

# A Meta-Analysis Of Organizational Citizenship Behavior And Leader-Member Exchange

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## ABSTRACT

*Numerous studies on Leader-Member Exchange (LMX) Theory of leadership have identified various antecedents and consequences of LMX. This study is a meta-analysis (Hunter & Schmidt, 1990) of two variables—organizational citizenship behavior and leader member exchange. The study addresses the following questions: (a) What is the correlation between organizational citizenship behavior and leader-member exchange? (b) What are the effects of moderators such as employee status, supervisory status, tenure, and perceptions outside of the United States?*

## INTRODUCTION

As American business companies struggle with the pressure from takeovers, mergers, restructuring, and acquisitions, employees' citizenship behavior is changing because employees perceive a lack of job security in the workplace. Before corporate downsizing, layoffs, and unemployment became common practice in the business world, there had been inherent expectations by management of employees' organizational citizenship behavior in the workplace.

Organizational citizenship is behavioral, wherein subordinates accommodate their supervisors, other employees, and clients in the conduct of their assigned duties by performing what is normally expected such as not arriving late, not leaving early, and not abusing their lunch break. Organizational citizenship behaviors are extra-role behaviors which, when performed by the members of the organization, benefit the organization (Bateman & Organ, 1983). These are everyday acts of cooperation that go beyond the formal job description (Katz & Kahn, 1978). The challenge for management is how to foster citizenship behavior within their employees despite the reality of job cuts in the workforce. There is considerable research to suggest interpersonal interaction between supervisors and subordinates merits closer scrutiny.

The Leader-Member Exchange (LMX) Theory is a well-researched leadership construct in organizational behavior and business management studies. Leader-Member Exchange is a two-way relationship (dyad) between the Leader (supervisor) and the Member (subordinate) (Danserau, Graen, & Haga, 1975; Deluga, 1998; Graen & Cashman, 1975; Graen & Scandura, 1987; Graen & Schiemmann, 1978; Vecchio & Gobdel, 1984). The theory asserts that leaders treat each employee on a different level of social exchanges, i.e., supervisors do not interact with subordinates uniformly (Graen & Cashman, 1975; Wayne & Green, 1993). The quality of the relationship or exchange varies because supervisors have limited time and resources. Supervisors exchange personal and positional resources in return for subordinates' performance on unstructured tasks. These personal and positional resources are: sharing of so-called inside information, influence in decision-making, task assignment, job latitude, support, and attention (Graen & Cashman, 1975).

Much has been written about LMX Theory and the implications that it has for various aspects of organizational life. For example, LMX research has involved areas such as performance appraisal (Linden, Wayne & Stilwell, 1993; Wayne & Ferris, 1990), worker productivity (Scandura & Graen, 1984), organizational climate

(Kozlowski & Doherty, 1989), demographic similarity (Linden et al., 1993), and perceived similarity (Linden et al., 1993; Turban, Jones, & Rozelle, 1990). As evidenced by the widespread application of LMX Theory, this theory is a useful tool for understanding the dynamics of dyadic functioning in organizational settings.

## **STATEMENT OF THE PROBLEM**

Numerous studies on Leader-Member Exchange (LMX) Theory of leadership have identified various antecedents and consequences of LMX. This study is a meta-analysis (Hunter & Schmidt, 1990) of two variables—organizational citizenship behavior and leader member exchange. The study addresses the following questions: (a) what is the correlation between organizational citizenship behavior and leader-member exchange? (b) what are the effects of moderators such as employee status, supervisory status, tenure, and perceptions outside of the United States?

An analysis of the total sample was performed using uncorrected and corrected effect sizes. The effect sizes for each study in the meta-analysis were corrected for study artifacts as identified by Hunter and Schmidt (1990). These artifacts included: sampling error, error of measurement in the dependent and independent variables, dichotomization of continuous independent and dependent variables, range variation, attrition, deviation from perfect construct validity in the dependent and independent variables, transcription errors, and variance due to extraneous factors (Hunter & Schmidt, 1990). In addition to examining the sample as a whole, three-moderator analysis was run to determine their effect on the variables of interest. The moderator analysis will include: (a) tenure (less than 5 years or greater than 5 years), (b) study conducted in the United States or another country, (c) employee or supervisory status.

The study of OCB explores the nature of discretionary behaviors of employees in the work place. OCB has a social exchange phenomenon and has been linked to LMX (Duarte, Goodson, & Kilch, 1994; Farh, Podsakoff, & Organ, 1990; Tansky, 1993). Blau (1964) described the differences between social and economic exchange saying, “only social exchange tends to engender feelings of personal obligation, gratitude, and trust; purely economic exchange as such does not” (p. 94); therefore, if employees consider themselves in conditions of social exchange, they exhibit OCB. In addition, theoretical and empirical research supports a positive relationship between OCB and group level performance outcomes (Karambayya, 1989; Smith, Organ, & Near, 1983).

Leader-Member Exchange Theory (Graen, Novak, & Sommerkamp, 1982), originally named Vertical Dyad Linkage Model (Dansereau, Graen, & Haga, 1975), posits leaders treat their subordinates differently, i.e., relationships or exchanges at varying degrees or levels depending upon whether the latter are part of the in-group (referred to as high-quality exchange relationship) or out-group (low-quality exchange) (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Cashman, 1975; Graen, Novak, & Sommerkamp, 1982; Graen & Scandura, 1987; Graen & Uhl-Bien, 1995; Linden & Graen, 1980). A social exchange process evolves between supervisor and subordinate in the development and maintenance of the following personal characteristics: mutual trust, interdependency, shared support, respect, strong loyalty, and reciprocal influence (Graen & Cashman, 1975). As noted by Deluga (1998), the dynamics in the dyadic exchange of the supervisor and subordinate result in either high-quality or low-quality Leader-Member Exchange relationship.

## **LITERATURE REVIEW**

A review of the Leader-Member Exchange literature agrees with the notion that leaders treat subordinates differently at varying degrees and levels (Dienesch & Linden, 1986), contingent on whether the latter are part of the in-group (high-quality relationship) or out-group (low-quality relationship) (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Cashman, 1975; Graen, Novak, & Sommerkamp, 1982; Graen & Scandura, 1987; Linden & Graen, 1980; Scandura & Graen, 1984; Vecchio, 1982). Proponents of the theory assert the quality (in-group or out-group) of dyadic exchange between superior-subordinate is more predictive of positive organizational outcomes than the leader’s traits or behaviors (Gerstner & Day, 1997; House & Aditya, 1997). The in-group reports mutual respect, trust, shared support, interdependencies, greater job latitude, common bonds, open communication, and reciprocal obligation between the supervisor and the subordinate (Dienesch & Linden, 1986; Linden & Graen, 1980; Snyder,

Williams, & Cashman, 1984). The exchange between superior-subordinate (dyad), is the unique basic premise and the unit of analysis of the Leader-Member Exchange (Graen, 1976; Linden & Graen, 1980).

The study of OCB explores the nature of discretionary behaviors in the work place. OCB emphasizes the social context of the work environment in addition to the technical nature of the job. OCB has been defined in terms of pro-social behavior (Brief & Motowidlo, 1986; Puffer, 1987), altruism (Rosch, 1978), and service orientation (Hogan & Busch, 1984). Several studies (Organ & Konovsky, 1989; Smith, Organ, & Near, 1983) have empirically labeled an altruistic OCB component that includes such employee behaviors as volunteering for things that are not required and making innovative suggestions to improve the department. Researchers have linked need for achievement, education, job satisfaction, urban and rural background, task scope, perceived peer competition, group cohesiveness, leader fairness, employee positive affect and negative affect, and employee positive mood to altruistic OCB (Farh, Podsakoff, & Organ, 1990; Organ & Konovsky, 1989; Puffer, 1987; Smith et al., 1983). Smith et al. (1983) also isolated a general compliance OCB component now relabeled conscientiousness (Organ, 1990), which includes such behaviors as not coasting toward the end of the day and having work attendance above the norm. Conscientiousness OCB has been associated with need for achievement, years of service, urban and rural background, task scope, and affect (Organ & Konovsky, 1989; Puffer, 1987; Smith et al., 1983). Organ (1990) contended that both types of OCB, altruistic and conscientiousness are generated primarily as a result of social exchange that characterizes much of human interaction.

In his concept of “willingness to cooperate,” Barnard (1983) linked the concept to another important concept, the informal structure that set him apart from much of the accepted thought of his day concerning organizations. In that era, the prevailing concepts of the organization constituted what is generally known today as Classical Management Theory (Organ, 1990). Classical writers assumed that most participants in organizations possessed neither the capacity nor the disposition to cooperate spontaneously. Only formal structure and controls, as defined and enforced by management, could fulfill this function (Organ, 1990). Barnard (1983) held that formal structure is the result, not the cause, of organized activity. He also contended that formal structure could only recognize what is already inherent in the individual and collective willingness to cooperate. According to Barnard (1983), formal structure does not suffice to anticipate all needed contributions. Willingness to cooperate is the essential condition that must be added to the formal structure. Organ (1990) stated that Organizational Citizenship Behavior is a very important construct in current use that closely resembles Barnard’s willingness to cooperate.

OCB consists of informal contributions that participants can choose to proffer or withhold without regard to considerations of sanction or formal incentive (Organ, 1990). According to Organ (1988), OCB has consisted of five specific categories: (a) altruism, which includes all discretionary behaviors that have the effect of helping a specific other person with an organizationally relevant task or problem, (b) conscientiousness, or behavior that organization members carry out certain role behaviors well beyond the minimum required levels, (c) courtesy, which includes such actions as “touching base” with those parties whose work would be affected by one’s decisions or commitments, (d) civic virtue, which implies a sense of involvement in what policies are adopted and which candidates are supported, and (e) sportsmanship, or acts that avoid complaining, petty grievances.

### **LMX And OCB**

Related research supported the argument that LMX should impact OCB. Duarte, Goodson, and Kilch (1994) found high LMX employees were rated more highly on subjective performance. They suggested that one reason for this phenomenon was that employees go beyond their formalized job contracts and contribute more to the work unit through OCBs than can be defined by task completion.

Employee OCB may be related to LMX. Smith, Organ, and Near (1983) identified two dimensions of OCB: altruism and compliance. Altruism refers to behaviors aimed at helping another person such as assisting the supervisor with his or her work, orienting new people and helping others that have been absent. Compliance refers to impersonal behaviors such as not taking undeserved breaks or time off, being punctual and giving advance notice if unable to come to work. Although task performance and OCB are related, there are distinct conceptual differences between the two constructs (Organ, 1988). Task performance includes behaviors that are required through the formal performance

evaluation. In contrast, OCB is not required or part of the formal reward system. Although OCB is not formally rewarded, OCB may be informally rewarded through LMX (Wayne & Green, 1993). It seems that an employee who engages in OCB would be contributing to the department's efficiency and effectiveness and helping the supervisor. OCB may be used as a way of reciprocating for support from the supervisor.

Overall these results suggest that LMX should influence occurrences of OCB because LMX is based on interactions between the supervisor and the employee. The linkage between LMX and OCB has been found to be significant (Tansky, 1993). However, this study suffered from several methodological weaknesses. The sample size and response rate were quite small, the control variables had not been shown to be previously linked to OCB, and the validity of the LMX scale employed has been questioned by several researchers (Dienesch & Liden, 1986; Vecchio & Gobdel, 1984). Consequently, the precise nature of the LMX and OCB relationship is still unclear.

### Meta-Analysis

Hunter and Schmidt (1990) indicate that meta-analysis, as a research tool, is useful when reviewing related data from numerous studies. Meta-analysis can add to the body of knowledge by using existing studies to reveal cumulative knowledge, identify areas that require more research, and make existing data more easily understood. Lipsey and Wilson (2001) identified four primary advantages of meta-analysis: (a) procedures impose discipline on the process of summarizing research findings, (b) provides a sophisticated approach to aggregating the data, (c) capable of finding effects and relationships in data that are not apparent in other approaches, and (d) provides a way of handling data from numerous studies. Both strengths and weaknesses have been cited when speaking of meta-analysis. Hunter and Schmidt (1990) argue that when using the mean and the standard deviation of the effect size, most criticism of meta-analysis can be overcome.

#### LMX and OCB Studies: The Following Studies Were Used In This Meta-Analysis

Aryee, S.; Budhwar, P. S.; & Chen, Z. X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. <i>Journal of Organizational Behavior</i> , 23(3), 267-285.
Deluga, R. J. (1995). The relation between trust in the supervisor and subordinate organizational citizenship behavior. <i>Military Psychology</i> , 7(1), 1-16.
Donavan, D. T., Brown, T. J., & Mowen, J. C. (2004). Internal benefits of service-worker customer orientation: Job satisfaction, commitment, and organizational citizenship behavior. <i>Journal of Marketing</i> , 68(1), 128-140
Duarte, N. T., Goodson, J. R., & Klich N. R. (1993). How do I like thee: Let me appraise the ways. <i>Journal of Organizational Behavior</i> , 14(3), 239-249.
Duarte, N. T., Goodson, J. R., & Klich N. R. (1994). Effects of dyadic quality and duration on performance appraisal. <i>Academy of Management Journal</i> , 37, 499-521.
Farh, J., Podsakoff, P. M., & Organ, D.W. (1990). Accounting for organizational citizenship behavior: Leader fairness and task scope versus satisfaction. <i>Journal of Management</i> , 705-721
Fok, L. Y. (2000). The relationship between equity sensitivity, growth need strength, organizational citizenship behavior, and perceived outcomes in the quality environment: A study of accounting professionals. <i>Journal of Social Behavior &amp; Personality</i> , 15(1), 99-120
Konovsky, M. A. & Pugh, S. D. (1994). Citizenship behavior and social exchange. <i>Academy of Management Journal</i> , 37(3), 656-669
Miles, D. E., Borman, W. E., Spector, P. E., & Fox, S. (2002). Building an integrative model of extra role work behaviors: A comparison of counterproductive work behavior with organizational citizenship behavior. <i>International Journal of Selection and Assessment</i> , 10, 51-57
Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. <i>Academy of Management Journal</i> , 43(4), 738-748
Organ, D. W. & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. <i>Journal of Social Psychology</i> , 135(3), 339-52
Riketta, M., & Landerer, A. (2002). Organizational commitment, accountability, and work behavior: A correlational study. <i>Social Behavior and Personality</i> , 30(7), 653-660
Schappe, S. P. (1998). The influence of job satisfaction, organizational commitment, and fairness perceptions on organizational citizenship behavior. <i>Journal of Psychology</i> , 132(3), 277-292
Van Yperen, N. W., & Van den Berg, A. E. (1999). Towards a better understanding of the link between participation in decision-making and organizational citizenship behavior: A multilevel analysis. <i>Journal of Occupational &amp; Organizational Psychology</i> , 72(3), 377-394
Organ, D. W. & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. <i>Journal of Social Psychology</i> , 135(3), 339-52
Wayne, S. J., & Green, S. A. (1993). The effects of leader-member exchange on employee citizenship and impression management behavior. <i>Human Relations</i> , 46(12), 1431-1440
Wayne, S. J., Shore, L. M., & Linden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. <i>Academy of Management Journal</i> , 40(1), 82-111
Williams, S., Pitre, R., & Zainuba, M. (2002). Justice and organizational citizenship behavior intentions: Fair rewards versus fair treatment. <i>Journal of Social Psychology</i> , 142(1), 33-34.
Williams, S. & Shiaw, W. T. (1999). Mood and organizational citizenship behavior: The effects of positive affect on employee organizational citizenship behavior intentions. <i>Journal of Psychology</i> , 133(6), 656-670.

**METHODOLOGY**

Two established instruments; the Leader-Member Exchange (LMX-7) Scale for Leader and Member and the Organizational Citizenship Behavior (OCB) Scale have been used to collect data relevant to understand if there is a correlation between OCB and LMX. During the literature search phase of this study, the criteria included studies of organizational citizenship behavior, perceived leader-member exchange, and perceived leader fairness. Electronic database searches were performed using the following criteria: employee perceptions, leader-member exchange, leader fairness, organizational commitment, organizational justice, commitment, employee relationships, perceived supervisor support, justice, in-group, and out-group.

**Meta-Analytic Methods**

Meta-analysis enables the researcher to aggregate data while correcting for artifacts that can bias the effect size estimates (Colquitt, LePine, & Noe, 2000). Meta-analysis is one technique that allows for the synthesis of data across studies. Nineteen studies were found during the literature search that met the inclusion criteria (see Appendix A for an overview of the studies). These studies were analyzed using the techniques outlined by Hunter and Schmidt (1990). Initially, a bare bone analysis was completed to determine an estimated mean and standard deviation for the corrected population correlations. A moderator meta-analysis was completed for each identified subset of the data. Secondly, the mean correlations and the standard deviation of the correlations were corrected using the formulae outlined in Hunter and Schmidt (1990). The following steps and formulae were used in the bare bones analysis (Ree & Stauffer, 1996):

1. Computation of the mean:  $M_g = \sum_k w_k g_k / \sum_k w_k$
2. Compute total variance:  $S_{total}^2 = \sum_k w_k (g_k - M_g)^2 / \sum_k w_k$
3. Estimate variance due to artifacts:  $S_{error}^2 = K \left( \sum_k w_k \right)^{-1}$
4. Estimate true variance:  $S_{residual}^2 = S_{total}^2 - S_{error}^2$

The weight for study  $k$  is  $S_k^{-2}$  (inverse of squared standard error). The formula for correlations:  $S_k^2 = (1 - M_r^2)^2 / (n_k - 1) = w^{-1}$

Each correlation study was then individually corrected using the following formulae:

1. Compute corrected  $r$ :  ${}_c r = \frac{r}{ab \sqrt{(1-u^2) \frac{r^2}{(ab)^2} + u^2}}$

(If  $r_{yy}$  is unrestricted, then  $A = r_{yy}^{1/2}$  and  $a = 1$ . If  $r_{yy}$  is restricted, then  $a = r_{yy}^{1/2}$  and  $A = 1$ . If  $r_{xx}$  is unrestricted, then  $B = r_{xx}^{1/2}$  and  $b = 1$ . If  $r_{xx}$  is restricted, then  $b = r_{xx}^{1/2}$  and  $B = 1$ .)

2. Compute correction factors  $Q$  and  $F$ :  $Q = \frac{r}{{}_c r}$

$$F = \left[ \left( \frac{1}{u^2} - 1 \right) \frac{r}{ab} + 1 \right]$$

(If  $r_{yy}$  is unrestricted, then  $a = 1$ . If  $r_{yy}$  is restricted, then  $a = r_{yy}^{1/2}$ . If  $r_{xx}$  is unrestricted, then  $b = 1$ . If  $r_{xx}$  is restricted, then  $b = r_{xx}^{1/2}$ .)

3. Compute new weight:  ${}_c w_k = {}_c S_k^{-2} = \left( \frac{S_k^2}{F^2 Q^2} \right)^{-1}$

4. Compute everything else as in a bare bones analysis, except, of course, with corrected values.

The following formulae were used in the noninteractive artifact distribution correlation method:

1. Compute mean and variance for attenuation factors  $A$ ,  $B$ , and  $C$  : (where  $C = [(1 - u^2)M_r + u^2]^{1/2}$  and  $D$  is generally any of the three attenuation factors,  $A$ ,  $B$ , or  $C$ ):

$$M_D = \sum_h n_h D_h / \sum_h n_h$$

$$S_D^2 = \frac{\sum_h n_h (D_h - M_D)^2}{\sum_h n_h}$$

2. Compute mean attenuation factor:  $F = M_A M_B M_C$

3. Compute mean corrected  $r$ :  ${}_c M_r = \frac{M_r}{F}$

4. Compute the sum of the coefficients of variation:  $V = \frac{S_A^2}{M_A} + \frac{S_B^2}{M_B} + \frac{S_C^2}{M_C}$

5. Compute corrected variances:  ${}_c S_{residual}^2 = \frac{S_{residual}^2 - (M_r^2 V)}{F^2}$

$${}_c S_{total}^2 = S_{total}^2$$

$${}_c S_{error}^2 = {}_c S_{total}^2 - {}_c S_{residual}^2$$

The following report statistics are reported:

1. Chi-square:  $\chi^2 = K(S_{total}^2) / S_{error}^2$

2. Standard error of the mean:

$$SEM = \sqrt{S_{error}^2 / K} \quad (\text{homogeneous case})$$

$$SEM = \sqrt{S_{total}^2 / K} \quad (\text{heterogeneous case})$$

3.  $Z$ :  $Z = M_g / SEM$

4. Mean Fisher  $z$ :  $M_{Fz} = \sum_k (n_k - 3) Fz_k / \sum_k (n_k - 3)$

5.  $Z^*$ :  $Z^* = M_{Fz} \sqrt{\sum_k (n_k - 3)}$

**Leader-Member Exchange (LMX-7) Scale**

The LMX-7 Scale is designed to assess the quality of exchange relationship between a supervisor and his or her subordinates. The LMX-7 Scale is a standardized and validated instrument by Scandura and Graen (1984). In their field experiment using controlled groups in pre and post leadership intervention treatments, the internal consistency reliability (Cronbach Alpha) for pre-intervention is .86 and for post-treatment is .84. The stability estimate of the scale (test/retest correlation) is .67. The LMX-7 Leader Scale is designed to be filled out by the supervisor. The Leader Scale consists of seven questions (regarding the supervisor's relationship with his/her subordinates). On a 5-point multiple-choice response range tailored to each question. The LMX-7 Member Scale consists of the same basic set of questions with the corresponding referent change to fit the subordinates as the respondents (subordinate rates his/her relationship with the supervisor) on a 4-point Likert response scale. Each of the responses are summed to obtain an overall Leader-Member Exchange score with a possible range of scores from 7 (low) to 35 (high) for leader scores. For members, a score of 7 (low) to 28 (high), with high scores indicating high-quality Leader-Member Exchange relationships between the supervisors and the subordinates. In the Linden et al. (1997) meta-analysis review of 48 studies, 18 of the studies cited LMX-7 Scale as the instrument of choice to measure Leader-Member Exchange.

**Organizational Citizenship Behavior (OCB) Scale**

The OCB scale is an instrument designed to measure Organizational Citizenship Behavior. The 16-item scale, of which three items are negatively phrased and reversed-scored, was developed and validated by Smith, Organ, and Near (1983). The three negatively phrased items are: "Takes undeserved breaks; Coasts towards the end of the day; Great deal of time spent with personal phone conversations." Respondents are asked to indicate their agreement on each item using a 5-point Likert-type response range of 1= Never; 2= Seldom; 3= Occasionally; 4= Often; 5= Almost Always. A high total score indicates a subordinate's high level of positive citizenship behaviors. Smith et al. (1983) reported that the scale is a two-dimensional construct that measures the organizational citizenship behavior dimensions of altruism and generalized compliance or conscientiousness. Smith et al. (1983) defined altruistic behavior as "spontaneous charitable acts to specific others," i.e., when an employee helps a co-worker with work-related tasks (Helps others who have been absent; Volunteers for things that are not required; Orients new people even though it is not required; Helps others who have heavy work loads; Assists supervisor with his or her work; Makes innovative suggestions to improve department), while general compliance or conscientiousness was defined as "impersonal prosocial conduct" (Punctuality; Attendance at work is above the norm; Gives advance notice if unable to come to work; Does not take unnecessary time off work; Does not take extra breaks; Does not spend time in idle conversations). According to Smith et al. (1983), both dimensions "are either not required by law or are essentially unenforceable by the usual incentives or sanctions." The coefficient alpha reliability estimate for altruism is .88, and the coefficient alpha reliability estimate for generalized compliance citizenship behavior is .85. This instrument has been used in research by Schappe (1998); Wayne and Green (1993); and Wayne, Shore, & Linden (1997). The instrument is in the public domain.

**RESULTS**

The 19 studies included in this meta-analysis were examined from several different viewpoints. First, the entire sample was analyzed to obtain bare bones and corrected correlation between the two variables of interest, organizational citizenship behavior and leader-member exchange. Both altruism and compliance were considered when analyzing organizational citizenship behavior. A number of moderator studies were then analyzed to determine if one or more variables affected the results. The first moderator examined was whether the study took place in the United States or a foreign country. The second moderator examined included supervisor or subordinate status. Of the nineteen studies, a mixture of only supervisor, only subordinate, or both supervisor and subordinate participating in the study could be found. The third moderator examined was employment tenure (less than 5 years or more than 5 years). The results of the complete sample bare bones and corrected artifact distribution analysis show a correlation between organizational citizenship behavior and perceived leader-member exchange (Table 1).

**Table 1**

Study	N	OCB/LMX Correlation		OCB Mean		OCB SD		OCB Alpha	
		Altruism	Compliance	Altruism	Compliance	Altruism	Compliance	Altruism	Compliance
1	195	.61	.70	49.38	36.20	7.49	6.93	.82	.90
2	98	.74	.68	4.66	5.24	.77	.81	.76	.66
3	252	.31	.45	4.75	3.09	.97	2.74	.83	.93
4	475	.68	.70	5.50	3.90	1.00	1.14	.90	.84
5	96	.84	N/A	9.01	N/A	.70	N/A	.87	N/A
6	261	.77	.85	12.07	9.16	3.00	1.17	.76	.85
7	67	.35	.40	5.67	5.76	1.01	1.09	.90	.87
8	42	.59	.68	8.90	9.60	.72	.60	.90	.90
9	367	.75	.62	17.61	16.15	3.16	3.78	.75	.84
10	114	.45	.55	5.28	4.95	.71	.57	.72	.65
11	203	.52	.54	1.42	3.46	.29	.70	.87	.87
12	63	.84	.82	3.98	3.91	.43	.70	.71	.63
13	130	.57	.58	5.93	3.22	.90	.43	.69	.69
14	139	.33	.42	82.20	54.20	10.60	7.60	.83	.62
15	142	.31	.47	5.16	4.86	.76	.74	.86	.76
16	85	.75	N/A	65.38	N/A	8.85	N/A	.87	N/A
17	156	.77	.64	4.80	5.52	1.20	.91	.91	.88
18	182	.86	.84	3.53	3.48	.52	.58	.86	.87
19	653	.84	.77	4.08	3.37	.49	.91	.78	.74

The uncorrected correlation between organizational citizenship behavior and leader-member exchange for the full sample revealed no significant trends. The heuristic used to determine effect size of the correlation was small ( $r \leq .10$ ), medium ( $r = .25$ ), and large ( $r \geq .40$ ) and was based on the work of Lipsey and Wilson (2001). Further analysis as demonstrated in Tables 2 through 31 shows a high correlation between OCB and LMX.

**Domestic/Foreign Moderator Analysis**

The results of the domestic moderator analysis show a correlation between organizational citizenship behavior (altruism) and leader-member exchange. The domestic analysis (altruism) consisted of a sample size of 2,963 in a total of 13 studies. The corrected correlation for domestic (altruism) studies reveals a large correlation between organizational citizenship behavior (altruism) and leader-member exchange. The mean of the bare bones analysis was 0.68 and for the corrected analysis was 0.80. A 95% confidence interval places the true correlation between 0.66 and 0.78 and the bare bones correlation between 0.70 and 0.82. The results of the foreign moderator analysis also show a large correlation between organizational citizenship behavior (compliance) and leader-member exchange. The foreign analysis (compliance) consisted of a sample size of 774 in a total of six studies. The corrected correlation for foreign (compliance) studies reveals a large correlation between organizational citizenship behavior (compliance) and leader-member exchange. The mean n the bare bones analysis was 0.65 and for the corrected analysis was 0.76. A 95% confidence interval places the true correlation between 0.61 and 0.72 and the bare bones correlation between 0.69 and 0.81. Tables 2 and 3 demonstrate the rationale for a corrected mean of .77 for altruism and .77 for compliance.

**Table 2: Correlation Artifact Distribution Analysis-Compliance**

Mean	=	Bare Bones 0.65960	Corrected 0.77686
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0170838	0.0236979
Error Variance	=	0.0015404	0.0021368
Residual Variance	=	0.0155434	0.0215610
% of Total Variance Accounted for by Artifacts	=	9.02	9.02
Chi Square (16 df)	=	188.53	188.53
Number of Studies=17; Total Sample Size=3,539; Raw (unweighted Mean)=0.63000			



**Table 3: Correlation Artifact Distribution Analysis-Altruism**

Mean	=	Bare Bones 0.66157	Corrected 0.77442
Hypothesis—The Case Is Homogeneous; i.e., No Moderators:			
Total Variance	=	0.0332298	0.0455327
Error Variance	=	0.0016233	0.0022243
Residual Variance	=	0.0316065	0.0433084
% of Total Variance Accounted for by Artifacts	=	4.89	4.89
Chi Square (18 df)	=	388.93	388.93
Number of Studies=19; Total Sample Size=3,720; Raw (unweighted Mean)=0.62526			

The results of the foreign moderator analysis show a correlation between organizational citizenship behavior (altruism) and leader-member exchange. The foreign analysis (altruism) consisted of a sample size of 776 in a total of six studies. The corrected correlation for foreign (altruism) studies also reveals a large correlation between organizational citizenship behavior (altruism) and leader-member exchange. The mean in the bare bones analysis was 0.58 and for the corrected analysis was 0.68. A 95% confidence interval places the true correlation between 0.53 and 0.62 and the bare bones correlation between 0.63 and 0.73. The results are shown in Tables 4 through 11.

**Table 4: Domestic/Foreign Moderator Analysis-Compliance**

Study	r	N	SE	t	a	b	c	rc
2	0.680	98	0.057	9.087	0.900	0.943	***	
3	0.450	252	0.035	7.967	0.900	0.943	***	
4	0.700	475	0.026	21.318	0.900	0.943	***	
5	0.850	261	0.035	25.968	0.900	0.943	***	
6	0.400	67	0.069	3.519	0.900	0.943	***	
8	0.620	367	0.029	15.097	0.900	0.943	***	
9	0.550	114	0.053	6.969	0.900	0.943	***	
10	0.540	203	0.039	9.096	0.900	0.943	***	
12	0.580	130	0.049	8.055	0.900	0.943	***	
15	0.640	156	0.045	10.336	0.900	0.943	***	
17	0.770	653	0.022	30.791	0.900	0.943	***	
Mean/Total	0.663	2782	0.011	46.386	0.900	0.943	1.000	0.780

Variance (a) = 0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000

**Table 5: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.66268	Corrected 0.78049
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0142251	0.0197325
Error Variance	=	0.0019340	0.0026827
Residual Variance	=	0.0122912	0.0170498
% of Total Variance Accounted for by Artifacts	=	13.60	13.60
Chi Square (16 df)	=	125.04	125.04
Number of Studies=17; Total Sample Size=2,782; Raw (unweighted Mean)=0.39882			

**Table 6: Altruism (Moderator Group = Domestic)**

Study	r	N	SE	t	a	b	c	rc
2	0.740	98	0.054	10.780	0.906	0.943	***	
3	0.310	252	0.034	5.156	0.906	0.943	***	
4	0.680	475	0.025	20.170	0.906	0.943	***	
5	0.840	96	0.055	15.010	0.906	0.943	***	
6	0.770	261	0.033	19.422	0.906	0.943	***	
7	0.350	67	0.066	3.012	0.906	0.943	***	
9	0.750	367	0.028	21.663	0.906	0.943	***	
10	0.450	114	0.050	5.333	0.906	0.943	***	
11	0.520	203	0.038	8.631	0.906	0.943	***	
13	0.570	130	0.047	7.849	0.906	0.943	***	
16	0.750	85	0.058	10.330	0.906	0.943	***	
17	0.770	156	0.043	14.976	0.906	0.943	***	
19	0.840	653	0.021	39.500	0.906	0.943	***	
Mean/Total	0.682	2963	0.010	50.488	0.906	0.943	1.000	0.799

Variance (a) = 0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000

**Table 7: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.68239	Corrected 0.79879
Hypothesis—The Case Is Homogeneous; i.e., No Moderators:			
Total Variance	=	0.0269297	0.0369002
Error Variance	=	0.0018427	0.0025249
Residual Variance	=	0.0250870	0.0343752
% of Total Variance Accounted for By Artifacts	=	6.84	6.84
Chi Square (18 df)	=	277.67	277.67
Number of Studies=19; Total Sample Size=2,963; Raw (unweighted) Mean=0.43895			

**Table 8: Compliance (Moderator Group = Foreign)**

Study	r	N	SE	t	a	b	c	rc
1	0.700	195	0.042	13.617	0.900	0.943	***	
7	0.680	42	0.091	5.866	0.900	0.943	***	
11	0.820	63	0.074	11.189	0.900	0.943	***	
13	0.420	139	0.049	5.417	0.900	0.943	***	
14	0.470	142	0.049	6.300	0.900	0.943	***	
16	0.840	182	0.043	20.770	0.900	0.943	***	
Mean/Total	0.648	774	0.021	23.165	0.900	0.943	1.000	0.764
Variance (a) = -0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000								

**Table 9: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.64834	Corrected 0.76359
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0273637	0.0379577
Error Variance	=	0.0075457	0.0104671
Residual Variance	=	0.0198179	0.0274906
% of Total Variance Accounted for By Artifacts	=	27.58	27.58
Chi Square (16 df)	=	61.65	61.65
Number of Studies=17; Total Sample Size=774; Raw (unweighted) Mean=0.23118			

**Table 10: Altruism (Moderator Group = Foreign)**

Study	r	N	SE	t	a	b	c	rc
1	0.610	195	0.048	10.695	0.906	0.943	***	
8	0.590	42	0.104	4.622	0.906	0.943	***	
12	0.840	63	0.084	12.091	0.906	0.943	***	
14	0.330	139	0.056	4.092	0.906	0.943	***	
15	0.310	142	0.056	3.858	0.906	0.943	***	
18	0.860	182	0.049	22.611	0.906	0.943	***	
Mean/Total	0.581	776	0.024	19.373	0.906	0.943	1.000	0.680
Variance (a) = 0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000								

**Table 11: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.58061	Corrected 0.67964
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0494900	0.0678131
Error Variance	=	0.0110293	0.0151127
Residual Variance	=	0.0384607	0.0527003
% of Total Variance Accounted for by Artifacts	=	22.29	22.29
Chi Square (18 df)	=	85.26	85.26
Number of Studies=19; Total Sample Size=776; Raw (unweighted) Mean=0.18632			

**Supervisory Status Moderator Analysis**

A total of four studies identified supervisors in their sample demographics (K = 7, N = 1,450) for organizational citizenship behavior (compliance). The mean for the bare bones analysis was 0.72 and for the corrected analysis was 0.85. A 95% confidence interval places the true corrected correlation between 0.70 and 0.82 and the bare bones correlation between 0.75 and 0.88.

A total of five studies identified supervisors in their sample demographics ( $K = 5, N = 1,536$ ) for organizational citizenship behavior (altruism). The mean for the bare bones analysis was 0.73 and for the corrected analysis was 0.85. A 95% confidence interval places the true corrected correlation between 0.70 and 0.82 and the bare bones correlation between 0.75 and 0.88. A total of four studies identified subordinates in their sample demographics ( $K = 4, N = 754$ ) for organizational citizenship behavior (compliance). The mean for the bare bones analysis was 0.54 and for the corrected analysis was 0.63. A 95% confidence interval places the true corrected correlation between 0.49 and 0.57 and the bare bones correlation between 0.59 and 0.69. A total of five studies identified subordinates in their sample demographics ( $K = 5, N = 851$ ) for organizational citizenship behavior (altruism). The mean for the bare bones analysis was 0.55 and for the corrected analysis was 0.64. A 95% confidence interval places the true corrected correlation between 0.50 and 0.59 and the bare bones correlation between 0.60 and 0.70.

A total of nine studies identified both supervisors and subordinates in their sample demographics ( $K = 9, N = 1,369$ ) for organizational citizenship behavior (compliance). The mean for the bare bones analysis was 0.66 and for the corrected analysis was 0.78. A 95% confidence interval places the true corrected correlation between 0.63 and 0.74 and the bare bones correlation between 0.69 and 0.82. A total of nine studies identified both supervisors and subordinates in their sample demographics ( $K = 9, N = 1,371$ ) for organizational citizenship behavior (altruism). The mean for the bare bones analysis was 0.66 and for the corrected analysis was 0.77. A 95% confidence interval places the true corrected correlation between 0.63 and 0.74 and the bare bones correlation between 0.69 and 0.81. The full data tables are found in Tables 12 through 23.

**Table 12: Compliance (Moderator Group = Supervisors)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
1	0.700		195	0.035	13.617	0.900	0.943	***
4	0.700		475	0.022	21.318	0.900	0.943	***
9	0.550		114	0.045	6.969	0.900	0.943	***
17	0.770		653	0.019	30.791	0.900	0.943	***
Mean/Total	0.720	1450	0.013	39.043	0.900	0.943	1.000	0.848

Variance (a) = -0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000

**Table 13: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.72002	Corrected 0.84802
Hypothesis—The Case Is Homogeneous; i.e., No Moderators:			
Total Variance	=	0.0036029	0.0049977
Error Variance	=	0.0027512	0.0038163
Residual Variance	=	0.0008517	0.0011814
% of Total Variance Accounted for by Artifacts	=	76.36	76.36
Chi Square (16 df)	=	22.26	22.26

Number of Studies=17; Total Sample Size=1,450; Raw (unweighted) Mean=0.16000

**Table 14: Altruism (Moderator Group = Supervisors)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
1	0.610		195	0.034	10.695	0.906	0.943	***
4	0.680		475	0.022	20.170	0.906	0.943	***
10	0.450		114	0.044	5.333	0.906	0.943	***
16	0.750		85	0.052	10.330	0.906	0.943	***
19	0.840		653	0.018	39.500	0.906	0.943	***
Mean/Total	0.727	1536	0.012	40.926	0.906	0.943	1.000	0.850

Variance (a) = -0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000

**Table 15: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.72656	Corrected 0.85049
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0136735	0.0187359
Error Variance	=	0.0027916	0.0038252
Residual Variance	=	0.0108818	0.0149107
% of Total Variance Accounted for by Artifacts	=	20.42	20.42
Chi Square (18 df)	=	93.06	93.06
Number of Studies=19; Total Sample Size=1,536; Raw (unweighted) Mean=0.17526			

**Table 16: Compliance (Moderator Group = Subordinates)**

Study	r	N	SE	t	a	b	c	rc
3	0.450	252	0.045	7.967	0.900	0.943	***	
10	0.540	203	0.050	9.096	0.900	0.943	***	
12	0.580	130	0.063	8.055	0.900	0.943	***	
15	0.640	156	0.057	10.336	0.900	0.943	***	
Mean/Total	0.537	754	0.026	17.098	0.900	0.943	1.000	0.633
Variance (a) = 0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000								

**Table 17: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.53738	Corrected 0.63291
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0051349	0.0071229
Error Variance	=	0.0116679	0.0161851
Residual Variance	=	0.0000000	0.0000000
% of Total Variance Accounted for by Artifacts	=	227.23	227.23
Chi Square (16 df)	=	7.48	7.48
Number of Studies=17; Total Sample Size=754; Raw (unweighted) Mean=0.13000			

**Table 18: Altruism (Moderator Group = Subordinates)**

Study	r	N	SE	t	a	b	c	rc
3	0.310	252	0.044	5.156	0.906	0.943	***	
5	0.840	96	0.072	15.010	0.906	0.943	***	
11	0.520	203	0.049	8.631	0.906	0.943	***	
13	0.570	130	0.062	7.849	0.906	0.943	***	
17	0.770	156	0.056	14.976	0.906	0.943	***	
Mean/Total	0.548	851	0.024	18.656	0.906	0.943	1.000	0.641
Variance (a) = -0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000								

**Table 19: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.54751	Corrected 0.64090
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0362709	0.0496997
Error Variance	=	0.0111973	0.0153429
Residual Variance	=	0.0250736	0.0343568
% of Total Variance Accounted for by Artifacts	=	30.87	30.87
Chi Square (18 df)	=	61.55	61.55
Number of Studies=19; Total Sample Size=851; Raw (unweighted) Mean=0.15842			

**Table 20: Compliance (Moderator Group = Supervisors and Subordinates)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
2	0.680	98	0.057	9.087	0.900	0.943	***	
5	0.850	261	0.035	25.968	0.900	0.943	***	
6	0.400	67	0.069	3.519	0.900	0.943	***	
7	0.680	42	0.088	5.866	0.900	0.943	***	
8	0.620	367	0.029	15.097	0.900	0.943	***	
11	0.820	63	0.071	11.189	0.900	0.943	***	
13	0.420	139	0.048	5.417	0.900	0.943	***	
14	0.470	142	0.047	6.300	0.900	0.943	***	
16	0.840	182	0.042	20.770	0.900	0.943	***	
Mean/Total	0.662	1369	0.015	32.288	0.900	0.943	1.000	0.780

Variance (a) = -0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000

**Table 21: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.66218	Corrected 0.77990
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0258672	0.0358818
Error Variance	=	0.0039646	0.0054995
Residual Variance	=	0.0219026	0.0303824
% of Total Variance Accounted for by Artifacts	=	15.33	15.33
Chi Square (16 df)	=	110.92	110.92

Number of Studies=17; Total Sample Size=1,369; Raw (unweighted) Mean=0.34000

**Table 22: Altruism (Moderator Group = Supervisors and Subordinates)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
2	0.740	98	0.057	10.780	0.906	0.943	***	
6	0.770	261	0.035	19.422	0.906	0.943	***	
7	0.350	67	0.070	3.012	0.906	0.943	***	
8	0.590	42	0.088	4.622	0.906	0.943	***	
9	0.750	367	0.030	21.663	0.906	0.943	***	
12	0.840	63	0.072	12.091	0.906	0.943	***	
14	0.330	139	0.048	4.092	0.906	0.943	***	
15	0.310	142	0.048	3.858	0.906	0.943	***	
18	0.860	182	0.042	22.611	0.906	0.943	***	
Mean/Total	0.659	1371	0.015	31.976	0.906	0.943	1.000	0.771

Variance (a) = 0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000

**Table 23: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.65885	Corrected 0.77123
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0405493	0.0555622
Error Variance	=	0.0045008	0.0061672
Residual Variance	=	0.0360485	0.0493950
% of Total Variance Accounted for by Artifacts	=	11.10	11.10
Chi Square (18 df)	=	171.18	171.18

Number of Studies=19; Total Sample Size=1,371; Raw (unweighted) Mean=0.29158

**Employee Tenure Moderator Analysis**

In five studies (altruism) the sample employment tenure was less than 5 years ( $K = 5, N = 722$ ). These studies also revealed a large correlation between organizational citizenship behavior (altruism) and leader-member exchange. The mean of the bare bones analysis was 0.57 and for the corrected analysis was 0.67. A 95% confidence interval places the true corrected correlation between 0.52 and 0.61 and the bare bones correlation between 0.62 and 0.73.

In 11 studies (compliance) the sample employment tenure was greater than 5 years ( $K = 11, N = 2,793$ ). The studies revealed a large correlation between organizational citizenship behavior (compliance) and leader-member

exchange. The mean of the bare bones analysis was 0.68 and for the corrected analysis was 0.81. A 95% confidence interval places the true corrected correlation between 0.67 and 0.78 and the bare bones correlation between 0.70 and 0.83.

In 11 studies (altruism) the sample employment tenure was greater than 5 years ( $K = 11, N = 2,795$ ). The studies revealed a large correlation between organizational citizenship behavior (altruism) and leader-member exchange. The mean of the bare bones analysis was 0.68 and for the corrected analysis was 0.80. A 95% confidence interval places the true corrected correlation between 0.66 and 0.77 and the bare bones correlation between 0.70 and 0.82. The full data tables are found in Tables 24 through 31.

**Table 24: Employee Tenure Moderator Analysis-Compliance (Moderator Group > 5 years tenure)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
1	0.700	195	0.038	13.617	0.900	0.943	***	
3	0.450	252	0.034	7.967	0.900	0.943	***	
4	0.700	475	0.024	21.318	0.900	0.943	***	
5	0.850	261	0.033	25.968	0.900	0.943	***	
6	0.400	67	0.065	3.519	0.900	0.943	***	
8	0.620	367	0.028	15.097	0.900	0.943	***	
11	0.820	63	0.067	11.189	0.900	0.943	***	
12	0.580	130	0.047	8.055	0.900	0.943	***	
14	0.470	142	0.045	6.300	0.900	0.943	***	
16	0.840	182	0.039	20.770	0.900	0.943	***	
17	0.770	653	0.021	30.791	0.900	0.943	***	
Mean/Total	0.685	2793	0.010	49.354	0.900	0.943	1.000	0.806

Variance (a) = -0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000

**Table 25: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.68476	Corrected 0.80649
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0166162	0.0230492
Error Variance	=	0.0017274	0.0023962
Residual Variance	=	0.0148887	0.0206530
% of Total Variance Accounted for by Artifacts	=	10.40	10.40
Chi Square (16 df)	=	163.52	163.52

Number of Studies=17; Total Sample Size=2,793; Raw (unweighted) Mean=0.68476

**Table 26: Altruism (Moderator Group = Greater than 5 years tenure)**

Study	<i>r</i>	<i>N</i>	<i>SE</i>	<i>t</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>rc</i>
1	0.610	195	0.039	10.695	0.906	0.943	***	
3	0.310	252	0.034	5.156	0.906	0.943	***	
4	0.680	475	0.025	20.170	0.906	0.943	***	
6	0.770	261	0.033	19.422	0.906	0.943	***	
7	0.350	67	0.066	3.012	0.906	0.943	***	
9	0.750	367	0.028	21.663	0.906	0.943	***	
12	0.840	63	0.068	12.091	0.906	0.943	***	
13	0.570	130	0.047	7.849	0.906	0.943	***	
15	0.310	142	0.045	3.858	0.906	0.943	***	
18	0.860	182	0.040	22.611	0.906	0.943	***	
19	0.840	653	0.021	39.500	0.906	0.943	***	
Mean/Total	0.680	2795	0.010	48.757	0.906	0.943	1.000	0.797

Variance (a) = -0.0000000; Variance (b) = 0.0000000; Variance (c) = 0.0000000

**Table 27: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.68045	Corrected 0.79652
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0329270	0.0451178
Error Variance	=	0.0019736	0.0027043
Residual Variance	=	0.0309534	0.0424135
% of Total Variance Accounted for by Artifacts	=	5.99	5.99
Chi Square (18 df)	=	316.99	316.99
Number of Studies=19; Total Sample Size=2,795; Raw (unweighted) Mean=0.36263			

**Table 28: Compliance (Moderator Group = Less than 5 years Tenure)**

Study	r	N	SE	t	a	b	c	rc
9	.550	114	0.067	6.969	0.900	0.943	***	
10	0.540	203	0.050	9.096	0.900	0.943	***	
13	0.420	139	0.060	5.417	0.900	0.943	***	
15	0.640	156	0.057	10.336	0.900	0.943	***	
Mean/Total	0.540	625	0.029	15.602	0.900	0.943	1.000	0.636

Variance (a) = -0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000

**Table 29: Compliance (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.54012	Corrected 0.63613
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0058363	0.0080959
Error Variance	=	0.0140265	0.0194570
Residual Variance	=	0.0000000	0.0000000
% of Total Variance Accounted for by Artifacts	=	240.33	240.33
Chi Square (16 df)	=	7.07	7.07
Number of Studies=17; Total Sample Size=625; Raw (unweighted) Mean=0.12647			

**Table 30: Altruism (Moderator Group = Less than 5 years Tenure)**

Study	r	N	SE	t	a	b	c	rc
5	0.840	96	0.069	15.010	0.906	0.943	***	
10	0.450	114	0.064	5.333	0.906	0.943	***	
11	0.520	203	0.048	8.631	0.906	0.943	***	
14	0.330	139	0.057	4.092	0.906	0.943	***	
17	0.770	156	0.054	14.976	0.906	0.943	***	
Mean/Total	0.570	722	0.025	18.135	0.906	0.943	1.000	0.667

Variance (a) = 0.0000000; Variance (b) = -0.0000000; Variance (c) = 0.0000000

**Table 31: Altruism (Correlation Artifact Distribution Analysis)**

Mean	=	Bare Bones 0.56982	Corrected 0.66701
Hypothesis—The Case Is Homogeneous; i.e., No Moderators			
Total Variance	=	0.0330106	0.0452324
Error Variance	=	0.0123255	0.0168889
Residual Variance	=	0.0206851	0.0283435
% of Total Variance Accounted for by Artifacts	=	37.34	37.34
Chi Square (18 df)	=	50.89	50.89
Number of Studies=19; Total Sample Size=722; Raw (unweighted) Mean=0.15316			

The results of the meta-analysis of organizational citizenship behavior (both compliance and altruism) and leader-member exchange have found a large correlation between the two variables. Significant findings were located in the supervisor moderator. Although all moderators reported a high correlation, supervisor only was much higher than subordinate only, or both supervisor and subordinate when reviewing altruism. It would be beneficial to organizations to find out why this is so, thereby raising everyone’s level of OCB.

## **DISCUSSION**

### **Domestic/Foreign Moderator Analysis**

The results of the domestic and foreign moderator analysis revealed little difference between the two groups. There are other factors that might have influenced the correlation between organizational citizenship behavior and leader-member exchange. Because categorization guides subsequent information processing, the initial classification of a person can lay the groundwork for the dyadic relationship that will eventually develop. According to Gilbert (1989), social perceptions involve three steps: categorization, characterization of dispositional factors, and correction for situational influences. The implication of the information processing research for the development of LMX relationships is clear. Once labeled, it is difficult to change the initial impression of the perceiver and hence the nature of the relationship with that perceiver. The culture of the corporation does not seem to have an effect upon this fact.

### **Supervisory Status Moderator Analysis**

The results of this moderator analysis seem to suggest that there is a high correlation between organizational citizenship behavior and leader-member exchange. From the review of literature, Lord and Maher (1991) have spelled out the importance of implicit theories in organizational contexts. They have asserted that values may provide justification for behavior, but that implicit theories actually drive behavior. Implicit theories often serve as a guide for the automatic processing of organizational information. When used in this manner, implicit theories act as cognitive filters that predispose people to think and act in a particular way (Lord & Maher, 1991). Due to the large cognitive load that is often present in organizational settings, employees rely extensively on their implicit theories not just for the understanding of organizational culture, but also as a guide for their social interactions. These implicit theories are likely to be especially influential during the initial stages of the exchange relationship when uncertainty along several dimensions exists. In these situations, implicit theories serve as a standard of comparison for the behaviors exhibited by both the leader and the member. The first time the subordinate encounters a leader; he or she likely automatically compares the leader's behavior to an implicit leadership theory. If there is a match between the leader's behavior and the subordinate's implicit leadership theory, then two things should happen. First, this match should produce a positive affective reaction on the part of the subordinate. Second, the leader will most likely be classified into the appropriate cognitive leadership category. The same sort of process takes place from the leader's perspective, but with an implicit performance theory being used as a standard for comparison.

### **Employee Tenure Moderator Analysis**

This analysis seems to demonstrate the high correlation between organizational citizenship behavior and leader-member exchange. The 95% confidence level for tenure greater than 5 years is slightly higher for both compliance and altruism as the 95% confidence level for tenure less than 5 years. The weighted mean for the bare bones analysis and the corrected analysis is also higher for tenure greater than 5 years for compliance and altruism. This has both managerial and financial implications that need to be investigated further.

## **LIMITATIONS**

Although meta-analysis has many advantages as a technique for analyzing and summarizing the quantitative findings of a body of empirical research, it is by no means without problems and limitations. Meta-analysis results are only as good as the studies that are included in the meta-analysis. This meta-analysis was not able to correct for range restriction due to the failure of the studies analyzed to report the standard deviation in a consistent fashion. If there are no studies of high methodological quality in the research base, it can hardly be expected that aggregating their findings will yield valid and useful results. Meta-analysis must carefully observe and code the key features of the studies judged eligible for the meta-analysis that bear on the validity and credibility of their results (Lipsey & Wilson, 2001). Even though the studies did not report the standard deviation consistently, other areas of the studies were considered of good quality. Multivariate analysis makes it possible to estimate the independent contribution of each methodological feature to the study results. If the methodological features are not neutral, those that are most influential must be identified and their net impact on summary effect sizes must be assessed. One approach is to fit



weighted multiple regression models in which the various methodological features are used to predict effect size. The resulting unstandardized regression coefficients on the method variables represent the multiplier that weights each value on a method variable (Lipsey & Wilson, 2001). As Lipsey and Wilson stated, if the best value is plugged in for each important method variable, the equation can be used to estimate the mean effect size that would be expected if all studies had the optimal combination of method features.

## **FUTURE RESEARCH**

The high correlation between OCB and LMX raises questions that might be of further interest. Domestic and foreign businesses have many struggles, including takeovers, mergers, restructuring, acquisitions, and the economy. This can lead to many managerial and financial problems. A major challenge is how to foster organizational citizenship behavior within employees despite these struggles. Because there is such a high correlation between the variables that were studied in this analysis, a standardized instrument combining organizations citizenship behavior and leader-member exchange should be developed. This instrument should be sensitive enough to provide reliable scores for both across a number of contexts.

## **CONCLUSION**

This meta-analytic study focused on the correlation between OCB and LMX. The results of the full study for compliance (K = 17, N = 3,539) and altruism (K = 19, N = 3,720) and moderator analysis revealed large effect sizes in all moderators studied. This research illustrates several implications of leaders in organizations that directly affect organizational citizenship behavior. High leader-member exchange results in an increase in both altruism and compliance organizations citizenship behavior. This study adds to the research focusing on the positive dyadic relationship between the leader and the member or the supervisor and the subordinate, as opposed to the traits, behaviors, situational styles of the leader, or any other variables.

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