Organizational Citizenship Behavior and Performance

A Meta-Analysis of Group-Level Research

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Most of the research on the relationship between organizational citizenship behavior (OCB) and performance has been conducted at the individual level. During the past 10 years, however, group-level research on that relationship has begun to appear. This article meta-analytically reviews 38 independent samples \((N = 3,097)\) in which the relationship between OCB and performance was studied at the group level. The analyses in this study suggest a positive overall relationship between OCB and performance \((\rho = .29)\), as well as the presence of several moderating variables. The theoretical implications of these findings are discussed, and some suggestions for future research are offered.

**Keywords:** organizational citizenship behavior; team performance; work teams; groups; group performance; contextual behavior; meta-analysis

Competitive organizations focus on hiring and retaining employees who are helpful, engaged, and cooperative, often beyond the call of duty (Katz, 1964). The importance of these behaviors for organizational performance has been emphasized by Barnard (1938), Roethlisberger and Dickson (1964), and Katz and Kahn (1966). In fact, Katz and Kahn...
suggested that spontaneous or extra-role behaviors are necessary for effective organizations.

Organizational citizenship behavior (OCB) was first introduced by Bateman and Organ (1983) and by Smith, Organ, and Near (1983). OCB has received a considerable amount of scholarly attention since then (see Hoffman, Blair, Meriac, & Woehr, 2007; Organ, 1997; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Much of that attention focused on the identification of predictors of OCB. Individual characteristics (e.g., organizational commitment), task characteristics (e.g., task feedback, routinization), organizational characteristics (e.g., reward structure, perceived organizational support), and leadership behaviors (e.g., transformational leadership) have all been identified as important predictors.

However, during the past 15 years, research on the relationship between OCB and one of its most important consequences, namely, performance, has emerged as a primary focus (e.g., Allen & Rush, 1998; DeGroot & Brownlee, 2006; Ehrhart, Bliese, & Thomas, 2006; Koys, 2001; Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff, Blume, Whiting, & Podsakoff, 2009; Sun, Aryee, & Law, 2007). This interest in performance is based on the intuitively appealing notion that employees who are more helpful and cooperative will perform better and be perceived as performing better by their managers. Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) are often cited as theoretical bases for expecting OCB to influence performance. For example, if Employee A helps Employee B to finish an important report, then Employee A gives of his or her own time (possibly affecting his or her own performance) to improve the performance of Employee B. Employee B may subsequently return the favor, thus improving the performance of Employee A. Managers who include OCB in their definition of performance might also be compelled to give higher performance ratings to employees who exhibit these behaviors (Borman & Motowidlo, 1997; Borman, White, & Dorsey, 1995).

In an effort to organize and test new theory related to research involving OCB, scholars have conducted several meta-analytic reviews (Hoffman et al., 2007; Ilies, Nahrgang, & Morgeson, 2007; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995; Podsakoff et al., 2009; Podsakoff, MacKenzie, & Bommer, 1996). Two of these reviews have explicitly addressed the ongoing debate among organizational scholars regarding the dimensionality of OCB. That is, some scholars identify OCB as a multidimensional construct (e.g., Organ, 1988; Organ, Podsakoff, & MacKenzie, 2006), whereas others have provided arguments for its unidimensionality (Hoffman et al., 2007; LePine et al., 2002). In recognition of the ongoing debate and
to be comprehensive, we consider the relationship between OCB and performance not only for overall OCB but also for the different facets of OCB (Organ, 1988).

All of these OCB meta-analyses have helped clarify our collective understanding of the construct primarily at the individual level of analysis. However, numerous scholars have argued that OCB has effects on performance at the group level too, and that it may be fundamentally different at the group level (see Ehrhart & Naumann, 2004; George, 1990; Organ & Ryan, 1995; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). In fact, they argue, OCB is well-suited to research at the group level. Group-level OCB can regulate social interaction and influence social identity (Ehrhart et al., 2006), so it is potentially distinct from individual-level OCB. Organ and Ryan argued that, “OCB is more interesting as a group-level phenomenon and . . . this is the preferred level at which to theorize about . . . OCB” (p. 797). Podsakoff et al. (2000) also called for more research at the group level and suggested that future research address inconsistent group-level findings involving the OCB-performance link by examining moderating variables such as task interdependence, criterion type, and rating source. Criterion type refers to subjective versus objective measures of performance; rating source represents possible differences between sources that evaluate OCB (e.g., peers, supervisors, self).

Organizational scholars have begun to answer this call by dramatically increasing research on OCB at the group level (Organ et al., 2006). We contend that a comprehensive review of this research is warranted for several reasons. First, several scholars have suggested that OCB and its correlates are more appropriately examined at the group level. This is in line with the original theory underlying OCB (Organ, 1988), which posits that the benefits of OCB occur when aggregated over time and across people. Furthermore, scholars have suggested that our understanding of OCB requires analysis at multiple levels (Bommer, Dierdorff, & Rubin, 2007; Schnake & Dumler, 2003). We fully concur, but suggest that improving our understanding of OCB at the group level first would more effectively inform future multilevel work. Therefore, this article provides a quantitative review of OCB at the group level.

Second, there have been inconsistent findings regarding the relationship between OCB and performance at the group level. For example, helping behavior has been found to increase (Podsakoff et al., 1997) and to decrease (Podsakoff & MacKenzie, 1994) the performance of work groups. And average effect sizes have varied across samples, ranging from $r = -.36$ in bank branches (Naumann & Bennett, 2002) to $r = .44$ in military units.
Small Group Research

(Ehrhart et al., 2006). Podsakoff et al. (2009) addressed organizational-level consequences of OCB but did not specifically examine previously identified potential moderators that might help explain inconsistent findings related to the OCB-performance relationship.

Third, the methodological approaches used in group-level studies vary significantly. In particular, there are differences across studies in the measurement of OCB, the rating source of OCB, whether ratings of OCB and performance come from the same or different sources, and the objectivity of performance measures. Although these differences make direct comparisons among studies a challenge, they can also yield new insights. Identifying and assessing the effects of potential moderators is important for understanding the relationship between OCB and performance.

Finally, it would be beneficial to learn whether robust findings at the individual level of analysis, regarding the relationships among OCB, performance, and their correlates (Hoffman et al., 2007), extend to the group level as well. Given these issues, the potential value of a comprehensive meta-analytic review of OCB at the group level seems clear. Our meta-analysis fills several gaps in the literature by considering the consistency and strength of the OCB–performance relationship, potential moderators of that relationship, and possible directions for future research.

Hypotheses

In an effort to ground our work theoretically and identify possible avenues for building new theory, we focused on two issues. First, what are the behavioral linkages between OCB and performance at the group level (Podsakoff et al., 2000)? Scholars have identified issues such as these as especially important when considering phenomena at higher levels of analysis, so that behavior, measurement, and theory are adequately aligned and misspecification is avoided (Kozlowski & Klein, 2000). Second, we consider multi-level aspects of OCB. Extensive research has been conducted on OCB at the individual level, and there is a growing literature on OCB at the group level. The next logical progression for OCB research involves the examination of cross-level relationships. However, theorizing about cross-level relationships would benefit from a thorough understanding of OCB at the group level. Thus, we suggest that a meta-analytic review, as generally suggested by Hunter and Schmidt (1990), would provide an initial contribution to building multilevel theory involving OCB.
Behavioral Linkages

We define group-level OCB as the normative level of citizenship performed within a group (Ehrhart & Naumann, 2004). OCB thus represents group members’ mutual understanding regarding the level of citizenship behavior that should occur. Group-level OCB regulates social interaction and influences social identity (Ehrhart et al., 2006), and thus should be considered distinct from individual-level OCB. For example, helping behavior at the individual level could be represented by one team member offering to help a newcomer learn how to perform a specific team task. Under similar circumstances, team-level OCB could be represented as the normative expectation that one or more members of the team will take the time to help their new colleague “learn the ropes.” Individual-level OCB is represented by a series of isolated incidents of helping behavior, whereas team-level OCB is more consistently and regularly reinforced because of team members’ shared understandings and expectations. Individual team members often learn the norms of the group during the socialization process (Moreland & Levine, 2000).

When OCBs such as helping behavior become normative within groups, they are likely to enhance coworker productivity (Podsakoff & MacKenzie, 1997; Podsakoff et al., 2000). For example, most groups must be able to effectively manage the process of newcomer socialization (Chen, 2005). The degree to which group members help someone new adapt to the group will maintain, if not improve, the performance of that group. Helping behavior also tends to increase group member interactions, which aids the dissemination of information, a critical factor related to effective team performance (Edmondson, Roberto, & Watkins, 2003).

Furthermore, high levels of OCB at the team level can free team resources to be used more efficiently (Podsakoff et al., 2000). For example, teams that exhibit high levels of sportsmanship by not complaining about trivial matters will have more time for productive pursuits, and there will be less need for the team leader to handle such issues. When group members regularly help one another, that also reduces their need to be supervised, freeing the leader to focus on issues more beneficial to the group, such as strategy formulation.

One of the primary challenges of successful teamwork is the management of team boundaries (Ancona & Bresman, 2007; Ancona & Caldwell, 1992). One such boundary distinguishes team priorities and behavior from individual priorities and behavior. Balancing the demands of individual and team interests often creates some tension, which can decrease team
performance (Nielsen, Edmondson, & Sundstrom, 2007). The ability of individual members to focus on group priorities at the expense of individual ones helps teams overcome the challenge of balancing individual and team interests. The willingness for group members to manage this challenge (i.e., OCB) by balancing individual and group interests contributes to group performance by freeing up time and resources, which helps the group focus on collective and strategically important goals (Hackman & Morris, 1975).

A final behavioral link between group OCB and performance involves information and feedback about group effectiveness (Sundstrom, 1999). Civic virtue at the group level entails efforts by group members to provide regular feedback to one another, and to their leader, regarding ways to improve group performance. This type of feedback could enhance a group’s ability to identify current and future problems, which might contribute significantly to the group’s productivity (Moreland & Levine, 1992). For these reasons, groups with normative expectations of civic virtue would likely perform more effectively than groups without such expectations.

Hypothesis 1: OCB is positively related to performance at the group level.

Multilevel Theory

As Rousseau (1985) astutely observed, most constructs in the organizational sciences are inherently multilevel and should therefore be examined at both higher and lower levels of analysis. This contention is particularly relevant to research involving OCB because many citizenship behaviors involve interaction among individuals and thus can lead to outcomes at higher levels of analysis. We suggest that a more thorough understanding of the dynamics of OCB at the group level will contribute to the future formulation of multilevel theory involving OCB. To date, there are too few cross-level studies of OCB to warrant their inclusion in a meta-analysis. Therefore, we cannot directly explore the cross-level nature of the OCB–performance relationship. However, we do illustrate the potential contribution of a group-level meta-analytic review by considering OCB within the context of multilevel theory.

Kozlowski and Klein (2000) contend that a multilevel approach is warranted when a phenomenon is influenced by higher-level organizational units, reflects actions or cognitions of lower-level organizational units, or has received considerable attention from scholars. Although few studies have examined OCB across levels (see Bommer et al., 2007 for an exception), it is plausible that OCB is influenced by higher-level organizational units. For example, the degree of interdependence required for the performance
of a team’s task (team level) may influence the appropriateness and frequency of team members’ citizenship behaviors. Bommer et al. (2007) examined 100 work groups in a manufacturing firm to investigate whether individual-level OCB is related to job performance at the individual level, and to see if that relationship is stronger when team-level OCB is less frequent. Why should it be stronger? Maybe individual-level OCB loses its distinctiveness when team-level OCB is common, and thus has a weaker relationship with individual job performance. Bommer and colleagues found that group-level OCB indeed moderated the relationship between individual-level OCB and job performance in just this way.

It also seems reasonable to assume that individual-level behavior and attitudes could influence group-level OCB. For example, a proposed cross-level model suggests that collaborative time management, the redefinition of work contributions, proactive availability, and strategic self-presentation could all enhance group-level OCB (Van Dyne, Kossek, & Lobel, 2007). Unfortunately, there is a gap in the literature regarding our understanding of OCB at the group level. More than 400 published studies have explicitly considered OCB since 1983, but less than 3% of them considered OCB and performance at the group level.

Building cross-level models without evidence regarding the dynamics of a particular phenomenon at higher levels of analysis may lead to misspecification. We suggest that group-level meta-analyses represent potentially important contributions to building multilevel theory. Specifically, a meta-analytic review of OCB and performance at the group level could provide an initial contribution to building multilevel theory involving OCB.

### Moderators of the OCB–Performance Relationship at the Group Level

Researchers have suggested that some of the inconsistent results in group-level OCB research may be due to moderating factors in the group-level relationship between OCB and performance (Podsakoff et al., 2000). Based on our reading of the literature, we have identified four potential moderating variables: (a) measurement of OCB, (b) OCB rating source, (c) common raters of OCB and performance, and (d) objectivity of performance measures. This list is by no means exhaustive, but other possible moderators are often difficult to assess because of a lack of adequate methodological detail in some articles on OCB.

**Measurement of OCB.** Most researchers have measured group-level OCB by surveying group members about their level of citizenship behavior...
and then aggregating their responses to the group level (e.g., Ehrhart et al., 2006; Koys, 2001; Podsakoff et al., 1997). This method can be appropriate when a construct is conceptualized at the group level of analysis, but one of the key issues is the referent used in the survey items (Chan, 1998; Rousseau, 1995). It is not uncommon for survey items to use the individual as the referent. Self-referenced items ask respondents to think and reply at the individual level. Aggregating such data to the group level may lead to misspecification, even when analyses indicate that there is greater agreement among respondents within, rather than between, teams. Chan (1998) suggested that group-level survey items should focus on the behavior of the entire group, not just the behavior of individual members. Group-level items ask individual group members about the behavior of the entire group and thus help capture a group’s normative pattern of action.

We argue, in line with Organ’s (1988) original theory, that OCB is more appropriately conceptualized at higher levels of analysis, and so we expect that when OCB is measured using the group as the referent, its relationship with group performance will be stronger than when OCB is measured using the individual as the referent.

Hypothesis 2: The measurement of OCB moderates the positive relationship between group OCB and performance, such that the relationship is stronger when OCB is measured using the group rather than the individual as the referent.

OCB rating source. The degree to which OCB goes beyond formal role descriptions or is actually an expected part of job performance is a key issue in the literature (Borman & Motowidlo, 1997; Borman, White, & Dorsey, 1995). If OCB is considered part of a job, then it may be less easily recognized and thus have a weaker effect on perceived performance. After all, the discounting principle from attribution theory states that any one cause for a behavior will seem less important to the extent that other possible causes exist (McClure, 1993). But if OCB indeed goes beyond job requirements, then it is more likely to be recognized and thus may have a greater impact on perceived performance. Past research has found that supervisors are more likely to consider OCB as part of the job, whereas peers are more likely to consider OCB as extraordinary (Borman et al., 1995). Thus, rating source may also be a moderator of the OCB-performance relationship.

Hypothesis 3: Rating source moderates the positive relationship between group OCB and performance, such that the relationship is stronger when OCB is rated by peers rather than by supervisors.
Common raters of OCB and performance. Common method variance (CMV) is familiar to social science researchers (Dionne, Yammarino, Atwater, & James, 2002; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Spector, 2006). Correlations between variables assessed with similar methods can be inflated because of CMV. Podsakoff et al. (2000) found significant evidence of CMV effects in a review of the OCB literature. Therefore, we examined whether and to what extent obtaining measures of both OCB and performance from the same rating source affected the relationship between OCB and performance at the group level of analysis.

Hypothesis 4: Rating source moderates the positive relationship between group OCB and performance, such that the relationship is stronger when rating sources are the same rather than different.

Objectivity of performance measures. Research on OCB and performance has operationalized performance in a variety of ways. One key distinction is whether performance measures are subjective or objective. Most researchers have used subjective measures (e.g., Hyatt & Ruddy, 1997; Neuman & Wright, 1999), but some have used objective measures, such as sales revenue (George & Bettenhausen, 1990) or quantity of production (Podsakoff et al., 1997). Is OCB related to both subjective and objective performance in the same manner, or does the nature of the performance measure moderate the relationship?

Previous research has found that OCB is more strongly related to subjective performance than to objective performance (Podsakoff et al., 2000). Subjective performance is typically assessed using supervisor ratings of performance. If supervisors consider OCB as part of the job, they may include this when assessing the performance of their subordinates, which could result in stronger relationships with OCB.

Hypothesis 5: The objectivity of the performance measure moderates the positive relationship between group OCB and performance, such that the relationship is stronger when performance measures are subjective rather than objective.

Method

Literature Search

A comprehensive literature search was conducted to identify published and unpublished studies investigating the relationship between OCB and
performance at both the individual and group levels. We began by acquiring citations from prior reviews (see Hoffman et al., 2007; Ilies et al., 2007; LePine et al., 2002; Organ & Ryan, 1995; Podsakoff et al., 1996, 2000) and through an electronic search using the PsycINFO (1887 to 2007), ABI-Inform (1971 to 2005), Business Source Premier (1886 to 2008), and Dissertation Abstracts International (1980 to 2008) databases. Various combinations of the following search terms were used: organizational citizenship behavior, helping, altruism, courtesy, civic virtue, sportsmanship, prosocial behavior, group/team performance, group/team effectiveness, and group/team assessment. We also searched for conference studies and posted requests to all the potentially relevant Academy of Management division listservs (e.g., research methods, organizational behavior), looking for unpublished work currently in progress. This initial search revealed a total of 95 studies.

Criteria for Inclusion

Articles from our initial search were reviewed for compliance with several criteria. First, studies that were qualitative or did not capture some unit-level outcome (e.g., group/team performance) were excluded from further consideration. Second, studies had to report at least one correlation between OCB and group-level performance (or provide statistics that could be converted to a correlation). Finally, studies had to assess OCBs that could be broadly categorized under Organ’s (1988) framework. Based on these criteria, we identified 38 independent studies, reporting 301 correlations between group-level OCB and performance. Twenty-three of these studies (61%) were published and 15 (39%) were unpublished manuscripts or dissertations. The dates for the studies ranged from 1990 to 2008, and the average sample size was 82 groups (SD = 60.83).

Coding

Two coders, the second and third authors, coded the studies independently. These coders were trained by the first author for approximately 15 hours on five of the studies. Articles were coded for sample size, the reliabilities of the variables, OCB type, and effect sizes. Many additional elements, representing potential moderators, were coded as well. Some of these included research design (e.g., field study, experiment), the objectivity of the performance measure (e.g., objective, subjective), the rating sources for OCB and performance (e.g., same, different), whether the study was published (e.g., published, dissertation, presentation), average group
size, and the type of group studied (e.g., service, production, action). A full list of coded variables is available from the first author.

Most of the coding was straightforward and thus does not require further explanation. But our coding of the measurement of OCB, and the measurement of job performance, deserves elaboration. One method for measuring OCB involved self-ratings by participants (e.g., “I often help other coworkers”). The referent in this case was the individual. The other method involved group ratings by participants (e.g., “Members of my group often help one another”). The referent in this case was the group. We coded studies differently based on their use of individual versus group referents to see whether the OCB–performance relationship varied depending on how OCB was measured.

In coding for job performance, we included any performance outcome that was evaluated at the group level, such as overall performance evaluations, customer service and satisfaction, sales performance, profit margin, combat readiness, service response time, knowledge, accuracy, safety, and security.

Methodological moderators (e.g., rating source, objectivity of criteria) were also coded, creating subsets of studies that were each meta-analyzed separately. We initially planned to code for other moderators, such as group autonomy, task interdependence, type of group, and average group tenure. However, a lack of descriptive information regarding the samples in several studies made it difficult to fully evaluate these moderators.

**Interrater Reliability**

In an effort to assess interrater reliability, 10 studies were randomly selected. Then each coder independently coded these studies. Cohen’s kappa is typically calculated to assess interrater reliability when coding involves categorizing responses (Cohen, 1960). The kappa coefficient provides a significant advantage over simple percentage agreement because it accounts for agreement due to chance. We calculated Cohen’s kappa to check the reliability of each coding decision that was made. These kappa coefficients ranged from .82 to .97, and all were significant ($p < .05$). When disagreements between the coders arose, they referred back to the study to identify the reason for the discrepancy. In most cases, a simple coding error (e.g., a typo) was identified, but in situations where a true difference in judgment was found, that difference was discussed and resolved by collectively determining the most appropriate solution. The true reliability of coding for many of the included studies was probably higher than our original estimates. A final
step taken to solidify the coding involved asking a third coder to randomly select 10 articles and evaluate the accuracy with which they were coded. This additional step confirmed our coding accuracy.

**Meta-Analytic Calculation Procedure**

Population correlation estimates and variances corrected for sampling error were calculated using the meta-analytic procedures outlined by Hunter and Schmidt (1990). Estimates of true correlations, their 90% confidence intervals, and their 80% credibility intervals were computed from these data. To warrant a search for moderators, we used the 75% rule. That is, if less than 75% of the variance could be attributed to artifacts, then moderator analyses were considered. Although the 75% rule is only a general rule, it may be more accurate than significance tests of homogeneity, and thus can be a powerful tool in research contexts with smaller samples (Hunter & Schmidt, 2004).

Confidence intervals were examined to determine the significance of the difference between estimates representing separate meta-analyses of subsets of studies (e.g., subjective vs. objective measures of performance). If the confidence intervals failed to overlap, then that suggested that the relationship between OCB and performance differed across levels of the relevant moderator variable (see Hunter, Schmidt, & Le, 2006; Judge, Jackson, Shaw, Scott, & Rich, 2007).

**Results**

The relationships between group performance and overall group OCB, as well as with the different forms of group OCB, are shown in Table 1. Supporting our first hypothesis, the relationship between overall group OCB and performance was positive and significant ($\rho = .29$). That is, higher levels of OCB were associated with better performance. A similar pattern was found for each dimension of OCB. The strongest relationship was with altruism ($\rho = .34$), and the weakest was with helping behavior ($\rho = .19$).

Variability attributed to artifacts was 29.9%. This met the 75% rule mentioned previously, suggesting that a search for moderators was warranted. Table 2 shows the mean weighted correlations between group-level OCB and performance, as moderated by how OCB was measured (individual referent vs. group referent). As predicted, individual OCB aggregated to the group level had a weaker relationship with performance ($\rho = .17$) than
did OCB operationalized as a group phenomenon ($\rho = .32$). These results provide support for our second hypothesis—when OCB is measured at the group level, using the group as the referent, it is more strongly associated with performance.

We found that supervisor ratings of OCB were more strongly related to performance ($\rho = .39$) than were peer ratings of OCB ($\rho = .08$), directly contradicting our third hypothesis. This result may be related to supervisors including OCB as a facet of performance as suggested by previous research (Borman & Motowidlo, 1997; Borman et al., 1995).

To test our fourth hypothesis, we analyzed whether it made a difference if the predictor (OCB) and the outcome (performance) were assessed by the same source. There was a significantly stronger relationship when the same source produced both measures ($\rho = .52$) than when the measures were obtained from different sources ($\rho = .25$).

Finally, we considered whether the objectivity of the performance measure affected the relationship between group-level OCB and performance. As expected, there was a stronger relationship between OCB and subjective measures of performance ($\rho = .34$) than there was between OCB and more objective performance measures ($\rho = .20$). However, the difference was not significant.

<table>
<thead>
<tr>
<th>OCB dimensions</th>
<th>$k$</th>
<th>$N$</th>
<th>$r$</th>
<th>90% CI</th>
<th>80% CV</th>
<th>% Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>Combined OCB measures</td>
<td>21</td>
<td>1,905</td>
<td>.19</td>
<td>.13</td>
<td>.25</td>
<td>.23</td>
</tr>
<tr>
<td>Civic virtue</td>
<td>10</td>
<td>886</td>
<td>.22</td>
<td>.15</td>
<td>.29</td>
<td>.26</td>
</tr>
<tr>
<td>Sportsmanship</td>
<td>8</td>
<td>556</td>
<td>.25</td>
<td>.14</td>
<td>.36</td>
<td>.29</td>
</tr>
<tr>
<td>Helping</td>
<td>15</td>
<td>1,426</td>
<td>.16</td>
<td>.07</td>
<td>.25</td>
<td>.19</td>
</tr>
<tr>
<td>Altruism</td>
<td>5</td>
<td>389</td>
<td>.29</td>
<td>.11</td>
<td>.47</td>
<td>.34</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>8</td>
<td>602</td>
<td>.28</td>
<td>.18</td>
<td>.37</td>
<td>.32</td>
</tr>
<tr>
<td>Courtesy</td>
<td>4</td>
<td>284</td>
<td>.27</td>
<td>.08</td>
<td>.46</td>
<td>.32</td>
</tr>
</tbody>
</table>

Note: OCB = organizational citizenship behavior; $k$ = independent samples; CI = confidence interval; $\rho$ = true score correlation; CV = credibility interval; % Var. = percentage of variance explained.
This article offers several contributions to our understanding of the role that OCB plays in the functioning of work teams. The first contribution is the identification of a significant and positive overall relationship between OCB and performance at the group level, which supports the original theoretical underpinnings of OCB (Organ, 1988). This article also answers several calls for increasing our understanding of OCB at the group level (George, 1990; Organ & Ryan, 1995; Podsakoff et al., 2000). A second contribution of this article is that we directly addressed discrepant findings from past research (e.g., Ehrhart et al., 2006; Naumann & Bennett, 2002; Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994) by identifying and testing several moderating variables. Although many such variables probably exist, the nature of the studies in our sample limited our analyses to

### Table 2
Summary of Moderator Analyses of the OCB and Performance Relationship

<table>
<thead>
<tr>
<th></th>
<th>90% CI</th>
<th>80% CI</th>
<th>% Var.</th>
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<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
</tr>
<tr>
<td>Measurement of OCB</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Individual</td>
<td>.08</td>
<td>.20</td>
<td>.17</td>
</tr>
<tr>
<td>Group</td>
<td>.21</td>
<td>.34</td>
<td>.32</td>
</tr>
<tr>
<td>OCB rating source</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>.14</td>
<td>.30</td>
<td>.26</td>
</tr>
<tr>
<td>Peer</td>
<td>-.05</td>
<td>.19</td>
<td>.08</td>
</tr>
<tr>
<td>Supervisor</td>
<td>.25</td>
<td>.42</td>
<td>.39</td>
</tr>
<tr>
<td>Group</td>
<td>.07</td>
<td>.66</td>
<td>.42</td>
</tr>
<tr>
<td>Common raters for predictor (OCB) and criterion (performance)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same source</td>
<td>.33</td>
<td>.55</td>
<td>.52</td>
</tr>
<tr>
<td>Different</td>
<td>.13</td>
<td>.29</td>
<td>.25</td>
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<tr>
<td>Objectivity of performance rating</td>
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<td></td>
<td></td>
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<tr>
<td>Objective ratings</td>
<td>.09</td>
<td>.26</td>
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</tr>
<tr>
<td>Subjective ratings</td>
<td>.22</td>
<td>.36</td>
<td>.34</td>
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</tbody>
</table>

Note: OCB = organizational citizenship behavior; \( k \) = independent samples; CI = confidence interval; \( \rho \) = true score correlation; CV = credibility interval; % Var. = percentage of variance explained.
four methodological moderators (measurement of OCB, rater type, rating source, criterion type). The measurement of OCB, OCB rating source, and common rating source proved to be significant moderators of the relationship between OCB and performance at the group level.

This article also contributes to the growing literature on the relationship between various group processes and group performance (e.g., De Dreu & Weingart, 2003; Gully, Devine, & Whitney, 1995; Gully, Incalceterra, Joshi, & Beaubien, 2002; LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; Marks, Mathieu, & Zaccaro, 2001; LePine, Piccolo, Jackson, Mathieu, & Saul, 2008). Gully et al. (1995, 2002) and De Dreu and Weingart (2003) found relationships between different team process variables (i.e., cohesion, conflict, efficacy, potency) and team performance. Gully and his colleagues also found support for the moderating influence of level of analysis in their studies. That is, the process–performance relationships were stronger at the group level than at the individual level.

However, recent work by Marks et al. (2001) and LePine et al. (2008) suggests that narrow team process variables load onto a broader teamwork process factor. Specifically, LePine and his colleagues (2008) found that several teamwork processes (e.g., conflict management, coordination, motivation) load onto three broad dimensions (i.e., transition, action, interpersonal), which then load onto one, general teamwork process factor. Their meta-analysis also included nine studies that examined team-level measures of OCB that were categorized generally and included in the overall teamwork process category. LePine et al. (2008) found that group-level OCB was strongly related to team performance (\( \rho = .31 \)), and they suggested that “relationships between teamwork processes and team effectiveness do not vary significantly as a function of the nature of the specific process in question” (p. 290). Our results generally support those of LePine et al. (2008). However, we suggest that OCBs represent a relatively distinct team process because of their role in facilitating other process variables. Scholars have suggested that OCB lubricates the social processes occurring within teams (Organ et al., 2006), which generally boosts team performance. That is, OCB may improve such team processes as coordination and communication in task contexts that involve considerable interdependence among group members (Bachrach, Powell, Collins, & Richey, 2006). However, OCB may actually detract from team performance in task contexts where workers are more independent, because OCB takes time away from their specific task duties (Nielsen, Bachrach, Halfhill, & Sundstrom, 2009).

The fourth contribution of our article is methodological in nature and relates to our moderator analyses. As suggested by prior research (Chan,
1998; Klein & Kozlowski, 2000; Rousseau, 1995), it is important to consider how constructs are measured at the group level. We found that there is a significant difference between aggregating ratings of OCB in a group using the individual as the referent versus asking individual group members to consider the group as the referent when rating its OCB. This supports Chan’s (1998) claim that group-level survey items should focus on the behavior of the entire group and not just individual members.

Spector (2006) argues that although the problems associated with common source variance (CSV) have been exaggerated, social desirability, affect, and acquiescence could all contribute to inflated correlations between independent and dependent variables that are evaluated by the same source. It is possible that these factors contribute to perceptions of OCB and performance. For instance, an individual who wants to present a positive image (i.e., social desirability) may inflate his or her ratings of both OCB and group performance. However, there may be another explanation for CSV that is specific to the domain of OCBs. Individuals who rate their groups higher on OCB may also be more likely to consider OCB in their overall evaluations of group performance. Conversely, lower OCB ratings may come from individuals who are less likely to notice or value such behavior and are therefore less likely to factor it into their overall group evaluations. Our findings are consistent with a recent review by Podsakoff et al. (2000), which concluded that uncontrolled common methods variance has a considerable inflationary effect on the relationship between OCB and performance. Further research is needed to determine the extent to which OCB is considered by individuals when they evaluate group performance.

Limitations

Our work has several limitations. First, meta-analytic estimates were based on findings from primary research. Any hidden problems with that research may thus have affected our results. Second, we were limited by a relatively small sample of studies. A third limitation concerns the concurrent nature of the majority of studies in our meta-analysis. We conceptualized OCB as a predictor of performance, as have many others (e.g., Ehrhart et al., 2006; Koys, 2001; Podsakoff et al., 1997). However, the reverse could be true; better performing groups may exhibit more citizenship behaviors over time. Why? Teams that are performing well may provide members with more time and energy to engage in helping behaviors. And
teams that are performing well may contain members with higher levels of positive affect, which could lead to more sportsmanship (i.e., less complaining). The lack of more experimental and longitudinal (e.g., cross-lagged panel designs) research is problematic and should be considered more carefully by future researchers planning to study OCB and performance at the group level. Finally, we were unable to assess the potential influence of several possible moderators (e.g., task interdependence and group autonomy) of the relationship between group-level OCB and performance, primarily because some of the studies in our sample contained too little information about those moderators.

**Future Research**

Our findings suggest that future research involving OCB should consider theorizing and testing at higher levels of analysis and across levels. Hundreds of studies have examined OCB, but few of them were conducted at the level of the group or organization. Researchers should also consider measuring different facets of OCB at the group level. This may contribute necessary information for postulating cross-level theories involving OCB, which is a necessary step in the evolution of OCB research (Schnake & Dumler, 2003), and indeed for all research in the organizational sciences (Rousseau, 1985). Although researchers have heeded the call for more group-level research, they have been slow to conduct research that addresses cross-level issues. Very few researchers have yet tested cross-level hypotheses regarding OCB and performance (see Bommer et al., 2007 for an empirical exception and Van Dyne et al., 2007 for a theoretical exception).

Limits associated with group-level research and the lack of adequate descriptions of the samples, tasks, and contexts associated with many of the studies we identified prevented us from reliably coding such potential moderators as task interdependence. At the organizational level, information about organization type, industry, or sector, and brief descriptions of organizational structure would be helpful as well for group- and organization-level OCB studies. The benefits of providing additional details in research publications are significant. First, such detail provides a richer description of the context of individual studies, which aids the interpretation of their results. Second, it enables others to produce better reviews (qualitative or quantitative) of research, which can provide stronger support for theory development.
References

References marked with an asterisk were included in the meta-analysis.


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