Exploring the Relationships among LMX Differentiation, Perceived Cohesion, and Solidarity Behavior

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ABSTRACT

This study examined the relationships among leader-member exchange (LMX) differentiation, perceived cohesion, and solidarity behavior. To test our hypotheses, we employed data from a survey that collected a total of 217 responses from across various organizations in Taiwan. The results found that LMX differentiation was negatively related to perceived cohesion, which in turn had negative relationship to the team member's solidarity behavior. This study also confirmed the mediating role of perceived cohesion in the LMX differentiation and solidarity behavior relationship. That conclusion means perceived cohesion is important to group members' solidarity behavior. Implications for managers' behavior, limitations, and research recommendations conclude the paper.

Keywords: cohesion, LMX, LMX differentiation, solidarity behavior

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I. INTRODUCTION

As the global economy evolves and business competition becomes more intense, many companies have adopted team/group-based structures as their primary mode of business operation to gain competitive advantage or just simply to survive (Gilson & Shally, 2004). The cross-functional composition of a team would help members to contribute diverse ideas, talents, and skills, as well as different areas of expertise to the team and may enhance the team's performance, provided the team is cooperative and well managed (Mathieu, Heffner, Goodwin, Salas, and Cannon-Bowers, 2000). Given the importance of teamwork and its potential benefits, it is worthwhile to examine, in the team context, what variables affect team operation and how they do so.

Empirical research has found leadership to be a particularly important factor influencing team cooperation (e.g., Burton & Sablynski, 2008; De Cremer & Van Knippenberg, 2002; Lee, 2001), which may consequently affect the attitudes and solidarity behaviors of the individual team members. Given the fact that leader–member exchange (LMX) theory has emerged as one of the most interesting and useful approaches in literature for explaining the ways in which leaders influence subordinates (Gerstner & Day, 1997), this study aims to dig further into the LMX differentiation theory to explore its plausible relationship with team member solidarity behavior.

The leader-member exchange (LMX) theory describes a process of interaction between the leader and followers and emphasizes on the vertical-dyad exchange relationships between both. Rooted in LMX theory, LMX differentiation theory is based on the premise that leaders develop differential relationships with different individuals among their followers. Such differential treatment, however, runs counter to principles of equality and consistency, which are critical to maintaining social harmony in groups, and, therefore, might result in fairness issues (Graen & Uhl-Bien, 1995). Hooper and Martin (2008) employed the fairness perspective to interpret LMX differentiation and defined LMX differentiation as the amount of variability in LMX relationships perceived by team members (i.e., their perceived LMX variability). Although many supervisors might claim that they treat everybody equally, the team members might not have the same perception that

they are treated equally. Cohesion is a dynamic process or emotional "glue" that holds a team together (Barsade & Gibson, 1998). Solidarity behavior refers to individual contributions to the common good. If team members perceive leader's differential treatments in interacting with different members of the team, then they may incline toward low team morale, which would result in lower perceived cohesion and so they may be unwilling to cooperate with others in the team. In contrast, team members perceiving strong perceived cohesion would sustain a high degree of integration or "bonding," in which they share a strong commitment to one another and work together for the good of the team.

Accordingly, this study proposed that the level of leader's LMX differentiation will affect members' cohesion perception which in turn will impact subordinates' solidarity behavior. In other words, perceived cohesion is proposed as the mediating factor in the relationship between a leader's LMX differentiation and subordinates' solidarity behavior. More specifically, this study attempts to address the following questions:

- 1. Is there a relation between LMX differentiation and perceived cohesion?
- 2. How are perceived cohesion and team solidarity behavior related?

II. LITERATURE REVIEW

LMX theory was originally defined as the average of subordinate perceptions of leaders' behaviors (Dansereau, Graen, & Haga, 1975). Graen and Uhl-Bien (1995) argue that high quality of the leader-member exchange (LMX) relationships develops reciprocal influence between dyadic partners (one employee and one supervisor). Piccolo, Bardes, Mayer, and Judge (2008) find that high quality of LMX enhances the relationship of procedural and interpersonal justice with respect to a variety of outcomes. LMX differentiation is a set of dynamic and interactive exchanges that occur between leaders and followers, the nature of which (transactional versus social exchange) may differ across dyads within a work group (Henderson, Liden, Glibkowski, & Chaudhry, 2009). In a high LMX relationship, a leader establishes a special relationship with a small number of his or her followers (i.e., the in-group) where these followers gain trust and get a disproportionate amount of the leader's attention. That is, subordinates who are part of an in-group may receive more tangible or intangible resources, such as emotional support, task guidance, and career mentoring from their leader. In contrast, those subordinates who are not in the in-group will fall into the out-group, would maintain low LMX relationships, and perform their work according to the employment contract.

Hooper and Martin (2008) defined LMX differentiation as the amount of variability in LMX relationships perceived by team members. Leaders develop a different quality of LMX relationships with each of their employees. These differential LMX relationships in teams may affect perceptions of fairness and coworker communication. For example, when favorable treatment of a coworker was perceived to be unfair, the rest of the team members tended to report disliking and distrust of the favored other, and also decreased communications with him/her. Hooper and Martin (2008) confirmed that LMX differentiation is negatively related to employee job satisfaction and wellbeing. Leader's LMX differentiation is assumed to have a negative association with team morale. Erdogan and Bauer (2010) examined the effects of LMX differentiation on the employee outcomes and found that LMX differentiation was related to more negative work attitudes and coworker relations, and higher levels of withdrawal behaviors when justice climate was low. The LMX literature has confirmed that leaders differentiate among their followers. Yet not much is known about the role of process variables play in the LMX differentiation-outcome variable relations (Hooper & Martin, 2008; Erdogan & Bauer, 2010).

Perceived cohesion is a salient group process variable which that is viewed as the single strongest predictor of group behavior and is also the central concept in explaining group dynamics and group process (George & Bettenhausen, 1990; Hare, 1992). Festinger, Schachter, and Back. (1950) described cohesion as "the resultant of all forces acting on the members of a group to remain in the group." Zaccaro, Rittman, and Marks' team leadership theory (2001) proposed that leadership is one important factor that influences perceived cohesion. Zaccaro et al. (2001) proposed that the leader can shape the environment and the atmosphere and that he/she also acts as a model. So the leader's behaviors will influence team members' cognitive processes. According to LMX theory, a leader who establishes a different relationship with each of the subordinates may foster inconsistent attitudes on the part of the employees. These kinds of differential LMX relationships within teams are likely to result in negative team relations, such as anger, distrust, fear, frustration, and other forms of "negative affect" (Pelled, 1996) and to result in low cohesion. This study, therefore, proposes that leader's LMX differentiation may lead to subordinates' differing attitudes and to result in negative perceived cohesion, as Hypothesis 1 states.

Hypothesis 1. LMX differentiation is negatively related to perceived cohesion.

1.Cohesion and Solidarity Behavior

Cohesion influences the will of group members to remain in the team and work with each other. If there is no desire for members to work together and to commit to one another, it will be impossible for the team to function properly and for members to perform their jobs well. In a highly cohesive team, members are more willing to show cooperative behavior to each other (Stashevsky & Kowlowsky, 2006) and tend to be more sensitive to others' needs. Carron and Brawley (2000) found a strong relation between cohesion and team success, because highly cohesive groups engender a strong social identity that can enhance members' desires to help one another (Kidwell, Mossholder & Bennett, 1997). This study thus proposes that perceived cohesion is positively related to members' solidarity behavior, because the willingness to help other team members may foster the desire of those helped to act likewise toward their team members, i.e., in this situation meaning to conform by cooperating with, and being helpful to, others and would, thus, result in more frequent solidarity behaviors, as Hypothesis 2 states.

Hypothesis 2. Perceived cohesion is positively related to solidarity behavior.

Carron (1982) proposed the "model of factors affecting cohesion" and suggested four factors impacting group cohesion: environmental, personal, leadership style, and team characteristics. Zhang, Du, Ma, & Wang (2009) indicated that LMX is critical to the establishment of team cohesion which will in turn impact on work performance. Loughead, Colman and Carron (2001) have found team cohesion to be a mediator in the leader behavior–exerciser's adherence relationship. That means the effects of leader behavior, while not directly influencing an exerciser's adherence, did so through cohesion. Loughead and Carron (2004) further found that perceived cohesion mediates the relationship between leadership and exerciser's satisfaction. Mach, Dolan, and Tzafrir (2010) also confirmed the mediation role of team cohesion in the team trust-team performance relation. Hooper and Martin (2008) linked the relationship between LMX differentiation and procedural fairness. Other studies also found that perceived leader's fairness has a positive impact on team members' cooperation behavior (De Cremer and Van Knippenberg, 2002, 2003; Lee, 2001). De Cremer and Van Knippenberg (2002) found procedural fairness may foster a sense of group belongingness among team members, which in turn affects team cooperation. Putting Hooper and Martine's (2008) study findings and De Cremer and Van Knippenberg's (2002, 2003) research results together, which implies the less LMX differentiation that team members perceive, the more the team members will have an attitude of belongingness and the higher team cohesion will be cultivated. As group members foster belongingness attitude and cohesive atmosphere, they are more likely to demonstrate cooperation behavior, i.e., solidarity behavior, in the team. Grounded on previous literature, this study therefore proposes Hypothesis 3 as follows.

Hypothesis 3. The relationship between LMX differentiation and organization solidarity behavior is mediated by cohesion.

III. RESEARCH METHOD

1. Participants

The sample consisted of employees who were currently working in a team of any organization in Taiwan during the period of a web survey conducted from December 2009 through January 2010. A total of 217 complete and valid questionnaires was collected for hypotheses testing. The majority of the respondents were male (64%), under the age of 30 (64%), with a bachelor's (57%) or above (30%) education level, and from manufacturing (53%). The average team size was 8.64 persons (SD = 2.78).

2. Measures

An English version of the questionnaire was compiled from literature and translated into Chinese. The Chinese version of the questionnaire was refined for its translation accuracy by three professionals. A pretest was conducted to test the content validity of the questionnaire and resulted in some modifications to the questionnaire. A complete version of the items measuring LMX differentiation, perceived cohesion, and solidarity behaviors is shown as Table 1.

Tab	le 1.	Questi	ionnaire	Items	and	Sources
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Construct	Measurement Items	Sources	
LMX differentiation	1. Please indicate in each box the number of members in your work team whose working relationship with the supervisor falls within each category (please include yourself in this count).	Hooper and Martin (2008)	
	1. The members of my team get along well together.		
	The members of my team will readily defend each other from criticism by outsiders.	Dobbins and	
Perceived	3.I feel that I am really a part of my team.		
Cohesion	4.I look forward to being with the members of my team each day.	Zaccaro (1986)	
	5.I enjoy belonging to this team because I am friends with many group members.		
	6. The team which I belong to is a close one.		
	1.I help my supervisor to finish tasks.		
	2.1 am willing to help my supervisor when things go wrong unexpectedly.	Koster and	
	3.I apologize to my co-supervisor when I made a mistake.	Sanders, 2006;	
Q - li de site	 4.1 try to divide the pleasant and unpleasant tasks equally between myself and my supervisor. 	Sanders,	
Solidarity	5.1 live up to agreements with my supervisor.	Schyns, Koster,	
Behavior	6.I help my co-workers to finish tasks.	and Rotteveel	
	7.I am willing to help my co-workers when things go wrong unexpectedly.	2003; Sanders,	
	8.I apologize to my co-workers when I made a mistake.	2004	
	9.1 try to divide the pleasant and unpleasant tasks equally between myself and my co-workers.		
	10. I live up to agreements with my co-workers.		

The first section of the questionnaire assesses the LMX differentiation perceived by respondent. The second and the third sections of the questionnaire measure respondent's perception about team cohesion and his (her) own solidarity behavior respectively. The final section collects respondent's biographical information, including age, gender, job title, educational level, and work seniority.

LMX differentiation was measured using a single-item LMX distribution measure, which was designed by Hooper and Martin (2008). Participant was asked to rate the LMX relationship quality of each of their team members (including himself/herself). He/She – The participant were required to indicate the number of people in their team whose relationship quality with the leader could be described as either: "very poor" (1), "poor" (2), "satisfactory" (3), "good" (4) or "very good" (5). They were also asked to indicate how they would describe their own LMX relationship on this scale.

The current operationalization of LMX differentiation builds upon previous measures of LMX variability (Sherony & Green, 2002; Hooper and Martin, 2008) by examining actual perceptions of LMX variability with an item that directly taps into the LMX construct. The LMX differentiation was operationalized by calculating the coefficient of variation. It is divided the standard deviation of LMX relationships within the team by the LMX team mean as reported by the participant ($CV=\sigma/\mu$).

Cohesion ($\alpha = .91$) was measured using the eight-item scale from Zaccaro et al. (1986). Respondents were asked to report their perceptions of the quality of their relationship with their supervisor and other team members. A sample item included in the survey was a question about the statement "The members of my team get along well together." Responses to this sample question could range from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

Adapting from Koster and Sanders (2006), Sanders (2004), and Sanders et al. (2003), we measured solidarity behavior by a five-item scale ($\alpha = .87$), including horizontal and vertical solidarity behavior. One sample item included was: "I help my supervisor to finish tasks." As for the previous sample question, responses could range from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

IV. DATA ANALYSIS

Partial least squares (PLS) structural modeling analysis was the tool used to analyze data. The PLS approach consists of two stages, measurement model testing and structural model testing, to substantiate structural equation modeling.

1. Results

All but one item with its loadings exceeded 0.7. This study dropped items with loading less than 0.7. The convergent validity was assessed by examining the measure's composite reliability (CR) and average variance extracted (AVE). Table 2 shows the results of the square root of AVE and CR values. All CR coefficients of constructs were well above the 0.7 threshold. The AVE of each construct was higher than 0.5, which means the measurement model reaches an acceptable convergent validity. Fornell and Larcker (1981) suggested that discriminant validity is demonstrated when the square root of AVE of each construct is greater than the correlation of the construct to other latent variables. Table 2 demonstrates an acceptable discriminant validity of the measurement model.

Construct	1.	2.	3.	4.	5.
1. LMX differentiation	-				
2. Cohesion	-0.42	0.69			
3. Solidarity Behavior	-0.24	0.68	0.52		
4. Vertical Solidarity Behavior	-0.05	0.53	0.89	0.51	
5. Horizontal Solidarity Behavior	0.01	0.49	0.82	0.51	0.54
CR	-	0.93	0.90	0.91	0.93
Μ	-	3.81	3.90	3.79	4.07
SD	-	0.69	0.47	0.48	0.46

Table 2. Convergent Validity and Discriminant Validity

Note: Diagonal elements (in bold) are the average variance extracted (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, the square root of the diagonal elements should be larger than off-diagonal elements.

This study used self-report data to test the hypotheses, which can result in the common method bias. A post-hoc remedy, Harman's one-factor test, suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), was employed to check whether the common method bias exists. All variables in the proposed research framework in Figure 1 were entered into an exploratory factor analysis. The result of an un-rotated principal components factor analysis revealed that totaling three factors with eigenvalues greater than 1 accounted for 65.37% of the total variance. The largest factor accounted for 33.01% of the total variance and was not greater than 50%, which is the minimum threshold value requirement for common method effect assessment; nevertheless, the value attributable to the largest factor was slightly greater than 1. Therefore, the data may have some common

variance problems but it is probably not sufficiently large enough to invalidate the research conclusion (Doty & Click, 1998).

2. Structural Model

The bootstrapping procedure suggested by Chin (1998) was performed to examine the statistical significance of each path coefficient using t-tests. Figure 1 shows that LMX differentiation was negatively related to cohesion ($\beta = -0.42$, p < 0.001) and also the R2 value of 17.9 percent indicating that the model explains a good amount of the variance in cohesion and supports Hypothesis 1. Cohesion was positively related to solidarity behavior ($\beta = 0.70$, p < 0.001) and the R2 value of 45.3 percent indicated that a good amount of variance in solidarity behavior was explained by cohesion. Hypothesis 2 was then confirmed. This study further compares the relative effects of cohesion on vertical solidarity behavior with the effects of cohesion on horizontal solidarity behavior and found the coefficients are 0.488 (p < 0.001, adj. R2 of 0.234) and 0.531 (p < 0.001, adj. R2 of 0.279) respectively. This result implies that as team gets more cohesive, team members will tend to be more cooperative with their teammates than to their team leader.



Figure 1. PLS Analysis Results

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Note: ***: p < 0.001.
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Using procedures recommended by Baron and Kenny (1986), we examine whether cohesion mediated the effects of LMX differentiation upon solidarity behavior. Evidence for partial mediation is present when the following conditions are met: The path from the independent variable (i.e., LMX differentiation) to the dependent variable (i.e., solidarity behavior) and the paths from the independent variable to the mediator (i.e., cohesion) and from the mediator to the dependent variable are all significant (Wold, 1985). Full mediation is present when the path from the independent variable to dependent variable (solidarity behavior) is not significant, but the remaining two paths are significant. From the above rules, Figure 2 shows that the path from LMX differentiation to cohesion is significant ($\beta = -0.42$, p < 0.001); the path from cohesion to solidarity behavior is also significant ($\beta = 0.70$, p < 0.001); but path from LMX differentiation to solidarity behavior is not significant ($\beta = 0.06$). These results suggest that cohesion fully mediates the relationship between LMX differentiation and solidarity behavior and indicate the critical role of perceived cohesion in shaping members' solidarity behavior.



Figure 2. Model Testing Results

3. Discussion

The primary aim of this study was to understand the relationship between LMX differentiation and cohesion and whether the latter has a relationship with solidarity behavior. Our findings align with previous studies (Hooper and Martin, 2008; Kidwell et al., 1997; Sherony and Green, 2002), which indicated that high LMX differentiation results in low perceived cohesion. In addition, low perceived cohesion is associated with low solidarity behavior. These findings add to the limited empirical findings about leader's LMX differentiation behavior and members' solidarity behaviors in team and organizational contexts. Moreover, this study found that cohesion fully mediates the relationship between LMX differentiation and solidarity behavior because a direct association between LMX differentiation and solidarity behavior was not present. By including the mediating variable, cohesion, this study found that although leader's behavior does not directly affect team member's cooperation behavior, it does so through the intra-team process variable, group cohesion. In other words, this study reveals how LMX differentiation would negatively affect member's solidarity behavior via cohesion. That means the more differentiated the leader-member relationships were perceived to be, the less perceived cohesion would be perceived by team members and, in turn, would result in less cooperative behavior. This finding is in line with previous research (De Cremer & Van Knippenberg, 2002) which suggests

Note: ***: p < 0.001.

that a leader's procedural fairness can influence the subordinate solidarity behavior via perceived cohesion. In addition, the results also show that

This study confirms that leaders play an important role in fostering cooperation in the organizational context. Leaders can use many sources of power, such as legitimate, reward, referent and expert, to influence subordinates by appealing to one or more of their needs. For example, leaders have reward power. Subordinates may work hard to get rewards that the leader has the power to influence (e.g., promotions, bonuses or such like). However, if two subordinates make equal efforts, and only one is to be rewarded, it will be perceived as unfair and an injustice. Therefore, leaders need to exercise this power cautiously. The relationship between leaders and subordinates can affect the whole team's atmosphere. According to literature, a highly cohesive team would generate better organization citizenship behavior, value commitment, satisfaction, performance, and less team conflict (Al-Rawi, 2008; Kidwell et al., 1997; Loughead & Carron, 2004). Previous studies have provided many ways to enhance cohesion. This study confirms that the leader is one of the very important keys to raising perceived cohesion.

V. CONCLUSION AND IMPLICATIONS

1. Conclusion

As the global economy evolves and business competition becomes more intense, many enterprises have adopted team/group-based structures as the primary mode of business operation. How to cooperate in the team context has been an important issue. Our study results show LMX differentiation to be negatively associated with perceived cohesion which in turn is positively related to group solidarity behavior. In other words, LMX differentiation creates an unfair situation that is harmful for members' morale and results in low cohesion. Leaders should spend more time understanding the work situation of each individual member and create a fair atmosphere to promote subordinates' willingness to cooperate.

The results of this research make an important contribution to the leadership literature as well as to the LMX differentiation literature and illustrate the potentially important role of a leader's fairness in influencing members' cooperation behavior.

2. Managerial Implications

The results of this study offer several insights for corporate superiors and team leaders. First, in addition to enhance the LMX quality per se, how leaders demonstrate LMX differentiation among team members also deserves the leader's attention. Although it is best for leaders to strive to treat all team members equally, it is not practical for leaders to provide sufficient and equal resources for all subordinates. Hooper and Martin (2008) then suggested that, although leaders may allocate tangible resources (e.g., funds and information) differentially among team members according to task requirements, leaders are encouraged to distribute non-tangible rewards (e.g., respect and trust) equally among team members to gain procedural fairness and integrity. On the other hand, although LMX differentiation is normal in team setting, from the perspective of equity, higher LMX differentiation will make team members feel inequality within team. In this respect, this study therein suggests leaders who practice LMX differentiation should keep in mind that their differential behaviors will be judged against norms of fairness by their team members. Henderson et al. (2009) suggest that organizations should provide specialized training for leaders in how employees evaluate and respond to ethical and fair, leader behavior in different context.

Second, our finding implies that fostering perceived cohesion is an important issue that the leader needs to work on so as to encourage more solidarity behavior among group members. Leaders should develop effective ways to foster perceived cohesion.

3. Limitations and Future Research

There are some limitations in this study. First, this research uses cross-sectional self-reported data. While individual perceptions were the focus of this research, making self-reporting methodologies a likely choice, the potential effects of common-source variance are a concern. Although the test result on common method bias was satisfactory, future researchers should employ multiple sources to collect data as well as to examine similar constructs with longitudinal data in a larger sample. Second, this study uses convenient sampling to collect data. There may be some biases incurred in this sampling method. Future study may employ other methods to examine the generalizability of the study results reported here. Third, the proposed model is theoretically sound, yet it is quite simple and partial. The large amount of unmeasured variables, including the embedded contextual issues, constitutes one major limitation of this study and warrants our caution in generalizing the study findings to other situation.

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探討主管成員交換品質差異、認知凝聚力 與團結行為之關係

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摘要

本研究主要探討主管成員交換品質差異、認知凝聚力與團結行為三者之間的關係,並以來 自台灣不同產業的217個樣本資料檢驗所提的研究模型。研究結果發現,員工所知覺的主管成 員交換品質差異和員工知覺的凝聚力呈現負向相關,而員工知覺的凝聚力會正向影響團隊成員 的團結行為,亦即主管成員交換品質差異越大,越不利於凝聚力的培養。本研究也發現,在主 管成員交換品質差異與團結行為之關係中,認知凝聚力扮演一個重要的中介的角色,換言之, 團隊成員的認知凝聚力有助於團隊的團結行為之形成。本文最後針對管理意涵、研究限制與未 來研究方向加以探討。

關鍵字:凝聚力、主管成員交換、主管成員交換品質差異、團結行為

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