until recently have scholars begun to examine the specific distribution of LMX within teams above and beyond the amount of differentiation. Specifically, drawing on role engagement theory (Kahn, 1990) and role system theory (Katz & Kahn, 1978), Li and Liao (2014) proposed three distinct configurations LMX differentiation, namely, *bimodal LMX differentiation* (i.e., equal or similar number of team members in "in-groups" and "out-groups")*, minority LMX differentiation* (i.e., one or two members possess LMX quality that is significantly different from the rest of the team members), and *fragmented LMX differentiation* (i.e., each member has meaningfully distinct LMX quality with the leader). Their study revealed that while LMX differentiation negatively impacted team coordination, which, in turn, impaired team financial performance, this negative impact was stronger when teams see a bimodal LMX configuration. This is because when teams are split into two comparable sizes, the *us-versus-them* mentality becomes more salient and impactful (Lau & Murnighan, 2005), and as a result, there may be higher levels of conflict and lower levels of effective coordination (Li & Liao, 2014). In a similar vein, Seo and colleagues (2018) also found that the effect of LMX differentiation on organizational commitment and collective turnover was contingent upon *how* LMX was distributed within the team and LMX differentiation was more detrimental when there existed two subgroups with similar sizes.

Although the call for examining the configuration and different patterns of distribution of LMX relationship was not recent – for example, Graen & Uhl-Bien (1995) questioned whether there existed a maximally effective distribution of LMX relationships in teams – scholars have yet to dig deep enough to answer this question. In their critical review of the LMX differentiation literature, Martin and colleagues (2018) reinforced the importance of examining properties and distribution of LMX differentiation, especially in the team context. Since LMX differentiation is "a natural byproduct of establishing high-quality relationships with some but not all members of a workgroup" (Yu et al., 2018, p. 1159), it is time for us to not only answer the question of '*Should* leaders differentiate their relationship qualities with team members or not?' but also the question of '*How* can leaders differentiation their relationship qualities with team members such that they can mitigate the negative impacts of LMX differentiation and enjoy its benefits?'.

Summary

A review of the LMX differentiation literature reveals several gaps as well as opportunities for future research that could enrich our understanding of how LMX differentiation can affect performance at the team level.

First, the LMX differentiation literature has predominantly focused on *either* the equality argument by attributing the detriments of LMX differentiation to socioemotional due to social comparisons (Dulebohn et al., 2012, 2017), *or* the equity argument by contending that LMX differentiation could help leader efficiently allocate resources based on role differentiation and individual strengths (Choi, 2014; Yu et al., 2018). Very few studies, however, have embraced both task and socioemotional perspectives simultaneously. This is problematic because "organizations are both task and social systems that involve simultaneous pressures for economic performance and the maintenance of social cohesion" (Kabanoff, 1991, p. 421). Because both task and social-related issues are fundamental in organizational settings (Kabanoff, 1991; Katz & Kahn, 1978), examining the impact of LMX differentiation on both task and social impacts simultaneously can provide valuable insights.

Second, the positive effect of LMX differentiation on team performance is based on the implicit assumption that leaders would develop high-LMX with the 'right' members – who are high performers and can carry forward the leader's agenda when receiving adequate tangible and intangible resources. However, instead of developing high-quality LMX with high performers, prior studies suggest that leaders often develop higher-quality relationships with members who leaders share more common characteristics with (McPherson & Smith-Lovin, 1987; McPherson, Smith-Lovin, &

Cook, 2001; e.g., personality; Zhang et al., 2012) or who are perceived as more likable (Engle & Lord, 1997; Liden et al., 1993; Wayne et al., 1997). This implies that *how* leaders differentiate (i.e., with whom they develop high-quality relationships) is the key in deciphering the true impact of LMX differentiation. While recent theorizing (e.g., Anand et al., 2011) highlighted the potential impact of LMX configurations within teams, and such view has received some empirical support (e.g., Li & Liao, 2014; Seo et al., 2018), this perspective did not fully reflect the relationship structures *among* team members. Therefore, future research should further investigate how different patterns of differentiation impact team dynamics and outcomes, as well as alternative ways in operationalizing *how* leaders are differentiating their relationships among team members.

Finally, a major criticism of research on LMX theory is that it overwhelmingly focuses on the leader-member dyad, whereas it was originally developed to understand the impact of differential social exchange relationships within teams (Henderson et al., 2009). Recognizing that leader-follower relationships do not reside in a vacuum but within the context of teams and organizations (House et al., 1995), scholars also highlighted the importance of factoring the broader social context in which leader-member dyads are embedded as an important boundary condition (Graen & Uhl-Bien, 1995; Matta, 2016; Mayer & Piccolo, 2006; Sparrowe & Liden, 1997). The social networks perspective, in particular, captures the complex and nuanced nature of social contexts and offers critical insights regarding how LMX unfolds in teams through both formal and informal relationships (Sparrowe & Liden, 1997), as networks not only reflect the structure of relationships among team members but also impact the process through which LMX perceptions are shaped (Zagenczyk et al., 2015).

In this dissertation, I propose and examine how LMX differentiation influences team performance through both task and socioemotional mechanisms (i.e., task and relationship conflict). Further, I theorize that the relationship quality between leaders and the members who are themselves in key positions of influence in their teams' social networks (i.e., key members) can mitigate the impact of LMX differentiation on task and relationship conflict and, ultimately, team performance. Drawing on social network research, I focus on three types of key members who have high *prestige* (i.e., *indegree centrality*), *brokerage* (i.e., *betweenness centrality*), and *core status* (i.e., *eigenvector centrality*).

CHAPTER III

THEORY AND HYPOTHESES

Following the Input-Process-Outcome framework (McGrath, 1964), later revised as the Input-Mechanism-Outcome framework (Mathieu et al., 2008), I examine the indirect impact of LMX differentiation (i.e., input) on team performance (i.e., outcome) via relationship and task conflict (i.e., team processes/mechanisms). Furthermore, I contend that the influence of LMX differentiation on teams is contingent upon the relationship quality between leaders and the influential key members in teams. Figure 1 presents a theoretical model that describes the hypotheses in this dissertation.

LMX Differentiation and Team Performance: The Indirect Path Through Task Conflict

LMX differentiation and task conflict. Task conflict in teams refers to the differences in opinions, ideas, and viewpoints associated with task performance, resource distribution, policies, and procedures (Amason & Sapienza, 1997; De Dreu, 2006; Jehn, 1994; Jehn & Mannix, 2001). Task conflict may arise in teams when team members hold different values (Jehn, 1994; Saavedra et al., 1993), diverging interests, different expectations, and incompatible preferences (Jehn & Mannix, 2001; Rentsch & Hall, 1994).

High LMX differentiation indicates that leaders allocate resources and rewards following the equity principle (i.e., resources allocation is based on individual effort and capabilities) as opposed to equality principle (i.e., resources are shared by the workgroup regardless of the individual efforts) (Deutsch, 1975; Graen, 1976; Graen & Scandura, 1987; Hooper & Martin, 2008). Although differential treatment based on equity principles may help leaders utilize each member's expertise and provide role clarifications (Choi, 2014; Yu et al., 2018), it may also create a competitive, hostile, and even antagonistic work environment within the group (Deutsch, 1975; Hooper & Martin, 2008; Tjosvold, 1986).

Specifically, equitable distribution of resources and rewards creates an incentive for individuals to excel beyond other's performance and compete for a greater portion of resources and attention (Tjosvold, 1986). In order to survive the within-team competition, individuals are prone to develop self-preserving task strategies that mainly benefit their individual performance and personal interests (Sinclair, 2003). As a result, members may develop divergent work values as well as various opinions regarding what the team's real goal, task, or mission should be (Jehn et al., 1999) and how team tasks should be prioritized and achieved (Jehn & Mannix, 2001). In addition, team members may unconsciously or deliberately inhibit other team members' performance by passively not cooperating or sharing information (Sias & Jablin, 1995; Zhao et al., 2019b), or even actively interfering, obstructing and sabotaging other's work, so that they will appear as more effective than other team members (Tjosvold, 1986). Indeed, prior research suggests that LMX differentiation inhibits the quality of communication among team members and even creates misunderstandings (Jablin & Sias, 2001; Sias & Jablin, 1995), instigating higher levels of conflict and deterring collaboration (Turner et al., 1987; Zhao et al., 2019a). Therefore, LMX differentiation may lead to more task-related conflict by creating a competitive team environment and different viewpoints within teams.

On the flip side, when LMX differentiation is low, resources and rewards are distributed based on equality norms (Hooper & Martin, 2008). Individuals are less likely to focus on their own unique abilities and interests; rather, they are more likely to emphasize the shared objectives and mutual interests among team members (Chatman & Flynn, 2001; Tjosvold, 1986). Communication processes and interactions may be smoother and there is a greater likelihood for members to develop task-related coordination plans, which will, in turn, reduce misunderstandings and task conflict. Thus, I hypothesize:

Hypothesis 1: LMX differentiation is positively related to team task conflict.

Task conflict as the mediator. I expect that LMX differentiation may impede team performance by creating high levels of task conflict. Previous studies suggest that task conflict reflects the task-related perspective of team processes, and is related to a variety of team group behavioral outcomes and affective states (De Dreu & Weingart, 2003; de Wit et al., 2013; DeChurch & Marks, 2001; Hinds & Mortensen, 2005; Jehn, 1997; Lau & Murnighan, 2005).

Research on the relationship between task conflict and team performance has yielded mixed results. While some research indicates that task conflict may benefit team performance and creativity as task conflict can provide diverse ideas (e.g., Amason & Sapienza, 1997; Jehn, 1995, 1997; Pelled et al., 1999; Simons & Peterson, 2000), others showed that task conflict does not always lead to the expected positive outcomes (e.g., Jehn et al., 1997; Stasser & Titus, 1985). This is because excessive task conflict may give rise to arguments with coworkers (van Dyne, Jehn, Cummings, 2002), disrupt effective communication and collaboration (De Dreu, 2006; De Dreu & van Knippenberg, 2005; O'Neill & McLarnon, 2018), and distract individuals from their original tasks (de Wit et al., 2012). Hence, individuals need to utilize extra attentional resources (e.g., time, energy) – which can otherwise be devoted to the core tasks – to comprehend multiple schools of thoughts and consolidate the divergent ideas into a cohesive solution (De Dreu, 2008; Farh et al., 2010). Furthermore, processing highly divergent perspectives and opinions constantly may cause cognitive overload, which may, in turn, lead to biased information processing (de Wit et al., 2013) and lower effectiveness in evaluating alternative solutions (Carnevale & Probst, 1998). Therefore, task conflict is likely to obstruct effective problem-solving and decision-making (De Dreu, 2006), harm creativity (Farh et al., 2010; Van Dyne et al., 2002), threaten implementation of plans (Amason & Schweiger, 1994), reduce team potency (O'Neill et al., 2013) and satisfaction (Vodosek, 2007), and ultimately inhibit team effectiveness (De Dreu, 2008). Previous meta-analytic results also show that task conflict does not necessarily improve team innovation (O'Neill et al., 2013) and is, in general, negatively related to team performance (e.g., De Dreu & Weingart, 2003; de Wit et al., 2012).

Taken together, I expect that LMX differentiation will induce more intrateam task conflict by creating a competitive work environment and divergent work values (Jehn et al., 1999). Task-related incompatibilities among team members will further harm team performance. Therefore, I propose:

Hypothesis 2a: Task conflict is negatively related to team performance.

Hypothesis 2b: Task conflict mediates the relationship between LMX differentiation and team performance, such that there is a negative indirect effect via task conflict.

LMX Differentiation and Team Performance: The Indirect Path Through Relationship Conflict

LMX differentiation and relationship conflict. Relationship conflict in teams refers to interpersonal incompatibilities, including “personal issues such as dislike among group members and feelings such as annoyance, frustration, and irritation” (Jehn & Mannix, 2001 p. 238), and is likely to arise when team members hold differing attitudes, values, and beliefs (Jehn & Bendersky, 2003) and unequal positions and status within the team (Lau & Cobb, 2010).

As discussed earlier, in teams where LMX differentiation is high, resources are unequally distributed among team members (Dienesch & Liden, 1986; Graen & Scandura, 1987; Henderson et al., 2009; Scandura & Schriesheim, 1994); therefore, LMX differentiation may impair perceptions of fairness, disrupt social harmony (Deutsch, 1975; Sinclair, 2003), and create a competitive and hostile work environment (Deutsch, 1975; Hooper & Martin, 2008). Previous research indicates that team members are usually aware of the surrounding social environment (Salancik & Pfeffer, 1978) and the leader’s differentiated treatment in their teams (Henderson et al., 2008; Tse et al., 2012; Vidyarthi et al., 2010), and information generated through these social comparisons may influence team members’ perceptions about each other and the ways in which they interact with other team members (Argo et al., 2006; Festinger, 1954; Kratzer et al., 2009).

When LMX differentiation is high, social comparison can reveal and result in within-team relationship imbalance among team members (Tse et al., 2013). According to balance theory (Heider, 1958), two members will develop a more balanced, and closer, relationship when they share either similar high-quality or low-quality relationships with the leader. In contrast, relationship imbalance between two members encourages them to focus on contrasting him/herself with the other member, which, in turn, may disrupt social harmony and induce negative sentiments (e.g., evaluation, attitudes, emotions) towards one another (Sherony & Green, 2002; Tse et al., 2013). When comparing themselves to their high-LMX members, low-LMX members may feel mistreated, neglected, and disrespected especially when they "fail" the competition for resources and receive fewer benefits from the leader (Ellemers et al., 2004; Erdogan & Bauer, 2010; Liden et al., 2006; Tse & Troth, 2013). Low-LMX members may perceive the differential treatment as unfair and experience emotions such as envy, depression, jealousy, shame, hostility, and resentment towards high-LMX members as a result of upward social comparison (Anand et al., 2011; Hooper & Martin, 2008; Matta, 2016; Tse et al., 2008, 2018; Tse & Troth, 2013). This type of social comparison, in turn, harms social integration and cohesion of the team (Kabanoff, 1991). In the meantime, high-LMX members may experience downward social comparison tension that induces emotions such as contempt (Tse et al., 2013), *schadenfreude* (Dvash et al., 2010), pride (Webster et al., 2003), and delight in superiority (Lockwood, 2002), especially when a team member perceives that he/she is quite different from a referent colleague (e.g., a low-LMX member) (Matta, 2016). Therefore, when LMX differentiation is high and team members are competing for the benefits of high-LMX relationships, members are likely to experience negative sentiments towards one another and experience higher levels of relationship conflict.

On the contrary, when LMX differentiation is low, members tend to share more similar perceptions and interpretations of the work environment as well as positive sentiments towards one another through parallel social comparison (Tse & Troth, 2013). When team members experience similar LMX relationships, intragroup harmony and solidarity will be strengthened and relational boundaries are likely to be eliminated. Team members are more likely to develop closer interpersonal relationships (Sherony & Green, 2002) and experience less relationship conflict (Hooper & Martin, 2008; Li & Liao, 2014; Sherony & Green, 2002). Consistent with this reasoning, several studies (e.g., Cobb & Lau, 2015; Hooper & Martin, 2008; Zhao, 2015; Zhou & Shi, 2014) have found a positive relationship between LMX differentiation and relationship conflict. Thus, I expect:

Hypothesis 3: LMX differentiation is positively related to team relationship conflict.

Relationship conflict as the mediator. I expect that LMX differentiation will have a negative indirect impact on team task performance via relationship conflict. Previous studies show that LMX differentiation creates more relationship conflict, which, in turn, negatively impact team creativity (Zhao, 2015), information sharing (Auh et al., 2016), satisfaction with the team (Choi, 2014), job satisfaction and well-being (Hooper & Martin, 2008).

Conflict scholars have consistently shown that relationship conflict negatively impacts team performance for a variety of reasons. Relationship conflict is often associated with feelings of anger, fear, frustration, distrust, and isolation (Jehn, 1995, 1997; Jehn & Mannix, 2001; Lau & Cobb, 2010; Leary & Kowalski, 1995). Such feelings may reduce psychological empowerment (Chen et al., 2011), intensify social anxiety (Baumeister & Tice, 1990), impair psychological safety within the team (Edmondson, 1999), and harm team cohesion (Ensley et al., 2002). Thus, Members would expect more negative (as opposed to positive) responses from others (Schlenker & Leary, 1982), and are less likely to openly discuss work issues with coworkers, proactively seek or provide information and resources, or effectively communicate with one another (De Dreu & Weingart, 2003; Lu et al., 2011; Nifadkar & Bauer, 2016). Lacking critical information may further limit team members' ability to succeed in their roles (Miller & Jablin, 1991; Morrison, 1993a, 1993b) and ultimately harm team performance (Nifadkar & Bauer, 2016). Furthermore, when experiencing high levels of intragroup hostility and antagonism, members may find it more difficult to focus on task completion as they have to spend extra cognitive resources to resolve or ignore conflicts (Jehn, 1994, 1995). Such threatening environment may lead to individual freeze-up and limit individuals' ability to effectively process task-related information (Staw et al., 1981). In other words, relationship conflict may also act as a job stressor that hinders team members' ability to work efficiently (Argyris, 1962; Dijkstra et al., 2005; Nifadkar & Bauer, 2016).

Taken together the arguments in the previous hypothesis, I expect that LMX differentiation will be associated with higher levels of relationship conflict within teams, and relationship conflict will further reduce members' ability to collaboratively solve problems (De Dreu, 2006) and make strategic decisions (Schweiger et al., 1986), thus impairing team performance. Therefore:

Hypothesis 4a: Relationship conflict is negatively related to team performance.

Hypothesis 4b: Relationship conflict mediates the relationship between LMX differentiation and team performance, such that there is a negative indirect effect via relationship conflict.

Teams and Social Networks

In teams, members were traditionally treated as a collection of undifferentiated or interchangeable individuals, each with equal levels of influence on their teams (Humphrey et al., 2009). In more recent studies, scholars have begun to recognize that certain members may be more critical and valuable to their teams, by exerting a stronger impact on team outcomes (Call et al., 2015; Delery & Shaw, 2001; Humphrey & Aime, 2014; Weber & Moore, 2014) – especially those who occupy key positions of influence in their team social networks (e.g., Li et al., 2020; Sherf et al., 2018).

Teams as social networks. An emerging stream of research on teams has argued that teams are complex social systems consisting of individuals who contribute to team success collectively (Ilgen et al., 2005; McGrath et al., 2000). The complexity and ambiguity that arise from working together with team members often make it unlikely that leaders will be the only source of information and influence (Carson et al., 2007; Mathieu et al., 2019). Therefore, instead of focusing only on the unidirectional, vertical influence of leaders on team members, leadership processes are better understood when taking into consideration the mutual, lateral influence among team members (Carson et al., 2007; Galvin et al., 2010; Mehra et al., 2006b; Weber & Moore, 2014).

Social networks involve a set of *actors* (also referred to as *nodes*, *points*, or *units*) who are connected by a set of *ties* (also referred to as *edges* or *lines*) representing established and repeated patterns of exchanges of information, affect, resources, and influences (Borgatti & Foster, 2003; Burt, 1992; Freeman, 1979). Recent studies have begun to view teams as networks consisting of members who are interconnected through various types of social relationships (e.g., Crawford, 2011; Friedrich et al., 2016; Klein et al., 2004; Meindl et al., 2002; Reagans et al., 2004; Roberson & Williamson, 2012; Sherf et al., 2018; Sparrowe et al., 2001). This line of research also echoed the importance of social interactions and relationships on team emergent states, processes, and outcomes (Li et al., 2020). The social networks approach provides both theoretical and methodological advantages in further examining the complex relationship patterns within teams and their influence on team processes, as it better preserves information about the inter-follower relationship structures and interdependencies in teams (Mehra et al., 2006b; Park et al., 2020; Wölfer et al., 2015). For instance, Sparrowe and Liden (2005) observed that members with high advice-centrality were more influential in their organizations when they received sponsorship from their leader. Venkataramani et al. (2010) found that leaders who occupied central positions were perceived as having greater status and thus developed higher quality LMX with members, and this effect was stronger when members themselves are not well-connected. By focusing on advice networks, Goodwin et al. (2009) observed that LMX was not only a function of personal relationships but also contained instrumental values. Several scholars (e.g., Graen & Uhl-Bien, 1995; Mayer & Piccolo, 2006; Sparrowe & Liden, 1997, 2005) further highlighted the value of using social network analysis to advance LMX theory as it would help us understand the extended influence of leader-member relationships beyond dyads.

It is well-established in the social networks literature that actors who occupy key central positions in the social network hold higher levels of power and influence (e.g., Brass, 1984; Brass & Burkhardt, 1993; Bruning et al., 2018; Burkhardt & Brass, 1990; Ibarra, 1993a; Ibarra & Andrews, 1993; Sparrowe & Liden, 2005). The advantageous structural positions allow key members to gain access to novel information (Burt, 2004; Freeman, 1979; Granovetter, 1973) and control over valuable resources (Hickson et al., 1971; Pfeffer, 1981; Salancik & Pfeffer, 1977), thus providing the foundation for key members to use their power and exert a strong influence on teams and organizations (Brass & Burkhardt, 1993). Social information processing theory (Salancik & Pfeffer, 1978) and social learning theory (Bandura & Walters, 1977) postulate that individuals test, confirm, and interpret their perceptions of the surrounding environment through interactions and social relationships with others (Pollock et al., 2000; Rice & Aydin, 1991). Such perceptions may emerge, over time, to represent reality and guide how individuals adapt their behaviors accordingly (Pfeffer, 1983; Salancik & Pfeffer, 1978), and are especially likely to be influenced by salient others (Galvin et al., 2010; Rice & Aydin, 1991; Salancik & Pfeffer, 1978).

Key members in team social networks. Key members occupying central positions are critical in forming and influencing team members' perceptions of leader behaviors, because they can take advantage of their structural positions to disseminate, withhold, and modify the information flowing in teams (Brass & Burkhardt, 1993; Rice & Aydin, 1991). Therefore, centrally positioned members are key players in influencing how members perceive, interpret, and make sense of leader's differentiated treatment among team members. I consider three different types of central positions that key members may hold – members who are themselves well-connected (i.e., high prestige), who serve as the connection between members (i.e., high brokerage), and who are linked to well-connected others (i.e., core status) [3].

Prestige. Prestigious members are individuals who are frequently nominated by other members as individuals they would reach out for task-related advice, information, resources, and support (Wasserman & Faust, 1994), and often enjoy high levels of popularity, reputation, and influence (Chiu et al., 2017; Salk & Brannen, 2000; Scott & Judge, 2009). This status of prestige is often operationalized by indegree centrality in social networks (e.g., Balkundi, 2006; Balkundi et al., 2009). The high involvement in other members' work allows the most prestigious member to acquire novel information about team members' work activities and current emotional status (Knoke & Burt, 1983; Reinholt et al., 2011). Therefore, prestigious members tend to be efficient in detecting the weak spots, coordinating task-related activities in teams (Balkundi, 2006; Balkundi et al.,

[3] I recognize that there exist other lines of research that describe the disproportionately higher contribution to or influence on certain team members. Two streams of research are most relevant to this dissertation. First, research on *star employees* – also referred to as *performance stars* (e.g., Kehoe et al., 2018), *extra milers* (e.g., Li et al., 2015), *relational stars* (e.g., Grigoriou & Rothaermel, 2014), among others – examines how stars contribute to team and organizational effectiveness. In their review, Call et al. (2015) defined star employees as those who have disproportionately higher performance, visibility, and social capital, and emphasized that all three dimensions are necessary conditions for an employee to be considered as a star. Although there exists a conceptual overlap between stars and key members, I did not adopt the term "star" in defining the key members in this dissertation because I argue that while key members are those with strong relationships with team members, but they may not always be the best performers (though they may be correlated) (Pearsall & Ellis, 2006). Second, mainly stemming from the Charismatic Leadership literature, scholars have examined the role of *surrogates* (e.g., Galvin et al., 2010) and *squires* (e.g., Weber & Moore, 2014) in shaping the distant followers' positive perceptions of leaders. I did not adopt these two terms in defining key members here because they are based on the implicit assumption that surrogate behaviors are always positive (i.e., benefiting the leader). Although I build on this line of theorizing and argue that key members may have the ability to mitigate the negative impact of LMX differentiation through positive surrogate behaviors, I also propose that key members may engage in negative surrogate behaviors (e.g., sabotaging the leader) should they choose to do so. Hence, because using the same name for different constructs may cause issues in making comparisons across studies and drawing scientific conclusions (Block, 2000; Call et al., 2015), I utilize the term *key members* as a way to portray influential individuals in social networks, without making assumptions on their high performance or positive surrogate behaviors.

2009), and directly influencing team member's opinions about the leader's behaviors (French & Raven, 1959; Galvin et al., 2010).

Brokerage. Brokerage, or betweenness centrality, is "the extent to which a focal person falls between pairs of other persons on the shortest path" (Brass & Burkhardt, 1993, p. 446). Brokers, therefore, are mediators connecting actors who are unconnected due to lack of access or trust (Marsden, 1990; Stovel & Shaw, 2012). In instrumental networks, brokers can facilitate team coordination through varies brokerage processes, such as connecting team members who can help each other, acting as conduits to transfer resources and advice from one member to another, and avoiding the exchange and use of redundant resources (Balkundi et al., 2009; Balkundi & Kilduff, 2006; Burt, 1992; Fernandez & Gould, 1994; Freeman, 1979; Freeman et al., 1979; Gould & Fernandez, 1989). In expressive networks, brokers are likely to become opinion leaders and influence how members perceive leader behaviors, interpret team events, and interact with other workers (Halevy et al., 2019; Wu et al., 2016). This is because, as a significant third-party, a broker can act as a *conduit* that provides or distorts information through workplace gossip (Feinberg et al., 2012; Galvin et al., 2010; Halevy et al., 2019; Mayo & Pastor, 2007), intervenes with others' relationships as mediators "to save the group unity from the danger of splitting up" (Simmel, 1950, p. 154), or even intentionally cultivates tension (e.g., conflicts, competition, and separation) so that they can leverage advantage over other individuals and gain dominant positions (Grosser et al., 2010; Halevy et al., 2019; Noon & Delbridge, 1993; Obstfeld et al., 2014; Simmel, 1950).

Core status. A team member can exert influence not only through immediate ties, but also through indirect connections (Balkundi & Kilduff, 2006). If an actor is connected to well-connected individuals or dense clusters (e.g., a subgroup in teams), that actor is considered as a node holding core (as opposed peripheral) position and has high eigenvector centrality (Bonacich, 1987; Borgatti & Everett, 1999). Although such members may not be well-connected themselves, they may still enjoy high reputation because they are the experts that experts turn to (Burt & Merluzzi, 2014). Members with high eigenvector centrality are considered to have high expertise and trustworthiness, and therefore have the potential to exert strong influence through multi-step "trickle-down" or "trickle-around" processes (Wo et al., 2019) and reap the benefits (e.g., trust) of being in-group members (Mayer et al., 1995).

However, just because all three types of key members have the *potential opportunities* to be influential, it does not mean that they will always *realize* these opportunities to exert positive influences (Adler & Kwon, 2002; Anderson, 2008; Kehoe et al., 2018). Prior network studies showed that key members were more likely to effectively use their network positions to exert positive influence (e.g., sharing knowledge and expertise with coworkers) when they were motivated (Anderson, 2008; Reinholt et al., 2011) and received complementary resources (Kehoe et al., 2018). In their study on distributed leadership in teams, Mehra, Smith, et al. (2006) found that it was the superior coordination between formal leaders and emergent leaders that benefited team performance, not just *whether* there existed informal leaders in teams. Following this reasoning, I propose that leader's relationship quality reflects the degree to which key members are motivated and have the relevant resources to mitigate the detrimental effects of LMX differentiation. In addition, given the emphasis on examining both task and socioemotional mechanisms in the teams (e.g., Courtright et al., 2015; Stewart et al., 2005; Yang & Mossholder, 2004), leadership (e.g., Ames & Flynn, 2007; DeRue et al., 2011), and LMX differentiation (e.g., Choi, 2014; Goodwin et al., 2009; Kuvaas et al., 2012) literature, I examine the role of leaders' relationships with key members in two qualitatively different social networks (i.e., instrumental and expressive networks; Borgatti & Foster, 2003; Ibarra, 1993b; Ibarra & Andrews, 1993; Krackhardt, 1990). The following section delineates how relationship quality between leaders and key members in their teams' instrumental and expressive networks can mitigate the impact of LMX differentiation on team conflict and, ultimately, team performance.

The Moderating Role of LMX with Key Members in Instrumental Networks

Instrumental ties usually arise from formal task positions and sequence of work (i.e., one task must be done before initiating another task) or in an organic way based on how members decide to distribute work among themselves (Crawford & LePine, 2013). Instrumental networks, therefore, depict the relationships and social interactions through which members exchange job-related resources, information, professional advice, expertise, knowledge, ideas, political access, and materials (Ibarra, 1993b; Ibarra & Andrews, 1993; Lincoln & Miller, 1979). Instrumental networks also reflect the interdependencies among team members regarding inputs to complete their work (Brass, 1984; Kozlowski et al., 1999) and provide perceptual cues and signals on an actor's expertise and informal hierarchical status (Ashforth & Humphrey, 1995; Mehra et al., 2006b). The advantageous positions in instrumental networks warrant key members novel information about specific work activities (Brass, 1984; Friedkin & Slater, 1994; Granovetter, 1973; Knoke & Burt, 1983), a more comprehensive picture of each team member's expertise and their work relationships (Reagans et al., 2016; Venkataramani, 2008), as well as greater control over the diffusion and flow of critical task-related resources (Burt, 1992; Schilling & Fang, 2014). Thus, key members have the means and potential to effectively facilitate adoptions of norms (Lacetera et al., 2004), improve collaborations among team members (Azoulay et al., 2010; Grigoriou & Rothaermel, 2014), disseminate valuable resources and information conducive to productivity through "trickle-down" and "trickle-around" effects (Baldwin et al., 1997; Wo et al., 2019), as well as promote learning behaviors, creativity, and innovation (Burke et al., 2007; Li et al., 2020). Isolated and peripheral members, on the contrary, may be less in tune with the team's current situations and are less likely to be effective in accessing novel information, integrating divergent ideas, and facilitating exchange of task-relevant information.

While LMX differentiation creates higher levels of task conflict because it induces self-preserving behaviors, creates divergent opinions about the content and prioritization of tasks, and inhibits within-team information exchange, I posit that the impact of LMX differentiation on task conflict varies depending on the relationship quality between the leader and key members, such that the positive association between LMX differentiation and task conflict will be weaker, and even become negative, when key members in instrumental networks experience high-quality LMX relationships. This is because when experiencing high-quality LMX, key members tend to feel obligated and driven to reciprocate their favorable treatment with higher levels of citizenship behaviors, loyalty, commitment, and performance (Asgari et al., 2008; Harris et al., 2014; Lee et al., 2018; Liden et al., 1997; Wang et al., 2005). As a result, key members may engage in *positive surrogate behavior*[4] to facilitate "a positive image of a leader" (Galvin et al., 2010, p. 480) when they experience positive social exchange relationships with leaders. Specifically, key members can attenuate other members' negative perceptions regarding LMX differentiation through promoting the leader (e.g., making positive statements about the leader's capabilities and past behaviors, expressing support for the leader's strategic goals and long-term vision), defending the leader (e.g., justifying the leader's differentiated treatment as a strategic move that will benefit the team overall, providing context to the leader's hard decisions such as budget cut, and even concealing the leader's deficiencies), and modeling followership (e.g., being committed to leaders' requests, displaying loyalty) (Galvin et al., 2010).

First, through their advantageous network positions – which warrant key members with popularity, legitimacy, expert power, as well as access to and control over information and task activities – key members can effectively help other followers make sense of the social context and understand their specific roles (Weber & Moore, 2014; Weick, 1995), reallocate resources they have received from leaders so that other followers can succeed in their roles, and reduce ambiguity and uncertainty regarding social expectations and proper behaviors (Weber & Moore, 2014). Team members, as a result, may gain higher levels of role meaningfulness, role availability, and role safety

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[4] The concept of surrogate behavior originates from the charismatic leadership literature and describes how a few key team members can influence distant followers' (i.e., those who do not have direct contact with their leaders all the time) attributions of charismatic leadership. Galvin, Balkundi, and Waldman (2010) originally conceptualized surrogate behavior mainly as a positive concept (i.e., acting for the leader). However, they did recognize the "potential for negative surrogacy" (Galvin et al., 2010, p. 490) and theorized that whether these individuals choose to engage in positive or negative surrogate behaviors is a function of their intentions and motivations. To avoid confusion, instead of using the general term *surrogate behavior*, I explicitly distinguish positive and negative surrogate behaviors in this dissertation and theorize LMX influences the degree to which key members will take advantage of network positions to act *for* or *against* their leaders.

(Kahn, 1990, 1992; Li & Liao, 2014), behave in ways that align with leaders' role assignment, share similar work values with other team members, engage in less self-preserving behaviors, even become more cooperative by sharing information and providing help to peers, thus facilitating faster and smoother decision making in teams. Moreover, because key members have greater access to novel information and task-related issues, they can act as a filter between leader and followers and report to leaders about task issues based on urgency and criticality (Weber & Moore, 2014), so that leaders can resolve critical task-related issues in a timely manner. Therefore, when leaders develop high-quality relationships with key members in instrumental networks, their differentiated treatment among team members is less likely to lead to task conflict. Further, the functional aspects of LMX differentiation can be augmented such that it promotes role clarity and fluid team coordination, reduces task conflict, and benefits subsequent team performance.

On the contrary, when key members in instrumental networks experience low-quality LMX, the dysfunctional aspect of LMX differentiation may be amplified. First, low-LMX key members may not receive adequate information and sufficient resources to engage in positive surrogate behavior (e.g., they may lack critical insights to properly help others interpret leaders' strategic goals). Indeed, Mehra, Smith, et al. (2006) found that when leadership roles were distributed among teams (i.e., there exist both formal and emerging/informal leaders), team performance was likely to suffer when the two leadership figures did not coordinate well. Furthermore, when key members do not receive high-LMX that aligns with their expert power, visibility, and reputation among peers, they may feel neglected, underappreciated, and mistreated (Erdogan & Bauer, 2010; Henderson et al., 2008; Liden et al., 2006). As such, key members may experience emotions such as envy, contempt, anger, and resentment towards their leaders and other followers (especially high-LMX members) (Anand et al., 2011; Tse et al., 2008; Tse & Troth, 2013). Consequently, key members who experience low LMX may feel compelled to maliciously engage in negative surrogate behavior, such as expressing negative opinions about leader's unfair treatment, whistle-blowing leaders' mistakes and wrong-doings (Gundlach et al., 2003), withholding their expertise and knowledge, obfuscating leaders' expectations when communicating with peers, as well as stalling or intercepting the flow of critical resources (Sparrowe, 2014). Their behaviors may magnify the negative impacts of LMX differentiation by creating higher levels of tension and consequently inhibit team coordination and performance. This leads to my next series of hypotheses:

Hypothesis 5: Leader's LMX quality with key members in instrumental networks – members with the highest prestige (H5a), brokerage (H5b), and core status (H5c) –moderates the relationship between LMX differentiation and task conflict such that the positive relationship between LMX differentiation and task conflict becomes stronger when LMX with key members is low, and weaker (or even becomes negative) when LMX with key members is high.

Hypothesis 6: The indirect effect of LMX differentiation on team performance via task conflict is moderated by leader's LMX quality with key members with the highest prestige (H6a), brokerage (H6b), and core status (H6c) in instrumental networks such that team performance is more negatively affected by LMX differentiation when LMX with key members is low, and less negatively (or even *becomes positively) affected by LMX differentiation when LMX with key members is high.*

The Moderating Role of LMX with Key Members in Expressive Networks

Social network theories distinguish between instrumental and expressive networks, as they represent different sources and means that key members acquire and exercise power and social influence (e.g., Balkundi & Harrison, 2006; Ibarra, 1993b; Ibarra & Andrews, 1993; Lincoln & Miller, 1979; Umphress et al., 2003). Through expressive ties, individuals can seek and provide social support, express personal feelings and interpersonal affect, and create a sense of belongingness (Lincoln & Miller, 1979; Umphress et al., 2003). Compared to instrumental ties, expressive ties usually form based on liking, similarities, intimacy, and emotive exchange, and therefore are less restricted by workflow (Ibarra, 1993b; Zagenczyk et al., 2010). In other words, individuals typically have more freedom to choose with whom they are connected to through expressive ties (Kilduff, 1992). Prior studies indicate that expressive networks tend to overlap strongly with emotional support, trust, and friendship networks (Ibarra, 1995; Krackhardt & Stern, 1988). Key members in expressive networks, therefore, are more involved in conversations that involve personal opinions about both good and bad things encountered at work, affording key members the opportunities to reduce or provoke negative emotional reactions towards the leader's differentiated treatment among members through positive or negative surrogate behaviors, respectively.

LMX differentiation provokes relationship conflict among team members as it induces social comparisons and disrupts social harmony (Anand et al., 2011). However, the positive association between LMX differentiation and relationship conflict can be weakened when leaders develop high-quality relationships with key members in expressive networks. As discussed previously, key members experiencing high-quality LMX are likely to engage in positive surrogate behavior and facilitate positive perceptions and attributions of leader behaviors (Galvin et al., 2010). Positive surrogate behavior, from a socio-emotional perspective, aims at portraying the leader as a likable, friendly, and fair person, and key members can do so through promoting the leader (e.g., emphasizing the leader’s positive attributes, such as caring and supportive), defending the leader (e.g., providing details on how a decision was made, describing frustrating situations that the leader had to deal with), and modeling followership (e.g., interacting with the leader in a positive way, engaging in casual conversations, showing genuine concern about the leader’s and the team’s overall welfare). Key members experiencing high LMX are motivated to buffer negative attributions of and doubts on leader behaviors (Weber & Moore, 2014) through disseminating positive information about the leader directly to many team members or indirectly through those members who are well-connected, as well as intercepting the flow of gossip and negative rumors about leaders. Experiencing high LMX and high centrality simultaneously will also make key members more likely to show assimilative social emotions (e.g., worry, sympathy, pity) towards other members, proactively engage in conversations, actively listen to their peers’ complaints and frustrations (Matta, 2016), and take those opportunities to alleviate team members’ antagonistic attitudes. Prior literature indicates that actors connected by expressive ties (i.e., key members and their peers) are likely to share similar perceptions about the team’s justice climate (Umphress et al., 2003). Therefore, when leaders develop high-quality LMX with key members in expressive networks, key members can help buffer the dysfunctional aspect of LMX differentiation such that team members are less likely to feel neglected, disrespected, mistreated, or depressed and, by extension, experience fewer negative emotions (e.g., jealousy, envy, contempt, and resentment) towards the leader and other members.

On the flip side, when key members experience low-quality LMX, they may be less driven to engage in positive surrogate behavior. Occupying key positions in expressive networks means that a large number of team members may seek out key members for social support. Such high demand for social support (e.g., personal conversations) may lead to key members' role overload and role ambiguity (Örtqvist & Wincent, 2006), making it more difficult for key members to thrive in their roles (Cullen et al., 2018). Lacking strong support via high-quality LMX from leaders further dampens key members' ability to continuously maintain high-quality relationships with their colleagues. Further, when the key member's relationship quality with the leader does not reflect the popularity among team members, they may consider it as unfair and perceive a threat to their current social status. This discrepancy between interpersonal relationships received from leader and peers may trigger the key member's defense mechanisms to eliminate competition and threat through counterproductive behaviors (e.g., spreading gossip, interacting with disrespect) (Aquino & Douglas, 2003; Matta, 2016). Consequently, LMX differentiation will create higher levels of relationship conflict when key members experience low-quality LMX. Taken together, I predict:

Hypothesis 7: Leader's LMX quality with key members in expressive networks – members with the highest prestige (H7a), brokerage (H7b), and core status (H7c) – moderates the relationship between LMX differentiation and relationship *conflict such that the positive relationship between LMX differentiation and relationship conflict becomes stronger when LMX with key members is low, and weaker when LMX with key members is high.*

Hypothesis 8: The indirect effect of LMX differentiation on team performance via relationship conflict is moderated by leader's LMX quality with key members with the highest prestige (H8a), brokerage (H8b), and core status (H8c) in expressive networks such that team performance is more negatively affected by LMX differentiation when LMX with key members is low, and less negatively affected by LMX differentiation when LMX with key members is high.

CHAPTER IV

METHODS

Sample and Procedure

Data for this study were obtained from a world-renowned provider of leadership development programs in the United States. Study participants include senior-level leaders from a variety of organizations and industries participating in a leadership development program, as well as members of their teams. Leaders and their team members received electronic surveys consisting of two types of questions: a) sociometric questions that captured team social networks, and b) psychometric survey items designed to assess their work-related perceptions, attitudes, and behaviors. Prior to responding to the survey, all respondents were informed that their responses would remain confidential. Data on social networks were collected using a roster method (Holland & Leinhardt, 1973; Marsden, 1990). Team members were presented with a roster consisting of the names of all team members, excluding themselves. Individuals were then asked to identify members with whom they interact. The content of the questions determines the kind of social network being assessed (this is described in more detail below).

The initial sample consists of 125 teams. Two teams were excluded because only one team member from those two teams participated in the study. The final sample consists of 123 leaders and 781 team members (response rate = 85%) from 123 senior executive teams representing the top three tiers of their respective organizations. The team size varied from 4 to 15 (M = 7.54, SD = 3.11). Participants represented a variety of business sectors (i.e., private, public, non-profit), industries (e.g., manufacturing, finance, pharmaceuticals, education, energy, consumer goods), and nearly 40 percent of the teams in this sample came from organizations with at least 10,000 employees. Leaders in this sample were mostly male (70.73%), Caucasian (63.41%), and held a master's degree or above (59.35%). Leaders on average were 50.2 years old (SD = 6.73), and they have spent an average of 3.06 years (SD = 2.67) with the team and 12.35 years (SD = 10.50) with the organization. Direct reports of the leaders were mostly male (60.44%), and no other demographic information was collected as part of this study. Team members have an average tenure of 3.61 years (SD = 4.52) with their teams and 10.3 years (SD = 9.98) with their organizations.

Social networks research requires high response rate for each individual network to conduct network analyses. The average response rate on social networks data across teams is 85%, and is comparable with prior network research on large organizational networks (e.g., Cullen et al., 2018). Further examination of individual response rate for each team revealed that seventeen teams had a low response rate (< 67%) and may cause issues due to the relatively incomplete network structure (Huang et al., 2019; Robins et al., 2004). Thus, these teams were not included in the analyses in which network-related variables were involved.

Measures

Leader-Member Exchange. Team members reported their LMX quality using the twelve-item LMX-MDM scale developed by Liden and Maslyn (1998) (α = .91). There are four dimensions in this LMX scale, including affect (e.g., "I like my supervisor vey much as a person"), loyalty (e.g., "My supervisor would come to my defense if I were 'attacked' by others"), contribution (e.g., "I do not mind working my hardest for my leader"), and professional respect (e.g., "I admire my supervisor's professional skills").

Responses for all items were recorded using a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Leader-Member Exchange Differentiation. In line with previous research (e.g., Boies & Howell, 2006; Erdogan & Bauer, 2010; Le Blanc & González-Romá, 2012; Liao et al., 2017; Nishii & Mayer, 2009; Seo et al., 2018; Sui et al., 2016). LMX differentiation was operationalized as the within-group standard deviation (SD) of LMX.

Task Conflict. Team members rated task conflict using three items adapted from Pelled, Eisenhardt, and Xin (1999) (α = .85). Responses was recorded using a five-point Likert scale ranging from 1 (to a very little extent) to 5 (to a very great extent). This adapted scale was also used successfully in other research (e.g., Farh et al., 2010). A sample item is “Team members disagree about how things should be done”.

Relationship conflict. Relationship conflict was measured using a three-item scale from Simons and Peterson (2000). The scale was based on Jehn’s (1995) measure of relationship conflict (α = .87) and was modified to match the context of senior-level teams. Each item measured relationship conflict on a five-point Likert scale ranging from 1 (to a very little extent) to 5 (to a very great extent). A sample item for relationship conflict is “There is jealousy or rivalry among the members of this team”.

LMX with key members in team social networks. The network variable was measured using a single-item to avoid respondent fatigue that may jeopardize data reliability (Marsden, 1990). This practice is consistent with most network research (e.g., Balkundi et al., 2009; 2006a), and prior research also indicates that respondents are able to provide accurate information of relatively stable patterns of interactions in social networks analysis (Brass, 1984; Freeman et al., 1987). Because the focus of this study was to examine the role of key members identified by team members (i.e., peers), leaders were not considered as an actor of the team social networks and their network ties were excluded.

Constructing instrumental networks. For instrumental networks, team members responded to an item that reads “I receive information, advice, or resources from this person to succeed in my role” on a five-point scale:1 (never), 2 (seldom), 3 (sometimes), 4 (often), and 5 (always). In instrumental networks, centrality was assessed using directed ties. Directed ties capture the qualitative distinction between being the source and the recipient of critical task-related information, and therefore better reflects the status and power of each actor in the social networks (Brass & Krackhardt, 1999; Knoke & Burt, 1983) and the degree to which a member is likely to control the flow of task-related information (White & Borgatti, 1994).

An additional step was taken to dichotomize the instrumental network data into binary data following the guidelines put forward by Borgatti and Quintane (2018). Dichotomizing valued networks helps preserve information on strong ties, and often yields more readable network structure and accurate predictions that cannot be derived from valued network data directly (Borgatti et al., 2013; Borgatti & Quintane, 2018). Specifically, I dichotomized the valued instrumental network such that a tie is considered to exist if the respondent chose 3 (sometimes), 4 (often), or 5 (always), and is considered as absent if the respondent chose 1 (never) or 2 (seldom). This threshold of “3” was chosen for two reasons. First, from a theoretical perspective, a tie strength smaller than 3 (sometimes) indicates that the two actors do not have a strong instrumental relationship, and therefore the influence of one actor on another is relatively weak. This threshold is also consistent with prior research that dichotomized instrumental networks (e.g., Methot et al., 2016). Second, from a methodological perspective, the chosen cutoff point should retain the richness of the network data, while pose the least amount of distortion to the original network structure (i.e., minimizing loss of information; Thomas & Blitzstein, 2009). In other words, we would expect the dichotomized network to correlate highly with the original network. I therefore calculated the correlation between the original and dichotomized networks for each team at each threshold. The average correlation between the original and dichotomized networks across teams is the highest when the threshold is set at 3 (r = .82), indicating that the dichotomized networks highly resemble the original networks (Borgatti & Quintane, 2018). Therefore, I dichotomized the instrumental network with the level of dichotomization set at “3 (sometimes)” and used these dichotomized networks in the subsequent analyses.

Constructing expressive networks. Team expressive social networks were constructed using one item that reads “I can go to him/her to share excitement or frustration”, and team members responded with 1 (yes) or 2 (no) to this question. Because my conceptualization of brokers in expressive networks emphasizes the broker’s function as a third-party that diffuses or aggravates any tension through exchanging personal opinions and feelings through strong, personal relationships – rather than tracking any specific information flow – I used mutual ties when constructing social networks. In other words, to better preserve information on *strong ties* in expressive networks, a tie is considered to exist only if both actors in a pair endorsed the other as a person that they can share frustration or excitement with.

Identifying key members in team networks. Next, using the igraph package in R, I calculated three types of centrality scores – degree centrality, betweenness centrality, and eigenvector centrality – to represent each member's prestige, brokerage, and core status in teams, respectively (Borgatti et al., 2013). In both instrumental and expressive networks, I computed degree centrality scores based on the number of ties by each member; a high degree centrality represents a high level of structural dependence of others on the focal individual. Next, following previous studies (e.g., Balkundi, 2006; Balkundi et al., 2009), I captured each member's brokerage (i.e., betweenness centrality) based on the extent to which a member falls on the shortest path between two unconnected members in the team. Finally, I measured a member's core status using eigenvector centrality; a high eigenvector centrality score designates an actor who receives many ties from those that themselves receive many social ties (Bonacich, 1987). I normalized the centrality scores based on team size so that they are comparable across teams (Wasserman & Faust, 1994). This standardization approach is consistent with prior research such as Balkundi (2004), Balkundi, Barsness, & Michael (2009), and Li, Zhao, Walter, Zhang, & Yu (2015). Team members with the highest score on each of these centrality metrics will be deemed as being a "key member" in that team social network.

LMX with key members. After identifying the key members in each team social network based on the above-mentioned centrality scores, I used their LMX score in subsequent analyses. In situations where there was more than one member with the highest scores on the same centrality metric (e.g., two members in the same team have the same highest betweenness centrality score), I randomly chose one member and used that member's LMX in the analyses. This approach of identifying the most central member and using their relevant scores in team-level analysis is consistent with prior research (e.g., Li et al., 2015; Sherf et al., 2018). In addition, to retain power, in instances where the most central member's LMX was not available, LMX of the member with the second highest centrality score was chosen for that team.

Team performance. Leaders reported their evaluation of team performance using five-item scale ranging from 1 (strongly disagree) to 5 (strongly agree) (α = .90). The items include "This team does high quality work", "Overall, the team is effective", "The team is achieving its goals", "The team is productive", and "We execute well as a team".

Control variables. To rule out alternative explanations, I controlled for *team size* because members of larger teams have more opportunities to forge a higher number of ties than those from smaller teams. Teams size has also been found to be correlated with team conflict (Amason & Sapienza, 1997) and team performance (Certo et al., 2006; Guzzo & Dickson, 1996). In addition, I controlled for *team network density* for both instrumental and expressive networks, as team network density may impact the degree to which key members can effectively exert social influence and has been found to be associated with team cohesion team performance (Reagans et al., 2004). Finally, I intended to control for the *mean levels of LMX* because of the potential confounding issue between means and standard deviations (Harrison & Klein, 2007). Controlling for these variables is consistent with prior research that focused on examining both the influence of LMX differentiation (Seo et al., 2018) on team outcomes and the influence of a significant team member's attributes and network characteristics on team outcomes (e.g., Balkundi, 2006; Furtado, 2016; Li et al., 2015; Sherf et al., 2018).

Analyses

Before testing the hypotheses, I first conducted a series of confirmatory factory analyses (CFA) to establish discriminant validity of the measures used in this study. The three member-source measures (i.e., LMX, task conflict, relationship conflict) were included in a model that was hypothesized to consist of three latent constructs. Due to the established nature of LMX-MDM measure, item parceling was used to maximize the parameter estimates to sample size ratio (Little et al., 2002). Results of the three-factor model showed very good fit: χ^2 (32) = 64.93 ($p < .05$), RMSEA = .04 ($p > .05$), CFI = .99, TLI = .98, SRMR = .03. This model also had a better fit compared to the two-factor model (task + relationship conflict, LMX): χ^2 (34) = 448.93 ($p < .05$), RMSEA = .14 ($p < .05$), CFI = .85, TLI = .80, SRMR = .07, as well as the one-factor model where all variables were loaded onto a single factor: χ^2 (35) = 1194.00 ($p < .05$), RMSEA = .23 ($p < .05$), CFI = .58, TLI = .46, SRMR = .16.

Following procedures presented in LeBreton and Senter (2008), I computed the $r_{wg(j)}$ estimate of inter-rater agreement and ICC(1) to investigate whether aggregation was appropriate. For task conflict, a mean $r_{wg(j)}$ estimate (using a uniform null distribution) of .79 (median = .81) and ICC(1) value of .13. For relationship conflict, I found an average $r_{wg(j)}$ of .78 (median = .82) and ICC(1) of .21. These values provide sufficient support for aggregation (Bliese, 2000).

As a final step, I conducted a multilevel CFA using the lavaan package in R following the procedures put forth by Huang (2018). One-factor and two-factor solutions were modeled at the higher level for both forms of conflict. Fit indices from these two models suggest that a level 2 two-factor solution: χ^2 (16) = 40.80 ($p < .05$), RMSEA = .05

(p > .05), CFI = .99, TLI = .98, SRMR*within* = .03, SRMR*between* = .04, fit the data slightly better than the one-factor solution: χ^2 (17) = 43.34 (p < .05), RMSEA = .05 (p > .05), CFI = .99, TLI = .98, SRMR*within* = .03, SRMR*between* = .09.

Prior to data analyses, the data were also screened for outliers using leverage statistics and standardized dfBetas. To examine nonmodel-based outliers, leverage indices for each team were computed and an outlier was defined as having a leverage value 4 times greater than the mean leverage statistic. No outliers were detected (.19; $leverage_{max}$ = .54). Examination of standardized dfBetas revealed no value greater than |1.96|, suggesting that there were no model-based outliers. Collectively, this analysis suggests that there were no outliers or extreme data points in the data. Assessment of univariate indices of skewness and kurtosis revealed a maximum skewness value of |1.51| and a maximum kurtosis value of |3.24|. These indices suggest that univariate normality was not a major concern in this sample.

CHAPTER V

RESULTS

Descriptive Statistics and Correlations

The correlations, means, standard deviations for the variables of interest in this dissertation appear in Table 1. In line with my theorizing, LMX differentiation was positively correlated with task conflict (r = .38, p < .05) and relationship conflict (r = .36, p < .05). The correlation between LMX differentiation and team performance was not significant (r = -.09, p > .10) and is consistent with recent meta-analytic findings (ρ = -.01, CI [-.06, .03]; Yu et al., 2018). As expected, task conflict correlated positively with relationship conflict (r = .64, p < .05) and showed a similar pattern with existing meta-analysis (ρ = .54; de Wit et al., 2012). I also observed a negative association between task conflict and team performance (r = -.36, p < .05). Although the correlation between relationship and team performance was also negative as predicted, it was not significant (r = -.17, p > .10). In addition, LMX with key members in instrumental and expressive networks was found to be negatively related to both task conflict (-.36 < r < .21) and relationship conflict (-.34 < r < -.16). The correlation between LMX differentiation and team mean LMX was significantly higher in this sample (r = -.70, p < .05) when compared to results from recent meta-analysis (ρ = -.18, CI [-.22, -.10]; Yu et al., 2018). Due to the magnitude of this correlation, I excluded mean LMX as a control variable for all further analyses to avoid challenges with multicollinearity.

Table 1. Means, Standard Deviations, and Correlations

Variables	*M*	*SD*	1	2	3	4	5	6	7
1. LMXD	.46	.22	-						
2. Team mean LMX	4.34	.32	-.70**	-					
3. Team size	7.54	3.11	.09	-.15	-				
4. Instrumental network density	.52	.15	-.03	.03	-.04	-			
5. Expressive network density	.51	.22	-.08	.12	-.25*	.13	-		
6. Task conflict	2.16	.44	.38**	-.43**	.33**	.01	-.11	-	
7. Relationship conflict	1.70	.53	.36**	-.40**	.27**	-.02	-.28**	.64**	-
8. Team performance	4.25	.53	-.09	.20*	-.12	-.09	.11	-.36**	-.17
9. LMX.iN.d	4.34	.62	-.35**	.62**	-.12	-.05	.03	-.30**	-.28**
10. LMX.iN.b	4.32	.56	-.38**	.60**	-.09	-.13	.03	-.33**	-.30**
11. LMX.iN.e	4.33	.61	-.42**	.62**	-.08	-.03	.07	-.32**	-.34**
12. LMX.iN.p	4.36	.57	-.32**	.53**	-.10	-.07	.05	-.31**	-.28**
13. LMX.eN.d	4.45	.47	-.27**	.59**	-.09	.07	.20*	-.21*	-.23*
14. LMX.eN.b	4.45	.47	-.28**	.63**	-.15	.06	.29**	-.22*	-.21*
15. LMX.eN.e	4.45	.44	-.22*	.54**	-.19	.07	.20*	-.21*	-.16
16. LMX.eN.p	4.42	.46	-.24*	.57**	-.09	.15	.11	-.30**	-.22*

Table 1. Means, Standard Deviations, and Correlations (Continued)

Variables	8	9	10	11	12	13	14	15
8. Team performance	-							
9. LMX.iN.d	.03	-						
10. LMX.iN.b	.12	.75**	-					
11. LMX.iN.e	.09	.78**	.77**	-				
12. LMX.iN.p	.18	.72**	.83**	.72**	-			
13. LMX.eN.d	.21*	.44**	.36**	.45**	.34**	-		
14. LMX.eN.b	.21*	.42**	.42**	.46**	.39**	.82**	-	
15. LMX.eN.e	.23*	.39**	.35**	.46**	.33**	.79**	.86**	-
16. LMX.eN.p	.20*	.41**	.38**	.44**	.36**	.76**	.90**	.83**

Note: N = 90-123; M = Mean; SD = Standard deviation; LMXD = LMX differentiation; LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks; LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks; LMX.iN.e = LMX with key members with the highest eigenvector centrality in instrumental networks; LMX.eN.p = LMX with key members with the highest pooled centrality in instrumental networks; LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks; LMX.eN.b = LMX with key members with the highest betweenness centrality in expressive networks; LMX.eN.e = LMX with key members with the highest eigenvector centrality in expressive networks; LMX.eN.p = LMX with key members with the highest pooled centrality in expressive networks.
$^{*}p < 0.05$; $^{**}p < 0.01$

Tests of Hypotheses

The main effect of LMX differentiation on task conflict and relationship conflict. I used multiple regression analysis to test the hypotheses in this dissertation. Hypothesis 1 predicted that LMX differentiation would be positively related to task conflict. The results of this analysis are presented in Model 2 of Table 2. LMX differentiation was positively and significantly related to task conflict ($b = .83$, $p < .05$). After controlling for team size, LMX differentiation explained an additional variance of 12% in task conflict and together the variables explained 23% of the variance. Therefore, Hypothesis 1 was fully supported. Hypothesis 3 proposed that LMX would be positively related to relationship conflict. Model 4 in Table 2 reveals that LMX differentiation was positively and significantly related to relationship conflict ($b = .85$, $p < .05$), explaining an additional 12% of variance after controlling for team size. Thus, Hypothesis 3 was supported.

The effects of task conflict and relationship conflicts on team performance. Hypothesis 2a predicted that task conflict would negatively influence team performance. Model 3 in Table 3 reveals a negative and significant relationship between task conflict and team performance ($b = -.44$, $p < .05$), with task conflict accounting for 12% of the total variance explained in team performance. Thus, Hypothesis 2a was supported. Hypothesis 4a posited that relationship conflict would negatively influence team performance. Model 4 in Table 3 indicates that the association between relationship conflict and team performance was not significant ($b = -.15$, $p < .05$), failing to support Hypothesis 4a.

Table 2. Multiple Regression Results for the Test of Hypotheses Involving Task Conflict and Relationship Conflict

Variable	Task Conflict				Relationship Conflict			
	Model 1		Model 2 (H1)		Model 3		Model 4 (H3)	
	b	SE	b	SE	b	SE	b	SE
Constant	**1.81*****	.10	**1.50*****	.12	**1.35*****	.12	**.99*****	.14
Control								
Team Size	**.05*****	.01	**.04*****	.01	**.05****	.02	**.04****	.01
Independent Variable								
LMXD			**.73*****	.17			**.85*****	.20
F	**14.82*****		**18.28*****		**9.45****		**13.96*****	
df	1, 121		2, 120		1, 121		2, 120	
R^2	**.11*****		**.23*****		**.07****		**.19*****	
Adjusted R^2	.10***		**.22*****		**.07****		**.18*****	
ΔR^2			**.12*****				**.12*****	

Note: N = 123; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error.
LMXD = LMX differentiation. ΔR^2 Comparisons: Model 2 with Model 1; Models 4 with Model 3.
$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 3. Multiple Regression Results for the Test of Hypotheses Involving Team Performance

Variable	Team Performance													
	Model 1		Model 2		Model 3 (H2a)		Model 4 (H4a)		Model 5 (H2b)		Model 6 (H4b)		Model 7 (Overall)	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**4.40*****	.13	**4.50*****	.16	**5.23*****	.24	**4.61*****	.18	**5.22*****	.25	**4.63*****	.19	**5.23*****	.25
Control														
Team Size	-.02	.02	-.02	.02	-.00	.02	-.01	.02	-.00	.02	-.01	.02	-.00	.02
Independent Variable														
LMXD			-.21	.23					.09	.23	-.09	.25	.04	.24
Mediator														
Task Conflict					**-.44*****	.11			**-.45*****	.12			**-.53*****	.15
Relationship Conflict							-.15	.10			-.14	.10	.11	.12
F	1.63		1.22		**8.39*****		2.05		**5.60****		1.40		1.40	
df	1, 113		2, 112		2, 112		2, 113		3, 111		3, 111		3, 111	
R^2	.01		.02		**.13*****		.04		**.13*****		.04		.04	
Adjusted R^2	.01		.00		**.12*****		.02		**.11*****		.01		.01	
ΔR^2			.01		**.12*****		.02		**.11*****		.02		.02	

Note: N = 115; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation. ΔR^2 Comparisons: Models 2, 3 and 4 with Model 1; Models 5, 6 and 7 with Model 2.
$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

The indirect effect of LMX differentiation on team performance via task and relationship conflict. Hypothesis 2b indicated that task conflict would mediate the relationship between LMX differentiation and team performance. Model 2 in Table 3 shows that LMX differentiation did not have a significant, direct effect on team performance (b = -.21, p > .10). While this failed to fulfill the criteria to establish mediation as laid out by Baron and Kenny (1986), Model 5 reveals that when regressing team performance on both LMX differentiation and task conflict, task conflict explained an additional 11% of the total variance in team performance. Therefore, following the recommendations of Preacher and Hayes (2008), I examined the significance of the indirect effect of LMX differentiation on team performance via task conflict by examining the confidence interval of this effect using 5,000 bootstrapped samples. If the confidence interval of the indirect effect does not include zero, we can conclude that the effect is significant. Results of this analysis suggest that LMX differentiation had a significant indirect effect on team performance via task conflict (b = -.30, 95% CI [-.57, -.09]), while the direct effect was non-significant (b = -.09, 95% CI [-.37, .55]). Thus, I concluded that task conflict mediated the relationship between LMX differentiation and team performance, supporting Hypothesis 2b.

Hypothesis 4b proposed that relationship conflict would mediate the relationship between LMX differentiation and team performance. Model 6 in Table 3 showed no support for a significant mediation effect. This finding was also consistent with the test results of indirect effects using 5,000 bootstrap samples, as both the direct effect (b = -.09, 95% CI [-.58, .40]) and indirect effect (b = -.12, 95% CI [-.32, .11]) were not significant. Hence, Hypothesis 4b was not supported.

I also tested the full model examining the indirect effect of LMX differentiation on task performance via both task and relationship conflict. As illustrated in Table 3 Model 7, task conflict remained significant (b = .53, p < .05) while relationship conflict was not significant (b = .11, p > .05). I once again tested the full model using PROCESS macro (Model 4) following the recommendations put forward by Preacher and Hayes (2008). Results from 5,000 bootstrapped samples suggest that the indirect effect of LMX differentiation on team performance via task conflict was significant (b = -.35, 95% CI [-.67, -.10]), whereas this was not the case for relationship conflict (b = .10, 95% CI [-.12, .37]). The direct effect of LMX differentiation on team performance was not significant because the confidence interval contains zero (b = .04, 95% CI [-.43, .52]).

The moderating effects of LMX with key members in instrumental networks on the LMX differentiation – task conflict relationship. Table 4 summarizes the tests for Hypotheses 5a, 5b, and 5c, which predicted that the positive relationship between LMX differentiation and task conflict would be moderated by leader's LMX with key members with the highest prestige (i.e., indegree centrality; H5a), brokerage (i.e., betweenness centrality; H5b), and core status (i.e., eigenvector centrality; H5c) in instrumental networks. I tested the moderating effect of LMX with key members on the relationship between LMX differentiation and both forms of conflict individually (i.e., one moderator at a time as opposed to entering three moderators all at once) because each moderator was based on a unique network property. I created the interaction terms by multiplying the mean-centered LMX differentiation and LMX with the three types of key members in instrumental networks. Team size and team instrumental network density were entered as control variables in the first step in the regression analyses. Results from Models 4, 8, and

Table 4. Moderation Analyses for the LMX Differentiation – Task Conflict Relationship

Variable	Task Conflict								Task Conflict							
	Model 1		Model 2		Model 3		Model 4 (H5a)		Model 5		Model 6		Model 7		Model 8 (H5b)	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Constant	**1.84*****	.18	**1.84*****	.17	**1.88*****	.17	**1.89*****	.17	**1.85*****	.20	**1.85*****	.19	**1.92*****	.19	**1.93*****	.19
Control																
Team Size	**.04****	.01	**.04****	.01	**.04**	.01	.04†	.01	**.04****	.01	**.04****	.01	**.03****	.01	**.03****	.01
Instrumental Network Density	.06	.26	.09	.25	.05	.25	.06	.25	.10	.30	.11	.29	.01	.29	.02	.29
Independent Variable																
LMXD			**.69*****	.19	**.56****	.20	.53	.20			**.68****	.20	**.51***	.21	**.49***	.21
Moderator																
LMX.iN.d					**-.12****	.07	**-.17***	.08								
LMX.iN.b													**-.16***	0.08	**-.20***	0.09
LMX.iN.e																
LMX.iN.p																
Interaction																
LMXD × LMX.iN.d							.28	.27								
LMXD × LMX.iN.b															.19	.28
LMXD × LMX.iN.e																
LMXD × LMX.iN.p																
F	**4,88****		**8.22*****		**7.20*****		**5.99*****		**4.24***		**7.13*****		**6.75*****		**5.46*****	
df	2, 103		3, 102		4, 101		5, 100		2, 94		3, 93		4, 92		5, 91	
R^2	**.09****		**.20*****		.22†		.23		**.08***		**.19****		**.23***		.23	
Adjusted R^2	**.07****		**.17*****		.19†		.19		**.06***		**.16****		**.19***		.19	
ΔR^2			**.11*****		.03†		.01				**.10***		**.04***		.00	

Note: N = 97-106; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks; LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks; LMX.iN.e = LMX with key members with the highest eigenvector centrality in instrumental networks; LMX.iN.p = LMX with key members with the highest pooled centrality in instrumental networks.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 4. Moderation Analyses for the LMX Differentiation – Task Conflict Relationship (Continued)

Variable	Task Conflict								Task Conflict							
	Model 9		Model 10		Model 11		Model 12 (H5c)		Model 13		Model 14		Model 15		Model 16	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Constant	**1.80*****	.19	**1.82*****	.17	**1.84*****	.17	**1.85*****	.18	**1.84*****	.18	**1.84*****	.17	**1.88*****	.17	**1.88*****	17
Control																
Team Size	**.04****	.01	**.03***	.01	**.03***	.01	**.03***	.01	**.04****	.01	**.04****	.01	**.04****	.01	.04**	.01
Instrumental Network Density	.16	.27	.16	.25	.14	.25	.13	.25	.06	.26	.09	.25	.04	.25	.04	.25
Independent Variable																
LMXD			**.71*****	.18	**.56****	.20	**.55****	.20			**.69*****	.19	**.56****	.19	**.55****	.20
Moderator																
LMX.iN.d																
LMX.iN.b																
LMX.iN.e					-0.12†	.07	-.14	.00								
LMX.iN.p													**-.15***	.07	-.15†	.09
Interaction																
LMXD × LMX.iN.d																
LMXD × LMX.iN.b																
LMXD × LMX.iN.e							.10	.30								
LMXD × LMX.iN.p															.01	.29
F	**3.85***		**7.93*****		**6.90*****		**5.49*****		**4.88****		**8.22*****		**7.48*****		**5.92*****	
df	2, 98		3, 97		4, 96		5, 95		2, 103		3, 102		4, 101		5, 100	
R^2	**.07***		**.20*****		.22†		.22		**.08****		**.20*****		**.23***		.23	
Adjusted R^2	**.05***		**.17*****		.19†		.18		**.07****		**.17****		**.20***		.19	
ΔR^2			**.12*****		.03†		.00				.11		.03		.00	

Note: N = 97-106; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks; LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks; LMX.iN.e = LMX with key members with the highest eigenvector centrality in instrumental networks; LMX.iN.p = LMX with key members with the highest pooled centrality in instrumental networks.

$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

12 in Table 4 suggest that the moderation effects of LMX with key member with the highest indegree centrality (b = -.28, p > .10), betweenness centrality (b = -.19, p > .10) and eigenvector centrality (b = .10, p > .10) were not significant. Therefore, Hypotheses 5a, 5b, and 5c were not supported.

Although not theorized as part of this dissertation, I observed negative and significant direct effects of LMX of key members with the highest indegree centrality (b = -.12, p < .05; Table 4 Model 3) and betweenness centrality (b = -.16, p < .05; Table 4 Model 7) on task conflict. There was also a marginal direct effect of LMX with key members with the highest eigenvector centrality on task conflict (b = -.12, p < .10; Table 4 Model 11).

The moderating effects of LMX with key members in expressive networks on the LMX differentiation – relationship conflict relationship. Table 5 displays the test for Hypotheses 7a-c, which proposed that LMX with key members with the highest prestige (i.e., degree centrality; H7a), brokerage (i.e., betweenness centrality; H7b), and core status (i.e., eigenvector centrality; H7c) in expressive networks would moderate the negative relationship between LMX differentiation and relationship conflict. Results from Model 4, 8 and 12 in Table 5 indicate that the moderation effects of LMX with key members with the highest degree centrality (b = .07, p > .10), betweenness centrality (b = -.47, p > .10), and eigenvector centrality (b = -.33, p > .10) on the LMX differentiation – relationship conflict were not significant. Thus, Hypotheses 7a, 7b, and 7c were not supported.

Different from the test results in instrumental networks, LMX with the three types of key members in expressive networks did not have a main effect on relationship

Table 5. Moderation Analyses for the LMX Differentiation – Relationship Conflict Relationship

Variable	Relationship Conflict								Relationship Conflict							
	Model 1		Model 2		Model 3		Model 4 (H7a)		Model 1		Model 2		Model 3		Model 4 (H7b)	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**1.75*****	.19	**1.74*****	.18	**1.72*****	.18	**1.72*****	.18	**1.80*****	.22	**1.71*****	.22	**1.70*****	.22	**1.68*****	.22
Control																
Team Size	**.03***	.02	**.03***	.02	.03	.02	.03	.02	.02	.02	.03	.02	.03	.02	.03	.02
Expressive Network Density	**-.54***	.22	**-.49***	.21	**-.45***	.22	**-.45***	.22	-.45	.27	-.37	.26	-.33	.27	-.33	.27
Independent Variable																
LMXD			**.72****	.23	**.65****	.24	**.65****	.24			**.80****	.25	**.76****	.26	**.81****	.27
Moderator																
LMX.eN.d					-.12	.10	-.12	.11								
LMX.eN.b													-.07	.12	-.02	.13
LMX.eN.e																
LMX.eN.p																
Interaction																
LMXD × LMX.eN.d							.07	.01								
LMXD × LMX.eN.b															-.47	.61
LMXD × LMX.eN.e																
LMXD × LMX.eN.p																
F	**6.61****		**8.17*****		**6.46*****		**5.12*****		3.08†		**5.75****		**4.36****		**3.59****	
df	2, 102		3, 101		4, 100		5, 99		2, 87		3, 86		4, 85		5, 84	
R^2	**.11****		**.20****		.21		.21		.07†		**.17****		.17		.18	
Adjusted R^2	**.10****		**.17****		.17		.17		.05†		**.14****		.13		.13	
ΔR^2			**.08****		.01		.00				**.10****		.00		.01	

Note: N = 90-105; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks; LMX.eN.b = LMX with key members with the highest betweenness centrality in expressive networks; LMX.eN.e = LMX with key members with the highest eigenvector centrality in expressive networks; LMX.eN.p = LMX with key members with the highest pooled centrality in expressive networks.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 5. Moderation Analyses for the LMX Differentiation – Relationship Conflict Relationship (Continued)

Variable	Relationship Conflict								Relationship Conflict							
	Model 9		Model 10		Model 11		Model 12 (H7c)		Model 13		Model 14		Model 15		Model 16	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Constant	**1.75*****	.19	**1.74*****	.18	**1.74*****	.18	**1.74*****	.19	**1.75*****	.19	**1.74*****	.18	**1.74*****	.18	**1.74*****	.19
Control																
Team Size	**.03***	.02	**.03***	.02	.03†	.02	.03†	.02	**.03***	.02	**.03***	.02	.03†	.02	.03†	.02
Expressive Network Density	**-.54***	.22	**-.49***	.21	**-.48***	.22	**-.49***	.22	**-.54***	.22	**-.49***	.21	**-.47***	.21	**-.49***	.22
Independent Variable																
LMXD			**.72****	.23	**.71****	.23	**.74****	.24			**.72****	.23	**.65****	.23	**.66****	.24
Moderator																
LMX.eN.d																
LMX.eN.b																
LMX.eN.e					-.03	.11	-.01	.12					-.01	.11	-.13	.11
LMX.eN.p																
Interaction																
LMXD × LMX.eN.d																
LMXD × LMX.eN.b																
LMXD × LMX.eN.e							-.33	.56							-.03	.53
LMXD × LMX.eN.p																
F	**6.61****		**8.17*****		**6.09*****		**4.91*****		**6.61****		**8.17*****		**6.56*****		**5.20*****	
df	2, 102		3, 101		4, 100		5, 99		2, 102		3, 101		4, 100		5, 99	
R^2	**.12****		**.20****		.20		.20		**.12****		**.20****		.21		.21	
Adjusted R^2	**.10****		**.17****		.16		.16		**.10****		**.17****		.18		.17	
ΔR^2			**.08****		.00		.00				**.08****		.01		.00	

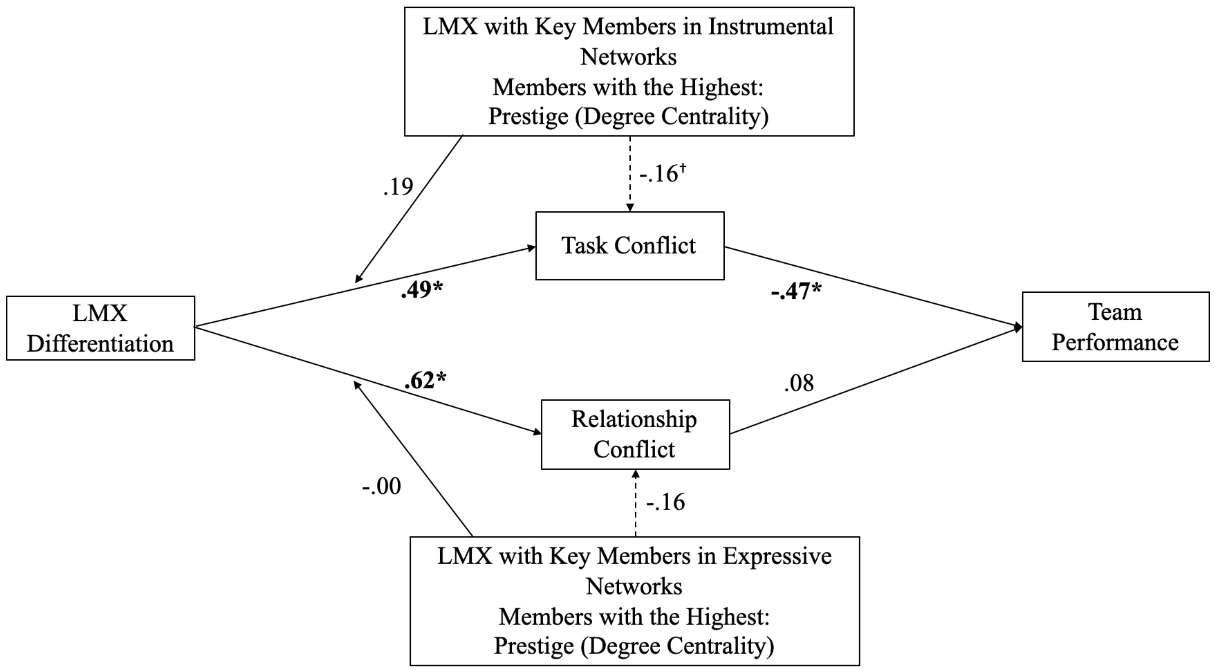
Note: N = 90-105; Significant relationships are presented in bold; b = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks; LMX.eN.b = LMX with key members with the highest betweenness centrality in expressive networks; LMX.eN.e = LMX with key members with the highest eigenvector centrality in expressive networks; LMX.eN.p = LMX with key members with the highest pooled centrality in expressive networks.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

conflict (LMX of key members with highest degree centrality: $b = -.12$, $p > .10$; LMX of key members with highest betweenness centrality: $b = -.07$, $p > .10$; LMX of key members with highest eigenvector centrality: $b = -.03$, $p > .10$).

The conditional indirect effect of LMX differentiation on team performance via task conflict and relationship conflict. Hypotheses 6a-c and 8a-c proposed that the indirect effect of LMX differentiation on team performance via task conflict and relationship conflict would be moderated by leader's LMX quality with key members with the highest prestige (i.e., degree centrality), brokerage (i.e., betweenness centrality) and core status (i.e., eigenvector centrality) in team instrumental and expressive networks. To account for the potential overlap of key members – that one member can be the key member in both instrumental and expressive networks – I tested the full model with two moderators simultaneously. I tested my full models in PROCESS macro following the recommendations of Hayes (2018). Based on the network attributes of key members, I tested three models separately. Each model consisted of both mediation chains and two moderators with the same network centrality from both instrumental and expressive networks.

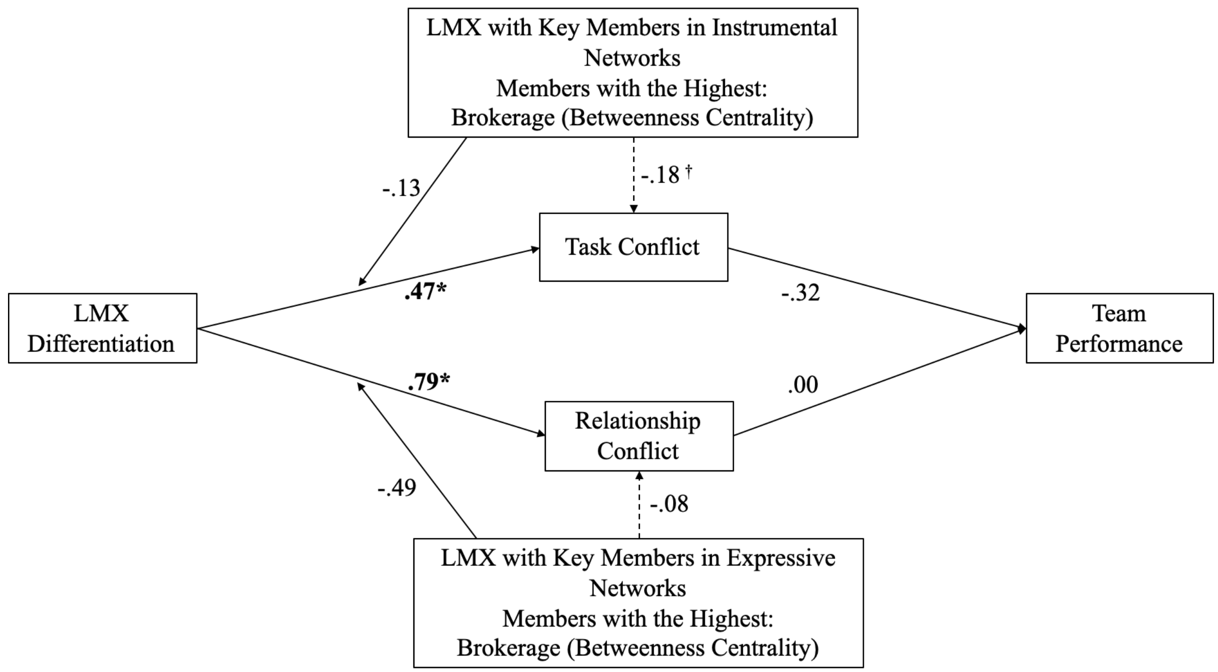
Figures 2, 3, and 4 illustrate the test results and unstandardized path estimates. Results suggest that the moderating effects for all six proposed moderators were non-significant. Following the recommendations of Edwards and Lambert (2007), I examined the indirect effects at high (+1 SD) and low (-1 SD) levels of each moderator to see whether they significantly differed from one another using 5,000 bootstrapped samples. Table 6 displays the results for these simple slop difference tests. Because the confidence intervals contain zero in all of the simple slope difference analyses, I concluded that there

Figure 2. First-Stage Moderation Results with Two Moderators Involving Key Members with the Highest Prestige (Degree Centrality)



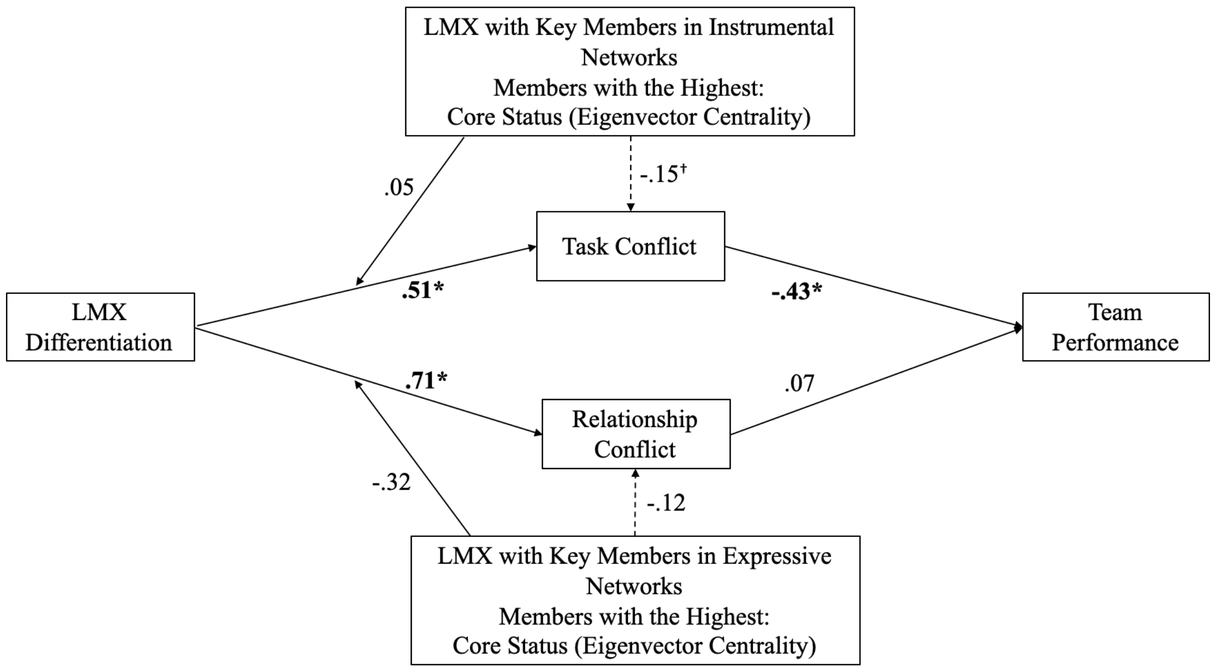
Note: N = 101.
†$p < .10$; *$p < .05$

Figure 3. First-Stage Moderation Results with Two Moderators Involving Key Members with the Highest Brokerage (Betweenness Centrality)



Note: N = 82.
$^{\dagger}p < .10$; $^{*}p < .05$

Figure 4. First-Stage Moderation Results with Two Moderators Involving Key Members with the Highest Core Status (Eigenvector Centrality)



Note: N = 96.
† p < .10; * p < .05

Table 6. Conditional Indirect Effects of LMX Differentiation on Team Performance via Task and Relationship Conflict, Moderated by LMX with Key Members (First-Stage Moderation)

Dependent Variable		Team Performance			
N=101		Indirect	*SE*	95% CI	
Moderator		Effect		*LL*	*UL*
LMX.iN.d					
	High	-.28	.19	-.75	-.02
	Low	-.17	.17	-.55	.13
	Difference	-.11	.19	-.58	.19
LMX.eN.d					
	High	.05	.10	-.14	.27
	Low	.05	.12	-.15	.36
	Difference	-.00	.11	-.23	.24
N=82		Indirect	*SE*	95% CI	
Moderator		Effect		*LL*	*UL*
LMX.iN.b					
	High	-.18	.18	-.61	.07
	Low	-.13	.16	-.52	.10
	Difference	-.05	.15	-.38	.25
LMX.eN.b					
	High	.00	.11	-.21	.24
	Low	.00	.18	-.35	.39
	Difference	.00	.12	-.26	.27
N=96		Indirect	*SE*	95% CI	
Moderator		Effect		*LL*	*UL*
LMX.iN.e					
	High	-.23	.18	-.65	.03
	Low	-.20	.16	-.59	.06
	Difference	-.03	.16	-.39	.31
LMX.eN.e					
	High	.04	.11	-.16	.29
	Low	.05	.15	-.22	.39
	Difference	-.02	.10	-.25	.20
N=101		Indirect	*SE*	95% CI	
Moderator		Effect		*LL*	*UL*
LMX.iN.p					
	High	-.23	.16	-.61	-.00
	Low	-.22	.18	-.66	.05
	Difference	-.01	.18	-.35	.39
LMX.eN.p					
	High	.04	.09	-.10	.26
	Low	.07	.14	-.17	.40
	Difference	-.02	.11	-.26	.19

Note: N = 82-101; *SE* = Standard error; CI = Confidence interval; *LL* = Lower limit; *UL* = Upper limit.
LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks;
LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks;
LMX.iN.e = LMX with key members with the highest eigenvector centrality in instrumental networks;
LMX.iN.p = LMX with key members with the highest pooled centrality in instrumental networks;
LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks;
LMX.eN.b = LMX with key members with the highest betweenness centrality in expressive networks;
LMX.eN.e = LMX with key members with the highest eigenvector centrality in expressive networks;
LMX.iN.p = LMX with key members with the highest pooled centrality in expressive networks.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

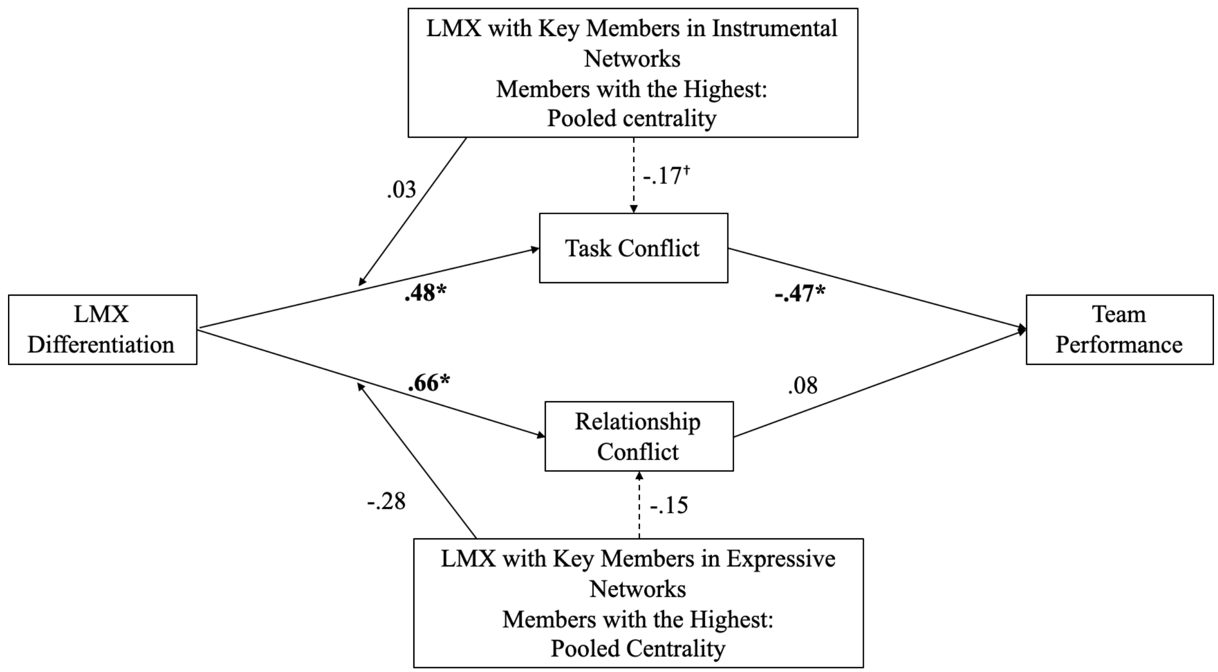
was no significant moderated mediation in the full models. I also tested the same models while specifying the direct relationship between LMX differentiation and team performance. However, adding the direct path between the independent and dependent variables did not significantly change the path coefficients of the model; therefore, I presented the more parsimonious models without the direct relationship between LMX differentiation and team performance in Figures 2 to 4.

Supplemental Analyses

Identification of key members. I first conducted supplemental analyses to identify key members who were most influential across all three types of network positions. The significant correlations between LMX with different types of key members indicate that it is possible for one member to be identified as key members based on different network properties (i.e., a member could be the most prestigious member *and* the most prominent broker at the same time). Therefore, it is worthwhile to examine whether, instead of LMX with a specific type of key member, leader's LMX with the member with the highest pooled centrality scores would have a more significant role in influencing the hypothesized relationships.

For instrumental networks, I computed the sum of standardized z-scores for three types of centralities; a member was deemed as a key member when the member had the highest pooled centrality in their team. Similarly, I also identified key members for all the teams using the pooled centrality score in expressive networks. Next, I used the LMX score of the member with the highest pooled centrality in their team as the moderator and performed the same set of analyses as described in the hypotheses testing section. While the moderating effect of LMX with key members with the highest pooled centrality in

Figure 5. First-Stage Moderation Results with Two Moderators Involving Key Members with the Highest Pooled Centrality



Note: N = 101.
†$p < .10$; *$p < .05$

instrumental networks was not significant (b = .01, p > .10; Table 4 Model 16), it had a negative and significant influence on task conflict (b = -.15, p < .05; Table 4 Model 15). Model 16 in Table 5 indicates that the moderation effect of LMX with key members with the highest pooled centrality in expressive networks did not moderate the LMX differentiation – task conflict relationship (b = .03, p > .10; Table 5 Model 16), nor did LMX with key members had a significant direct impact on relationship conflict (b = -.01, p > .10; Table 5 model 15). I also tested the full model using LMX with key members with the highest pooled centrality in their respective networks (Figure 5). The mediating effect of task conflict remains significant, but this is not the case for relationship conflict. As shown in Table 6, the simple slope differences were not significant (*simple slope difference*$_{instrumental}$ = -.01, CI [-.35, .39]; *simple slope difference*$_{expressive}$ = -.02, CI [-.26, .19]), suggesting that the conditional indirect effects were not significant.

The direct effect of LMX differentiation on team performance. I also conducted supplemental analyses to examine the moderating effects of the proposed moderators on the relationship between LMX differentiation and team performance. Results from Table 7 indicates that LMX with key members with the highest degree centrality (b = -.87, p < .05; Model 4), betweenness centrality (b = -1.25, p < .05; Model 8), and pooled centrality (b = -.84, p < .05; Model 16) in instrumental networks had significant moderating effects on the direct relationship between LMX differentiation and team performance. To further examine the nature of these moderating effects, I plotted the interactions at both low (-1 SD below the mean) and high (+1 SD above the mean) levels of each moderator. Examination of the interaction plots (Figures 6, 7, and 8) revealed a common trend across all three analyses – when leaders had high LMX with key

Table 7. Multiple Regression Results for the Moderating Effect of LMX with Key Members in Instrumental Networks on the LMX differentiation – Team Performance Relationship

Variable	Team Performance								Team Performance							
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**4.56*****	.23	**4.56*****	.23	**4.57*****	.23	**4.55*****	.22	**4.53*****	.25	**4.52*****	.25	**4.50*****	.26	**4.44*****	.24
Control																
Team Size	-.02	.02	-.02	-.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.01	.02
Instrumental Network Density	-.32	.34	-.33	.34	-.34	.34	-.35	.33	-.34	.40	-.34	.39	-.31	.40	-.33	.38
Independent Variable																
LMXD			-.25	.26	-.28	.28	-.19	.27			-.40	.27	-.35	.29	-.21	.28
Moderator																
LMX.iN.d					-.02	.09	.14	.11								
LMX.iN.b													.05	.10	**.27***	.12
LMX.iN.e																
LMX.iN.p																
Interaction																
LMXD × LMX.iN.d							**-.87***	.37								
LMXD × LMX.iN.b															**-1.25****	.36
LMXD × LMX.iN.e																
LMXD × LMX.iN.p																
F	1.29		1.18		.89		1.88		.94		1.38		1.09		**3.34****	
df	2, 99		3, 98		4, 97		5, 96		2, 92		3, 91		4, 90		5, 89	
R^2	.03		.04		.04		**.09***		.02		.04		.05		**.16****	
Adjusted R^2	.01		.01		-.00		**.05***		-.00		.01		.00		**.11****	
ΔR^2			.01		.00		**.05***				.02		.09		**.11****	

Table 7. Multiple Regression Results for the Moderating Effect of LMX with Key Members on the LMX differentiation – Team Performance Relationship (Continued)

Variable	Team Performance								Team Performance							
	Model 9		Model 10		Model 11		Model 12		Model 13		Model 14		Model 15		Model 16	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**4.60*****	.24	**4.59*****	.24	**4.59*****	.24	**4.52*****	.24	**4.56*****	.23	**4.56*****	.23	**4.52*****	.23	**4.48*****	.22
Control																
Team Size	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02
Instrumental Network Density	-.39	.35	-.39	.35	-.39	.35	-.32	.35	-.32	.34	-.33	.34	-.29	.34	-.26	.33
Independent Variable																
LMXD			-.19	.26	-.13	.29	-.04	.29			-.25	.26	-.13	.27	-.02	.27
Moderator																
LMX.iN.d																
LMX.iN.b																
LMX.iN.e					.05	.10	.19	.13								
LMX.iN.p													.14	.10	**.30***	.12
Interaction																
LMXD × LMX.iN.d																
LMXD × LMX.iN.b																
LMXD × LMX.iN.e							-.70†	.41								
LMXD × LMX.iN.p															**-.84***	.39
F	1.25		1.01		.82		1.26		1.29		1.18		1.39		2.11†	
df	2, 94		3, 93		4, 92		5, 91		2, 99		3, 98		4, 97		5, 96	
R^2	.03		.03		.03		.07†		.03		.04		.05		**.10***	
Adjusted R^2	.01		.00		-.01		.01†		.01		.01		.02		**.05***	
ΔR^2			.01		.00		.03†				.01		.02		**.05****	

Note: N = 95-102; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks; LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks; LMX.iN.e = LMX with key members with the highest eigenvector centrality in instrumental networks; LMX.iN.p = LMX with key members with the highest pooled centrality in instrumental networks.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 8. Multiple Regression Results for the Moderating Effect of LMX with Key Members in Expressive Networks on the LMX differentiation – Team Performance Relationship

Variable	Team Performance								Team Performance							
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**4.27*****	.21	**4.27*****	.21	**4.29*****	.21	**4.30*****	.20	**4.21*****	.24	**4.24*****	.24	**4.26*****	.24	**4.23*****	.24
Control																
Team Size	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02
Expressive Network Density	.20	.25	.19	.25	.12	.25	.10	.24	.26	.29	.26	.29	.14	.30	.15	.30
Independent Variable																
LMXD			-.22	.26	-.10	.27	.01	.27			-.21	.29	-.09	.30	-.01	.30
Moderator																
LMX.eN.d					.20†	.12	**.32***	.12								
LMX.eN.b													.19	.13	.28†	.14
LMX.eN.e																
LMX.eN.p																
Interaction																
LMXD × LMX.eN.d							**-1.45***	.59								
LMXD × LMX.eN.b															-.94	.68
LMXD × LMX.eN.e																
LMXD × LMX.eN.p																
F	1.23		1.05		1.58		**2.53***		1.08		.89		1.24		1.39	
df	2, 98		3, 97		4, 96		5, 95		2, 84		3, 83		4, 82		5, 81	
R^2	.02		.03		.06†		**.12***		.03		.03		.06		.08	
Adjusted R^2	.01		.00		.02†		**.07***		.00		-.00		.01		.02	
ΔR^2			.01		.03†		**.06***				.01		.03		.02	

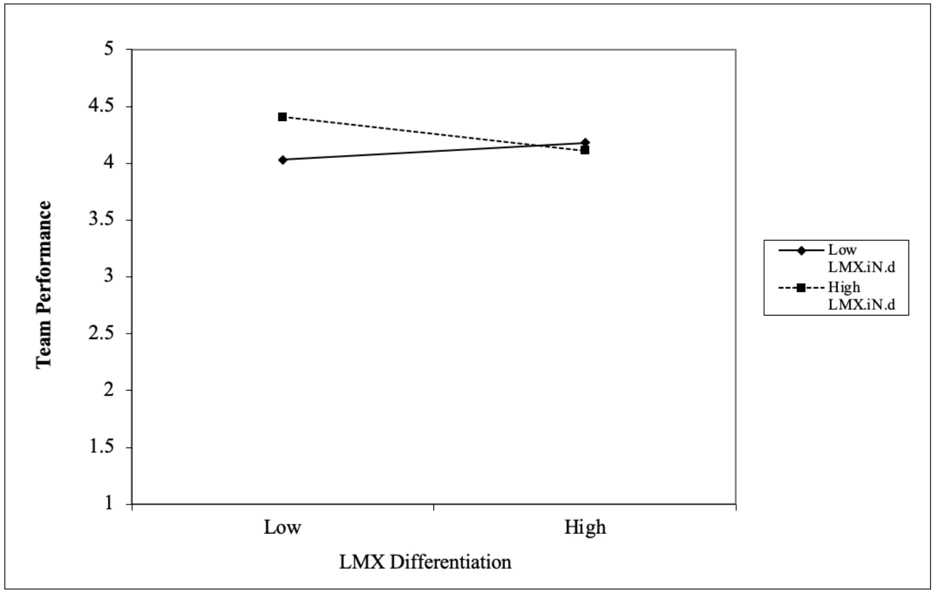
Table 8. Multiple Regression Results for the Moderating Effect of LMX with Key Members in Expressive Networks on the LMX differentiation – Team Performance Relationship (Continued)

Variable	Team Performance								Team Performance							
	Model 1		Model 2		Model 3		Model 4		Model 1		Model 2		Model 3		Model 4	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Constant	**4.27*****	.21	**4.27*****	.21	**4.27*****	.21	**4.27*****	.20	**4.27*****	.21	**4.27*****	.21	**4.28*****	.21	**4.28*****	.21
Control																
Team Size	-.02	.02	-.02	-.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02	-.02	.02
Expressive Network Density	.20	.25	.19	.25	.12	.25	.12	.25	.20	.25	.19	.25	.15	.25	.17	.25
Independent Variable																
LMXD			-.22	.26	-.11	.27	-.03	.27			-.22	.26	-.12	.25	-.05	.27
Moderator																
LMX.eN.d																
LMX.eN.b																
LMX.eN.e					.23†	.12	**.29***	.13								
LMX.eN.p													.20†	.12	**.35***	.12
Interaction																
LMXD × LMX.eN.d																
LMXD × LMX.eN.b																
LMXD × LMX.eN.e							-.90	.61								
LMXD × LMX.eN.p															-.73	.59
F	1.23		1.05		1.65		1.77		1.23		1.05		1.56		1.56	
df	2, 98		3, 97		4. 96		5. 95		2, 98		3, 97		4, 96		5, 95	
R^2	.02		.03		.06		.09		.02		.03		.06†		.08	
Adjusted R^2	.01		.00		.03†		.05		.01		.00		.02		.03	
ΔR^2			.01		.03†		.02				.01		.03†		.02	

Note: N = 87-101; Significant relationships are presented in bold; *b* = Unstandardized coefficients; *SE* = Standard error. LMXD = LMX differentiation; LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks; LMX.eN.b = LMX with key members with the highest betweenness centrality in expressive networks; LMX.eN.e = LMX with key members with the highest eigenvector centrality in expressive networks; LMX.iN.p = LMX with key members with the highest pooled centrality in expressive networks. $^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

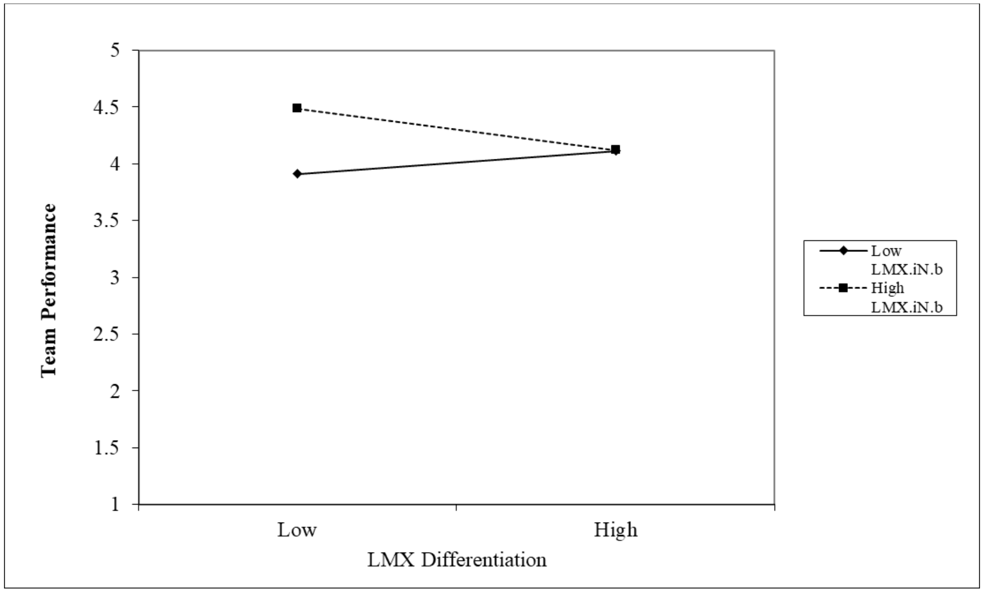
members, the relationship between LMX differentiation and team performance was negative. However, it is worth noting that these negative effects were significant only for key members with the highest degree ($slope_{high}$ = -.72, p <.05) and betweenness ($slope_{high}$ = -.91, p <.05) centrality. In contrast, when leaders had low LMX with key members, there was no significant relationship between LMX differentiation and team performance. I also observed a significant moderating effect of LMX with key members with the highest degree centrality in expressive networks on the relationship between LMX differentiation and team performance (b = -1.45, p < .05; Table 7 Model 4). The interaction plot (Figure 9) shows that both slopes (± 1 SD) were significant ($slope_{high}$ = -.72, p <.05, $slope_{low}$ = -.67, p <.05), such that the relationship between LMX differentiation and team performance was positive when LMX with the most prestigious member in expressive networks was low, and negative when LMX with the most prestigious member in expressive networks was high. Tables 9 and 10 present the summary of hypotheses and findings. The implications of these findings are discussed in the following chapter.

Figure 6. Moderating Effect of LMX with Key Members with the Highest Prestige (Degree Centrality) in Instrumental Networks



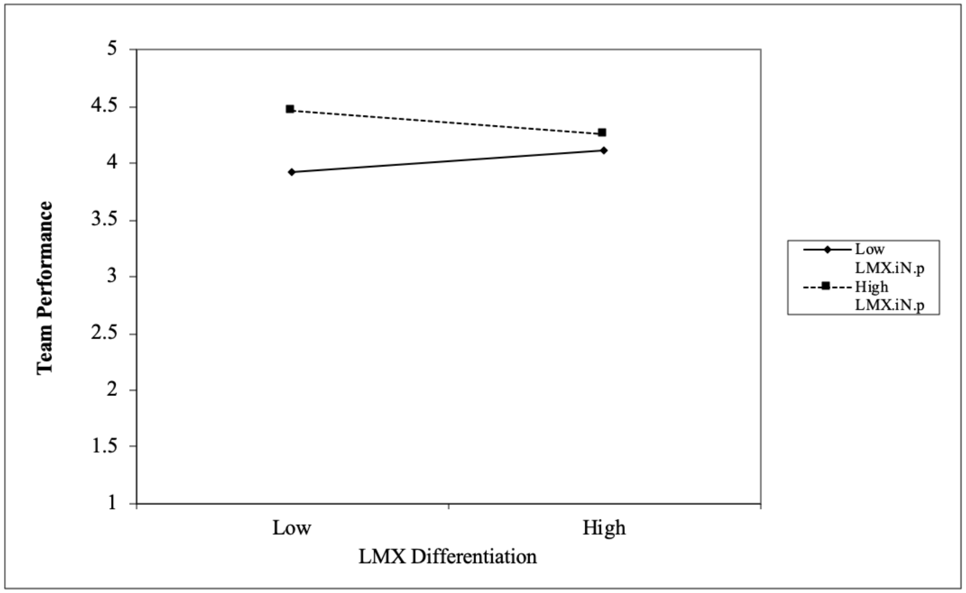
Note: N = 102; LMX.iN.d = LMX with key members with the highest degree centrality in instrumental networks.

Figure 7. Moderating Effect of LMX with Key Members with the Highest Brokerage (Betweenness Centrality) in Instrumental Networks



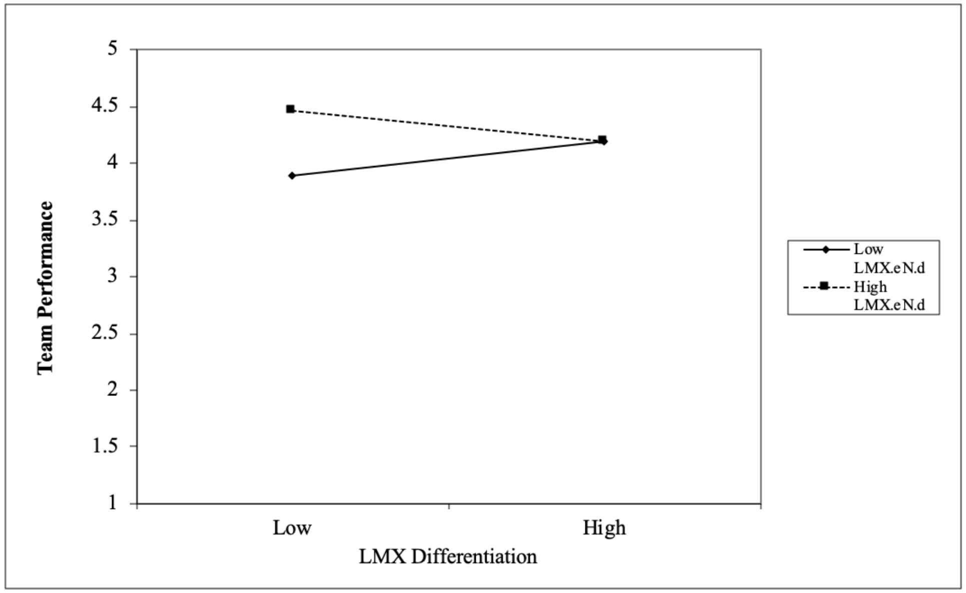
Note: N = 95; LMX.iN.b = LMX with key members with the highest betweenness centrality in instrumental networks.

Figure 8. Moderating Effect of LMX with Key Members with the Highest Pooled Centrality in Instrumental Networks



Note: N = 102; LMX.iN.p = LMX with key members with the highest pooled centrality in instrumental networks.

Figure 9. Moderating Effect of LMX with Key Members with the Highest Degree Centrality in Expressive Networks



Note: N = 101; LMX.eN.d = LMX with key members with the highest degree centrality in expressive networks.

Table 9. Summary of Hypotheses

	Hypotheses	Results
Hypothesis 1	LMX differentiation is positively related to team task conflict.	Supported
Hypothesis 2a	Task conflict is negatively related to team performance.	Supported
Hypothesis sb	Task conflict mediates the relationship between LMX differentiation and team performance, such that there is a negative indirect effect via task conflict.	Supported
Hypothesis 3	LMX differentiation is positively related to team relationship conflict.	Supported
Hypothesis 4a	Relationship conflict is negatively related to team performance.	Not supported
Hypothesis 4b	Relationship conflict mediates the relationship between LMX differentiation and team performance, such that there is a negative indirect effect via relationship conflict.	Not supported
Hypothesis 5	Leader's LMX quality with key members in instrumental networks – members with the highest prestige (H5a), brokerage (H5b), and core status (H5c) –moderates the relationship between LMX differentiation and task conflict such that the positive relationship between LMX differentiation and task conflict becomes stronger when LMX with key members is low, and weaker (or even becomes negative) when LMX with key members is high.	Not supported
Hypothesis 6	The indirect effect of LMX differentiation on team performance via task conflict is moderated by leader's LMX quality with key members with the highest prestige (H6a), brokerage (H6b), and core status (H6c) in instrumental networks such that team performance is more negatively affected by LMX differentiation when LMX with key members is low, and less negatively (or even becomes positively) affected by LMX differentiation when LMX with key members is high.	Not supported
Hypothesis 7	Leader's LMX quality with key members in expressive networks – members with the highest prestige (H7a), brokerage (H7b), and core status (H7c) – moderates the relationship between LMX differentiation and relationship conflict such that the positive relationship between LMX differentiation and relationship conflict becomes stronger when LMX with key members is low, and weaker when LMX with key members is high.	Not supported
Hypothesis 8	The indirect effect of LMX differentiation on team performance via relationship conflict is moderated by leader's LMX quality with key members with the highest prestige (H8a), brokerage (H8b), and core status (H8c) in expressive networks such that team performance is more negatively affected by LMX differentiation when LMX with key members is low, and less negatively affected by LMX differentiation when LMX with key members is high.	Not supported

Table 10. Summary of Findings from Supplemental Analyses

Supplemental Analyses and Findings
Alternative ways to identify key members
LMX with key members with the highest *pooled* centrality in instrumental networks did not moderate the relationship between LMX differentiation and task conflict, but it has a direct negative on task conflict.
LMX with key members with the highest pooled centrality in expressive networks did not moderate the relationship between LMX differentiation and relationship conflict, and it does not have a significant impact on relationship conflict.
Moderating effect of the LMX differentiation - team performance relationship
LMX with key members with the highest degree, betweenness and pooled centrality moderate the relationship between LMX differentiation and team performance, such that when LMX with key members is high (low), the relationship between LMX differentiation and team performance was negative (positive).
LMX with key members with the highest degree centrality moderates the relationship between LMX differentiation and team performance, such that when LMX with key members is high (low), the relationship between LMX differentiation and team performance was negative (positive).

CHAPTER VI

DISCUSSION

One of the important premises of the LMX theory is that, although high-quality relationships between leaders and members are beneficial, leaders cannot develop and maintain high-quality relationships with every member. LMX differentiation, as a natural consequence, may have contradicting effects on team performance, and the literature has yet to conclude whether, when, and how LMX differentiation affects team performance (Anand et al., 2015). Most studies have focused primarily on either the socioemotional or the task-related mechanisms linking LMX differentiation to team performance, however, there is very little scholarly consensus on these mechanisms unfolding simultaneously. In this dissertation, I tested the impact of LMX differentiation on team performance through these two pathways. In addition, this dissertation takes a social networks approach to understand how leaders' relationship quality with key members can alleviate the potential negative consequences of LMX differentiation, whilst enhancing the positive aspects of it. Below, I summarize the findings of this dissertation, discuss the theoretical and practical implications, limitations, and directions for future research.

Summary of Results

First, I hypothesized that LMX differentiation would lead to higher levels of task and relationship conflict, and both of these hypotheses were supported. I further predicted that task and relationship conflict would mediate the effect of LMX differentiation on team performance. Results suggest that while task conflict mediated the relationship between LMX differentiation and team performance, the mediation effect of relationship conflict was not significant. One potential explanation could be that teams in this sample were mostly senior-level teams consisting of individuals who may be savvy enough to not let personal issues interfere with their responsibilities. This notion may be supported by the relatively low scores on relationship conflict as well.

In addition, examinations of whether leaders maintaining high-quality relationships with key members would mitigate the detrimental consequences of LMX differentiation on task and relationship conflicts revealed no significant results. In other words, l found no support for my moderation hypotheses suggesting that leaders maintaining high-quality LMX with key members in central positions (i.e., prestige, brokerage, and core status) in both instrumental and expressive networks would weaken the relationships between LMX differentiation and both forms of conflict. However, in some instances (i.e., members with the highest prestige and brokerage in instrumental networks), I observed that maintaining high-quality relationships with key members directly mitigated task conflict in teams.

In the supplemental analyses, I formed an index of pooled centrality that considers the combination of all three types of network centralities. Results of analyses with this pooled centrality index as a moderator of the relationships between LMX differentiation and both conflicts revealed no significant effects. However, I once again found that when members with the highest pooled centrality in instrumental networks experienced high-quality LMX, their teams had lower levels of task conflict.

Additional supplemental analyses also revealed that the direct effect of LMX differentiation on task performance was contingent upon varying levels of LMX with some key members of instrumental networks (i.e., highest prestige, brokerage, and pooled centrality). Findings from these analyses lend support to social comparison theory

(Festinger, 1954; Vidyarthi et al., 2010), as the patterns of interaction reveal a common trend: having high LMX with key members intensified the negative relationship between LMX differentiation and task performance. A similar pattern was observed when examining the moderating effect of LMX with the most prestigious key members in expressive networks.

One possible explanation for these effects is that, given key members' visibility (centrality) in their respective networks, any favorable treatment that they receive becomes more salient to the rest of the team. Such visible and preferential treatment of key members in the context of high-LMX differentiation within teams is likely to intensify the negativity associated with differentiated treatment on the part of the leader. Under such circumstances, even if key members are motivated to act as positive surrogates for their leaders, the preferential treatment that they receive may undermine their legitimacy as a surrogate (Zagenczyk et al., 2015).

Another possible explanation could lie in the specific content of high-quality LMX between key members and leaders. Although high-LMX members may receive more resources, they may also experience higher levels of workload as leaders tend to assign more challenging and complex tasks to their trusted members (Koçoğlu et al., 2014). At the same time, key members may also be overwhelmed with various requests and interruptions from their colleagues (e.g., request for advice and help) because of their critical positions in team networks (Cullen et al., 2018). As a result, key members with high LMX may experience high levels of role ambiguity and overload trying to fulfill the expectations from both leaders and team, which, in turn, induces high levels of stress and hinders their own performance (Cullen et al., 2018; Soltis et al., 2013).

Theoretical Implications

This dissertation contributes to the LMX differentiation literature in several ways. First, one of the reasons for inconsistent findings regarding the impact of LMX differentiation on team performance lies in the lack of theorizing and testing of both task and socioemotional mechanisms simultaneously at the team level. By examining task and relationship conflict as two parallel mechanisms, this dissertation provides empirical clarifications to disentangle the complicated relationship between LMX differentiation, team processes, and team performance. Specifically, although previous studies have examined the relationship between LMX differentiation and team conflict, they were mainly focused on relationship conflict (e.g., Cobb & Lau, 2015; Zhao, 2015; Zhou & Shi, 2014) and overall team conflict (e.g., Boies & Howell, 2006), virtually no study has examined the effect of LMX differentiation on both forms of conflict and downstream team performance simultaneously. This dissertation highlights the value of examining both the task and relationship pathways through which LMX differentiation impacts team performance and suggests that in the context of senior-level teams, task conflict plays a more significant role in transmitting the indirect effect of LMX differentiation on team performance than relationship conflict does. Furthermore, contrary to Yu et al. 's (2018) speculations based on meta-analytic findings that the positive direct influence of LMX differentiation on team performance may be suppressed by the negative indirect effect through impairing team processes, I found that LMX differentiation did not exert a positive direct influence on team performance even after accounting for the indirect paths through team conflict.

Second, in response to prevailing sentiments that "not all differentiation is the same" (Seo et al., 2018, p. 479) and calls for research to move beyond the *degree* of LMX differentiation (Li & Liao, 2014), this dissertation examined *how* leaders differentiate LMX among team members. Specifically, I identified influential members in teams using a social network approach and examined the degree to which their relationship quality with their leaders impacts the relationship between LMX differentiation and team performance. In addition, while there exists an implicit assumption in the extant literature that leaders develop high-quality relationships with high performers, this study relaxed this assumption and empirically tested the degree to which leader's relationship with key members in teams impacted team performance. With the significant direct effects shown in this study, it appears that having high-quality relationships with key members indeed benefits overall team performance. However, these benefits diminish as the degree of LMX differentiation becomes higher in teams.

Next, by taking a social networks approach, this dissertation also contributes to the LMX differentiation literature by highlighting the importance of taking into consideration of the broader, horizontal relationships in teams, as opposed to focusing only on the leader-member dyad. Leader-member relationships do not exist in a vacuum, and they may influence or be influenced by other social relationships surrounding leader-member and member-member relationships. This dissertation offers an alternative and potentially more objective approach of depicting interpersonal relationships at the team level since team networks are constructed using information received from all team members and about each and every team member.

Finally, findings (or lack thereof) from this dissertation lend more support to a social comparison theoretical understanding of how LMX differentiation unfolds in teams, as opposed to an agentic or equity-based approach to LMX differentiation in teams. In other words, based on an equity theoretical approach, one would expect effects in the opposite direction compared to those found in this dissertation – that LMX with key members would help mitigate the negative impacts of LMX differentiation. However, a social comparison approach seems to better explain findings from this dissertation, that is, when leaders differentiate and have high-quality relationships with highly visible individuals, it puts the spotlight on differential treatment.

Practical Implications

Findings of this dissertation also provide implications for practice. Given the inevitability of LMX differentiation, leaders may benefit from knowledge on the consequences of preferential treatment towards certain members. My results highlight the importance that when leaders develop differentiated relationship qualities with team members, it creates higher levels of conflicts among team members, especially regarding team tasks and how they should be completed. Unequal distribution of resources among team members may also create a competitive environment and induce self-preserving behaviors, ultimately impairing team performance. Such differentiated relationships among team members also provoke tension and personal issues among team members.

However, this does not mean that LMX differentiation is uniformly bad; in fact, there exist tradeoffs with LMX differentiation in teams. On the one hand, having high-quality relationships with key members in teams is beneficial to team performance – in teams where leaders develop high-quality relationships with key members, their performance tends to be higher than in teams where leaders develop low-quality relationships with key members. On the other hand, developing high-quality relationships with key members also introduces the risk of magnifying the negative impact of differentiated relationships on team performance, such that the higher the differentiation, the lower the performance. When there exists higher than usual levels of differentiated treatment among team members, the benefits of having high-quality relationships with key members could be diluted. It is also possible that while developing high-quality relationships with key members is beneficial in the short-term, it has long-term consequences in impacting team dynamics.

Thus, to reduce team conflict and enhance team performance, leaders should first be able to accurately identify key members who are influential among team members and develop high-quality relationships with them. From a strategic perspective, especially in the face of limited tangible and intangible resources, it is important for leaders to prioritize with whom they should build high-quality relationships. Leaders should also develop strategies to prevent or alleviate potential negative perceptions of the differential treatment toward members (e.g., through open and transparent communications, alternative resources, and reward allocation strategies). In all, when making decisions regarding with whom leaders should be prioritizing building and maintaining relationships, leaders should be mindful of team dynamics and try to identify informal leaders within their teams.

Limitations and Future Directions

Despite the theoretical and practical contributions, this dissertation is not without its limitations. First, teams in this sample were mainly senior-level decision-making teams in relatively large organizations from a variety of industries. Although this provides valuable insights regarding how differentiated relationships in teams impact team performance in senior-level teams, it limits the generalizability of the findings of this study. In addition, it is possible that the unique characteristics of these teams may have contributed to several of the null findings in this dissertation. For instance, a possible reason for why relationship conflict did not significantly reduce team performance might be because senior-level team members were experienced and savvy enough to not let personal incompatibilities hinder them from successfully executing their job roles. These findings should be interpreted with caution as they may not apply to other kinds of teams. In addition, because team members in this sample are mostly highly capable individuals who all, to some extent, deserve (or at least think they do) favorable treatment from their leaders, when leaders do have high-quality relationships with key members, it might induce more social comparisons and magnify the negative impacts of LMX differentiation. Future research should extend this theoretical framework to other kinds of teams and contexts to develop a richer understanding of how differentiation impacts team performance.

Second, because the data were collected in a leadership development program and the complexity involving collecting social networks data, all variables were collected at the same time in this study. However, to overcome challenges with common method variance, data were collected from multiple sources. The dependent variable – team performance – was rated by team leaders, and the network structure was constructed using team members' individual responses on sociometric measures. However, in addition to construct overlap, it is likely that common method variance may account (to some extent) for the elevated correlation between task and relationship conflict, though, CFA helped establish their discriminant validity. In addition, because of the cross-sectional nature of the data, I was not able to further examine the way LMX differentiation unfolds in teams and how it affects team conflict over time. In other words, perceptions of LMX may change over time as the leader-member relationship evolves based on different role stages, so do team members' emotions and reactions to their relationships with others (Cropanzano et al., 2017). Future research should explore experimental or longitudinal designs to see whether LMX differentiation causes higher levels of relationship conflict, which then translates to task conflict at different role stages, and vice versa.

Third, this dissertation focused on one way to depict how LMX relationships were distributed in teams (i.e., by examining leader's LMX with the most influential team member). To enrich our understanding of how LMX differentiation unfolds in teams, future studies should also explore alternative ways in capturing not only to what extent, but also how leaders differentiate their relationships with team members. Extending the social networks perspective, future research could examine alternative ways of identifying influential key members in teams, such as the effect of leader's LMX with pariah members (i.e., members with particularly low centralities) on team processes and team outcomes, as members may perceive the preferential treatment with these members as a stronger violation of justice in teams, thus intensifying the negative impacts of LMX differentiation (Chen et al., 2018; Matta & Van Dyne, 2020). Furthermore, future research should also explore key members in other types of networks, especially negative network ties (e.g., avoidance network) and multiplex ties (Crawford & LePine, 2013). In addition to traditional ways of operationalizing LMX differentiation, it is also worth exploring other conceptualizations and operationalizations to capture the nuances in the distribution of LMX within teams. For instance, following the group diversity typology (Harrison & Klein, 2007) and its implications for LMX differentiation research, future studies could examine how different types of LMX differentiation (i.e., LMX separation, LMX variety, and LMX disparity; Buengeler et al., 2020) influence the degree to which key members exert impacts on teams.

Additionally, while this study focused on the team-level phenomena regarding how LMX differentiation unfolds, future research could also explore the phenomena at the dyadic and individual level. For instance, even for members on the same team, they may experience varying levels of LMX differentiation and team conflict. As a result, their psychological and behavioral reactions to their leader's differentiated treatment among team members and team conflict may also vary accordingly; therefore, it is worth exploring the opportunity to directly measure perceived LMX differentiation in teams (Choi et al., 2018). Future research could also explore the effect of relative LMX (i.e., an individual's perception of his/her own LMX compared to the team average LMX; Henderson et al., 2008) and LMX social comparison (i.e., an individual's LMX compared to that of each individual member; Matta, 2016; Vidyarthi et al., 2010) to examine how such perceptions drive individual behaviors.

Finally, because of the dyadic nature of any leader-member relationship and the potential discrepancies in leader and member ratings of the same LMX relationship (Matta et al., 2015; Sin et al., 2009), it is possible that leader's ratings of LMX with team members better reflect the agentic perspective of LMX differentiation while members' perceptions of LMX is more useful when examining the social impact of LMX differentiation on teams (Choi, 2014). Nevertheless, this dissertation provides important theorizing and empirical evidence from the team members' perspective, and future research should explore and compare the degree to which the consensus between leader- and follower-ratings influence the effect of LMX differentiation on teams.

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VITA

CHEN WANG

2008-2012	B.B.A., Tourism Management Qingdao University Qingdao, China
2008-2012	B.A., Tourism and Leisure Management IMC University of Applied Sciences Krems Krems, Austria
2012-2013	M.I.B., International Business Florida International University Miami, Florida
2015-2020	Doctoral Candidate/Graduate Teaching Assistant, Business Administration Florida International University Miami, Florida
2019	Provost Award for Outstanding Graduate Teaching Assistant Florida International University Miami, Florida

PUBLICATIONS AND PRESENTATIONS

Kim, K., Halliday, C. S., Zhao, Y., Wang, C., & Von Glinow, M. A. (2018). Rewarding self-initiated expatriates: A skills-based approach. *Thunderbird International Business Review, 60*(1), 89-104.

Frear, K., Wang, C., Speights, S. L., & Heggestad, E. D. (2018). How I see it, how everyone else sees it: Personal and social schemas of career success. *Academy of Management Best Papers Proceedings.*

Sanchez, J. I., Wang, C., Ponnapalli, A. R., & Sin, H. P. (2020, August). A meta-analysis of neglected artifacts in organizational behavior mediation research. *Paper presented at the 80th AOM Annual Conference, Vancouver, BC, Canada.*

Wang, C. & Sin, H.P. (2020, March). LMX Differentiation and team performance: The role of key members. *Proposal accepted at the WAM Annual Conference, Waikoloa, HI.*

Ponnapalli, A. R., Wang, C., Gajendran, R. S., & Kundu, S. K. (2019, August). When work comes first at the cost of family: Consequences for International New Ventures. *Paper presented at the 79th AOM Annual Meeting, Boston, MA.*

Ponnapalli, A. R., Wang, C., Buckman, B. R., & Snihur, A. (2019, April). Authenticity at work: Establishing a nomological net using meta-analysis. *Poster session presented at the 34th SIOP Annual Conference, National Harbor, MD.*

Wang, C., Ponnapalli, A. R., Kundu, S. K., Gajendran, R. S., & Sin, H. P. (2018, December). The line that connects the dots: Building high-quality ties in International New Venture networks. *Paper presented at the 2018 SMS Special Conference, Hyderabad, India.*

Ponnapalli, A. R., Wang, C., Sin, H. P. (2018, November). Ex-offender at work: A research agenda. In J. Griffith, J. (Facilitator), Improving Lives: Exploring the relationship between criminal history and work. *Symposium conducted at the 2018 SMA Annual Conference, Lexington, KY.*

Frear, K., Wang, C., Speights, S. L., & Heggestad, E. D. (2018, August). How I see it, how everyone else sees it: Personal and social schemas of career success. *Paper presented at the 78th AOM Annual Meeting, Chicago, IL.*

Wang, C., Ponnapalli, A. R., Buckman, B. R., Viswesvaran, C. (2018, April). Factors influencing the reliability of authenticity scales: A reliability generalization meta-analysis. *Poster session presented at the 33rd SIOP Annual, Chicago, IL.*

Wang, C., Ponnapalli, A. R., & Sin, H. P. (2017, October). Ex-offenders and employment: A comprehensive literature review. *Paper presented at the 2017 SMA Annual Conference, St. Pete Beach, FL.*

Halliday, C. S., Ponnapalli, A. R., Wang, C., Kim, K., & Newburry, W. (2017, October). The role of sub-national institutions on the corporate social responsibility and corporate reputation relationship. *Paper presented at the 2017 SMA Annual Conference, St. Pete Beach, FL.*

Wang, C., Ponnapalli, A. R., & Buckman, B. R. (2017, April). Authentic leadership and employee engagement. *Poster session presented at the 32nd SIOP Annual Conference, Orlando, FL.*

Kim, K., Wang, C., & Von Glinow, M. A. (2016, July). Making the connection: Cross-cultural management course and cultural intelligence. *Paper presented at the 2016 AIB Annual Conference, New Orleans, LA.*