

RESEARCH REPORT

Relationships of Role Stressors With Organizational Citizenship Behavior: A Meta-Analysis

Erin M. Eatough
University of South Florida

Chu-Hsiang Chang
Michigan State University

Stephanie A. Miloslavich
Florida Institute of Technology

Russell E. Johnson
Michigan State University

Several quantitative reviews have documented the negative relationships that role stressors have with task performance. Surprisingly, much less attention has been directed at the impact of role stressors on other aspects of job performance, such as organizational citizenship behavior (OCB). The goal of this study was to therefore estimate the overall relationships of role stressors (i.e., role ambiguity, conflict, and overload) with OCB. A meta-analysis of 42 existing studies indicated that role ambiguity and role conflict were negatively related to OCB and that these relationships were moderated by the target of OCB, type of organization, OCB rating source, and publication status. As expected, role conflict had a stronger negative relationship with OCB than it did with task performance. Finally, we found support for a path model in which job satisfaction mediated relationships of role stressors with OCB and for a positive direct relationship between role overload and OCB.

Keywords: role overload, role conflict, role ambiguity, organizational citizenship behavior, meta-analysis

Understanding the variables that impact job performance is an obvious concern for organizations. One line of research has examined the effects of occupational stressors on performance. Role stressors like role ambiguity, role conflict, and role overload have emerged as key predictors of employee behavior (Jex, 1998). Although the negative associations between role stressors and in-role performance have been well established (Gilboa, Shirom, Fried, & Cooper, 2008; Jackson & Schuler, 1985; Tubré & Collins, 2000), less attention has been devoted to extra-role behaviors like organizational citizenship behavior (OCB). This omission is unfortunate because the criterion space for job performance includes not only in-role behaviors but also OCB. Researchers have recognized the important linkages between employee OCB performance and organizational effectiveness and profitability (N. P. Podsakoff,

Whiting, Podsakoff, & Blume, 2009; P. M. Podsakoff, MacKenzie, Paine, & Bachrach, 2000). However, without clear evidence that role stressors represent impediments to performing OCB, organizations may be reluctant to take steps to reduce role stressors or help employees cope with the negative reactions elicited by such stressors (Jex, 1998). It is therefore crucial to verify the nomological network of occupational stress (e.g., Beehr, Jex, Stacy, & Murray, 2000; Chang, Johnson, & Yang, 2007) so that evidence-based programs can be developed to reduce stressors and foster OCB.

The purpose of this article is threefold: (a) to provide a quantitative review of the relationships of role stressors (i.e., role ambiguity, role conflict, and role overload) with OCB, (b) to compare role stressor–OCB relationships with role stressor–task performance ones, and (c) to test a mediation model that includes a theoretically derived mediator of role stressor–OCB relationships. A quantitative review concerning OCB is needed because every meta-analytic review to date (e.g., Gilboa et al., 2008; Örtqvist & Wincent, 2006; Tubré & Collins, 2000) has focused exclusively on task performance. Including OCB in the criterion space provides a more complete picture of how role stressors relate to employees' various workplace behaviors (Jex, 1998). Although OCB is suspected to be more greatly affected by role stressors than required in-role job behaviors, owing to its discretionary nature (e.g., Jex, 1998), this assumption has seldom been examined empirically. Our study provides the first comparison of meta-analytic estimates of relationships of role stressors with OCB versus task performance to directly test this assumption. Last, by testing job satisfaction as a mediator, we are able to better delineate the nature of

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Erin M. Eatough, Department of Psychology, University of South Florida; Chu-Hsiang Chang, Department of Psychology, Michigan State University; Stephanie A. Miloslavich, School of Psychology, Florida Institute of Technology; Russell E. Johnson, Department of Management, Michigan State University.

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Correspondence concerning this article should be addressed to Chu-Hsiang (Daisy) Chang, Department of Psychology, Michigan State University, 346 Psychology Building, East Lansing, MI 48824. E-mail: cchang@msu.edu

the processes linking role stressors to OCB and to highlight intervention possibilities that may be used to enhance OCB via the mediating variable (e.g., Fried, Shirom, Gilboa, & Cooper, 2008). Below, we provide an overview of role stressors and their relationships with OCB.

Role Stressors

In the occupational health literature, role stressors are some of the most commonly studied work stressors (Gilboa et al., 2008; Jackson & Schuler, 1985; Tubré & Collins, 2000). Role stressors include role ambiguity, role conflict, and role overload. *Role ambiguity* refers to vague and unclear expectations set for employees, such that employees are uncertain as to what is expected of them (Katz & Kahn, 1978). *Role conflict* refers to simultaneous contradictory expectations from work colleagues that interfere with one another and make it difficult to complete work tasks (Katz & Kahn, 1978). *Role overload* describes situations in which employees feel that there are too many responsibilities or activities expected of them given the time available, their abilities, and other constraints (Rizzo, House, & Lirtzman, 1970).

Ample research findings have suggested that role stressors have detrimental effects on employee attitudes and increase strain responses (e.g., O'Driscoll & Beehr, 1994; Stordeur, D'hoore, & Vandenberghe, 2001). Interestingly, research has often concluded that out of the three role stressors, role ambiguity and conflict have stronger relationships with various employee reactions, such as job satisfaction, organizational commitment, emotional exhaustion, and tension and anxiety, than role overload (e.g., Fried et al., 2008; Jackson & Schuler, 1985; Örtqvist & Wincent, 2006). Gilboa et al. (2008) suggested that the differences in relationship magnitude may be due to how employees appraise these role stressors. Specifically, building on work by LePine and colleagues (e.g., Boswell, Olson-Buchanan, & LePine, 2004; LePine, Podsakoff, & LePine, 2005), Gilboa et al. argued that employees evaluate each stressor on two basic dimensions. The first dimension, *hindrance*, refers to the extent to which a stressor is considered as threatening and impeding to individuals' work achievements. The second dimension, *challenge*, refers to the extent to which a stressor is viewed as a potential learning and achievement opportunity. Among the three role stressors, role ambiguity is most likely to be viewed as a pure hindrance, with little challenge component (Gilboa et al., 2008). Compared with role ambiguity, role conflict is likely to have a slightly higher challenge component, as employees may try to bargain with the various sources of contradictory work expectations in order to meet all their demands. This negotiation process can empower employees and build their efficacy. Finally, role overload has both strong hindrance and challenge components. Although role overload may be regarded as a threat because it represents an overwhelming demand on employees that exceeds their abilities or coping resources, it also derives from employees taking on more responsibilities or challenging tasks in order to develop or grow (Gilboa et al., 2008). Owing to their different natures, the three role stressors likely have different relationships with job performance. Indeed, existing meta-analyses have revealed that role ambiguity has stronger negative associations with task performance than role conflict and role overload do (Gilboa et al., 2008; Tubré & Collins, 2000).

Relationships of Role Stressors With OCB

OCB refers to discretionary behavior that benefits organizations and their members by improving the social and psychological context in which the technical core of the organization operates (Borman & Motowidlo, 1993; Organ, 1997). OCB differs from in-role task performance in that the former is not formally prescribed by the job, whereas the latter is mandatory. Despite its discretionary nature, OCB is a facet of job performance that results in beneficial outcomes for employees (Allen & Rush, 1998), work groups (P. M. Podsakoff, Ahearne, & MacKenzie, 1997), and organizations (Bolino, Turnley, & Bloodgood, 2002; N. P. Podsakoff et al., 2009). Although person-based variables such as personality and affect contribute to the performance of OCB (Ilie, Scott, & Judge, 2006), aspects of work settings and experiences are also important, such as organizational fairness (Tepper & Taylor, 2003) and support (Wayne, Shore, & Liden, 1997). Included among situation-based antecedents of OCB are role stressors, which we discuss below.

Several reasons have been posited as to why role stressors relate to OCB. Because they are perceived as a hindrance to work achievement, role stressors, especially ambiguity and conflict, elicit negative emotions, which reduce the likelihood that OCB will be performed. Whereas positive emotions are linked to action tendencies to perform prosocial and cooperative behaviors (Carlson, Charlin, & Miller, 1988), negative emotions are related to lower likelihood of cooperation (De Cremer & Van Hiel, 2006). Role stressors give rise to experiences of anxiety and tension (Jackson & Schuler, 1985), two emotional states that are negatively related to prosocial behaviors (M. B. Harris, 1977). Negative emotional states may increase the likelihood of disengagement from discretionary behaviors, like OCB (e.g., Bachrach & Jex, 2000), because they lead to a redirection of effort to cope with sources of strain (Belschak & Den Hartog, 2009). Aversive stimuli may even activate behavioral inhibition systems (Belschak & Den Hartog, 2009), resulting in avoidance-oriented motivations that "turn off" OCB (Johnson & Chang, 2008).

In addition to discrete emotions such as anxiety and tension, role stressors may also be related to OCB through general job satisfaction. Role stressors, particularly ambiguity and conflict, are likely to be viewed as hindering employees' ability to attain personal and professional goals at work (LePine et al., 2005). As employees are unable to achieve valued outcomes at work, they are likely to experience lower morale, as indicated by lower job satisfaction (e.g., Chang, Rosen, & Levy, 2009; Harrison, Newman, & Roth, 2006). Indeed, prolonged exposure to role stressors has been related to employees being dissatisfied with their jobs (O'Driscoll & Beehr, 1994), which in turn may be associated with reduced OCB (LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). Interestingly, a recent meta-analysis (Fried et al., 2008) reported that relationships between role ambiguity and role conflict with task performance were mediated by job satisfaction. In the current study, we postulate that job satisfaction will also mediate the relationship of role ambiguity and role conflict with OCB, especially given that job satisfaction has stronger ties to OCB than does task performance (Organ, 1997; Organ & Ryan, 1995).

Interestingly, because role overload encompasses both hindrance and challenge aspects, it may have a more complex relationship with OCB compared with the other role stressors. On the

one hand, role overload creates excessive demands on available resources, to the extent that employees are overtaxed and thus less able to perform OCB. However, role overload may also be tied to heightened responsibility and more work challenges, which creates a stronger sense of ownership over one's work and motivates higher levels of performance (LePine et al., 2005). It should be noted that although role overload, when considered as a challenge stressor, may be positively related to performance through higher motivation and self-efficacy (e.g., Boswell et al., 2004; LePine et al., 2005), its associations with elevated strain and lower satisfaction remain significant (e.g., Örtqvist & Wincent, 2006; Parker, Griffin, Sprigg, & Wall, 2002; Pasupuleti, Allen, Lambert, & Cluse-Tolar, 2009; Perrewé et al., 2005).

Research has suggested that an additional causal pathway may also exist between role overload and OCB. Bolino and Turnley (2005) reported a positive relationship from OCB to role overload, such that engaging in OCB contributes to experienced overload. They argued that when employees strive to fulfill an "organizational-member role" by performing OCB, they suffer higher role overload as a result. Contributing to the organization through OCB requires additional resources on the part of employees, particularly in terms of their time and energy, which may lead to perceived overload (Bergeron, 2007). In their more recent study, Bolino, Turnley, Gilstrap, and Suazo (2010) found that perceived pressure to perform OCB was positively related to actual OCB performance and role overload, further supporting that perceived need to engage in OCB creates additional demands and role overload. Regardless of the mechanisms, there exists the potential for positive linkages between role overload and OCB. As such, we expect that compared with the other two role stressors, role overload will have a weaker, negative relationship with OCB and that this relationship will be mediated by job satisfaction.

Hypothesis 1: There will be a negative relationship between (a) role ambiguity, (b) role conflict, and (c) role overload with OCB.

Hypothesis 2: The negative relationship between role overload and OCB will be weaker than the negative relationship between (a) role ambiguity and (b) role conflict and OCB.

Hypothesis 3: The relationship between (a) role ambiguity, (b) role conflict, and (c) role overload and OCB will be mediated by job satisfaction.

Although role stressors are believed to negatively relate to both OCB and task performance, their relationships with the two outcomes may be quite different depending on the type of role stressors considered. In particular, Organ (1988) suggested that when job descriptions are more ambiguous, it is difficult for employees to differentiate between task performance and OCB. Indeed, previous studies have supported that OCB was valued equally to, if not more than, task performance when role definitions are inherently vague (e.g., MacKenzie, Podsakoff, & Fetter, 1991; MacKenzie, Podsakoff, & Paine, 1999). As such, we do not expect role ambiguity to differ in its relationships with task performance and OCB. In contrast, role conflict and overload are intertwined with excessive and contradictory demands on the finite resources that employees can devote toward achieving valuable

work outcomes. Role conflict represents incompatible demands regarding how to meet performance expectations, whereas role overload represents competing demands regarding what to do first to meet expectations. In this case, employees may prioritize by reducing discretionary extra-role behaviors and only focus energy on necessary job duties and tasks that are directly aligned with their performance evaluation standards (Bergeron, 2007). Because reducing the performance of OCB does not carry the same risks as failing to perform the required in-role behavior (Allen & Rush, 1998; Bergeron, 2007), they are more likely to do so in order to cope with the distress.

Hypothesis 4: (a) Role conflict and (b) role overload will have stronger negative relationships with OCB than with task performance.

Theoretical Moderators of Role Stressor-OCB Relationships

We examine potential moderators of role stressor-OCB relationships. One such variable is the target of OCB, which may be an individual in the organization (OCBI) or the organization itself (OCBO; Williams & Anderson, 1991). Distinguishing between OCBI and OCBO is useful because they sometimes have unique antecedents (LePine et al., 2002). Employees often attribute strain originating from role stressors to their work organization, rather than to specific people within the organization (Siegrist, 1996). If so, then employees may respond by reducing prosocial behaviors that target the perceived source of experienced strain (i.e., OCBO). Furthermore, employees may be less inclined to reduce their performance of OCBI because such behaviors build relationships and expand social networks within organizations (Bolino et al., 2002). OCBI is a means for employees to strengthen their support systems and coping resource repertoire (Halbesleben & Bowler, 2005), which are especially useful when experiencing hindrance stressors. Last, OCBI is more visible and therefore more likely to be rewarded than OCBO (P. M. Podsakoff, MacKenzie, & Hui, 1993). Just as employees are hesitant to reduce in-role performance, owing to its employment-based repercussions, for the same reasons they may also be less likely to scale back OCBI relative to OCBO. In sum, we expect that OCBI levels will fluctuate less than OCBO levels as a function of role stressors.

Hypothesis 5: The relationships of (a) role ambiguity, (b) role conflict, and (c) role overload with OCB will be stronger for OCBO versus OCBI.

We also considered type of organization (public vs. private) as a potential moderator. Although OCB is usually considered discretionary and not part of formal job descriptions (Organ, 1997), there is evidence that OCB contributes to performance appraisal ratings and reward decisions (Allen & Rush, 1998; Rotundo & Sackett, 2002). Public organizations differ from private ones in that the former tend to have more bureaucratic compensation systems (e.g., tenure-based pay; Bass, 1985; Lindblom, 1977), rather than performance-based incentives (Gore, 1993; Kalleberg, Marsden, Reynolds, & Knoke, 2006). Thus, engaging in OCB is less likely to be formally recognized during the performance appraisal and rewarded accordingly in public organizations. In-

deed, researchers have concluded that pay-for-performance systems are less feasible in public sectors (Kellough & Lu, 1993), as public sectors often have diverse, and sometimes conflicting, organizational missions and performance standards (Baldwin, 1987). Moreover, public sector employees often consider incentives or monetary rewards tied to performance less important (Wittmer, 1991). Thus, OCB is likely to be viewed as substantially more discretionary in the public sector versus the private sector, where organizations are more likely to have performance-based reward structures that recognize extra-role performance (Gore, 1993; Kalleberg et al., 2006; Osborne & Gaebler, 1993). If the distinction between task performance and OCB is less clear in the private sector, then private sector employees may be less likely to reduce their level of OCB when faced with role stressors. We therefore expect the following:

Hypothesis 6: The relationships of (a) role ambiguity, (b) role conflict, and (c) role overload with OCB will be stronger for public versus private organizations.

Methodological Moderators of Role Stressor-OCB Relationships

The source of OCB data is a potential moderator. Although it is appropriate to use self-rated data for role stressors, which are composed of idiosyncratic perceptions of the environment, it is debatable whether work behaviors can be accurately measured via self-report (Fletcher & Baldry, 1999). In fact, large discrepancies have been observed between self- and other-ratings of OCB, perhaps because self-ratings contain more bias (Allen, Barnard, Rush, & Russell, 2000). When predictor and criterion data are provided by the same source, common method variance may accentuate observed relationships (P. M. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), thereby resulting in stronger relationships when OCB is self-rated.

Publication bias refers to the argument that published findings are skewed in favor of reporting significant effects. Thus, meta-analyses based solely on published findings may overestimate effect sizes. As such, we tested publication status as a moderator, with the expectation that role stressor-OCB relationships will be higher in published studies.

Hypothesis 7: The relationships of (a) role ambiguity, (b) role conflict, and (c) role overload with OCB will be stronger for self-rated versus supervisor-rated OCB.

Hypothesis 8: The relationships of (a) role ambiguity, (b) role conflict, and (c) role overload with OCB will be stronger for published versus unpublished studies.

Method

Literature Search

Four methods were used to search for relevant studies. First, the first and third authors conducted independent computerized searches of five databases: PsycINFO, ABI/INFORM, MEDLINE, ERIC, and Google Scholar. Keywords associated with OCB (*organizational citizenship behavior, contextual performance, altru-*

ism, civic virtue, compliance, conscientiousness, courtesy, helping, individual initiative, individual support, interpersonal facilitation, loyalty, organizational support, sportsmanship) were combined with keywords associated with role stressors (*role ambiguity, role clarity, role conflict, role overload, workload, time pressure, job demand*) for the database search. Second, we compared our reference list with the reference lists of existing reviews of OCB and role stressors (e.g., P. M. Podsakoff, MacKenzie, & Bommer, 1996). The first and third authors also conducted a manual search of articles published in 14 journals since 1980: *Academy of Management Journal; Anxiety, Stress, and Coping: An International Journal; Human Performance; Human Relations; International Journal of Stress Management; Journal of Applied Psychology; Journal of Management; Journal of Occupational Health Psychology; Journal of Organizational Behavior; Journal of Vocational Behavior; Organizational Behavior and Human Decision Processes; Personnel Psychology; Stress Medicine; and Work & Stress*. Because the original conception of OCB is often accredited to Organ and colleagues' work in 1983 (e.g., Bateman & Organ, 1983; Smith, Organ, & Near, 1983), starting the search from 1980 was deemed appropriate. No geographical, cultural, or population restrictions were placed on the search, although we included only materials in English. Finally, we contacted active researchers for file-drawer studies and posted calls for unpublished articles on electronic mailing lists run by the Society for Industrial and Organizational Psychology, the Academy of Management, the Society for Human Resource Management, and Emonet. In total, we identified 42 relevant articles with 44 separate samples that could be included in the meta-analysis (see the Appendix).

Inclusion Criteria and Coding

Empirical studies were included in the meta-analysis if they fit four criteria. First, only empirical studies that investigated relationships between OCB and at least one role stressor were included. Our search identified three studies that examined relationships between role stressors and the personality construct of conscientiousness (e.g., E. G. Harris, Artis, Walters, & Licata, 2006). These studies were excluded. Second, correlation coefficients were collected as effect sizes. When a study reported correlations between a role stressor and multiple measures of OCB (e.g., OCBI and OCBO), the effect sizes were averaged together. This approach is commonly adopted to avoid inflation of the sample size (Cheung & Chan, 2008). However, because this procedure does not take into consideration the level of dependence across effect sizes from the same sample, it likely underestimates the heterogeneity among these effect sizes. As such, the adjusted-weighted procedure (Cheung & Chan, 2004, 2008) was adopted to calculate the adjusted sample size whenever multiple effect sizes from the same sample were averaged in order to account for the relatedness among these effect sizes. The adjusted sample size was then used as the sample weight for the sample-weighted average effect size. Third, correlations between role clarity (opposite of role ambiguity) and OCB were recorded inversely. Finally, we included studies that examined relationships between OCB and work demands ($k = 3$), time pressure ($k = 2$), and workload ($k = 1$) as effect sizes for the role overload-OCB relationship. In all, we located 24, 22, and 19 effect sizes for relationships involving role ambiguity, role conflict, and role overload, respectively.

The first and the third authors, who were master's level organizational psychology graduate students, first independently coded the studies for the four moderators: type of OCB, type of organization, rating source for OCB, and publication status. The initial agreement between coders was 98%, and discrepancies were resolved through discussion. Additional characteristics, such as study design (e.g., cross-sectional vs. longitudinal; correlational vs. experimental) and sample features (e.g., industry, managerial vs. nonmanagerial employees), were also coded. Unfortunately, not enough studies were available for these characteristics to include them as moderators in the analyses.

Procedure

The meta-analysis was conducted following the strategy specified by Arthur, Bennett, and Huffcutt (2001), which is based upon the random-effects model of the Hunter and Schmidt (2004) approach. For each target relationship, a sample-weighted mean correlation (\bar{r}) was first computed. As mentioned earlier, the adjusted-weighted procedure (Cheung & Chan, 2004, 2008) was used to calculate the sample weight for studies that provided more than one effect size. The percentage of variance accounted for by sampling error was calculated (Hunter & Schmidt, 2004) to indicate the sampling error associated with sample sizes. The chi-square test for the homogeneity of observed correlation coefficients across studies was then calculated (Rosenthal, 1991). This homogeneity test helps determine how the standard error for effect sizes should be estimated. Depending on the test results, different formulae were applied to calculate the standard error that would then be used to compute the 95% confidence interval around the sample-weighted mean correlation (Whitener, 1990). Information regarding the confidence interval was used to judge whether the relationships found between role stressors and OCB were significantly different from zero. A 95% confidence interval excluding zero indicates that the correlation is significant. We conducted outlier analysis to examine the effect size distributions and the tolerance analysis for the Fail-safe N for when the meta-analytic relationship was significant (Rosenthal, 1979).

The statistical correction for attenuating artifacts such as unreliability of measures was then performed to derive the corrected estimate of the correlation coefficient (ρ ; Hunter & Schmidt, 2004). We corrected for measurement unreliability in both the predictor and outcome variables using information from the empirical studies (e.g., coefficient alphas; Hall & Brannick, 2002). It is worth noting that because internal consistency is an inflated estimate of reliability, it may result in undercorrection for artifacts associated with measurement errors (Conway & Huffcutt, 1997; Viswesvaran, Ones, & Schmidt, 1996). For the role ambiguity-OCB relationship, the means and standard deviations for the correction artifacts for the overall analysis were, respectively, .91 and .001 for role ambiguity and .91 and .002 for OCB. The means and standard deviations for the artifacts for the overall analysis of the role conflict-OCB relationship were, respectively, .88 and .001 for role conflict and .89 and .002 for OCB. Finally, for the role overload-OCB overall analysis, the means and standard deviations for the artifacts were, respectively, .88 and .004 for role overload and .91 and .002 for OCB. The variance and standard deviation of the corrected correlation were then calculated to determine the 95% credibility interval. The Q statistic, which is based on a

chi-square distribution, was calculated to examine whether there was significant variation in the corrected estimate. A significant Q statistic is a preferred way to determine the presence of between-study moderators, as it is more powerful in detecting small differences among effect sizes (Koslowsky & Sagie, 1993; Sagie & Koslowsky, 1993). When the Q statistic was significant, additional subgroup analyses were performed to examine the effects of a priori moderation effects (Cortina, 2003). Finally, Z tests were conducted to compare the magnitude of relationships of role stressors with task performance versus OCB by comparing our estimates with those reported by Gilboa et al. (2008).

To test whether job satisfaction mediated relationships between role stressors and OCB, we first built a meta-analytic correlation matrix consisting of all the corrected correlation coefficients between role stressors, job satisfaction, and OCB using the current and previous meta-analytic results. Selected meta-analyses published since 2006 provided estimates for relationships not included in the current study. Path analysis based on this correlation matrix was performed to evaluate the fit of the proposed mediation model. We adopted Shadish (1996) and Viswesvaran and Ones's (1995) procedures for model testing. Because no published meta-analysis estimated the relationships of role overload with role ambiguity and conflict, we conducted additional meta-analysis following the same procedure noted above for these relationships.

Results

Bivariate Relationships Between Role Stressors and OCB

Table 1 summarizes the meta-analytic estimates of the relationships between role stressors and OCB. Overall, role ambiguity had a significant, sample-weighted mean correlation with OCB ($\bar{r} = -.13$). Sampling and measurement error accounted for 18% of the variance in correlations. After correcting for sampling and measurement error, the estimated correlation was $-.15$. This provided support for Hypothesis 1a. As shown in Table 1, after correcting for sampling and measurement error, which accounted for 21% of the variance across effect sizes, role conflict had a significant, negative relationship with OCB ($\rho = -.16$). This supported Hypothesis 1b. Finally, unlike role ambiguity and role conflict, the sample-weighted mean correlation between role overload and OCB was nonsignificant ($\bar{r} = -.05$), which provided no support for Hypothesis 1c. Tolerance analyses were applied to the two significant relationships, and it was found that the Fail-safe N was 1,663 for the role ambiguity-OCB relationship and 1,030 for the role conflict-OCB relationship. When comparing the corrected correlations, both role ambiguity ($Z = -5.08, p < .001$) and role conflict ($Z = -5.61, p < .001$) had stronger relationships with OCB than did role overload. As such, Hypotheses 2a and 2b were supported.

Outlier analyses revealed that one data point was identified as an outlier for the role ambiguity-OCB and role conflict-OCB relationships each, and three data points were identified as outliers for the role overload-OCB relationship. However, removing these outliers did little to the overall relationship strengths. In all the cases, the difference in effect sizes was less than .01. Because no strong theoretical rationale or methodological concerns exist to

Table 1
Meta-Analytic Results for Relationships Between Role Ambiguity, Role Conflict, and Role Overload and OCB

Variable and moderator	<i>k</i>	<i>N</i>	\bar{r}	ρ	<i>SD_p</i>	%SE	95% CI		95% CV		<i>Q</i> , <i>df</i>	<i>Z</i>
							<i>LL</i>	<i>UL</i>	<i>LL</i>	<i>UL</i>		
Role ambiguity												
Overall	24	5,756	-.13	-.15	.12	17.61	-.17	-.08	-.40	.09	133.04***, 23	-0.85
Type of OCB												
OCBI	11	3,461	-.11	-.14	.00	100.00	-.15	-.08	-.14	-.14	7.86, 10	
OCBO	12	3,503	-.09	-.12	.12	17.40	-.15	-.03	-.35	.12	67.93***, 11	-5.27***
Type of organization												
Public	5	1,017	-.26	-.31	.13	28.30	-.36	-.15	-.56	-.06	17.25***, 4	
Private	11	3,194	-.11	-.13	.09	26.54	-.16	-.06	-.31	.05	46.62***, 10	
Rating source												
Self	6	1,215	-.27	-.34	.11	33.59	-.36	-.18	-.56	-.12	16.84***, 5	-7.54***
Coworker	2	430	-.19	-.21	.00	100.00	-.27	-.10	-.21	-.21	0.02, 1	-2.03*
Supervisor	15	4,539	-.09	-.11	.08	21.83	-.13	-.05	-.28	.05	67.44***, 14	3.49***
Publication status												
Published	19	5,436	-.11	-.14	.12	17.00	-.16	-.06	-.36	.09	109.28***, 18	
Unpublished	5	1,122	-.21	-.25	.12	27.08	-.33	-.11	-.48	-.01	18.36***, 4	
Role conflict												
Overall	22	6,257	-.12	-.16	.11	20.96	-.17	-.08	-.39	.07	103.57***, 21	3.36***
Type of OCB												
OCBI	10	3,334	-.09	-.11	.07	43.04	-.13	-.04	-.24	.02	22.97**, 9	
OCBO	11	3,414	-.14	-.19	.09	24.60	-.19	-.09	-.37	-.00	42.82***, 10	-2.15*
Type of organization												
Public	4	1,258	-.17	-.22	.00	100.00	-.22	-.12	-.22	-.22	2.74, 3	
Private	9	2,919	-.12	-.15	.14	15.27	-.18	-.06	-.42	.11	82.59***, 8	-5.89***
Rating source												
Self	10	2,376	-.21	-.26	.12	27.89	-.28	-.14	-.49	-.03	34.74***, 9	0.88
Supervisor	11	3,604	-.09	-.11	.06	35.47	-.12	-.05	-.22	.00	30.27***, 10	
Publication status												
Published	19	5,295	-.11	-.15	.10	20.47	-.15	-.07	-.35	.06	90.29***, 18	
Unpublished	3	962	-.15	-.18	.12	21.02	-.28	-.02	-.42	.06	14.26***, 2	
Role overload												
Overall	19	6,022	-.05	-.06	.18	9.09	-.12	.02	-.42	.30	207.16***, 18	0.35
Type of OCB												
OCBI	12	4,794	-.08	-.10	.11	21.83	-.14	-.02	-.32	.12	49.61***, 10	
OCBO	9	1,614	-.09	-.11	.16	10.68	-.18	-.00	-.42	.20	81.63***, 8	0.29
Type of organization												
Public	6	2,971	-.11	-.13	.13	13.85	-.20	-.02	-.39	.12	42.17***, 5	
Private	5	1,172	-.11	-.14	.07	21.08	-.16	-.05	-.28	.00	21.50***, 4	
Rating source												
Self	10	4,531	-.08	-.10	.17	5.41	-.17	.01	-.44	.24	177.89***, 9	-2.05*
Supervisor	5	886	-.02	-.03	.00	100.00	-.08	.04	-.03	-.03	2.16, 4	
Objective	2	325	-.16	-.22	.00	100.00	-.27	-.06	-.22	-.22	0.34, 1	-2.97**
Publication status												
Published	14	4,317	-.05	-.06	.22	8.44	-.14	.05	-.49	.37	164.52***, 13	1.79†
Unpublished	5	1,705	-.09	-.11	.11	8.80	-.17	-.00	-.33	.11	55.54***, 4	

Note. OCB = organizational citizenship behavior; *k* = number of effect sizes; *N* = total number of subjects; \bar{r} = mean sample-weighted correlation; ρ = estimate of corrected correlation; *SD_p* = corrected standard deviation of corrected correlation; %SE = percentage of observed variance accounted for by sampling error; 95% CI = 95% confidence interval around the mean sample-weighted correlation; 95% CV = 95% credibility interval around the corrected correlation; *Q* = chi-square test for the homogeneity of true correlations across studies; *Z* = significant test of the difference between the corrected correlations; *LL* = lower limit; *UL* = upper limit; OCBO = OCB targeted at the individual; OCBI = OCB targeted at the organization.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

justify their exclusion, these studies were included in the subsequent analyses.

Comparing Relationships of Role Stressors With OCB Versus Task Performance

Table 2 summarizes the results of *Z* tests comparing the relative magnitudes of role stressor–performance relationships (role stressor–task performance estimates were taken from Gilboa et al., 2008). In support of Hypothesis 4a, role conflict had a stronger relationship with OCB. On the other hand, role overload had a similar relationship with task performance and OCB, which is counter to Hypothesis 4b.

Moderator Analyses

The significant *Q* statistic for the relationships between all three role stressors and OCB indicated the presence of between-study moderators for these relationships: for role ambiguity, $Q(23) = 133.04, p < .001$; for role conflict, $Q(21) = 103.57, p < .001$; and for role overload, $Q(18) = 207.16, p < .001$. Subgroup analyses revealed that role ambiguity had similar relationships with OCBO ($\rho = -.12$) and OCBI ($\rho = -.14; Z = -0.85$), which is counter to Hypothesis 5a. In support of Hypothesis 6a, role ambiguity had a stronger relationship with OCB in public ($\rho = -.31$) versus private organizations ($\rho = -.13; Z = -5.27, p < .001$). Consistent with Hypothesis 7a, role ambiguity had a stronger relationship with self-rated OCB ($\rho = -.34$) than supervisor-rated OCB ($\rho = -.11; Z = -7.54, p < .001$). Interestingly, we found that role ambiguity also had a stronger relationship with coworker-rated OCB ($\rho = -.21, p < .05$) than supervisor-rated OCB ($Z = -2.03, p < .05$). Finally, publication status also moderated the role ambiguity–OCB relationship. However, contrary to Hypothesis 8a, the relationship was stronger for unpublished studies ($\rho = -.25$) than published studies ($\rho = -.14; Z = 3.49, p < .001$).

Turning our attention to role conflict, it had a stronger relationship with OCBO ($\rho = -.19$) than OCBI ($\rho = -.11; Z = 3.36, p < .001$), which supports Hypothesis 5b. Role conflict also had a stronger association with OCB for employees in public organizations ($\rho = -.22$) versus private ones ($\rho = -.15; Z = -2.15, p < .05$).

.05). In support of Hypothesis 7b, role conflict had a stronger relationship with self-rated ($\rho = -.26$) than supervisor-rated OCB ($\rho = -.11; Z = -5.89, p < .001$). Hypothesis 8b was not supported, as publication status was not a significant moderator.

Finally, subgroup analyses revealed that only rating source and publication status were significant moderators for role overload–OCB relationships. Specifically, role overload had a stronger relationship with self-rated OCB ($\rho = -.10$) than supervisor-rated OCB ($\rho = -.03, Z = -2.05, p < .05$), which is consistent with Hypothesis 7c. Interestingly, role overload had a stronger relationship with objective OCB measures (e.g., returning surveys to help researchers; $\rho = -.22$) than self- or supervisor-rated OCB ($Z = -2.14, p < .05$, and $Z = -2.97, p < .01$, respectively). Contrary to Hypothesis 8c, unpublished studies ($\rho = -.11$) yielded stronger effect sizes than did published studies ($\rho = -.06; Z = 1.79, p < .10$).

Examining the Mediating Role of Job Satisfaction

Table 3 presents the meta-analytic correlation matrix, and Table 4 reports the path analysis findings. The full mediation model had good fit with the data, $\chi^2(3) = 79.89$, comparative fit index (CFI) = .98, Tucker–Lewis index (TLI) = .95, root-mean-square error of approximation (RMSEA) = .05, standardized root-mean residual (SRMR) = .02, and all the paths from role stressors to job satisfaction and from job satisfaction to OCB were significant and in the expected direction. We then tested for partial mediation for role ambiguity and role conflict, such that the direct paths from role ambiguity and conflict to OCB were freely estimated (Partial Mediation Model 1). Doing so resulted in a significant improvement in model fit, $\Delta\chi^2(2) = 35.11, p < .001$. However, because the direct path from role ambiguity to OCB was not significant, it was removed from the second partial mediation model, resulting in minimal change in fit, $\Delta\chi^2(1) = 2.86, ns$. Finally, we specified a correlation between role overload and OCB (Partial Mediation Model 3), which led to a significant improvement in model fit, $\Delta\chi^2(1) = 45.12, p < .001$. The final model is illustrated in Figure 1.

The path coefficients supported that role ambiguity ($\beta = -.32$), role conflict ($\beta = -.22$), and role overload ($\beta = -.07$) all had significant, negative relationships with job satisfaction, which in turn was positively related to OCB ($\beta = .23$). Role conflict also had a direct, negative relationship with OCB ($\beta = -.06$), and OCB was positively related to role overload ($\beta = .08$). These results suggest that job satisfaction mediates the linkages of role stressors to OCB and that engaging in OCB is related to increases in employees’ perceived work overload. As such, Hypothesis 3 received support.

Discussion

The current meta-analysis provided the first quantitative review of the relationships between role stressors and OCB. Consistent with hypotheses, role ambiguity and role conflict were found to have significant negative relationships with OCB. The general negative linkages between role ambiguity and conflict to OCB are presumably due to both role stressors representing a hindrance to employees’ ability to pursue their achievement goals at work (Gilboa et al., 2008; LePine et al., 2005). Indeed, the magnitude of

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Table 2
Comparing Relationships of Role Stressors With OCB Versus Task Performance

Role stressor and outcome	ρ	<i>N</i>	<i>Z</i>
Role ambiguity			-6.62***
Task performance	-.24	22,258	
OCB	-.15	6,458	
Role conflict			4.29***
Task performance	-.10	23,400	
OCB	-.17	6,257	
Role overload			1.19
Task performance	-.08	8,296	
OCB	-.06	6,022	

Note. OCB = organizational citizenship behavior; ρ = estimate of corrected correlation; *N* = total number of subjects; *Z* = *Z* test based on comparing current meta-analytic estimates with estimates from Gilboa et al. (2008).

*** $p < .001$.

Table 3
Meta-Analytic Correlations Between Role Stressors, Job Satisfaction, and OCB

Variable	1	2	3	4
1. Role ambiguity	—			
2. Role conflict	.52 ^a	—		
<i>k</i>	71	—		
<i>N</i>	16,827	—		
3. Role overload	.41 ^b	.62 ^b	—	
<i>k</i>	34	26	—	
<i>N</i>	11,695	7,990	—	
4. Job satisfaction	-.46 ^a	-.42 ^a	-.32 ^d	—
<i>k</i>	52	54	57	—
<i>N</i>	11,187	11,851	23,205	—
5. OCB	-.15 ^b	-.16 ^b	-.06 ^b	.25 ^c
<i>k</i>	24	22	19	19
<i>N</i>	6,458	6,257	6,022	6,508

Note. All correlations were corrected for attenuation due to unreliability. OCB = organizational citizenship behavior.

^a Meta-analytic correlations from Fried et al. (2008). ^b Meta-analytic correlations from original analyses in the current article. ^c Meta-analytic correlations from Hoffman et al. (2007). ^d Meta-analytic correlations from Örtqvist and Wincent (2006).

these relationships is comparable to those of the relationships found between other hindrance stressors and OCB (e.g., perceptions of politics; Chang et al., 2009; psychological contract breach; Zhao, Wayne, Glibkowski, & Bravo, 2007). Role overload, however, had a more complex relationship with OCB. Several study characteristics emerged as significant moderators. Below, we discuss the implications of our findings.

Distinguishing Between Role Ambiguity, Role Conflict, and Role Overload

The current meta-analytic results supported that each of the three role stressors—ambiguity, conflict, and overload—had unique patterns of relationships with employee performance and should be treated as distinctive stressors. Their uniqueness is illustrated in several ways. First, although role ambiguity and conflict were both negatively related to OCB, role ambiguity had a stronger association with task performance than OCB, whereas the opposite was true for role conflict. Perhaps role ambiguity has a greater relationship with task performance because what counts

as adequate task performance is less clear relative to OCB. The duties and responsibilities that compose task performance are not obvious because in-role behaviors tend to be organization and position specific (Campbell, 1990). The behaviors that count as OCB, however, are more likely to generalize across positions and organizations (Borman & Motowidlo, 1993), which may also make them less susceptible to role ambiguity. Thus, rather than blurring the line between in- versus extra-role performance (e.g., Organ, 1988), role ambiguity represents more of an obstacle for employees who try to identify their task expectations. In this case, employees may cope with role ambiguity by engaging in behaviors that they know are most likely to be evaluated favorably (viz., OCB), which, as such, further restricts the efforts they can devote to task performance.

On the other hand, role conflict places multiple and conflicting demands on employees that tax their coping resources (Bakker, Demerouti, & Verbeke, 2004; LePine et al., 2005). When resources are limited and employees can concentrate their efforts in only one direction, they opt to reduce OCB and expend whatever energy they have left on required job tasks. Lowering OCB represents a viable option to allocate resources for bargaining with various organizational constituents so that employees can resolve the discrepant demands. Future studies should continue to examine how role ambiguity differs from role conflict (e.g., Chang et al., 2009; King & King, 1990), particularly with regard to their linkages to important employee behaviors that have implications for both individual outcomes and organizational effectiveness.

Second, role overload was unique in that its overall relationship with OCB was not significant and was much weaker than relationships of role ambiguity and conflict with OCB. Moreover, role overload had similar relationships with OCB and task performance. The nonsignificant association between role overload and OCB is not completely surprising, as role overload may be appraised as a stressor comprising both hindrance and challenge aspects (Boswell et al., 2004; Gilboa et al., 2008; LePine et al., 2005). On the one hand, overloaded employees may experience negative affect and reduce their performance levels. On the other hand, they may also respond to role overload by increasing their motivation and efforts in order to meet all the demands, regardless of whether the demands are considered in- or extra-role. Future research ought to explore the dual nature of role overload by, for example, identifying characteristics that predispose employees to view overload as a challenge versus a hindrance, such as approach

Table 4
Nested Model Testing for Mediation Model

Model	χ^2	<i>df</i>	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>	<i>SRMR</i>	$\Delta\chi^2$, <i>df</i>
Full mediation model	79.89	3	.98	.95	.05	.02	
Partial Mediation Model 1 ^a	44.78	1	.99	.91	.07	.01	35.11***, 2
Partial Mediation Model 2 ^b	47.64	2	.99	.95	.05	.01	32.25***, 1
Partial Mediation Model 3 ^c	2.52	1	1.00	.99	.01	.00	77.37***, 2

Note. *N* = 8,917. *CFI* = comparative fit index; *TLI* = Tucker–Lewis index; *RMSEA* = root-mean-square error of approximation; *SRMR* = standardized root-mean residual.

^a Estimate the direct paths from role ambiguity and role conflict to organizational citizenship behavior (OCB) while the other path is held constant. ^b Estimate the direct path from role conflict to OCB while the other paths are held constant. ^c Estimate the direct effect from role conflict to OCB and between role overload and OCB while the other path is held constant.

*** *p* < .001.

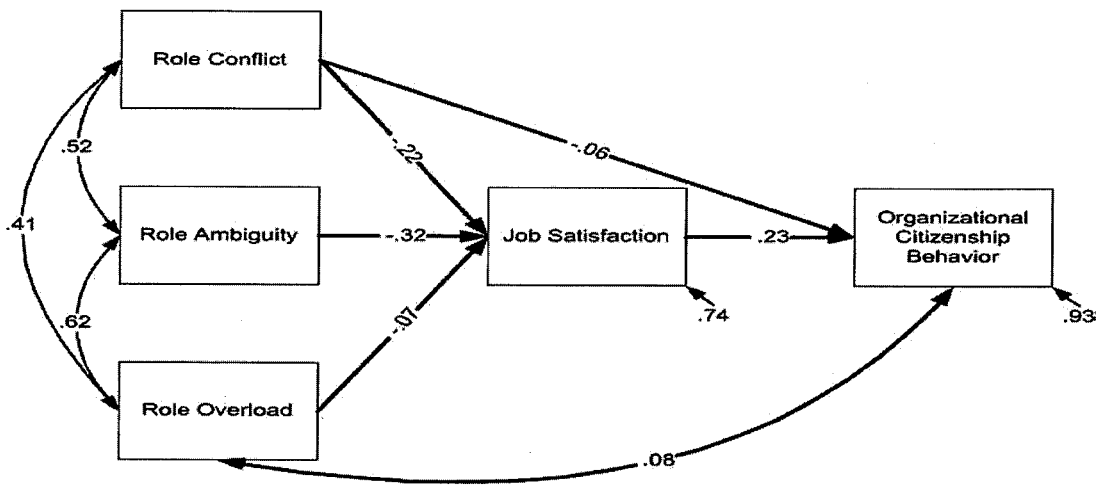


Figure 1. Final model for relationships between role stressors, job satisfaction, and organizational citizenship behavior. All path coefficients are significant at $p < .001$.

and avoidance motivation (Carver & White, 1994; Johnson & Chang, 2008).

Finally, the distinctiveness between the three role stressors is also evident when examining job satisfaction as a mediator for the role stressor-OCB relationship. We found evidence supporting that the relationship between role ambiguity and OCB was fully mediated by job satisfaction, suggesting that a lack of knowledge of what is expected of employees is associated with lower morale, which in turn is related to decrements in OCB. On the other hand, the association between role conflict and OCB was only partially mediated by job satisfaction. This suggests that alternative mechanisms, such as a lack of mental resources (e.g., Kanfer & Ackerman, 1989), may exist and explain the linkage between role conflict and OCB. Finally, we found that although job satisfaction mediated the negative relationship between role overload and OCB, a positive relationship also existed between the two constructs. As mentioned earlier, role overload can be viewed as both a hindrance and a challenge stressor that may have opposite linkages with OCB via low morale or high motivation. Alternatively, OCB engagement may place increased demands on employees. This is consistent with the recent findings suggesting that that performing OCB can contribute to feelings of being overextended (Bolino & Turnley, 2005; Bolino et al., 2010). Future research should consider more complex, alternative models that capture the relationship patterns between role stressors and OCB and test the direction of the causal relationships with longitudinal, cross-lagged data.

Moderators of Role Stressor-OCB Relationships

Study characteristics were tested as moderators of the role stressor-OCB relationships, and OCB target, type of organization, rating source, and publication status all influenced these relationships. Consistent with expectations, relationships tended to be stronger when OCB was self-reported. Results were less consistent, however, for the other moderators. In line with expectations, OCBO suffered more than OCBI when role conflict was high, possibly because receiving incompatible messages from multiple

sources is attributed to the company's general failure to provide a unified, clear set of guidelines for how to meet performance expectations, rather than to any specific individuals. Future research examining this proposition—that the source of the role conflict is more global—is warranted. Also, role ambiguity and conflict both had a stronger relationship with OCB in public versus private organizations. Future research should take into consideration where the samples are collected and focus on identifying the key mechanisms that explain the different associations. For example, previous studies have hinted that role ambiguity and conflict were more detrimental to the morale of public versus private sector employees (e.g., Cho & Lee, 2001; Guerra, Martinez, Munduate, & Medina, 2005), which may account for their stronger association with OCB observed here. Finally, results for publication status were inconsistent, because unpublished studies yielded comparable or larger effect sizes for role stressor-OCB relationships than did published studies. These findings suggest that the file-drawer problem had minimal impact on the results of this meta-analysis.

Limitations and Conclusion

There are four major limitations of the current study. First, the number of empirical studies examining relationships between role stressors and OCB was relatively small compared with ones testing relationships between role stressors and task performance (Gilboa et al., 2008). This is especially evident when it comes to some of the moderator analyses (e.g., unpublished studies for the role conflict-OCB relationship). Although we note that caution should be taken when interpreting the meta-analytic results based on only a few studies, we contend that this highlights the importance of expanding the criterion domain of occupational stressors (Jex, 1998) to include behaviors that are omitted in traditional performance appraisals, such as OCB. Second, the majority of the studies employed a cross-sectional design, which limits the causal inferences that can be drawn from the current results. This limitation points to the urgent need for conducting longitudinal primary studies to delineate the causal order for relationships between role stressors and OCB. It also hints at the value of utilizing alternative

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designs. For example, we found two studies that used an experimental or quasi-experimental design with objective OCB measures (e.g., returning a survey voluntarily to help the researchers), and they both showed that role overload had large, negative effects on OCB (e.g., Barr, Spitzmuller, & Stuebing, 2008; Hui, Organ, & Crooker, 1994). Future research that explores relationships between role stressors and OCB using alternative methodologies is needed. Third, although we found support that job satisfaction mediated relationships between role stressors and OCB, additional pathways (e.g., low cognitive resources; Kanfer & Ackerman, 1989) may exist to explain these relationships. Finally, although some between-study characteristics (e.g., rating source) were supported as moderators for effect sizes, a large amount of variance in correlations remained unexplained. This suggests that additional moderators are responsible for between-study differences in effect size. Thus, future work should explore boundary conditions for the associations between role stressors and OCB.

We conclude the article by discussing some practical implications of our meta-analytic findings. This study underscores the negative associations that role stressors have not only with task performance but also with OCB as well. Thus, employers wishing to encourage more OCB may want to consider steps to reduce role stressors, especially role ambiguity and conflict. Ways of doing so may involve ensuring that employees are provided with clearly defined descriptions of job duties and expectations. Creating a feedback-rich environment at work (see Steelman, Levy, & Snell, 2004) may be particularly effective because inadequate access to needed information is a root cause of both role ambiguity and conflict (King & King, 1990; Schaubroeck, Ganster, Sime, & Ditman, 1993). Alternatively, employers could target the process variable (viz., job satisfaction) in order to encourage OCB. For example, providing high organizational support, adopting fair decision-making procedures, and rewarding employee performance properly are practices that enhance employee satisfaction and, in turn, OCB. On the other hand, companies should be aware of the possible reciprocal relationship between OCB and role overload. Thus, although more citizenship behaviors are typically considered beneficial from the organizational perspective (e.g., N. P. Podsakoff et al., 2009), pressure to engage in OCB may have unintended negative consequences for individual employees (e.g., work-family conflict, intention to quit; Bolino et al., 2010). As such, a delicate balance exists for organizations to adopt practices that can encourage OCB while taking into account the overall well-being of the individual employees.

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(Appendix follows)

Appendix

Summary of Studies Included in the Current Meta-Analysis and Coding for Moderators

Study	Role ambiguity		Role conflict		Role overload		Moderator coding			
	<i>r</i>	Type	<i>r</i>	Type	<i>r</i>	Type	OCB type	Organization type	Rater	Publication status
Anderson & Williams (1996)					-.03	Extracted	OCBI	Public	Supervisor	Published
Barr et al. (2008)	.13	Calculated	.05	Calculated	-.14	Calculated			Objective	Published
Bettencourt & Brown (2003) Sample 1	-.28	Extracted	-.25	Extracted			OCBO	Private	Supervisor	Published
Bettencourt & Brown (2003) Sample 2	-.25	Extracted	-.34	Extracted			OCBO	Private	Supervisor	Published
Bolino & Turnley (2005)					.51	Extracted	OCBO		Spouse	Published
Bolino et al. (2010)					.49	Extracted			Self	Published
Chiaburu (2009)	-.19	Calculated					OCBI, OCBO		Coworker	Unpublished
Chu et al. (2006)	-.35	Extracted	-.12	Extracted	.21	Extracted		Public	Self	Published
Chung & Schneider (2002)			-.13	Extracted				Private	Self	Published
Dysvik (2009) Sample 1					.07	Extracted	OCBI		Self	Unpublished
Dysvik (2009) Sample 2					.07	Extracted	OCBI		Self	Unpublished
Edwards et al. (2009)	-.45	Extracted	-.30	Extracted					Supervisor	Unpublished
Ehrhart et al. (2008)	-.07	Extracted	.05	Extracted	.03	Extracted	OCBI	Private	Supervisor	Unpublished
Fisher (2002)			-.05	Extracted			OCBI		Self	Published
Foote et al. (2005)	-.33	Calculated	-.36	Calculated			OCBO	Private	Self	Published
Fortunato (2004)	-.11	Extracted	-.11	Extracted				Public	Self	Published
Grandey & Groth (2009)			-.21	Calculated			OCBI, OCBO	Public	Self	Unpublished
K. J. Harris et al. (2007)					-.10	Calculated	OCBI, OCBO	Public	Supervisor	Published
Hui et al. (1994)					-.21	Calculated	OCBI		Objective	Published
Inoue et al. (2010)					.06	Extracted	OCBO	Private	Self	Published
Jain et al. (2008)					-.14	Calculated	OCBI, OCBO	Private	Self	Unpublished
Janssen (2001)					.06	Extracted	OCBO	Private	Supervisor	Published
Jex et al. (2003)	-.16	Extracted	-.15	Extracted			OCBI	Public	Supervisor	Published
Jex & Thomas (2003)					-.18	Extracted	OCBI	Public	Self	Published
Klein & Verbeke (1999)	-.21	Calculated	-.11	Calculated	-.03	Calculated	OCBI, OCBO	Private	Self	Published
Kraimer & Wayne (2004)	-.21	Extracted	.00	Extracted				Private	Supervisor	Published
Ladebo (2006)	-.41	Extracted						Public	Self	Published
MacKenzie et al. (1998)	-.09	Extracted	-.07	Extracted				Private	Supervisor	Published
MacKenzie et al. (2001)	-.05	Calculated					OCBI, OCBO	Private	Supervisor	Published
Miller et al. (1999)	-.26	Extracted			.11	Extracted		Public	Self	Published
Naus et al. (2007)			-.32	Extracted			OCBO	Private	Self	Published
Organ & Hui (1995)					.01	Calculated	OCBI, OCBO		Friend	Published
P. M. Podsakoff & MacKenzie (1995)	-.07	Calculated	-.08	Calculated			OCBI, OCBO		Supervisor	Published
P. M. Podsakoff, MacKenzie, & Fetter (1993)	-.07	Calculated	-.08	Calculated			OCBI, OCBO	Private	Supervisor	Published
P. M. Podsakoff, Niehoff, et al. (1993)	-.01	Calculated	-.16	Calculated			OCBI, OCBO	Private	Supervisor	Published
Rodopman (2007)	-.18	Calculated					OCBI, OCBO		Coworker	Unpublished
Rosen et al. (2009)					-.02	Calculated	OCBI, OCBO	Public	Supervisor	Published
Schaubroeck & Fink (1998)	-.12	Calculated	.01	Calculated			OCBI, OCBO	Private	Supervisor	Published
Tate (2009)					.18	Calculated	OCBI, OCBO		Self	Unpublished
Tompson & Werner (1997)			-.21	Calculated			OCBI, OCBO		Self	Published
Turner & Valentine (2001)			-.44	Extracted				Private	Self	Published
Whitaker (2009)	-.36	Extracted							Supervisor	Unpublished
Whitaker et al. (2007)	-.17	Extracted							Supervisor	Published
Yun et al. (2007)	-.38	Calculated					OCBI, OCBO		Supervisor	Published

Note. Extracted effect sizes indicate that effect sizes were taken directly from the study, whereas authors calculated effect sizes using the adjusted-weighted approach. OCBI and OCBO = organizational citizenship behavior targeted at the individual (OCBI) or organization (OCBO).

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