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A Meta-Analysis of LMX Differentiation and its Effect on Performance and Organizational
Citizenship Behavior

(Full Paper Submission)

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ABSTRACT

Although leader-member exchange (LMX) differentiation represents a central assumption of LMX research, its effects on group and individual effectiveness and performance have not gone undebated. This study aims to synthesize and aggregate the empirical findings of past studies and estimate the true relationship between LMX differentiation and its relationship with group performance, individual performance, and organizational citizenship behavior. The results show that LMX differentiation is not significantly associated with either group or individual performance. However, the relationship between LMX differentiation and an element of extra-role performance (i.e. OCB) is significant.

KEYWORDS: Leader-member exchange (LMX), LMX differentiation, meta-analysis, organizational citizenship behavior

INTRODUCTION

There has been a recent interest in leader-member exchange (LMX) differentiation among scholars. While the notion of LMX has been established in leadership literature, LMX differentiation represents a newly-emerged area. Building on the assumption of LMX theory which states that leaders often develop exchanges of various qualities with members, LMX differentiation focuses solely on the extent to which a leader tends to develop inconsistent relationships with subordinates (Liden, Erdogan, Wayne, and Sparrowe, 2006).

The concept of LMX differentiation can be traced back to Graen (1976)'s seminal work in which he acknowledged the fact that followers tend to build relationships of various quality with their leader. In other words, a leader can form high-quality relationships with certain group members while keeping fewer quality exchanges with other followers.

Since then, research in LMX has devoted considerable attention to the antecedents and outcomes of LMX. Prior studies have found that followers who managed to maintain high-quality interactions with their leader often find themselves in-group members, which usually entails that the followers receive favorable work evaluations, gain more promotion opportunities, and obtain more frequent mentoring relative to those who have lower quality exchanges with the leader. As a result, employees with higher LMX quality tend to experience higher job satisfaction, greater organizational commitment, and less turnover intention, compared with those with less quality LMX.

However, the notion of LMX seems to be running against the rule of equality. Group members may perceive of their work environment as unfair if a leader differentiates among followers without proper justifications. Consequently, the effect of LMX differentiation may be counterproductive. Recently, there has been a renewed interest among scholars in this line of research to take a broader view on the effect of LMX differentiation with various hypotheses being proposed and tested.

Researchers seem to take different perspectives on this issue. On the one hand, since the subdivision of task responsibilities makes it possible to apply individual member skills in places where they can be more effectively utilized, leaders who assign tasks/responsibilities in a differentiated manner may achieve greater collective efficiency, resulting in superior group performance (Stogdill, 1959; Graen, 1976). Also, since leaders have limited stock of attention and energy, those leaders who strategically, selectively invest their attention and energy into their dyadic relationship in a way that more capable employees receive more critical support could attain better group performance (Liden et al. 2006).

Empirical evidence partially supports this perspective. Liden et al. (2006) proved that LMX variability positively affects group performance when tasks are highly interdependent. Naidoo et al. (2010) using a unique dataset that enables them to test the effect of LMX differentiation at different stages of group life cycle reported that LMX variability positively affects group performance at later stages.

On the other hand, in groups where LMX differentiation is more pronounced, members with low LMX quality may withhold their contribution (Liden et al., 2006). Also, differential treatment may go counter with the principle of equality, while promoting favoritism. Therefore, groups with greater LMX differentiation are more likely to have injustice concerns. Empirical evidence has also provided support for this view. Hooper and Martin (2008) show that perceived LMX variability could lead to greater team conflict. Similarly, Li and Liao (2014), by testing a dual process model, discovered that LMX variability has an adverse effect on team coordination, thereby negatively influences group performance. Furthermore, Wu et al. (2010) presented that greater LMX variability results in wider leader identification divergence.

As for the individual members within a group, studies have also provided contradicting evidence of LMX differentiation. One group of studies regarded high-quality LMX as a reward for high-performing employees (Sias & Jablin, 1995). It is suggested that leaders who reward employee on a consistent basis regardless of the individual contribution would de-motivate employees. Other researchers tend to believe that LMX differentiation would exert a negative influence on the employee because of the perceived injustice it may cause. Erdogan and Bauer (2010) found that team members are more likely to

develop negative work attitude when a leader exhibits a high degree of LMX differentiation.

In such cases in which studies on LMX differentiation report mixed and contradicting evidence, we believe it is helpful to conduct a meta-analysis. A meta-analytic approach has the advantage of quantitatively combining empirical results to reveal the true relationship. Therefore, the aim of this study is to quantitatively aggregate the empirical evidence reported in studies on the relationship between LMX differentiation, group effectiveness and individual performance (in-role and extra-role). In our paper, we analyze only one element of extra-role performance, specifically organizational citizenship behavior (OCB).

We draw upon Liden et al. (2006)'s definition of LMX differentiation and define it as the extent to which a leader differs in forming social exchange with followers within the same group. Our focal dependent variable is group effectiveness. It is defined as a group's ability to meet predetermined goals. In this meta-analysis, we plan to review and synthesize studies that empirically hypothesized and tested the relationship between LMX differentiation and team/group performance. To the best of our knowledge, there has not been such an attempt. Also, our exclusive focus on team/group performance is due to the fact that team/group performance is one of the most important outcome variables in leadership research.

We organize our research in the following manner. The next section will highlight a selected literature review and the hypotheses development. The following section will be devoted to describing our methodology and meta-analysis procedures. In the fourth section, we present our results. Finally, in the last section, we conclude our findings.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

LMX Differentiation

Since its inception in the 1970s, LMX has attracted a vast amount of scholarly attention and is considered one of the most fruitful research areas in leadership literature. Before the renewed attention to LMX differentiation, past studies generally focus on LMX quality, which is the quality of the dyadic relationship between a leader and a member. The well-established LMX literature suggests that an increase in LMX quality leads to a number of positive job-related outcomes such as job satisfaction, organizational commitment, job performance and organizational citizenship behavior (Gerstner & Day, 1997; Masterson, Lewis, Goldman, & Taylor, 2000).

Though based on similar concepts, LMX differentiation is foundationally different from LMX quality. Whereas LMX quality pertains to individual dyad, LMX differentiation is a group-level construct and is usually operationalized as the variability of LMX quality within a group (Liden et al., 2006; Li & Liao, 2014; Erdogan & Bauer, 2010). This implies that the quality of individual dyads aggregately determines LMX differentiation.

Although the concept of LMX differentiation has been recognized in early LMX studies, scholarly works that empirically test the effects of leader's differential treatment had been missing in the literature until Liden et al. (2006) brought it to light. Since then, a number of approaches to conceptualize LMX differentiation have been proposed and

tested (Henderson, Wayne, Shore, Bommer & Tetrick, 2008; Ma & Qu, 2010; Naidoo, Scherbaum, Goldstein & Graen, 2011; Le Blanc & González-Romá, 2012).

LMX Differentiation and Group Performance

The new stream of research on LMX differentiation has not gone undebated. There have been two different views toward LMX differentiation as well as how it would affect team functionality. On the one hand, there is a group of researchers who view LMX differentiation as a necessary practice for leaders to achieve greater group effectiveness and performance (Graen, 1976; Liden et al. 2006). It is suggested that it is necessary for a leader to provide differentiated guidance and support for members given that members are usually assigned diverse tasks which require different inputs. Leaders who seek greater group effectiveness and performance are, to a large extent, required to offer supports in an idiosyncratic way. As such, leaders inevitably differ in the quality of exchanges with group members. More importantly, such differentiated leadership practices help the group to achieve greater effectiveness and performance.

On the other hand, the existence of differential treatment by leaders raises the concern about favoritism and organizational justice (Hooper & Martin, 2008; Li & Liao, 2014). When leaders exercise differentiated leadership practices within groups, it is likely that members will perceive an unjust group climate, resulting in lower trust and greater within group conflicts (Hooper & Martin, 2008). Also, members who consider themselves under-treated may withhold their contributions to the group (Liden et al., 2006). In such situations, LMX differentiation may be negatively associated with overall group effectiveness and performance.

Just as the diverging views toward the concept of LMX differentiation, the empirical evidence draws the debate no closer to a conclusion. In fact, conflicting results are often to be found in LMX differentiation studies. For example, Liden et al. (2006) found that the variability of LMX within a group is not significantly related to group effectiveness and performance. However, the relationship is positive and significant when task interdependence was high. In contrast, Hooper and Martin (2008) showed that the presence of LMX differentiation is related to a greater degree of group conflict, which, in turn, lowers group potency. Therefore, past studies are incomplete with respect to the bivariate relationship between LMX differentiation and group effectiveness.

Given the diverse theoretical explanations and empirical findings, it is particularly difficult to pinpoint the definite direction of the relationship between LMX differentiation and group effectiveness and performance. Therefore, we offer competing hypotheses, which are as follows:

Hypothesis 1a: LMX differentiation is positively and significantly associated with group effectiveness.

Hypothesis 2a: LMX differentiation is negatively and significantly associated with group effectiveness.

LMX Differentiation and Individual Job Performance

A group of researchers conceptualized LMX differentiation as a reward that encourages individual contributions (Sias & Jablin, 1995). It is believed that a leader who rewards

his/her subordinate equally irrespective of member's individual contributions may demotivate group members. Likewise, in a team where leaders exhibit differential treatment, members are motivated to make more contributions toward group objectives in order to get rewarded.

LMX differentiation is also proposed to have a negative effect on employees since it may signal organizational injustice. The study conducted by Hooper and Martin (2008) showed that LMX differentiation negatively affects a follower's job satisfaction and well-being. Relatedly, Ni and Lin (2012) also reported that trust among group members is lower where LMX differentiation is present. Employee's organizational citizenship behavior is also reduced when a leader practice differential treatment (Cheng and Li, 2012).

There are also studies that reported no significant relationship between LMX differentiation and individual job performance (Liden et al., 2006; Le Blanc and Roma, 2012; Haynie, Cullen, Lester, Winter & Svyantek, 2014). Similarly, given the obscure picture the literature presents, we were not able to identify the direction of the relationship between LMX differentiation and individual work performance with confidence. As such, we offer the competing hypotheses. We also distinguish between employee's in-role and extra-role performance.

Hypothesis 2a: LMX differentiation is positively and significantly associated with job performance (in-role performance).

Hypothesis 2b: LMX differentiation is negatively and significantly associated with job performance (in-role performance).

Hypothesis 3a: LMX differentiation is positively and significantly associated with organizational citizenship behavior (extra-role performance).

Hypothesis 3a: LMX differentiation is negatively and significantly associated with organizational citizenship behavior (extra-role performance).

METHODOLOGY

Retrieval of Studies

The selection of studies was initiated with a search in academic databases, such as ABI Inform/Proquest, Google Scholar, Business Source Complete, PsychInfo, and JSTOR. In addition to published articles, a search criterion was selected to include dissertations. The keywords that were used included: Leader-member exchange differentiation, LMX differentiation, leader-member exchange variability, LMX variability, relative LMX, relative leader-member exchange, relational LMX, relational leader-member exchange, leader-member exchange differential, and LMX differential. After exhausting these sources for article collections, a backward and forward search was conducted for each of the studies that were found using their references and papers that cited them. Furthermore, a manual search in the Leadership Quarterly journal was also conducted. This process yielded 37 articles. However, only studies that included our variables of interest and were written in English were used for our study. The final sample included 17 articles.

Constructs Included in the Meta-Analysis

Leader-Member Exchange (LMX) Differentiation

LMX differentiation is defined as the extent to which the relationships between a leader and followers vary within a group. It is commonly operationalized as the variability of all individual dyadic exchanges.

Group Performance

Group or team performance is defined as the overall team's satisfactory completion of task and assignments as required by the leader or manager.

Individual Performance

Individual performance is also noted as in-role performance. This refers to the employees' or followers' satisfactory completion of task and assignments required by one's organizational role.

Organizational Citizenship Behavior (OCB)

OCB is a form of extra-role performance. In contrast to in-role performance, OCB is behavior that "may not be specifically related to accomplishing role-related tasks but that supports the social and psychological environment in which task performance takes place".

Coded Variables

In addition to the correlations between LMX differentiation and the aforementioned variables, the following was included in the coding sheet to extract information from each study: 1) author and year of publication, 2) publication form (unpublished/published article or dissertation [All of the articles chosen in our analysis happened to be published journal articles]), 3) sample (U.S vs. International), and 4) measurement of LMX differentiation (leader vs. follower perspective [Although LMX differentiation has been measured from both perspectives, all of the articles in our analysis only measure LMX differentiation from the followers' perspectives]).

Computation Analysis of Effects

To compute all effect sizes, we use the correlation coefficients given to us by the correlation matrix of each study. If the correlation coefficients were not given to us and we could not calculate it with the reported statistics, the article was omitted from further analyses. The computation estimates of overall effect sizes were in accord with [Cooper \(2009\)](#). We converted all effect sizes r s to d s and corrected for sampling error. The d s were subsequently averaged for the estimation of the overall effect size, d . In addition, a test around the 95% credibility interval was conducted to determine whether the effect sizes were significant. Furthermore, a test for homogeneity, Q , was also calculated to determine if any moderators are present. The results of our effects are highlighted in Table 1.

RESULTS

Table 1: Summary of Samples and Effect Sizes

	k	N	r	d	95% CI	Q
Group Performance	9	723	.00007	.018	(-.14, .14)	12.6629 (13.362; 0.10)
Individual Performance	3	720	.00019	.007	(-.11, .11)	5.2073 (4.605, 0.10)
OCB	6	1584	.21	.01	(.05, .37)	15.7276 (15.086, 0.01)

Note. k = total number of studies that included the observed variable of interest correlation with LMX differentiation; N = total number of respondents across k samples; r = mean sample-weighted correlation; d = mean sample-weighted effect size; CI = credibility interval; Q = homogeneity test including the critical value with the scores and significance given in parentheses

Of the seventeen papers, we were able to extract eighteen correlations for our computations. [Naidoo, Scherbaum, Goldstein, and Graen \(2011\)](#) included both group and individual performance in their analysis. The mean sample-weighted effect size, d , of all three variables are very small according to [Cohen \(1988\)](#). The 95% credibility intervals for both group and individual performance show that the effects of these variables are not significant. However, the Q indicates that a moderator may be present for individual performance. Taken together, Hypotheses 1 and 2 are not supported.

Hypothesis 3a is supported because OCB variable's positive effect size, although small, does show significance when tested around the 95% credibility interval. Moreover, there seems to be a moderator present that was not tested in this paper.

CONCLUSION

In this study, our objective is to estimate the true relationship between LMX differentiation and its effect on group performance, individual performance, and organizational citizenship behavior. The results show that, when empirical evidence is aggregated, LMX differentiation is not significantly associated with either group effectiveness and performance or individual performance. However, the relationship between LMX differentiation and extra-role performance, namely OCB shows results of a significant, but weak relationship. Furthermore, our results show that there may be a moderator(s) present in the relationship between LMX differentiation and individual performance as well as LMX differentiation and OCB; however, we could not identify one in the present study.

LMX differentiation is still a relatively new construct compared to its predecessor. This paper contributed to the literature by synthesizing the scarce empirical evidence in an attempt to identify gaps for future theoretical and statistical evidence.

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