Relationships Among Leader-Member Exchange, Organizational Citizenship Behavior, Organizational Commitment, Dyadic Gender, and Dyadic Duration in a Rehabilitation Center

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Abstract

The relationship between subordinates' perceptions of the quality of the leader-member exchange (LMX), organizational commitment (OC), and willingness to engage in organizational citizenship behavior (OCB) was investigated in this pilot study. By surveying direct service staff at a large rehabilitation organization, we examined (a) differences in LMX according to the dyadic gender of the supervisor compared to the employee and dyadic duration of the relationship; and (b) moderation effects of both dyadic duration on the relationship between LMX and OCB and OC, and of dyadic gender on the relationship between LMX, and both OCB and OC. The correlation between LMX and OC was significant, $r = .38$, $p = .01$. There was evidence of moderating effects of dyadic duration on the relationship between LMX and OCB, $F(3,37) = 2.86$, $p = .05$, as well as LMX and OC, $F(3,37) = 6.34$, $p = .001$. There was also evidence that dyadic gender moderates the LMX/OC relationship, $F(3,37) = 5.98$, $p = .002$.

Leadership, and its importance to organizational and individual success, historically has been among the most widely researched constructs in the behavioral sciences (Milner, Katz, Fisher, & Notrica, 2007). A growing body of research has been conducted on leader-member exchange (LMX) theory (Stringer, 2006), which emphasizes the dyadic relationship between supervisors and subordinates. Research on LMX theory began in the early 1970s by Graen and his colleagues as a theoretical alternative to understanding leadership at work (Graen & Cashman, 1975). Prior to introduction of LMX theory, most leadership theorists focused exclusively on the role of general leader style. According to Milner et al. (2007), this general leadership style was thought to be ambiguous, out-dated, and ineffective, since the primary focus was on a particular leader who displayed the same behaviors towards all subordinates, situational theorists notwithstanding. On the contrary, LMX theory considers the dyadic exchange of supervisor (leader) and subordinate (member) behavior (Martin, Thomas, Charles, Epitropaki, & McNamara, 2005) as its central focus.

The LMX relationship between a supervisor and subordinate has been shown to develop quickly and remain relatively stable over time (Gerstner & Day, 1997; Graen & Cashman, 1975). LMX theory suggests that leaders interact with their subordinates at varying levels dependent on whether the subordinates are part of the “in-group” (high quality relationship) or “out-group” (low quality relationship). Members of the “in-group” are often given additional responsibility, autonomy, increased communication with their supervisors, and trust in exchange for organizational commitment and per-
formance. High quality LMX relationships have been shown to result in higher levels of subordinate satisfaction and performance (Ansee Lieve, 2007; Bechtel et al., 2006; Mardanov, Heischmidt, & Henson, 2008; Stringer, 2006), lower levels of subordinate stress (Harris & Kacmar, 2005), and lower levels of subordinate absenteeism (Dierendonck, LeBlanc, & Breukelen, 2001). The “out-group” members do not experience the same amount of responsibility, autonomy, communication, and trust with their supervisors. Inversely, low quality LMX relationships have been shown to result in higher levels of supervisor control and directives, lower levels of subordinate satisfaction, higher levels of subordinate turnover, and less desired assignments (Green & Cashman, 1975; Varma & Stroh, 2001).

LMX theory has been extensively researched in organizational settings such as banks (Vecchio, 1998), college athletic departments (Sagas & Cunningham, 2004), hospitals (Dunegan, Uhl-Bien, & Duchon, 2002), state lottery centers (Harris & Kacmar, 2005), public libraries (Green, Anderson, & Shivers, 1996), fire stations (Stringer, 2006), universities (Epitropaki & Martin, 1999), and electrical companies (Harris & Kacmar, 2005). Surprisingly little LMX research has been conducted in rehabilitation organizations, to date, we could find only three studies. These focused specifically on the relationship between LMX and burnout (Larson & Gouwens, 2008), LMX and organizational citizenship behavior (OCB; Hopkins, 2002), and LMX and subordinate disability status (Colella & Varma, 2001).

Researchers have found relationships between LMX and various organizational constructs, including levels of job satisfaction (Stringer, 2006), turnover (Vecchio, 1998), levels of stress (Harris & Kacmar, 2005), amount and quality of work-related information employees receive (Sias, 2005), subordinate feedback-seeking behaviors (Lee, Park, Lee, & Lee, 2007), organization citizenship behavior (Wayne & Green, 1993), and organizational commitment (Tiemey, Bauer, & Potter, 2002). Organizational citizenship, or extra-role behavior is discretionary individual behavior, unrecognized by the formal reward system; its aggregate is said to promote effective organizational functioning (Lapierre & Hackett, 2007; Organ, 1988). Examples include, but are not limited to, helping other workers on job tasks, actively participating in team functions, and communicating positive messages about the organization to the public (Organ, 1988). Among other researchers, both Allen and Rush (2001) and Farrell and Finkelstein (2007), found that women were more likely to be reported by others as engaging in OCB than men. We could only find one published study that originated in a human service organization: Hopkins (2002) examined the effects of LMX and various organizational constructs on degree of willingness to engage in OCB among child and family service employees. Employees’ reports of organizational support, job performance, and professional education were positively related to their level of OCB.

Organizational commitment (OC), or company loyalty, is the degree to which an individual identifies with and becomes involved in the goals and values of the organization (Kent & Chelladurai, 2001). Employees with a high degree of commitment have shown a willingness to exert considerable effort on behalf of the organization, and a strong desire to remain in the organization. In fact, OC has been found to be a more stable and lasting measure of employee attitude than job satisfaction (Sias, 2005). We found two human service studies examining OC: First, Mannheim and Papo (2000) conducted a study among professional and nonprofessional occupational welfare workers to investigate the relationship between various participant characteristics and organizational outcomes, including OC. Second, Jaskyte (2003) examined the perceptions of rehabilitation employees of organizational arrangements, job characteristics, leadership behavior and job satisfaction and their own organizational commitment. Results showed that perceptions of leadership behavior were important predictors of job satisfaction and commitment. Finally, there are gender differences in organizational commitment, with women consistently displaying higher levels than men (Bellman, Forster, Still, & Cooper, 2003; Mathieu & Zajac, 1990).
Thus, relationships among leader-member exchange, organizational citizenship behavior, and organizational commitment have been heavily researched, although not in rehabilitation. Similarly, research has been conducted on relationships between LMX and two variables describing the nature of the supervisory-subordinate dyad: its duration (i.e., how long the subordinate has reported to the supervisor), and gender (i.e., whether the supervisor and subordinate are the same or different genders). First, dyadic duration appears influential in the relationship between LMX and job performance (Duarte, Goodson, & Klich, 1994; Mossholder, Niebuhr, & Norris, 1990; Vecchio, 1998). And second, supervisors who are the same gender as subordinates appear more likely to develop higher quality LMXs than those supervisors of the opposite sex (Milner et al., 2007; Wayne, Liden, & Sparrow, 1994).

The purpose of this pilot study was to examine the various relationships among Leader-Member Exchange, Organizational Citizenship Behavior, and Organizational Commitment. Previous LMX research has demonstrated empirical evidence for the relationship between subordinates’ perceptions of the LMX relationship with their supervisor and their willingness to engage in OCB (Hopkins, 2002) and OC (Yukl, 1989). In addition, the relationship between subordinates’ perceptions of the LMX relationship with their supervisor and the dyadic gender of the supervisors and subordinates (Milner et al., 2007; Wayne et al., 1994) and dyadic duration (Vecchio, 1998) of the LMX relationship have also been shown. Therefore, it seems plausible that dyadic duration and gender, respectively, will moderate the relationship between subordinates’ perceptions of the quality of the LMX with their supervisor and their willingness to engage in OCB and OC. Furthermore, considering the established positive relationship between LMX and both OCB and OC and LMX and dyadic duration and gender, independent of one another, it seems likely that both dyadic duration and gender would moderate the relationship between subordinates’ perceptions of the quality of the LMX and their willingness to engage in OCB and OC. Based on these assumptions, the following research questions were developed:

1. Is there a relationship between subordinates’ perceptions of the quality of the leader-member relationship (LMX) and their willingness to engage in organizational citizenship behavior (OCB)?
2. Is there a relationship between subordinate LMX and organizational commitment (OC)?
3. Does subordinate LMX differ according to the dyadic gender of the supervisors and subordinates (same sex vs different sex)?
4. Is LMX related to dyadic duration?
5. Does dyadic duration moderate the relationship between LMX and OCB?
6. Does dyadic duration moderate the relationship between LMX and OC?
7. Does dyadic gender moderate the relationship between LMX and OCB?
8. Does dyadic gender moderate the relationship between LMX and OC?

Methods

Participants and Procedure

The participants were 41 direct service staff employed, at the time of the study, at a large Midwestern community rehabilitation program. Most staff participated in a large group meeting, while a few staff were contacted by household drop-off method (Trochim & Donnelly, 2007). Staff were compensated for their participation with an amount equal to their hourly pay. The age range of participants was from 19 to 65 years, while mean age was 31.94 years (SD = 11.22). Among the 39 participants who
provided complete demographic data, 34 were female (87.2%) and 5 were male (12.8%). A small majority, 21 (53.8%), had an undergraduate degree; 17 (43.6%) had a high school diploma/GED, and one had a graduate degree (2.6%). Ethnic backgrounds reported by participants included 25 White, Non-Hispanic (64.1%), 7 Black, Non-Hispanic, (17.9%), 5 Hispanic (12.8%), 1 Asian/Pacific Islander (2.6%), and 1 other (2.6%). Dyadic duration ranged from 3 to 90 months; the mean dyadic duration was 19.98 months (SD = 22.69).

Complete data from two research participants were excluded from data analyses requiring knowledge of their gender or the duration of their relationship with their supervisors. As a result, only 39 cases were used in computing demographic statistics, while all 41 cases were used in questions for which demographics did not matter.

**Instruments**

A brief demographic instrument was used to collect respondents' age, gender, highest degree earned, race/ethnicity, and dyadic duration. A unique code on each demographic survey allowed us to determine dyadic gender while still hiding the identity of both supervisors and subordinates. Besides this demographic instrument, three instruments were used to measure the other variables of interest: the Team Leader-Member Exchange Scale (abbreviated as LMX-SLX by its developers Graen, Hui, & Taylor, 2004), the Organizational Citizenship Behavior Scale (OCBS; Smith, Organ, & Near, 1983), and the Organizational Commitment Questionnaire (OCQ; Mowday, Steers, & Porter, 1979).

**LMX-SLX.** This 10-item instrument was used to assess the quality of the supervisor-subordinate relationship from the perspective of the subordinate; it may also be used with the supervisor as referent. It is one of the most commonly used scales to assess quality of the LMX, and measures three dimensions: trust, respect, and obligation. A five-point Likert-type scale (higher scores indicating better quality) is used in combination with questions like “My direct supervisor would help me with my job problems,” and “My direct supervisor has trust that I would carry my workload.” Since all items are scored similarly and worded in a positive direction, the composite LMX-SLX score was the simple sum of the items, as prescribed by Graen et al. (2004). Psychometric analysis of the LMX-SLX (Graen et al. 2004; Scherbaum, Naidoo, & Ferreter, 2007) has indicated high (.95) internal consistency, and high levels of differentiation, using classic item analysis, between individuals whose scores were close but not equal.

**OCBS.** Two subscales comprise this scale. The first is a 6-item subscale assessing altruism, defined as spontaneous extra-role behaviors that assist others with organizational tasks (example questions include “I help other employees with their work when they have been absent,” and “I take the initiative to orient new employees to the program even though it is not part of my formal job description”). The second scale (8 items) is used to measure general compliance with work rules and norms, and included items on such characteristics as extraordinary attendance and avoidance of engagement in idle conversations. Some items were positively worded; those negatively worded had to be reverse-scored. Respondents rated themselves on a five-point Likert-type scale, ranging from not at all characteristic to very characteristic. While separate scale scores could have been computed, consistent with scoring instructions from the scale developers, the final score used was a simple sum of all items, after adjustments were made for reverse scoring. Internal consistency of both the altruism and compliance subscales is acceptable, ranging from .75 to .91 (Organ & Konovsky, 1989; Pond, Naco, Mohr, & Rodriguez, 1997), while alpha coefficient for the whole scale has been estimated at .72 (Truckenbrodt, 2000).

**OCQ.** This 15-item questionnaire characterized three factors of commitment among subordinates: (a) strong belief in and acceptance of the goals and values of the organization; (b) willingness to expend considerable effort on the organization's behalf; and (c) strong desire to remain a member of the
organization. Items, which were both positively and negatively worded, included "I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful," and "I feel very little loyalty to this organization." The rating scale was a seven-point Likert-type ranging from strongly disagree to strongly agree. After reverse scoring appropriate items, the final score was the unweighted mean of the item scores. Internal consistency of the OCQ is acceptable, ranging from .64 to .91 (Mowday, Steers, & Porter, 1979; Sias, 2005; Truckenbrodt, 2000). Additionally, Mowday et al. found evidence of stability over time (test-retest reliability = .53 .75 at 2–4 months), and ability to demonstrate acceptable convergent and discriminant validity.

Results

Prior to regression analysis, data were screened for missing data in the LMX-SLX, OCQ, and OCBS, and distribution problems. There was a small amount of data missing from the three instruments, and these were handled by mean substitution. Mean score substitution is especially useful in small samples when listwise deletion would reduce sample size, and has been extensively used in past studies (Howell, 2006). Initial inspection revealed an extreme skewness in dyadic duration; 24 participants (58.5%) had worked with their supervisors for 12 months or less, while 17 (41.5%) had worked with their supervisors for between 13 and 90 months. Because this skewness would violate the assumption of univariate normality, dyadic duration was recoded into a 0/1 dichotomy, with 1 assigned to those staff with 13+ months. This made sense conceptually, since 13 months would put staff past their probationary periods.

The dependent variable (DV) for all analyses was total LMX, obtained by computing the sum of the items on the LMX-SLX (Graen et al., 2004). Given the small sample size, a family alpha level of .05 was used for tests of each of the eight research questions. Simple linear regression analyses were used to address the first four research questions (RQ); hierarchical multiple regression analyses were used to address the last four. An examination of the residual plot for each RQ separately was used to test the assumptions of normality and homogeneity of variance, as well as the presence of extreme univariate and multivariate outliers. Neither violations of the assumption nor any extreme outliers were detected. To test the assumption of the absence of multicollinearity, both tolerance and VIF were considered for each RQ with multiple predictors. Because each individual research participant completed research packets independently, possible errors of prediction were considered to be independent of one another.

Research Questions 1–4

The null hypothesis for each of these questions was that the population correlation was not significantly different from 0. Since there was one predictor and n = 41 for each analysis, power was computed at only .68. Thus, there was increased probability of Type II error.

RQ 1 was "Is there a relationship between subordinates' perceptions of the quality of the leader-member relationship (LMX) and their willingness to engage in organizational citizenship behavior (OCB)?" The correlation was not significant, r = .15, p = .35. In the test for RQ 2, "Is there a relationship between subordinate LMX and organizational commitment (OC)?", the correlation coefficient was significant, r = .38, p = .01. The third and fourth research questions concerned the LMX dyadic gender relationship and LMX dyadic duration relationship, respectively. Neither correlation was significant: In RQ 3, r = .14, p = .38, while in RQ 4, r = .30, p = .051. Thus, the null hypothesis was rejected in RQ 2 only.
Research Questions 5 – 8

The null hypothesis for each of these hierarchical multiple regressions was that all slopes equaled 0 in the population. These research questions involved possible moderation effects of dyadic duration and dyadic gender on the relationships between LMX and both OCB and OC. Thus the strategy was to do a two-step multiple regression, with the main effects tested at step one, and the interaction effect added at step two. The power for each of these analysis, with three predictors and n = 41, was .48, thus increasing the probability of Type II error.

RQ 5 concerned the moderating effect of dyadic duration on the LMX OCB relationship. Model one consisted of LMX, OCB, and dyadic duration, and was not significant, $R^2 = .10, F (2, 38) = 2.21, p = .12$. However, when the interaction was added in model two, the resulting regression equation was significant, $R^2 = .19, F (3, 37) = 2.86, p = .05$. As can be seen, there was a .09 change in $R^2$ from model one to model two. The relationship between LMX and organizational citizenship behavior was weaker in dyads that had been together longer. In RQ 6, the moderating effect of dyadic duration on the LMX OC relationship was examined. Model one, consisting of LMX, OC, and dyadic duration, was significant, $R^2 = .26, F (2, 39) = 7.59, p = .002$. Model two, which also included the OC dyadic duration interaction, was significant as well, $R^2 = .34, F (3, 37) = 6.34, p = .001$. Thus, there was a change in $R^2$ of .08 from model one to model two. Further, the relationship between LMX and organizational commitment was stronger for those dyads that had been together longer.

RQ 7 was “Does dyadic gender moderate the relationship between LMX and OCB?” Neither model one, $R^2 = .10, F (2, 38) = 2.21, p = .12$, nor model two, $R^2 = .16, F (3, 37) = 2.31, p = .09$, was significant. Similarly, RQ 8 examined the moderating effect of dyadic gender on the LMX OC relationship. Model one was significant, $R^2 = .26, F (2, 38) = 7.59, p = .002$, as was model two, $R^2 = .32, F (2, 38) = 5.98, p = .002$, and there was a .06 change in $R^2$. The relationship between LMX and organizational commitment was stronger for those dyads in which the supervisor and subordinate were the same gender. Thus moderating effects were found in three out of four of these research questions.

Discussion

The relationship between LMX quality and various individual and organizational constructs is well documented in the LMX literature. The results of the present study both extend our understanding of the leader-member exchange, and provide some clarity in our leadership knowledge base, especially as it comes to dyads. At the same time, new questions arise.

Jaskyte’s (2003) finding that perceptions of leader behavior were associated with organizational commitment is echoed in the present data. There was a significant low to moderate positive relationship between LMX and OC. However, we did not find a similar relationship between LMX and OCB, contrary to earlier findings by Miller (2002). It is possible this lack of a relationship between LMX and OCB was due to the small sample size, resulting in low power observed. Thus a larger sample size may have resulted in higher power and a significant relationship between LMX and subordinate willingness to engage in OCB. Follow-up studies using similar methods will need to incorporate a larger sample size in an effort to achieve larger power and possible significance between LMX and OCB.

While not being significantly correlated with LMX, dyadic duration was useful as a moderator in both the LMX-OCB and LMX-OC relationships. This is consistent with past research on relationships between LMX and other organizational constructs (Duarte, Goodson, & Klitch, 1994; Mossholder, Niebuhr, & Norris, 1990; Vecchio, 1998). In dyads that had been together longer, the LMX-OCB relationship was weaker, while the LMX-OC relationship was stronger.
Inasmuch as supervisors who are the same gender as subordinates have appeared more likely to develop higher quality LMXs than those supervisors of the opposite sex (Milner et al., 2007; Wayne, Liden, & Sparrow, 1994), it would seem logical that dyadic gender would be significantly correlated with LMX and moderate relationships between LMX and other organizational constructs. Our results were mixed: the dyadic gender-LMX correlation was not significant, and the moderating effect was not found in the LMX-OCB relationship. This is likely due to the relative lack of power as a consequence of the small sample size, although the imprecision of the instruments is always a possibility. The moderating effect was only seen in the LMX-OCB relationship, with the relationship being stronger for staff in same-gender dyads, consistent with past research in which women consistently are reported as being more committed than men (Bellman et al., 2003; Mathieu & Zajac, 1990). While women are also reported as having higher levels of both LMX (Varma & Stroh, 2001) and OCB (Allen & Rush, 2001), we failed to find any associations with either of these constructs or a moderating effect on their relationship.

A number of limitations affect interpretation of these results. The first has to do with the self-report nature of the instruments. It is possible that, regardless of assertions of confidentiality and anonymity, research participants self-reported in a more favorable manner as a result of beliefs about their employment status within the organization at the time, and the nature of the research questions. A limitation on generalizability had to do with the fact that all participants came from only one organization, the demographic makeup of which would be similar to only a small percentage of rehabilitation organizations. The small sample size, and consequent poor power in the analyses, surely were threats to conclusion validity. Finally, there would be unexplained variance involving the effects of the amount of contact that each subordinate had with their direct supervisor, again threatening the conclusion validity of these results. It was possible that two staff who had worked with the same direct supervisor for the same amount of time could experience differing amounts of contact due to non-overlapping work schedules. For example, a subordinate appointed to exclusively work an overnight schedule could have substantially less face time with her or his dayshift direct supervisor, than other subordinates with overlapping shifts and more face time with their direct supervisors, regardless of dyadic duration of each respective dyad. As a result, a subordinate with a non-overlapping schedule with their direct supervisor misperceived themselves to be in a high quality LMX relationship because of their infrequent contact and perceived responsibility and autonomy. On the other hand, another subordinate with very infrequent contact with the same direct supervisor may have accurately perceived being mistrusted and in a low quality LMX relationship. It is recommended that future research of this kind include demographic information regarding the amount of face to face contact and work schedules for respective supervisor and subordinate dyads.

Unexplained variance provides significant challenges and opportunities for future researchers. We examined dyadic gender and found the relationship between LMX and OCB to be stronger when dyads were the same gender. Similar relationships and moderating effects might be established with dyadic ethnicity. The role of subordinate disability in either direct relationships or moderating effects on LMX relationships with other organizational constructs would certainly be interesting. Person-environment fit (P-E fit; Furnham & Schaeffer, 1984; Furnham & Walsh, 1990; Hoffman & Woehr, 2006) may be a revealing dimension to add to LMX research. Conceptually, it would seem logical that persons whose P-E fit was strong would more likely (a) be members of the “in-group” (Graen & Cashman, 1975) with higher LMX, (b) have a greater level of organizational commitment, and (c) be more likely to perform discretionary organizational citizenship behaviors.

Research suggests that leaders who can effectively sustain high quality LMX relationships with subordinates see lower turnover, and increased job satisfaction and performance in those subordinates. Given past research and the results of our study, it would seem advisable that supervisors be alerted as to the need and benefits of establishing high quality LMX relationships with all of their employees.
(Graen et al., 2004). They should also be encouraged to establish a feedback seeking environment 
(Lee et al., 2007), share high quality information (Sims, 2005) and delegate additional responsibility 
and encourage autonomy among subordinates in low quality LMX relationships (Lee, 1999). 
Finally, it may be helpful for rehabilitation organizations to hold regular leadership training sessions on 
LMX theory and the many antecedents and outcomes of LMX.

References


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