

## Personality and Citizenship Behavior: The Mediating Role of Job Satisfaction

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Using meta-analytic path analysis, the authors tested several structural models linking agreeableness and conscientiousness to organizational citizenship behavior (OCB). Results showed that the 2 personality traits had both direct effects and indirect effects—through job satisfaction—on overall OCB. Meta-analytic moderator analyses that distinguished between individual- and organization-targeted citizenship behaviors (OCB-I and OCB-O) showed that agreeableness was more closely related with OCB-I and conscientiousness with OCB-O. Finally, the path analyses predicting OCB-I and OCB-O offered further support for the general hypothesis that these 2 constructs are distinct. That is, the results of these analyses revealed that agreeableness had both direct and indirect effects on OCB-I but only indirect effects on OCB-O, and that for conscientiousness the pattern of direct and indirect effects was exactly opposite (direct and indirect effects on OCB-O but only indirect effects on OCB-I).

*Keywords:* organizational citizenship behavior, personality, job satisfaction

Following years of research on the antecedents and consequences of in-role, or formally prescribed, job performance, researchers since the 1980s have increasingly turned their attention to more spontaneous and voluntary workplace behaviors that enhance organizational functioning. Known variously as organizational citizenship behavior (OCB; Organ, 1988), prosocial organizational behavior (Brief & Motowidlo, 1986), extra-role behavior (Van Dyne & LePine, 1998), and contextual performance (Motowidlo & Van Scotter, 1994), these actions were originally defined as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate, promotes the efficient and effective functioning of the organization” (Organ, 1988, p. 4). Recognizing that in contemporary organizations the boundaries between in-role and discretionary extra-role performance are often ill-defined, scholars have come to embrace a view of OCB consistent with contextual performance, that is, behaviors that enhance the organizational environment rather than directly contribute to the achievement of workplace tasks (e.g., Organ, 1997).

Citizenship behaviors have been categorized in several ways. One framework describes a typology based on clusters of behaviors (e.g., sportsmanship, conscientiousness, civic virtue, altruism, and courtesy; Organ, 1988; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Another approach “slices” behaviors not by category of behavior but instead by the intended beneficiary of the behavior (e.g., OCBs targeted at individuals [OCB-I] vs. OCBs targeted at organizations [OCB-O]; McNeely & Meglino, 1994; L. J. Williams & Anderson, 1991). Proponents of this approach assume that clusters of behaviors fall into one of these two categories and that the two higher order dimensions of OCBs likely have different antecedents (L. J. Williams & Anderson, 1991). For example, behaviors reflecting altruism, helping, courtesy, cooperative behavior, and interpersonal facilitation are enacted to benefit other people in some way. On the other hand, behaviors like conscientiousness, sportsmanship, compliance, and civic virtue are enacted to benefit the larger organization, not necessarily specific people.

Because citizenship behaviors are often spontaneous and by definition not directly task-focused, they are not formally prescribed or directly enforced by explicit means; therefore, situational cues triggering these behaviors tend to be relatively weak. Furthermore, contextually oriented behaviors are less strongly influenced by cognitive ability and more so by personality, compared to task behaviors (Motowidlo, Borman, & Schmit, 1997). Consequently, a steady stream of research, including several meta-analytic studies (Borman, Penner, Allen, & Motowidlo, 2001; Dalal, 2005; Hurtz & Donovan, 2000; Lapiere & Hackett, 2007; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995; Podsakoff, MacKenzie, Paine, & Bachrach, 2000), has explored relationships among personality and

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OCB. Two personality traits in particular, conscientiousness and agreeableness, have been found to predict OCB (Organ & Ryan, 1995).

Interestingly, there is little research on psychological mechanisms explaining why personality traits predict OCB; most prior meta-analytic studies have not gone beyond estimating true-score correlations between personality and discretionary behaviors.<sup>1</sup> This general lack of attention to intervening processes is surprising, given that Organ and Ryan (1995) suggested more than 10 years ago that attitudes would mediate the effect of personality on citizenship behavior. In the present study, we begin to address this gap by conceptualizing an attitudinal mechanism—job satisfaction—that is likely to mediate the effect of personality on citizenship behavior, an approach which we then test with meta-analytic path modeling.

Another important issue informed by the current study is related to the construct validity of OCB. Some prior meta-analyses exploring personality as a predictor have estimated true-score correlations with only broad measures of OCB or OCB-like behaviors (e.g., Borman et al., 2001; Dalal, 2005; Hurtz & Donovan, 2000; Lapierre & Hackett, 2007), whereas others have estimated relationships with specific behaviors (altruism, generalized compliance, etc.; Organ & Ryan, 1995; Podsakoff et al., 2000). Only one meta-analysis (LePine et al., 2002) has estimated a relationship between a personality trait (conscientiousness) and target-focused OCB, finding little evidence for differential relationships with OCB-I and OCB-O (or the lower level subdimensions). Other authors (e.g., Ilies, Nahrgang, & Morgeson, 2007), however, have suggested that target-focused OCBs are distinct from one another and that examining worker behaviors through a target-oriented lens is a useful approach. In the current study, we inform this issue both theoretically and empirically by reexamining the differential validity for personality predictors of OCB-I and OCB-O.

Finally, we contribute to the literature on OCB by examining issues related to the source of OCB ratings. The performance of citizenship behaviors may be either self-assessed or evaluated by supervisors or peers. When both a predictor (e.g., personality) and OCB are self-rated, the correlation between the two is almost certainly inflated by common rater bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Conversely, when the predictor score is self-rated and citizenship behavior is rated by a different person (usually the supervisor), the correlation may be biased downward. Limited observational opportunities on the part of the supervisor may (a) cause the rater to underestimate the occurrence of OCBs, particularly when the OCBs benefit multiple targets besides the rater, and (b) result in range-restricted ratings of OCB across subordinates (i.e., if supervisors do not observe all or most OCBs they will have trouble differentiating among those who perform OCBs frequently and those who do not). To the extent that OCB ratings by supervisors are less accurate and more range-restricted than self-ratings, correlations of supervisor-rated OCB with self-rated antecedents will be biased downward. We also examine the influence of the rating source separately for OCB-I and OCB-O, as differences between self- and other-ratings of behavior may vary according to the target of behavior. These results could inform researchers about the appropriateness of using self- or supervisor-rated OCB when studying targeted (interpersonal- or organization-focused) behaviors.

To summarize, the purpose of the present study is fivefold. First, we integrate theoretical perspectives on personality and OCB, suggesting that job satisfaction mediates the relationships between two relevant personality traits—conscientiousness and agreeableness—and OCB. Second, we consider how these relationships may differ depending on OCB target, a theoretically substantive consideration, and also depending on OCB rater, a methodological issue. Third, to answer these questions, we update meta-analytic estimates of the relationships between OCB and two important antecedents, personality and job satisfaction, and conduct a series of moderator analyses. Fourth, in order to link personality, job satisfaction, and OCB in integrated models, we test structural path models using meta-analytic data. Finally, to better understand the implications of the rating source for OCB research, we examine path model fit and parameters for meta-analytic correlations computed using only different-source data.

## Personality Traits and OCB: Direct and Mediated Effects

### *Direct Effects*

The question of whether humans are predisposed to engage in prosocial acts has been tackled by writers from diverse disciplines, from evolutionary and neurobiological psychologists like Buck (2002) and Dawkins (1976) to moral philosophers like André Gide (see Fowlie, 1965). Philosophical questions aside, in basic and applied psychology it is accepted that individual differences in prosocial tendencies do exist (see Penner, Dovidio, Piliavin, & Schroeder, 2005). Contemporary research on individual differences in personality has coalesced around a five-factor theoretical model for describing the structure of personality (Digman, 1990); of these five factors, conscientiousness and agreeableness have the most obvious theoretical connections with OCB and have been the subject of most dispositionally based OCB research. Given that most OCB researchers have focused on conscientiousness and agreeableness among the Big Five, we too focus on these traits for the present meta-analytic study.

Agreeable people tend to be altruistic and cooperative, with an expectation that others will do the same (Costa & McCrae, 1992). They are predisposed to seek out interpersonally supportive and accepting environments (e.g., Barrick, Stewart, & Piotrowski, 2002; Wiggins, 1991); the enactment of citizenship behaviors, particularly those targeted at individuals, may be one means of creating and maintaining such environments for themselves. Not surprisingly, agreeableness has been found to be related to OCB in prior research. Organ and Ryan (1995) reported relatively small (but nonzero) meta-analytic relationships between agreeableness and OCB dimensions ( $r = .10$  for altruism and  $r = .08$  for generalized compliance), a finding replicated in a later meta-analysis by Borman et al. (2001;  $r = .13$ ). Following the conceptual reasoning and the empirical evidence reviewed above, we expect a positive zero-order correlation between agreeableness and OCB.

Conscientious individuals tend to be diligent, organized, and achievement oriented (Costa & McCrae, 1992); they are likely to

<sup>1</sup> The lone exception is a study by Lapierre and Hackett (2007), who found that conscientiousness increases OCB, which enhances leader-member exchange quality, leading to greater job satisfaction.

engage in citizenship behaviors because these behaviors contribute to their personal sense of achievement on the job. Organ and Ryan (1995) reported meta-analytic evidence that trait conscientiousness was associated with two OCB dimensions, with sample size-weighted mean uncorrected correlations ranging from .16 (with altruism) to .21 (with generalized compliance). Similarly, Borman et al. (2001) and LePine et al. (2002) reported average correlations between conscientiousness and OCB of .24 and .19, respectively. Consistent with prior research, we expect to find a positive zero-order correlation between conscientiousness and OCB.

### *Mediating Mechanisms*

Organ and Ryan (1995) concluded their review of dispositional influences on citizenship behavior with the suggestion that dispositional variables influence such behaviors only to the extent that they affect thoughts and feelings about a job. Following this line of reasoning, we consider a specific job attitude that involves both thoughts and feelings (e.g., Ilies & Judge, 2002)—job satisfaction—as a mediator in the relationship between these two personality traits and citizenship behavior. Broadly speaking, agreeable and conscientious employees are predisposed to engage in activities and behaviors that result in increased job satisfaction, which in turn influences them to engage in OCB via social exchange mechanisms. In other words, to the extent that employees view their work contributions as part of an exchange (e.g., Bateman & Organ, 1983; Van Dyne, Graham, & Dienesch, 1994), those who benefit from satisfying work environments will be more likely to reciprocate by engaging in citizenship behaviors.

Agreeable individuals value cooperative environments (e.g., Barrick et al., 2002; Wiggins, 1991) and consequently strive to foster pleasant and harmonious interpersonal relationships with coworkers; in so doing, they experience more satisfying work environments themselves (Judge, Heller, & Mount, 2002). Conscientiousness, on the other hand, is associated with job involvement and with individual behaviors (diligence, reliability, orderliness, etc.) that are valued and rewarded in most workplaces (Judge et al., 2002; Organ & Lingl, 1995). Given the achievement orientation associated with conscientiousness, being recognized, valued, and rewarded for diligent in-role behaviors contributes positively to experienced job satisfaction (Judge et al., 2002). For both agreeable and conscientious employees, this experienced job satisfaction may in turn engender reciprocation in the form of increased OCBs.

Two other conditions are required for mediation. First, job satisfaction must be related to the personality traits. Indeed, there is empirical evidence supporting a direct association with both agreeableness and conscientiousness (Judge et al., 2002). Second, job satisfaction must be linked to citizenship behavior; this has been shown in previous meta-analyses (e.g., LePine et al., 2002; Organ & Ryan, 1995). Furthermore, job satisfaction has been shown to be related to both individually and organizationally targeted citizenship behaviors (McNeely & Meglino, 1994).

### *Differential Relationships by OCB Target*

Thus far, we have treated OCB as a unitary construct, not distinguishing among different OCB dimensions. On this point, there is a lack of consensus in the literature. With respect both to

the lower order categorization of OCB and to OCB-I/OCB-O, LePine et al. (2002) concluded on the basis of meta-analytic evidence that the high intercorrelations between the dimensions and the fact “that there are no meaningful differences in relationships with predictors across dimensions” (p. 62) suggest that OCB should be conceptualized as a latent construct. A recent meta-analysis by Hoffman, Blair, Meriac, and Woehr (2007) also questions the OCB-I/OCB-O distinction.

Other empirical evidence, however, suggests that it is useful to distinguish between OCB dimensions. A recent meta-analytic study found a true-score correlation (corrected for attenuation) of .64 between OCB-I and OCB-O (Dalal, 2005), indicating that the two higher order dimensions of OCB are related yet distinct (i.e., 60% of the variance in one dimension is unexplained by the other, even after accounting for imperfect measurement). Further evidence for the distinctiveness of OCB-I and OCB-O is offered by a recent meta-analysis on the effects of leader–member exchange (LMX) on OCB. Ilies et al. (2007) found that LMX, as an interpersonal exchange variable, is more strongly associated with OCB-I than with OCB-O. Altogether, this evidence suggests that there continues to be value in examining OCB-I and OCB-O separately.

There are also conceptual reasons to believe that relationships between personality and OCB may differ depending on the target. Following Organ’s (1994) distinction between thematically related and topographically similar behaviors, Ilies et al. (2007, p. 271) suggested that it is important “to distinguish between dimensions that reflect different types of behavior and to consider the thematic correspondence between predictors and these behavioral dimensions” when examining predictors of citizenship behavior. In the workplace context, agreeableness reflects individual differences in *interpersonal* behavioral tendencies and conscientiousness reflects individual differences in more generalized, or *impersonal*, behavioral tendencies (e.g., Lee, Ashton, & Shin, 2005; Mount, Ilies, & Johnson, 2006). Focusing on interpersonal versus impersonal behavior themes, one would expect to observe that agreeableness is more closely associated with OCB-I and conscientiousness with OCB-O.

As we noted earlier, those who experience positive work outcomes such as job satisfaction are likely to reciprocate with OCBs as a form of social exchange (e.g., Bateman & Organ, 1983). Taking this one step further, we expect that individuals will choose to reciprocally benefit the perceived source of their job satisfaction. Therefore, agreeable individuals would tend to engage in reciprocating OCBs that benefit colleagues with whom they have enjoyed rewarding workplace relationships (i.e., OCB-Is). On the other hand, because conscientious employees attain job satisfaction through an organizational system of rewards and recognition, their reciprocation would tend to be directed toward the broader organization (i.e., OCB-Os).

Given these arguments, first, we expect that agreeableness will be more strongly associated with interpersonal citizenship behaviors (OCB-I) and that conscientiousness will be more strongly associated with impersonal citizenship behaviors (OCB-O). Second, following Lee and Allen (2002) and Organ and Ryan (1995), we expect that the effects of agreeableness and of conscientiousness on OCB will be mediated through job satisfaction. We expect partial, as opposed to full, mediation because there are other personality-influenced mechanisms (besides satisfaction) that are

known to influence OCB, such as perceptions of fairness (Organ & Ryan, 1995) and organizational support (Rhoades & Eisenberger, 2002), that may explain these effects.

In sum, we test path models that link agreeableness and conscientiousness to OCB through job satisfaction. We expect both traits to have direct and indirect (through job satisfaction) effects on overall OCB. When predicting OCB-I/OCB-O, we expect differential patterns of direct and mediated effects. We expect agreeableness, but not conscientiousness, to have a direct effect on OCB-I in addition to the mediated effect through satisfaction (conscientiousness is expected to be fully mediated by satisfaction). For OCB-O, we expect an opposite pattern; conscientiousness should have both a direct and an indirect effect on OCB-O, whereas the influence of agreeableness on OCB-O should be fully mediated by satisfaction.

### *Differential Relationships by OCB Rater*

As noted, correlations between self-rated personality and self-rated OCB are likely inflated by common rater bias, whereas correlations between self-rated personality and other-rated OCB may be biased downward due to raters' limited observational opportunities. Therefore, correlations with predictors should be lower for other-rated OCB, compared to self-rated OCB. We also examine whether the source of ratings differentially influences the consistency of results for predicting OCB-I and OCB-O, as differential influences may help in elucidating the role of observational opportunities for different OCB ratings. Finally, to further investigate whether common method bias explains the mediated effects proposed in this article, we examine how well the path models describe the true-score correlations matrices that include meta-analytic correlations between OCB and predictors using (a) all the data available in the literature and (b) only correlations involving different-source ratings.

## Method

We used meta-analysis to estimate the true-score zero-order correlations between OCB and its antecedents. To test the hypothesized differential associations between predictors and OCB-O and OCB-I, we conducted moderator meta-analyses to obtain independent estimates for the associations of OCB-O and OCB-I with their antecedents. Next, we conducted fully hierarchical moderator analyses to examine the impact of the source of the OCB ratings used to compute the original correlations (same source vs. different source) on the magnitude of the meta-analytic estimates. Finally, to test alternative path models (fully and partially mediated) with job satisfaction as a mediator of the effects of the personality traits on OCB, we used meta-analytic path analysis. Meta-analytic path analysis tests a structural model specified by researchers against the matrix of population correlations between the constructs included in the model (Viswesvaran & Ones, 1995).

### *Meta-Analysis*

*Literature search.* A literature search was conducted to identify published and unpublished reports that examined the relationship between the predictors considered in this study (agreeableness, conscientiousness, and job satisfaction) and OCB. First, we

performed electronic searches of the PsycINFO (1887–2006) database using the keywords *organizational citizenship, contextual performance, organizational spontaneity, extrarole behavior, and prosocial behavior* combined with the search terms *agreeableness, conscientiousness, personality, or satisfaction*. The electronic searches resulted in the identification of 792 published and unpublished reports, including dissertations. Second, we searched reference lists of key articles and prior meta-analyses on the topic (e.g., Borman et al., 2001; LePine et al., 2002; Organ & Ryan, 1995). Third, we searched the homepages of professional conferences to identify potentially relevant but unpublished manuscripts, and we contacted the authors asking for a copy of the manuscript. Altogether, the last two steps resulted in an additional 61 studies.

*Inclusion criteria.* We read all the abstracts obtained from the electronic search. First, we excluded studies that reported no data (e.g., theory papers) or studies that did not examine any of the associations that we were meta-analyzing. In the next stage, we examined each of the studies that could not be excluded on the basis of the abstract, as well as the additional studies selected from reference lists or conference papers. We excluded studies that did not report sufficient data to calculate an effect size for at least one of the relationships considered in this research (we contacted authors to obtain data necessary to calculate an effect size if it appeared that such data were collected but were not reported). There were 151 studies that met the inclusion criteria; these studies provided a total of 193 unique correlations between OCB and its predictors (31 correlations with agreeableness, 39 with conscientiousness, and 123 with job satisfaction). From the 151 studies included in the final analysis, 98 were journal articles, 40 were dissertations, and another 12 were conference proceedings. One study was published in a book chapter.

*Coding.* In the analyses related to overall OCB, for each of the relationships that we estimated, we included a unique correlation estimate from each particular sample. For studies that did not provide such overall estimates (e.g., provided correlations with OCB-O and OCB-I but not with overall OCB), we combined multiple estimates into a single correlation using the formula for computing the correlation between a predictor and a composite of criteria scores, which takes into account the intercorrelations among the scores comprising the composite criterion (Hunter & Schmidt, 1990).

For the moderator analyses, we first categorized the primary estimates according to the target of the citizenship behavior (OCB-O or OCB-I), and we then conducted separate meta-analyses by category for each of the relationships examined. Measures of conscientiousness (as a citizenship behavior, not a trait), sportsmanship, compliance, job dedication, civic virtue, loyalty, and creativity/innovation were categorized as OCB-O. We coded behaviors reflecting altruism, helping, courtesy, cooperative behavior, personal support, prosocial behavior, and interpersonal facilitation as OCB-I. This coding, done by one of the authors, was based on the definitions of the dimensions of citizenship behaviors provided by Podsakoff, MacKenzie, and Hui (1993) and Podsakoff et al. (2000). To verify coding accuracy, another author coded the information provided in 35 studies (51 correlations, which amounts to more than 20% of the estimates); comparing this coder's categorization of estimates as reflecting OCB-I/OCB-O with that of the initial coder revealed a 94.4% agreement. Studies often provided correlations between predictors and criteria for

multiple OCB-I (e.g., altruism and courtesy) and OCB-O (e.g., conscientiousness, sportsmanship, and compliance) dimensions. In these cases, we used the formula for computing a correlation between a predictor and a composite criterion. Second, we coded estimates according to whether the data were provided by the same rater or by different raters.

*Procedure.* We used the Schmidt–Hunter psychometric meta-analysis method (Hunter & Schmidt, 1990) to cumulate the estimates reported in the literature. The correlations reported in the primary studies were corrected for measurement error in both the predictor and the criterion scores using the internal consistency reliability. The large majority of studies provided the reliabilities of the measured scores used to compute the reported correlations; if reliability estimates were not provided, we used the average value of the estimates that were provided for the specific construct. Besides providing point estimates for the true-score correlations, we also examined variability in these estimates by computing 80% credibility intervals and 90% confidence intervals around the point values.

*Path Analysis*

*Procedure.* Meta-analytic path analysis examines how well a proposed structural model explains the population correlations among the constructs included the model. In this study, we considered a path model in which job satisfaction fully mediated the effects of agreeableness and conscientiousness on OCB, and we considered partially mediated models, in which agreeableness and conscientiousness also have direct effects on OCB. We tested such alternative models against (a) a true-score correlation matrix with overall OCB as the end outcome, (b) a true-score correlation matrix with OCB-O as the end outcome, and (c) a true-score correlation matrix with OCB-I as the end outcome. In estimating these models, we followed Viswesvaran and Ones (1995), who recommended using the harmonic mean of the cumulative sample sizes to compute the standard errors of the estimated parameters (see also Colquitt, LePine, & Noe, 2000; Ilies & Judge, 2003).

*Input data.* In meta-analytic path analysis, the model parameters are estimated by using true-score correlations as input (Viswesvaran & Ones, 1995). Therefore, to test the alternative models considered in this article (fully and partially mediated models) we used the meta-analytic true-score correlations of predictors with OCBs (overall OCB, OCB-O, OCB-I) that were obtained in this study, the true-score correlation between agreeableness and conscientiousness reported by Ones (1994; see Ones, Viswesvaran, & Reiss, 1996), and the true-score correlations between the two traits and job satisfaction reported by Judge et al. (2002).

Results

*Meta-Analysis Results*

Table 1 presents the meta-analytic results for the relationships between the predictors and overall OCB. In short, all the predictors showed positive relationships with the criterion, and neither the credibility nor the confidence interval included zero for any predictor. Job satisfaction showed the highest true-score correlation with overall OCB ( $\rho = .28$ ); the correlations of personality traits

Table 1  
General Meta-Analysis Results Concerning Overall OCB, OCB-I, and OCB-O

Predictor	Overall OCB						OCB-I						OCB-O									
	k	N	r	$\rho$	SD <sub>p</sub>	CV	CI	k	N	r	$\rho$	SD <sub>p</sub>	CV	CI	k	N	r	$\rho$	SD <sub>p</sub>	CV	CI	
Agreeableness	31	10,693	.15	.18	.10	.05	.14, .22	17	8,137	.17	.21	.13	.05	.37	14	6,614	.12	.15	.13	-.01	.31	.08, .22
Conscientiousness	39	10,049	.19	.24	.14	.06	.19, .28	20	6,877	.15	.18	.10	.04	.31	17	5,691	.25	.31	.12	.16	.46	.25, .37
Job satisfaction	123	33,609	.23	.28	.15	.09	.25, .31	65	17,357	.22	.27	.13	.10	.43	61	15,386	.24	.30	.12	.14	.45	.26, .33

Note. OCB = organizational citizenship behavior; OCB-I = individual-targeted citizenship behaviors; OCB-O = organization-focused citizenship behaviors; k = number of correlations; N = combined sample size; r = sample size-weighted average correlation;  $\rho$  = estimated true-score correlation; SD<sub>p</sub> = standard deviation of true-score correlation; CV = 80% credibility interval (for a positive estimate, a credibility interval that does not include zero indicates that 90% of the primary estimates were positive); CI = 90% confidence interval.

with overall OCB were  $\rho = .18$  and  $\rho = .24$  for agreeableness and conscientiousness, respectively. These meta-analytic correlations represent the best estimates for the correlations between the three predictors considered in this research and overall OCB, at the population level. Table 2 integrates the results of this analysis with the results from other meta-analytic studies as described above.

The results of the moderator analyses by target are also presented in Table 1. These results support our expectations that the target of the behavior moderates the magnitude of the effects of the personality traits on citizenship behavior. First, as we predicted, agreeableness was more strongly correlated with individual-targeted behaviors than with organization-targeted behaviors ( $\rho = .21$  vs.  $\rho = .15$ ), and conscientiousness was more strongly correlated with organization-targeted behaviors than with individual-targeted behaviors ( $\rho = .31$  vs.  $\rho = .18$ ). Hotelling–Williams tests, recommended when comparing nonindependent correlations that share a variable (see Steiger, 1980), showed that for both traits, the correlations with OCB-O and OCB-I were significantly different from each other, in the predicted direction ( $t = 6.21, p < .01$  for agreeableness, and  $t = 12.76, p < .01$  for conscientiousness).

In Table 3 we present the results of the moderator analyses by rating source (same- vs. different-source ratings) for overall OCB, OCB-I, and OCB-O. All the correlations between predictors and overall OCB were larger when they were computed from same-source ratings, as expected. Furthermore, the hierarchical moderator analyses with OCB-O and OCB-I as criteria showed that for each of the six comparisons between same-source and different-source ratings (three predictors by two criteria), the meta-analytic correlation was higher for same-source ratings.<sup>2</sup>

*Path Analysis Results*

The path analysis concerning overall OCB showed only limited support for the fully mediated model (standardized root mean residual [SRMR] = .08; root-mean-square error of approximation [RMSEA] = .17; comparative fit index [CFI] = .89). The standardized path coefficients are shown in Figure 1. Jointly, the predictors explained 12% of the variance in citizenship behaviors.

Table 2  
*Meta-Analytic Correlations Among the Constructs Included in the Study*

Construct	$\alpha$	1	2	3	4
1. Agreeableness	.75	—			
2. Conscientiousness	.78	.27	—		
3. Job satisfaction	.83	.17	.26	—	
4. Organizational citizenship behavior	.82	.18	.24	.28	—

*Note.*  $N = 16,694$  (the harmonic mean of the meta-analytic sample sizes used to estimate each correlation in the table; Viswesvaran & Ones, 1995). All coefficients are true-score correlations (corrected for internal consistency). Internal consistency (alpha) values are taken from the literature (Viswesvaran & Ones, 2000) or estimated in this study. The agreeableness–conscientiousness correlation was estimated by Ones (1994; Ones et al., 1996). The correlations between the two personality traits and job satisfaction were taken from Judge et al. (2002). The correlations of personality traits and job satisfaction with organizational citizenship behaviors were estimated in the present meta-analysis (see Table 1).

Because the fully mediated model did not fit the data well, we estimated a partially mediated model. Because this is a fully specified (saturated) model, fit indices cannot be used to assess whether the directional effects specified in the model adequately describe the pattern of correlation among the constructs included in the model (i.e., we cannot claim that this model fits the data better than the fully mediated model). Therefore, we interpret only the magnitudes of the path coefficients that were added to the fully mediated model (the direct effects from agreeableness and conscientiousness). The standardized path coefficients representing the direct effects of the personality traits on OCB were .11 and .18 for agreeableness and conscientiousness, respectively, and both estimates were statistically significant ( $p < .01$ ). This model explained 17% of the variance in OCB, and the total effects of agreeableness and conscientiousness on OCB were .15 and .27, respectively. These results suggest that the effects of the two personality traits on overall citizenship behavior are not fully mediated by job satisfaction.

The next set of analyses consisted of a series of path models on the meta-analytic correlations concerning OCB-O and OCB-I. First, as with overall OCB, the fully mediated model (Model 1) did not fit the data well for either criteria (RMSEA = .22/.16 for OCB-O/OCB-I; see Table 4). Next, we estimated Model 2, which specified full mediation for agreeableness and partial mediation for conscientiousness for predicting OCB-O and full mediation for conscientiousness and partial mediation for agreeableness for predicting OCB-I. The fit indices for Model 2 are included in Table 4, and the standardized path estimates are shown in Figures 2 (OCB-O) and 3 (OCB-I). Across all the fit indices presented, Model 2 clearly fit the data better than Model 1 for both OCB-O and OCB-I (in addition, the  $\Delta\chi^2$  was significant at  $p < .001$  for both comparisons).

Finally, to examine the role that the source of ratings has in explaining the relationships included in the models described above (i.e., does common rater bias completely explain these relationships?), we conducted path analyses using meta-analytic correlations among predictor and OCB variables computed using only different-source correlations. Even though in general the magnitudes of the path coefficients decreased (e.g., in the fully mediated model the effect of job satisfaction on OCB decreased from .34 to .29 in the model predicting overall OCB, from .36 to .30 in the model predicting OCB-O, and from .33 to .28 in the model predicting OCB-I), substantively, the results were remarkably similar to those obtained by using both types of correlations. That is, nothing changed in terms of the statistical significance of the path coefficients or the relative fit of the models (i.e., the partially mediated model fit the data much better than the fully mediated model for each of the three criteria), which suggests that our results cannot be explained exclusively by common method variance caused by same-source measurement (see Podsakoff et al., 2003).

To summarize, the path analyses supported our expectations that the effects of the personality traits on organization-targeted behaviors were mediated—fully for agreeableness and partially for con-

<sup>2</sup> The number of samples was relatively low for some of these analyses (e.g., only 5 samples reported same-source correlations between agreeableness and OCB-O), which raises the possibility that these results are biased because of second-order sampling error.

Table 3  
Moderator Analyses by the Type of Ratings (Same vs. Different Source)

Predictor	Overall OCB						OCB-I						OCB-O															
	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	<i>SD<sub>p</sub></i>	CV	CI	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	<i>SD<sub>p</sub></i>	CV	CI	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	<i>SD<sub>p</sub></i>	CV	CI							
Agreeableness	13	4,933	.20	.23	.12	.08	.39	.16	.31	.6	3,176	.25	.30	.14	.12	.48	.18	.41	.5	2,551	.15	.18	.18	-.05	.41	.02	.34	
Same source																												
Different source	18	5,760	.11	.14	.05	.07	.21	.10	.17	11	4,961	.13	.16	.08	.05	.26	.10	.21	9	4,063	.11	.13	.07	.04	.22	.08	.18	
Conscientiousness																												
Same source	18	5,652	.22	.27	.14	.09	.44	.20	.33	9	3,944	.16	.20	.11	.06	.33	.12	.27	7	3,182	.27	.33	.11	.20	.47	.25	.42	
Different source	21	4,397	.15	.19	.13	.02	.36	.13	.26	11	2,933	.12	.15	.09	.03	.26	.08	.21	10	2,509	.22	.28	.13	.12	.45	.20	.37	
Job satisfaction																												
Same source	54	15,937	.27	.33	.20	.08	.58	.28	.39	22	5,221	.27	.35	.17	.13	.56	.27	.42	24	5,597	.29	.38	.14	.20	.56	.32	.44	
Different source	69	17,672	.20	.24	.08	.14	.34	.22	.26	43	12,136	.19	.23	.08	.13	.34	.20	.26	37	9,789	.21	.25	.07	.16	.34	.22	.28	

Note. OCB = organizational citizenship behavior; OCB-I = individual-focused citizenship behaviors; OCB-O = organization-focused citizenship behaviors; *k* = number of correlations; *N* = combined sample size;  $\rho$  = estimated true-score correlation; *SD<sub>p</sub>* = standard deviation of true-score correlation; CV = 80% credibility interval (for a positive estimate, a credibility interval that does not include zero indicates that 90% of the primary estimates were positive); CI = 90% confidence interval.

scientiousness—through job satisfaction. The pattern was reversed when examining individual-targeted behaviors, as the effects of these traits were mediated—fully for conscientiousness and partially for agreeableness—through job satisfaction. Importantly, support for these differential effects was consistent whether we used all data available or only different-source correlations.

Discussion

The findings reported herein make several contributions to the literature on citizenship behavior. First, we provide updated meta-analytic estimates for the associations between OCB and some of its most important antecedents. Compared to the meta-analytic estimates previously reported in the literature (e.g., LePine et al., 2002), our estimates are based on substantially higher numbers of studies, samples, and participants, which increases the confidence in the stability of the results. Consistent with previous meta-analytic reviews (Organ & Ryan, 1995), conscientiousness was more strongly related to OCB than was agreeableness ( $\rho = .24$  and  $\rho = .18$ , respectively). We also found that job satisfaction had a positive relationship with OCB and that job satisfaction not only mediated the effects of personality traits on OCB but also explained additional variance in the criteria scores.

Second, this study provides the first meta-analytic evidence of mediated effects of multiple dimensions of personality on OCB. Meta-analytic path analyses revealed that job satisfaction mediated the effects of the personality traits on overall OCB and that both agreeableness and conscientiousness had direct effects on OCB in addition to their indirect effects through job satisfaction. Second, we provide meta-analytic evidence supporting an OCB categorization based on the target of the behaviors. Our moderator analyses results clearly show that interpersonal (agreeableness) and impersonal (conscientiousness) traits have differential validities in predicting OCB-I and OCB-O, which attests to the different nature of the two OCB dimensions. Fully hierarchical moderator analyses revealed that the relationships between these predictors and OCB-I/OCB-O were further moderated by the type of ratings used to compute the meta-analytic estimates, but that their differential effects on OCB-I and OCB-O were maintained.

These results differ from those in two recent meta-analyses that suggest that a single-factor model of OCB may have greater construct validity than either a behaviorally focused five-factor framework (e.g., altruism, sportsmanship, etc.) or a target-focused two-factor framework (e.g., OCB-I/OCB-O; Hoffman et al., 2007; LePine et al., 2002). How do we reconcile these seemingly contradictory results? First, our results are not directly comparable with those of Hoffman et al. (2007), because we set out to examine differential relationships of OCB-I and OCB-O with conscientiousness and agreeableness, whereas the goal of the Hoffman et al. study was to examine what factor structure best explains the intercorrelations among lower order behavioral dimensions of OCB. We can only speculate that the methodology employed by Hoffman et al.—treating the five lower order dimensions (altruism, civic virtue, etc.) as indicators for the higher order dimensions (thus correcting for an index of reliability given by the correlations among the lower order dimensions) led to the very high OCB-I–

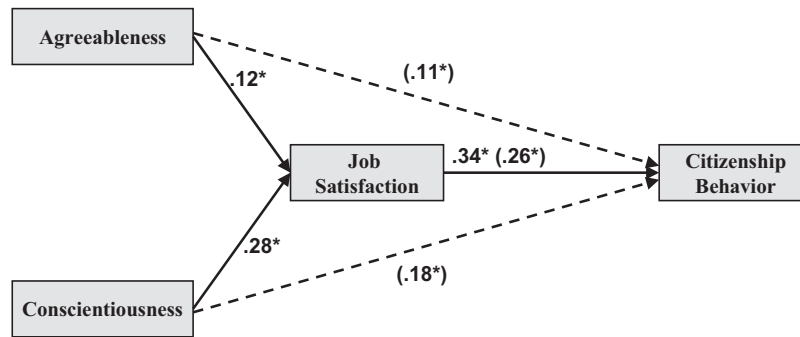


Figure 1. Path model predicting overall organizational citizenship behavior. Coefficients in parentheses were estimated in the partially mediated model. \*  $p < .01$ .

OCB-O correlation ( $\rho = .98$ ).<sup>3</sup> Of note here is the fact that the result of Hoffman et al. is divergent with that of Dalal (2005), who found a true-score correlation of  $\rho = .64$  among OCB-I and OCB-O, and these two sets of results are directly comparable.

The difference between our conclusion and the results of LePine et al. (2002) does seem surprising because these authors also examined differential relationships for OCB-I and OCB-O with a range of predictors. We believe the conclusion of LePine et al. is different from ours because these authors included only one predictor that can be matched, conceptually, with the different targets for OCB-I and OCB-O. That is, with the exception of conscientiousness—which should be expected to correlate more strongly with OCB-O than with OCB-I—there is no clear conceptual reason to expect differential relationships of OCB-I and OCB-O with the other predictors considered by LePine et al. (e.g., job satisfaction is not expected to relate differentially with OCB-I/OCB-O, and indeed, our results concerning satisfaction are consistent with those of LePine et al.).<sup>4</sup> We obtained differential results for two predictors, agreeableness and conscientiousness, that were theoretically matched to the OCB-I/OCB-O themes. LePine et al., on the other hand, did not find differential relationships with OCB-I and OCB-O for conscientiousness (they did not examine agreeableness). A closer inspection of their results testing differential relationships for conscientiousness reveals that they are based on only three studies, which raises the question of whether their failure to find differences might have been due to low statistical power or second-order sampling error.

Finally, our findings are informative with respect to the importance of the source of OCB ratings. We found that the mediated relationships of personality traits to OCB through job satisfaction are supported even when using only different-source correlations as input in the path analyses. This is an important finding because it rules out the possibility that common method/rater bias completely explains these relationships. Another interesting finding was that even though the meta-analytic correlations based exclusively on different-source correlations were lower than those based on all the data, the difference in the magnitudes of these meta-analytic estimates was consistently (across predictors) smaller for OCB-O compared to OCB-I. On average, different-source correlations were 35.3% smaller than correlations based on all data for OCB-I, compared to 25.7% for OCB-O. This suggests that supervisor ratings may be less accurate for OCB-I than for OCB-O, perhaps because of the more pronounced effect of limited obser-

vational opportunities (i.e., different employees may perform OCB-Is directed at different people, and thus supervisors are less consistent in rating these behaviors, whereas OCB-O can be more consistently rated), and thus self-ratings may reasonably assess OCB-I.

### Limitations

As is the case with all research, there are several limitations associated with the work presented in this article. First, many of the OCB measures used to compute the primary estimates included in the analyses were self-reported, which, as noted, raises the question of whether common method/rater bias explains the correlations of these scores with self-rated personality and job satisfaction. Nevertheless, the meta-analytic estimates from analyses including only correlations between different-source ratings were distinguishable from zero for all predictors. Furthermore, the path analyses conducted on meta-analytic correlations among predictor and OCB variables computed using only different-source correlations fully supported the partially mediated models. Second, a possible limitation stems from the fact that the path analysis results are based on a diverse set of meta-analyses, which themselves were based on a diverse set of studies. This is a limitation common to any path or regression model based on meta-analytic data (see Ilies & Judge, 2003, for a more extended discussion of this issue). Estimating the variability around the meta-analytic correlations (confidence and credibility intervals) and the path coefficients (statistical significance) should, to some extent, alleviate this concern.

Despite its limitations, we believe this research has clear implications for both researchers and managers. First, as noted previously, these findings make several conceptual contributions to the

<sup>3</sup> Hoffman et al. (2007) also included only studies that contained inter-correlations among measures of OCB that explicitly mapped onto Organ's (1988) five-category framework, with no overlap across dimensions; therefore, compared to our effort, they sampled from a more restricted study population.

<sup>4</sup> Perhaps a case could be made that leader support, one of the correlates from LePine et al. (2002), should more strongly correlate with OCB-I, but it is not clear to what extent respondents interpret leader support as enabled by the organization and respond as such by performing OCB-O (these authors also do not report what measures of leader support they included).



Table 4  
Summary of Fit Indices for Path Models Predicting OCB-O and OCB-I

Model	df	$\chi^2$	GFI/AGFI	CFI	NFI/NNFI	RMSEA	SRMR
Predicting OCB-O							
Model 1: Full mediation	2	1,131.86	.95/.77	.83	.83/.50	.22	.093
Model 2: Partial mediation	1	12.60	1.00/.99	1.00	1.00/.99	.03	.009
Predicting OCB-I							
Model 1: Full mediation	2	676.24	.98/.88	.90	.90/.69	.16	.073
Model 2: Partial mediation	1	69.31	1.00/.97	.99	.99/.94	.07	.019

Note. Model 2 involved a fully mediated effect of agreeableness and a partially mediated effect of conscientiousness for predicting organization-targeted citizenship behavior (OCB-O) and a fully mediated effect of conscientiousness and a partially mediated effect of agreeableness for predicting individual-targeted citizenship behavior (OCB-I); see Figures 2 and 3.  $\chi^2$  = minimum fit function chi-square; GFI/AGFI = goodness-of-fit/adjusted goodness-of-fit index; CFI = comparative fit index; NFI/NNFI = normed/nonnormed fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean residual.

literature on citizenship behavior at work, and they also raise new and interesting questions about reasons and motives that lead to the different types of OCBs. Second, as described in the next section, the findings presented in this report have important implications for practice, especially for selecting employees into organizations and for influencing behavior by managing the work context.

*Practical Implications*

Our results suggest some ways that an organization might increase the prevalence of citizenship behaviors, which are known to be linked with organizational performance (Podsakoff & MacKenzie, 1997; Podsakoff et al., 2000). The meta-analytic results concerning the personality predictors suggest that utilizing these two traits for selection and career development decisions would be beneficial for organizations. A long-term, systematic approach encompassing selection, career development, and job design may result in especially beneficial synergies for the organization.

Previous meta-analytic reviews on personality and overall job performance (see Barrick, Mount, & Judge, 2001), and Organ and Ryan’s (1995) meta-analysis on antecedents of OCB, have highlighted the value of selecting employees high on trait conscientiousness. Our results show that such practice is likely to increase overall OCB in organizations (of the two traits examined in this study, conscientiousness had the highest validity). However, when examining OCB-I, agreeableness had a higher validity than conscientiousness. This result suggests that selecting on agreeableness

may also be important, particularly for organizations with a high degree of interdependence and interpersonal interactions among employees but low levels of formal structure, such as those using self-managing teams.

Shifting focus from the organization level to the job level, it is worth noting that dispositional characteristics also may indirectly affect OCBs through sorting processes, such that people will tend to gravitate toward jobs where their activities are most compatible with their motivations and abilities (Judge, Higgins, Thoresen, & Barrick, 1999; Wilk, Desmarais, & Sackett, 1995). Meta-analytic data suggest that agreeable people seem to be more attracted to jobs that require interpersonal interaction and helping (“social” jobs in Holland’s RIASEC typology; Holland, 1997), whereas conscientious individuals are drawn more to investigative jobs (requiring analytical thinking) and to conventional jobs (requiring systematic thinking) (Barrick, Mount, & Gupta, 2003). To the extent that organizations can facilitate this natural sorting through staffing, career development systems, and job design, they are likely to benefit long-term from having more satisfied employees who in turn are also better organizational citizens.

*Conclusion and Directions for Future Research*

These findings contribute to the organizational behavior literature by complementing previous results linking personality, job satisfaction, and OCB. Our results support a mediated model in which personality traits, as distal predictors of behavior, influence

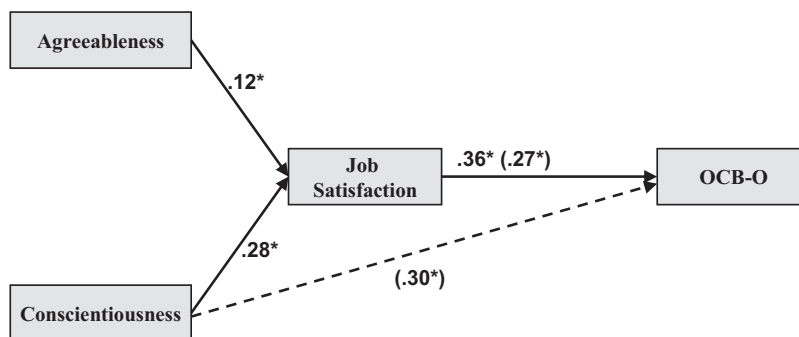


Figure 2. Path model predicting organization-targeted citizenship behavior (OCB-O). Coefficients in parentheses were estimated in the partially mediated model. \*  $p < .01$ .

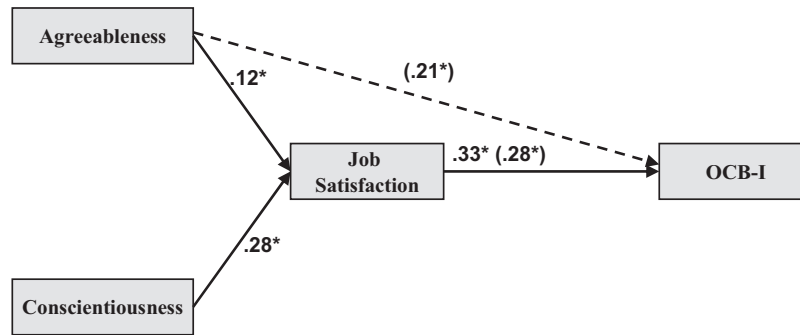


Figure 3. Path model predicting individual-targeted citizenship behavior (OCB-I). Coefficients in parentheses were estimated in the partially mediated model. \*  $p < .01$ .

OCB through the proximal predictor of job satisfaction. We encourage researchers to continue this line of research by exploring other potential mediators of the effects of personality and by conducting longitudinal studies to explore the causal relationships implied in this study. In addition, the literature on OCB could be further informed by examinations of more nuanced relationships among specific citizenship behaviors and bandwidth-matched facets of agreeableness (e.g., trust, altruism, etc.) and conscientiousness (e.g., achievement striving, dutifulness, etc.). Conversely, combining aspects of personality that are theoretically matched to the general discretionary nature of citizenship behavior into higher order or composite predictors (see Hogan & Hogan, 1989) may also prove useful in both research and practice.

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### **Correction to Ilies et al. (2009)**

In the article “Personality and Citizenship Behavior: The Mediating Role of Job Satisfaction,” by Remus Ilies, Ingrid Smithey Fulmer, Matthias Spitzmuller, and Michael D. Johnson (*Journal of Applied Psychology*, 95, 945–959), the path coefficients presented in the figures are slight overestimates. For example, in Figure 1 (p. 952), the paths from Agreeableness and Conscientiousness to Job Satisfaction should be .11 and .23 instead of .12 and .28, the direct effects from Agreeableness and Conscientiousness to Citizenship Behavior should be .10 and .16 instead of .11 and .18, and the paths from Job Satisfaction to Citizenship Behavior should be .28 (.22) instead of .34 (.26). The statistical significance of the path coefficients is correct, and so are the substantive conclusions based on the better fit of the partially mediated models relative to the fully mediated models. Also, the meta-analytic estimates presented in Table 1 (p. 949), Table 2 (p. 950), and Table 3 (p. 951) are correct.

### **Correction to Correction to Ilies et al. (2009)**

In the Correction to Ilies et al. (2009; *Journal of Applied Psychology*, Vol. 95, No. 2, 404) the volume number of the original article was incorrectly identified. It should have been identified as Vol. 94.