

The degree of spuriousness within the job satisfaction-organizational citizenship behavior relationship

Michael King¹ | Nathan A. Bowling² | Kevin J. Eschleman¹ 

¹Psychology Department, San Francisco State University, San Francisco, CA, USA

²Psychology Department, Wright State University, Dayton, OH, USA

Correspondence

Kevin J. Eschleman, Psychology Department, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132, USA.
Email: kesch@sfsu.edu

Abstract

Overwhelming evidence suggests that job satisfaction and organizational citizenship behavior (OCB) are positively related. Although researchers have generally assumed that satisfaction has a genuine relationship with OCB, we argue that the satisfaction-OCB relationship may be largely spurious. We tested the degree of spuriousness within the satisfaction-OCB relationship in two studies—a meta-analysis (Study 1) and a two-wave primary study ($N = 420$; Study 2). In both studies, we examined the strength of the satisfaction-OCB relationship after controlling for environmental variables (i.e., job characteristics, job stressors, and leader behaviors) and personality variables (i.e., five factor model characteristics and core self-evaluations). Across the two studies, we observed several instances in which the satisfaction-OCB relationship was significantly weaker after we controlled for a third variable, but a meaningful relationship was still present. And in some instances, the satisfaction-OCB relationship was rendered statistically nonsignificant or practically nonsignificant once controls were included. These findings suggest that satisfaction and OCB is at least partially spurious.

1 | INTRODUCTION

Overwhelming evidence shows that job satisfaction and organizational citizenship behavior (OCB) are positively related (LePine et al., 2002; Organ & Ryan, 1995; Podsakoff et al., 2006). But why does this relationship exist? Researchers have generally assumed that a satisfaction-OCB correlation reflects a genuine relationship between job satisfaction and OCB (e.g., Barnes et al., 2013; Bateman & Organ, 1983; Fassina et al., 2008; Organ & Ryan, 1995). This, however, is just one possibility. Because neither satisfaction nor OCB lend themselves to experimental manipulation, the literature is dominated by nonexperimental designs. It is thus necessary to use statistical controls to examine alternative explanations for the satisfaction-OCB relationship. One plausible alternative explanation—and the one we examined in the current paper—is that the satisfaction-OCB relationship is largely spurious.

We conducted two studies to test the spurious hypothesis. Study 1 used meta-analytic data and Study 2 ($N = 420$) used a two-wave primary data set. Before discussing the specifics of the current

research, however, we first review evidence of a statistical relationship between satisfaction and OCB. We then summarize the arguments that researchers have used to assert that satisfaction causes OCB and we present our own arguments for why the satisfaction-performance relationship may instead be spurious.

1.1 | Evidence for a positive satisfaction-OCB relationship

Being an effective employee involves more than the performance of formal job duties; it also involves the performance of OCB (Borman & Motowidlo, 1997; Podsakoff et al., 2009). OCB includes discretionary behaviors that benefit either other people at work (e.g., coworkers) or the organization as a whole (e.g., the organization's image). The OCB construct comprises a variety of behaviors, including voluntarily assisting coworkers with their job tasks, providing suggestions that help the organization perform more effectively, and attending functions that further the organization's goals (see Lee & Allen, 2002;

Smith et al., 1983). Early research often measured OCB as a combination of altruism, courtesy, civic virtue, conscientiousness, and sportsmanship factors (Podsakoff et al., 1990; Smith et al., 1983), but these factors have been shown to load onto a single factor of overall OCB (Hoffman et al., 2007). More recently, researchers have often distinguished between OCB directed at benefiting individuals (OCB-I) and OCB directed at benefiting the organization (OCB-O; e.g., Carpenter et al., 2014; Dalal, 2005; Lee & Allen, 2002).

In order to increase the extent to which workers engage in OCB, researchers have given considerable attention to identifying the potential causes of OCB (see Barnes et al., 2013; Bateman & Organ, 1983; Fassina et al., 2008; Organ & Ryan, 1995). Job satisfaction is among the most widely studied of those potential causes. In fact, job satisfaction has been examined so frequently that its relationship with OCB is summarized in at least three meta-analyses (i.e., Dalal, 2005; LePine et al., 2002; Organ & Ryan, 1995), each of which has found a significant positive satisfaction–OCB relationship. LePine et al., for example, reported a mean corrected correlation (r) of .24 ($k = 72$; $N = 7,100$) between satisfaction and OCB. As we discuss in the next section, there are several plausible explanations for why this relationship exists.

1.2 | Why are job satisfaction and OCB positively related?

Why are job satisfaction and OCB positively related? We consider two possibilities. First, we discuss the traditional interpretation—the possibility that satisfaction causes OCB. We then discuss the possibility that the satisfaction–OCB relationship is spurious.

1.2.1 | The traditional interpretation: A genuine relationship

A genuine relationship between job satisfaction and OCB can manifest in three ways: (a) satisfaction could cause OCB, (b) OCB could cause satisfaction, or (c) satisfaction and OCB could have reciprocal causal relationships with each other. Researchers have generally assumed that job satisfaction causes OCB (Barnes et al., 2013; Bateman & Organ, 1983; Fassina et al., 2008; Organ & Ryan, 1995). To support this position, they have invoked both social exchange and emotion-centered explanations. The *social exchange explanation* suggests that workers engage in OCB as part of a quid pro quo exchange with their employer (for a general review of social exchange theory, see Cropanzano & Mitchell, 2005; for applications of social exchange theory to the satisfaction–OCB relationship, see Dalal, 2005; Organ & Ryan, 1995). Satisfied workers, in other words, may engage in OCB as a means of “paying back” their employer for providing satisfying work. As such, engaging in OCB could allow workers to resolve the discomfort they experience from feeling indebted to their employer (Bolino et al., 2010; Organ & Konovsky, 1989).

The *emotion-centered explanation*, on the contrary, suggests that satisfied workers engage in OCB as a means of maintaining and enhancing their current satisfaction levels (Miles et al., 2002; Spector & Fox, 2002). This explanation draws directly from models that more generally describe the emotion-maintenance function of altruistic behavior (see Isen, 1984). The emotion-centered explanation, therefore, differs from the social exchange explanation in the function it assigns to OCB: The former suggests that performing OCB increases positive emotions; the latter suggests that performing OCB decreases the discomfort of feeling indebted to one's employer. Both explanations, however, predict that satisfaction has a genuine relationship with OCB.

1.2.2 | An alternative interpretation: The spurious hypothesis

Instead of representing a causal effect, the positive relationship between satisfaction and OCB may occur because both variables share one or more causes. The satisfaction–OCB relationship, in other words, may be spurious (for previous research on the spurious hypothesis, see Farh et al., 1990). Indeed, various work environment variables (i.e., job characteristics, job stressors, and leader behaviors) and personality traits (i.e., five factor model characteristics and core self-evaluations) may be responsible for producing a spurious satisfaction–OCB relationship. As we review in the next subsections, each of these proposed third variables has been theorized as a cause of both satisfaction and OCB.

1.3 | Third variables that may produce a spurious job satisfaction–OCB relationship

1.3.1 | Job characteristics as third variables

According to the job characteristics model (JCM; Hackman & Oldham, 1975, 1980), jobs vary from each other by the amount of (a) autonomy, (b) feedback, (c) skill/task variety, (d) task identity, and (e) task significance they provide. The JCM predicts that each of these job characteristic—as well as an overall job scope index formed by summing the five job characteristics—has causal effects on both job satisfaction and job performance. More specifically, Hackman and Oldham theorized that job characteristics influence satisfaction via the fulfillment of psychological needs and that they influence job performance via intrinsic motivation (see Salancik, & Pfeffer, 1977). By suggesting that job characteristics are a cause of both satisfaction and OCB, the JCM implies that the satisfaction–OCB relationship is spurious.¹ And indeed, there is

¹Because OCB was not a popular research topic when the JCM was first introduced, Hackman and Oldham (1975, 1980) did not explicitly address the effects of job characteristics on OCB. The discretionary character of OCB, however, makes it a plausible outcome of job characteristics. This is because the intrinsic motivation produced by job characteristics is likely to influence a worker's decision to engage in OCB.

some previous support for this prediction: Farh et al. (1990) found that the satisfaction–OCB relationship was weakened after the effects of job characteristics were controlled. As we explain later in the Introduction, the current research will extend Farh et al.'s findings.

Hypothesis 1 *Job characteristics contribute to spurious relationships between (a) job satisfaction and overall OCB, (b) job satisfaction and OCB-I, and (c) job satisfaction and OCB-O.*

1.3.2 | Job stressors as third variables

Job stressors are conditions or events within the work environment that place adaptive demands on workers and thus have the potential to undermine their psychological and physical health (Jex et al., 1992). Several job stressors have attracted sustained research attention, including role ambiguity, role conflict, and job insecurity (see Bowling et al., 2017; Jackson & Schuler, 1985; Sverke et al., 2002). Researchers have generally assumed that job stressors have causal effects on both satisfaction and job performance (e.g., Gilboa et al., 2008; Jex, 1998; Spector, 1997). First, a negative causal effect from job stressors to satisfaction is consistent with conservation of resources (COR) theory (Hobfoll, 1989; Hobfoll & Shirom, 2000). COR theory asserts that people will experience psychological health when they are able to obtain, maintain, and increase their personal resources (e.g., time, social relationships, and money). The presence of job stressors is likely to threaten a worker's resources, thus producing various forms of distress—including job dissatisfaction.

A negative causal effect from job stressors to OCB is consistent with the idea that work stressors often impose a hindrance to effective job performance (see Gilboa et al., 2008; LePine et al., 2004, 2005). This may happen, for example, because exposure to job stressors forces workers to mount a coping response, thus diverting their attention away from performing their jobs effectively. The possibility that job stressors are a cause of both satisfaction and OCB suggests that the satisfaction–OCB relationship may be spurious.

Hypothesis 2 *Job stressors contribute to spurious relationships between (a) job satisfaction and overall OCB, (b) job satisfaction and OCB-I, and (c) job satisfaction and OCB-O.*

1.3.3 | Leader behaviors as third variables

Leaders engage in a variety of behaviors directed at their subordinates (Bauer & Erdogan, 2015; Northouse, 2016; Yukl, 1989). In the current research, we examined three such behaviors that plausibly have causal effects on both subordinate satisfaction and subordinate performance: (a) leader–member exchange (LMX) behavior (Dansereau et al., 1975), (b) transformational leadership

(Burns, 1978), and (c) contingent reward leadership (Bass, 1985). Because these behaviors reflect favorable treatment directed toward one's subordinates, they are each likely to influence the extent to which subordinates are satisfied with their supervisors (see Judge et al., 2004). And because it is an important facet of job satisfaction, satisfaction with supervision is likely to contribute to general job satisfaction (see Smith et al., 1969; Spector, 1985).

The leader behaviors we examined in the current research also likely have causal effects on OCB. As we discussed earlier, workers may engage in OCB as part of a quid pro quo exchange with their employer (e.g., Bolino et al., 2010; Organ & Konovsky, 1989). Any leader behavior that is favorable to subordinates, therefore, is likely to initiate such an exchange. Subordinates, in other words, may perform OCB as a means of “paying back” their supervisors for engaging in favorable leader behaviors (e.g., Cropanzano & Mitchell, 2005). In short, the possibility that leader behaviors cause both satisfaction and OCB suggests that the satisfaction–OCB relationship may be spurious. Consistent with this prediction, Farh et al. (1990) found that the satisfaction–OCB relationship was weakened after the effects of leader behaviors were controlled. As we explain later in the Introduction, the current research will extend those findings.

Hypothesis 3 *Leader behaviors contribute to spurious relationships between (a) job satisfaction and overall OCB, (b) job satisfaction and OCB-I, and (c) job satisfaction and OCB-O.*

1.3.4 | Personality traits as third variables

In the previous sections, we described how the effects of various environmental factors could produce a spurious satisfaction–OCB relationship. We now consider the possibility that personality traits—more specifically, the five factor model (FFM) personality traits (Costa & McCrae, 1988) and core self-evaluations (Judge et al., 1998)—could produce similar effects. Several theoretical mechanisms suggest that both the FFM traits and core self-evaluations have causal effects on job satisfaction (for a review of these mechanisms, see Judge et al., 1998; Spector et al., 2000). Personality traits, for instance, could influence satisfaction by shaping how workers perceive their work environments. This mechanism helps explain why people employed in identical work environments often report different satisfaction levels. In addition to influencing satisfaction via a perceptual mechanism, personality traits may also influence satisfaction via effects on the objective nature of the work environment. Personality traits, for instance, can affect the types of work environments people are selected into (e.g., being highly conscientious may allow a worker to be promoted into an objectively better job) and it can affect the types of work environments people create for themselves (e.g., being agreeable may allow a worker to develop positive relationships with coworkers).

The FFM personality traits and core self-evaluations may also have causal effects on OCB. To understand the conceptual basis

of such effects, it is helpful to consider the character of OCB: Engaging in OCB typically reflects some mixture of (a) personal initiative (e.g., giving recommendations that help the organization), (b) concern for the well-being of other people (e.g., helping a coworker with a personal problem), and (c) the willingness to initiate social interactions (e.g., helping a new coworker feel welcome; Hoffman et al., 2007). The FFM traits and core self-evaluations reflect many of these same qualities (see Costa & McCrae, 1988; Digman, 1990; Judge et al., 1998). Conscientiousness and core self-evaluations, for example, reflect personal initiative; agreeableness reflects concern for others; and extraversion reflects the willingness to initiate social interactions. And because personality traits represent general tendencies that predate one's entry into the workforce, they are more likely causes rather than consequences of OCB. In sum, the possibility that the same personality traits cause both satisfaction and OCB suggests that the satisfaction-OCB relationship may be spurious.

Hypothesis 4 *FFM traits contribute to spurious relationships between (a) job satisfaction and overall OCB, (b) job satisfaction and OCB-I, and (c) job satisfaction and OCB-O.*

Hypothesis 5 *Core self-evaluations contribute to spurious relationships between (a) job satisfaction and overall OCB, (b) job satisfaction and OCB-I, and (c) job satisfaction and OCB-O.*

1.4 | The current studies

We conducted two studies to test the degree of spuriousness within the job satisfaction-OCB relationship. Study 1 used meta-analytic data; Study 2 ($N = 420$) used a two-wave primary data set. Together, the current studies extended Farh et al.'s (1990) research on the spurious hypothesis in several ways. First, the meta-analytic methods we used in Study 1 provide more stable estimates of effects than are possible in a small primary sample (Farh et al. had an N of 195; for a discussion of the advantages of meta-analysis, see Hunter & Schmidt, 2004). Second, Studies 1 and 2 examined a larger set of third variables than did Farh et al. (in addition to examining job characteristics and leader behaviors as Farh et al. did, we also examined job stressors and personality traits). Finally, the current research—particularly Study 2—used an OCB measure that was free of counterproductive work behavior (CWB) content (for discussions of the problems that occur when OCB measures are contaminated with CWB content, see Dalal, 2005; Fox et al., 2012). In contrast, the OCB scale that Farh et al. used included several items that appear to assess CWB, including “takes underserved work breaks,” “coasts toward the end of the day,” and “great deal of time spent with personal phone conversations.” We were thus able to obtain a cleaner test of the spuriousness of the satisfaction-OCB relationship than Farh et al. did. The data that support the findings of this study are available from the corresponding author upon reasonable request.

2 | METHOD—STUDY 1

Before we conducted the analyses that tested our study hypotheses, it was necessary to create meta-analytically derived correlation matrices that included job satisfaction, overall OCB, and the relevant third variables (see Tables 1–5). When available, we used previously published meta-analytic estimates to create these correlation matrices. We conducted original meta-analyses to estimate correlations that had not been the focus of previous meta-analyses. We describe these previously published and original meta-analyses in the following subsections.

2.1 | Previously published meta-analyses

We used data from 17 previously published meta-analyses (see Tables 1–5 for references to these meta-analyses). For each relevant relationship, we recorded the mean sample-weighted corrected correlation (ρ), the number of samples (k), and the total sample size (N). In instances where a given relationship was reported in multiple meta-analyses, we used estimates from the meta-analyses that either had the largest k or used a coding strategy that most closely resembled the strategy we used to conduct our original meta-analyses. To ensure uniformity across all analyses, we retained only those meta-analytic estimates that corrected for unreliability in overall OCB using internal-consistency reliability.

2.2 | Original meta-analyses

We conducted original meta-analyses for eight of the correlations needed to complete the correlation matrices: (a) autonomy-overall OCB, (b) task identity-overall OCB, (c) task significance-overall OCB, (d) skill variety-overall OCB, (e) feedback-overall OCB, (f) job insecurity-overall OCB, (g) job insecurity-role ambiguity, and (h) job insecurity-role conflict. We did not conduct original meta-analyses for many of the interrelationships between third variables (e.g., the skill variety-contingent reward relationship) due to the unavailability of relevant primary studies. As a result, we were unable to build a meta-analytic correlation matrix that included every third variable. This prevented us from conducting analyses in Study 1 that simultaneously controlled for every third variable.

2.2.1 | Literature search

We used PsycINFO to search for relevant primary studies published from 1894 to 2016. Our search used the keywords “citizenship behavior” or “OCB” in combination with one of the following third variable terms: “job characteristics,” “autonomy,” “control,” “task identity,” “task significance,” “skill variety,” “feedback,” “job security,” or “job insecurity.” This search strategy yielded 910 articles. We excluded studies that omitted the relevant zero-order correlations

TABLE 1 Meta-analytically derived correlations for job characteristics, job satisfaction, and overall OCB (Study 1)

	Autonomy	Task identity	Task significance	Skill variety	Feedback	Job satisfaction
Task identity	$\rho = .55^b$ $k = 111$ $N = 43,427$					
Task significance	$\rho = .50^b$ $k = 100$ $N = 41,837$	$\rho = .39^b$ $k = 83$ $N = 37,435$				
Skill variety	$\rho = .64^b$ $k = 100$ $N = 58,350$	$\rho = .37^b$ $k = 80$ $N = 36,334$	$\rho = .62^b$ $k = 78$ $N = 37,758$			
Feedback	$\rho = .53^b$ $k = 110$ $N = 44,390$	$\rho = .49^b$ $k = 92$ $N = 41,108$	$\rho = .56^b$ $k = 80$ $N = 37,082$	$\rho = .50^b$ $k = 79$ $N = 36,256$		
Job satisfaction	$\rho = .48^b$ $k = 175$ $N = 75,364$	$\rho = .31^b$ $k = 121$ $N = 49,973$	$\rho = .41^b$ $k = 108$ $N = 84,141$	$\rho = .42^b$ $k = 111$ $N = 48,795$	$\rho = .43^b$ $k = 126$ $N = 60,272$	
Overall OCB	$\rho = .33^a$ $k = 17$ $N = 3,944$	$\rho = .22^a$ $k = 4$ $N = 999$	$\rho = .35^a$ $k = 7$ $N = 1,900$	$\rho = .28^a$ $k = 4$ $N = 999$	$\rho = .34^a$ $k = 11$ $N = 2,720$	$\rho = .24^c$ $k = 72$ $N = 7,100$

Note: ρ = meta-analytic correlation corrected for unreliability. k = number of independent samples in meta-analysis. N = sample size in meta-analysis. Overall OCB = organizational citizenship behavior measured with combination of facets.

^aNew meta-analyses conducted for the current study.

^bHumphrey et al. (2007).

^cLePine et al. (2002).

(e.g., Andrews et al., 2009; Riketta & Landerer, 2002; Suazo, 2011) and studies that used previously published data (i.e., Wong, 2012). Using these criteria, we retained 52 correlations from 33 samples for use in the original overall OCB meta-analyses.

For the job insecurity-role stressor relationships, we reviewed the references cited within Keim et al.'s (2014) meta-analysis on job insecurity. In addition, we used PsycINFO to search for relationships between role stressors and job insecurity published through 2016. Keyword searches for "job insecurity and role conflict" and "job insecurity and role ambiguity" yielded 35 articles. We identified a total of 39 samples as relevant to the current study using both PsycINFO and Keim et al.'s (2014) references. Of the 39 samples, 30 were from published journal articles, whereas nine were from dissertations.

2.2.2 | Meta-analytic method

The original meta-analyses were conducted with the Hunter and Schmidt (2004) method and Schmidt and Le's (2014) Meta-Analysis Software Program Version 2.0. We computed sample-weighted mean correlations corrected for unreliability in both the predictor and criterion variables using each variable's internal-consistency reliability estimate. Artifact distributions were used when the primary studies omitted reliability data (Hunter & Schmidt, 2004). Linear

composite scores were computed (see Hunter & Schmidt, 2004) for studies that used multiple measures of the same variable (e.g., multiple measures of autonomy; Jones, 2009; McAllister et al., 2007) and to compute overall OCB scores for studies that assessed multiple OCB dimensions (e.g., Bell & Menguc, 2002; Farh et al., 1990; Todd, 2003). A meta-analytic confirmatory factor analysis of OCB dimensions (i.e., altruism, courtesy, civic virtue, conscientiousness, and sportsmanship) supports a single-factor model for overall OCB (Hoffman et al., 2007).

The correlation matrices from the previously published and the original meta-analyses provided the data we used to conduct regression analyses testing our study hypotheses. We used the harmonic mean of the N s of the individual relationships to compute the sample size for each analysis (Viswesvaran & Ones, 1995).

3 | RESULTS—STUDY 1

For the sake of completeness, we used three different approaches to test our hypotheses—each of which invokes a different standard for inferring the presence of spuriousness. Specifically, we examined whether controlling for various sets of third variables causes the job satisfaction-OCB relationship to become either (a) statistically non-significant, (b) practically nonsignificant, or (c) significantly weaker

	Role ambiguity	Role conflict	Job insecurity	Job satisfaction
Role conflict	$\rho = .53^b$ $k = 71$ $N = 16,827$			
Job insecurity	$\rho = .27^a$ $k = 26$ $N = 25,161$	$\rho = .20^a$ $k = 17$ $N = 16,228$		
Job satisfaction	$\rho = -.46^d$ $k = 52$ $N = 11,187$	$\rho = -.42^e$ $k = 54$ $N = 11,851$	$\rho = -.43^c$ $k = 94$ $N = 76,260$	
Overall OCB	$\rho = -.15^b$ $k = 24$ $N = 6,458$	$\rho = -.16^b$ $k = 22$ $N = 6,257$	$\rho = -.16^a$ $k = 9$ $N = 2,107$	$\rho = .24^e$ $k = 72$ $N = 7,100$

Note: ρ = meta-analytic correlation corrected for unreliability. k = number of independent samples in meta-analysis. N = sample size in meta-analysis. Overall OCB = organizational citizenship behavior measured with combination of facets.

^aNew meta-analyses conducted for the current study.

^bEatough et al. (2011).

^cKeim et al. (2014).

^dCheng and Chan (2008).

^eLePine et al. (2002).

TABLE 2 Meta-analytically derived correlations for job stressors, job satisfaction, and overall OCB (Study 1)

	Transformational	Contingent reward	Leader-member exchange	Job satisfaction
Contingent reward	$\rho = .80^a$ $k = 87$ $N = 22,369$			
Leader-member exchange	$\rho = .73^b$ $k = 20$ $N = 5,451$	$\rho = .73^b$ $k = 6$ $N = 1,900$		
Job satisfaction	$\rho = .16^a$ $k = 18$ $N = 5,279$	$\rho = .52^c$ $k = 43$ $N = 11,461$	$\rho = .50^d$ $k = 33$ $N = 6,887$	
Overall OCB	$\rho = .30^e$ $k = 28$ $N = 7,970$	$\rho = .23^c$ $k = n/a$ $N = 5,568$	$\rho = .34^f$ $k = 97$ $N = 23,039$	$\rho = .24^g$ $k = 72$ $N = 7,100$

Note: ρ = meta-analytic correlation corrected for unreliability. k = number of independent samples in meta-analysis. N = sample size in meta-analysis. Overall OCB = organizational citizenship behavior measured with combination of facets. n/a = not available in prior meta-analysis.

^aJudge and Piccolo (2004).

^bDulebohn et al. (2012).

^cPodsakoff et al. (2006).

^dGerstner and Day (1997).

^eWang et al. (2011).

^fMartin et al. (2016).

^gLePine et al. (2002).

TABLE 3 Meta-analytically derived correlations for leader behaviors, job satisfaction, and overall OCB (Study 1)

TABLE 4 Meta-analytically derived correlations for five factor model traits, job satisfaction, and overall OCB (Study 1)

	Openness	Conscientiousness	Extraversion	Agreeableness	Emotional stability	Job satisfaction
Conscientiousness	$\rho = -.06^a$ $k = 338$ $N = 356,680$					
Extraversion	$\rho = .17^a$ $k = 418$ $N = 252,004$	$\rho = .00^a$ $k = 632$ $N = 683,001$				
Agreeableness	$\rho = .11^a$ $k = 236$ $N = 144,205$	$\rho = .27^a$ $k = 344$ $N = 162,975$	$\rho = .17^a$ $k = 243$ $N = 135,529$			
Emotional stability	$\rho = .16^a$ $k = 423$ $N = 254,937$	$\rho = .26^a$ $k = 587$ $N = 490,296$	$\rho = .19^a$ $k = 710$ $N = 440,440$	$\rho = .25^a$ $k = 561$ $N = 415,679$		
Job satisfaction	$\rho = .02^b$ $k = 50$ $N = 15,196$	$\rho = .27^b$ $k = 79$ $N = 21,719$	$\rho = .25^b$ $k = 75$ $N = 20,184$	$\rho = .17^b$ $k = 38$ $N = 11,856$	$\rho = .29^b$ $k = 92$ $N = 24,527$	
Overall OCB	$\rho = .14^c$ $k = 38$ $N = 7,405$	$\rho = .18^c$ $k = 71$ $N = 14,355$	$\rho = .09^c$ $k = 34$ $N = 6,700$	$\rho = .14^c$ $k = 47$ $N = 10,308$	$\rho = .12^c$ $k = 36$ $N = 8,629$	$\rho = .24^d$ $k = 72$ $N = 7,100$

Note: ρ = meta-analytic correlation corrected for unreliability. k = number of independent samples in meta-analysis. N = sample size in meta-analysis. Overall OCB = organizational citizenship behavior measured with combination of facets.

^aReported in Ones (1993).

^bReported in Judge, Heler, and Mount (2002).

^cReported in Chiaburu et al. (2011).

^dReported in LePine et al. (2002).

than the original zero-order relationship. We describe each of these approaches in the following subsections and report the results of these analyses in Table 6.

3.1.1 | Does controlling for third variables produce statistical nonsignificance?

In our first test of the spurious hypothesis, we examined the statistical significance of the job satisfaction–OCB relationship after accounting for the effects of various sets of third variables. Following the approach used in previous studies (e.g., Farh et al., 1990; Hsieh, 2016; Judge, Erez, & Thoresen, 2000), we inferred support for the spurious hypothesis if two conditions were met: (a) job satisfaction has a statistically significant zero-order relationship with OCB and (b) job satisfaction has a statistically nonsignificant relationship with OCB after the effects of third variables are controlled. To conduct these analyses, we used the meta-analytic correlation matrix to build a path model for each analysis (MPLUS 5.1; Muthén & Muthén, 2007). Each model included (a) a path between job satisfaction and overall OCB, (b) paths between each of the third variables, and (c) paths from all third variables to both job satisfaction and overall OCB. We conducted five separate analyses—one for each of our study hypotheses.

We used LePine et al.'s (2002) ρ of .24 as the estimate for the zero-order relationship between job satisfaction and OCB. As shown in Table 6, the relationship between job satisfaction and overall OCB remained statistically significant when job characteristics ($\beta = .03$, $p < .05$), job stressors ($\beta = .15$, $p < .01$), leader behaviors ($\beta = .13$, $p < .01$), FFM traits ($\beta = .18$, $p < .01$), and core self-evaluations ($\beta = .08$, $p < .01$) were controlled. Although these findings appear to contradict the spurious hypothesis, it is important to remember that the large N s used in these analyses (each N was $>4,500$) can cause small effects to be statistically significant. Indeed, the small unique effects we observed after controlling for job characteristics and core self-evaluations would likely be statistically nonsignificant if observed in a study with a more typical sample size.

3.1.2 | Does controlling for third variables produce practical nonsignificance?

We also examined whether controlling for various sets of third variables causes the job satisfaction–OCB relationship to become practically nonsignificant (for an example of this approach, see Bowling, 2007). Practical significance is the interpretation of effect size rather than a statistical test of probability

	Emotional stability	Locus of control	Self-esteem	Self-efficacy	Job satisfaction
Locus of control	$\rho = .40^b$ $k = 31$ $N = 6,538$				
Self-esteem	$\rho = .64^b$ $k = 19$ $N = 5,565$	$\rho = .52^b$ $k = 47$ $N = 14,691$			
Self-efficacy	$\rho = .62^b$ $k = 7$ $N = 1,541$	$\rho = .56^b$ $k = 13$ $N = 3,088$	$\rho = .85^b$ $k = 9$ $N = 2,431$		
Job satisfaction	$\rho = .29^c$ $k = 92$ $N = 24,527$	$\rho = .32^d$ $k = 80$ $N = 18,491$	$\rho = .26^d$ $k = 56$ $N = 20,819$	$\rho = .45^d$ $k = 12$ $N = 12,903$	
Overall OCB	$\rho = .12^e$ $k = 36$ $N = 8,629$	$\rho = .36^a$ $k = 8$ $N = 2,469$	$\rho = .38^f$ $k = 14$ $N = 4,069$	$\rho = .42^a$ $k = 15$ $N = 5,780$	$\rho = .24^g$ $k = 72$ $N = 7,100$

Note: ρ = meta-analytic correlation corrected for unreliability. k = number of independent samples in meta-analysis. N = sample size in meta-analysis. Overall OCB = organizational citizenship behavior measured with combination of facets.

^aFrom new meta-analyses conducted for the current study.

^bReported in Judge, Erez, Bono, and Thoresen (2002).

^cReported in Judge, Heler, and Mount (2002).

^dReported in Judge and Bono (2001).

^eReported in Chiaburu et al. (2011).

^fReported in Bowling et al. (2010).

^gReported in LePine et al. (2002).

TABLE 5 Meta-analytically derived correlation matrix for core self-evaluations, job satisfaction, and overall OCB (Study 1)

TABLE 6 Analyses testing the genuineness/spuriousness of the job satisfaction-overall OCB relationship in Study 1

Other variables	N	ρ	β	$\Delta\chi^2 (df = 1)$ Constraint = .10	$\Delta\chi^2 (df = 1)$ Constraint = .24	Part ρ	% Spurious
		.24**					
Job characteristics	5,803		.03*	21.76**	207.18**	.03*	98%
Job stressors	13,884		.15**	5.28*	297.06**	.14**	66%
Leader behaviors	6,003		.13**	18.77**	145.55**	.19**	38%
FFM traits	20,318		.18**	97.16**	147.71**	.18**	44%
Core self-evaluations	4,861		.08**	13.02**	234.54**	.08**	90%

Note: N = Sample size based on harmonic mean. Overall OCB = organizational citizenship behavior measured with combination of facets. FFM Traits = Five Factor Model traits. β = standardized path coefficient for job satisfaction-overall OCB relationship controlling for other variables. $\Delta\chi^2 (df = 1)$ Constraint = Chi-squared difference test when the model constrains the job satisfaction-overall OCB relationship to either .10 or .24. Part ρ = semipartial corrected correlation between job satisfaction and overall OCB after controlling for other variables. % Spurious = percentage of job satisfaction-overall OCB relationship strength accounted for by other variables.

* $p < .05$; ** $p < .01$.

(see Cohen, 1992). Probability tests (p values) are biased by sample size such that relatively small effects are statistically significant when calculated using a large sample. In comparison, practical significance evaluates the effect size and the context in which the phenomenon would occur to determine if the phenomenon would produce a noticeable (impactful) effect. Cohen established

benchmarks for practical significance in the social sciences (i.e., small, medium, and large) by comparing a wide range of effect sizes. An r value of $\pm .10$ was determined to be the threshold for the lowest meaningful correlation. As a result, we assessed practical significance by comparing the resulting job satisfaction-OCB path coefficient when third variables were accounted for to the

r value of .10, which can be used as a benchmark for a practically nonsignificant relationship.

Evidence of practical nonsignificance was provided in the analyses that accounted for either the effects of job characteristics or the effects of core self-evaluations. Specifically, adding the .10 constraint produced significant misfit in the model that included job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 5,803) = 21.76, p < .01$), indicating that the model's job satisfaction-overall OCB relationship of .03 was significantly weaker than the practical significance benchmark of .10. Similarly, adding the .10 constraint led to significant misfit in the model that included core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 4,861) = 13.02, p < .01$), indicating that the model's job satisfaction-overall OCB relationship of .08 was significantly weaker than the practical irrelevance benchmark of .10.

Parallel analyses indicated that the job satisfaction-OCB relationship remained practically significant (i.e., > the .10 threshold) when the effects of the other sets of third variables were controlled for. Specifically, adding the constraint to the models accounting for job stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 13,884) = 5.28, p < .05$), leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 6,003) = 18.77, p < .01$), and FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 20,318) = 97.16, p < .01$) produced significant misfit. In these instances, however, the misfit indicated that the job satisfaction-overall OCB relationships were significantly *greater* than the practical significance benchmark. It is important to remember, however, that the large sample sizes used in these analyses can cause path coefficients that are either marginally weaker or marginally stronger than .10 to be significantly different from that value. Overall, these findings suggest that controlling for third variables can, in some cases, cause the job satisfaction-overall OCB relationship to become practically nonsignificant.

3.1.3 | Does controlling for third variables produce a weaker relationship?

Finally, we calculated the variance reduction rate in the job satisfaction-overall OCB relationship that occurred after the effects of the various sets of third variables were controlled (see Burke et al., 1993; Chen & Spector, 1991; Williams et al., 1996). The variance reduction rate indicates the percentage of the job satisfaction-overall OCB relationship strength accounted for by other variables (% spurious), thus providing an estimate of how much the satisfaction-OCB relationship was weakened after we accounted for the third variables. First, we squared the zero-order job satisfaction-overall OCB relationship. We then used the meta-analytically derived correlation matrices to calculate the partial correlations between job satisfaction and overall OCB. We then squared these partial correlations. Finally, we computed the variance reduction rate using Chen and Spector's (1991) formula:

$$\left(\text{zero-order correlation}^2 - \text{partial correlation}^2 \right) / \text{zero-order correlation}^2.$$

As shown in Table 6, these analyses suggest that controlling for various sets of third variables yielded moderate to large decreases

in the job satisfaction-overall OCB relationship. Specifically, these effects were most pronounced when either job characteristics (variance reduction rate = 98%), core self-evaluations (variance reduction rate = 90%), or job stressors (variance reduction rate = 66%) were controlled. Controlling for either FFM traits (variance reduction rate = 44%) or leader behaviors (variance reduction rate = 38%) produced smaller reductions in the job satisfaction-OCB relationship.

To formally test whether these reduction rates were statistically significant, we used structural equation modeling software to constrain the job satisfaction-overall OCB relationship that was present after various sets of third variables were controlled to be equal to .24, the value for the zero-order job satisfaction-overall OCB relationship. As shown in Table 6, including this constraint produced significant misfit in the models controlling for the effects of (a) job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 5,803) = 207.18, p < .01$), (b) job stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 13,884) = 297.06, p < .01$), (c) leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 6,003) = 145.55, p < .01$), (d) FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 20,318) = 147.71, p < .01$), and (e) core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 4,861) = 234.54, p < .01$). These analyses, in other words, suggest that controlling for any of the sets of third variables produced a significant reduction in the job satisfaction-OCB relationship. Note, however, that the large sample sizes used in these analyses could cause marginal decreases in the strength of the job satisfaction-overall OCB relationship to be statistically significant.

4 | STUDY 2

Study 2 used a two-wave data set to further examine the extent to which the job satisfaction-OCB relationship is spurious. The availability of the raw data and control of the study design enabled Study 2 to include analyses unique from Study 1.

5 | METHOD—STUDY 2

5.1 | Participants and procedure

We recruited the Study 2 participants (final $N = 420$) using Amazon's Mechanical Turk (MTurk; <https://requester.mturk.com/>). MTurk and other crowdsourcing services are a popular means of recruiting research participants (Landers & Behrend, 2015). Indeed, crowdsourcing provides an inexpensive, convenient way of collecting confidential data and it generally yields more heterogeneous samples than are possible with more traditional data sources (e.g., data collected from a single organization; Cheung et al., 2017; Landers & Behrend, 2015).

Each Study 2 measure was administered during one of two waves (time lag = 1 week). The Wave 1 questionnaire included measures of the third variables, we described in the Introduction section; the Wave 2 questionnaire included measures of job satisfaction and OCB. We paid participants \$0.50 (USD) for each survey they

completed. Although we initially recruited 800 respondents for the Wave 1 data collection, we excluded some respondents because they either did not provide a useable email address (an e-mail address was needed in order to send respondents the Wave 2 questionnaire; n of excluded respondents = 64) or incorrectly answered the Wave 1 attention check question “Indicate you are paying attention by selecting the ‘Somewhat Agree’ option” (n of excluded respondents = 65). We e-mailed 671 Wave 1 respondents the Wave 2 questionnaire, which produced the final sample of 420 participants (62.6% response rate). A response rate of this size across multiple waves is typical of MTurk studies (see Daly & Natarajan, 2015; Stoycheff, 2016). The mean age of participants in this final sample was 34 years, 51% were male, they worked an average of 40 hr per week, and they had worked in their current position for an average of 6 years. All participants were currently employed within the United States. Participants represented a variety of job titles, including “accountant,” “customer service representative,” “driver,” “office manager,” and “sales representative.”

5.2 | Measures

We assessed all of the Study 2 variables using self-report measures. Other than the exceptions described below, all of the Study 2 measures were on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

5.2.1 | Wave 1 measures

Job characteristics

The Wave 1 questionnaire included items from the five job characteristics scales from Morgeson and Humphrey (2006): autonomy (Cronbach's $\alpha = .89$), task identity (Cronbach's $\alpha = .86$), task significance (Cronbach's $\alpha = .87$), task variety (Cronbach's $\alpha = .91$), and feedback (Cronbach's $\alpha = .87$). Each of these scales comprised three items. An example item is “the job allows me to make my own decisions about how to schedule my work” (autonomy).

Job stressors

We assessed three job stressors in the Wave 1 questionnaire: role ambiguity, role conflict, and job insecurity. The measures of role ambiguity (six items; Cronbach's $\alpha = .86$) and role conflict (six items; Cronbach's $\alpha = .86$) were from Bowling et al. (2017) and the measure of job insecurity (four items; Cronbach's $\alpha = .74$) was from Vander Elst et al. (2014). An example job stressor item is “I am not sure what is expected of me at work” (role ambiguity).

Leader behaviors

The Wave 1 questionnaire included measures of three leader behaviors: LMX, transformational leadership, and contingent reward leadership. The LMX scale (eight items; Cronbach's $\alpha = .93$) was from

Bernerth et al. (2007); the transformational leadership scale (12 items; Cronbach's $\alpha = .90$) was from Podsakoff et al. (1990); and the contingent reward leadership scale (four items; Cronbach's $\alpha = .92$) was from Podsakoff et al. (1984). An example leader behavior item is “My manager and I have a two-way exchange relationship” (LMX).

Personality traits

We assessed each of the FFM traits in the Wave 1 questionnaire: openness (Cronbach's $\alpha = .83$), conscientiousness (Cronbach's $\alpha = .84$), extraversion (Cronbach's $\alpha = .87$), agreeableness (Cronbach's $\alpha = .87$), and emotional stability (Cronbach's $\alpha = .93$). Each FFM scale was from the International Personality Item Pool (IPIP; Goldberg et al., 2006) and comprised 10 items. We assessed core self-evaluations (Cronbach's $\alpha = .79$) in the Wave 1 questionnaire with a 12-item measure from Judge et al. (2003). An example personality trait item is “I just know that I will be a success” (core self-evaluations).

5.2.2 | Wave 2 measures

Job satisfaction

We assessed global job satisfaction (Cronbach's $\alpha = .93$) in the Wave 2 questionnaire using three items from the Michigan Organizational Assessment Questionnaire (Cammann et al., 1979). Previous research provides extensive evidence of the construct validity of this scale (see Bowling & Hammond, 2008). An example job satisfaction item is “All in all I am satisfied with my job.”

OCB

The Wave 2 questionnaire included Lee and Allen's (2002) measures of OCB-I (Cronbach's $\alpha = .90$) and OCB-O (Cronbach's $\alpha = .92$). Each OCB scale comprised eight items, which were on a 5-point frequency scale from 1 (*never*) to 5 (*always*). Meta-analytic evidence provides support for the construct validity of self-reported OCB data (Carpenter et al., 2014). An example OCB item is “I demonstrate concern about the image of the organization” (OCB-O). In addition to computing separate OCB-I and OCB-O scores, we also computed an overall OCB score by summing all 16 of Lee and Allen's items (Cronbach's $\alpha = .93$).

6 | STUDY 2 RESULTS

6.1 | Preliminary analyses

We report the descriptive statistics and correlations for the Study 2 measures in Table 7. Note that the pattern of correlations displayed in this table is consistent with the correlations reported both in the existing literature and in Study 1. Study 2, for instance, found that the three job stressors were negatively related to job satisfaction (for similar findings, see Bowling et al., 2017; Jackson & Schuler, 1985; Sverke et al., 2002) and that the FFM personality traits

TABLE 7 Correlations and descriptive statistics for variables in Study 2

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Job characteristics in Wave 1																										
1	Autonomy	5.05	1.46	(.89)																						
2	Task identity	5.67	1.14	.37	(.86)																					
3	Task significance	5.00	1.54	.20	.13	(.87)																				
4	Task variety	5.37	1.36	.32	.18	.25	(.91)																			
5	Feedback	5.10	1.28	.35	.50	.38	.33	(.87)																		
Job stressors in Wave 1																										
6	Role ambiguity	2.49	1.24	-.06	-.26	-.09	-.12	-.36	(.86)																	
7	Role conflict	3.82	1.30	.02	-.23	-.06	.07	-.20	.31	(.86)																
8	Job insecurity	2.60	1.24	-.17	-.47	-.17	-.15	-.41	.53	.24	(.74)															
Leader behaviors in Wave 1																										
9	Transformational	5.12	1.11	.32	.40	.30	.39	.63	-.44	-.25	-.42	(.90)														
10	Contingent Reward	5.16	1.47	.34	.43	.33	.15	.69	-.39	-.23	-.39	.72	(.92)													
11	LMX	4.88	1.33	.36	.46	.25	.29	.66	-.37	-.24	-.42	.83	.76	(.93)												
Personality in Wave 1																										
12	Openness	5.29	0.94	.04	.19	.16	.16	.22	-.27	-.08	-.35	.22	.22	.19	(.83)											
13	Conscientiousness	5.42	1.01	.00	.34	.19	.34	.24	-.41	-.13	-.49	.25	.14	.22	.42	(.84)										
14	Extraversion	3.99	1.23	.07	.08	.21	.08	.16	-.07	-.02	-.12	.11	.18	.15	.33	.17	(.87)									
15	Agreeableness	5.52	1.05	.22	.33	.22	.38	.26	-.37	-.14	-.41	.41	.25	.32	.45	.46	.28	(.87)								
16	Emotional stability	4.62	1.41	.23	.30	.23	.24	.32	-.30	-.19	-.50	.31	.26	.31	.30	.44	.42	.34	(.93)							
17	Core self-evaluations	5.12	0.90	.18	.39	.25	.26	.37	-.41	-.24	-.59	.42	.35	.37	.35	.52	.37	.46	.74	(.79)						
Attitudes & behaviors in Wave 2																										
18	Job satisfaction	5.40	1.47	.28	.42	.29	.33	.51	-.36	-.19	-.52	.62	.55	.56	.16	.33	.13	.36	.35	.47	(.90)					
19	Overall OCB	3.40	0.80	.19	.24	.45	.33	.43	-.17	-.02	-.26	.37	.38	.33	.31	.29	.26	.45	.24	.27	.44	(.93)				
20	OCB-I	3.45	0.84	.08	.16	.36	.29	.27	-.10	.02	-.14	.22	.24	.18	.27	.23	.20	.44	.17	.14	.22	.86	(.90)			
21	OCB-O	3.36	0.99	.24	.25	.42	.29	.47	-.19	-.05	-.30	.41	.42	.39	.28	.28	.25	.36	.25	.33	.53	.90	.55	(.92)		

Note: $N = 420$. SD = standard deviation. LMX = leader-member exchange. OCB-I = organizational citizenship behavior directed at individuals. OCB-O = organizational citizenship behavior directed at the organization. Overall OCB = organizational citizenship behavior total scale. $|r| \geq .10$ are significant at $p < .05$. $|r| \geq .13$ are significant at $p < .01$.

were positively related to OCB (for similar findings, see Chiaburu et al., 2011; Dalal, 2005). These results give us confidence in the quality of the Study 2 data.

6.2 | Analyses testing the spurious hypothesis

Prior to testing the spurious hypothesis in Study 2, we examined the zero-order correlations between job satisfaction and OCB (see Table 7). We observed significant positive zero-order correlations (r) between job satisfaction and overall OCB ($r = .44, p < .01$), OCB-I ($r = .22, p < .01$), and OCB-O ($r = .53, p < .01$). Thus, the corresponding r^2 suggests that job satisfaction explained 19.4%, 4.8%, and 28.1% of the variance in overall OCB, OCB-I, and OCB-O, respectively. To test the spuriousness hypothesis, we conducted analyses paralleling those we used in Study 1. Specifically, we examined whether accounting for various sets of third variables caused the job satisfaction–OCB relationship to become either (a) statistically nonsignificant, (b) practically nonsignificant, or (c) significantly weaker than the original zero-order relationship. We report the results of these analyses in the following subsections.

6.2.1 | Does controlling for third variables produce statistical nonsignificance?

We used structural equation modeling to build baseline models that paralleled the Study 1 baseline models. Specifically, we built separate models for each type of OCB (i.e., overall OCB, OCB-I, and OCB-O). And for each job satisfaction–OCB relationship, we conducted six separate analyses—one for each of our study hypotheses and another that simultaneously controlled for all of the third variables we measured. We report the analyses for overall OCB, OCB-I, and OCB-O in Tables 8–10, respectively.

Analyses for overall OCB

The job satisfaction–overall OCB relationship remained statistically significant ($p < .01$) regardless of whether we controlled for (a) job characteristics ($\beta = .23$), (b) job stressors ($\beta = .37$), (c) leader behaviors ($\beta = .26$), (d) FFM traits ($\beta = .30$), (e) core self-evaluations ($\beta = .37$), or (f) all of the third variables ($\beta = .22$).

Analyses for OCB-I

The relationship between job satisfaction and OCB-I became statistically nonsignificant when we controlled for either (a) job characteristics ($\beta = .03$), (b) leader behaviors ($\beta = .09$), (c) FFM traits ($\beta = .08$), or (d) all of the third variables ($\beta = .04$). That relationship, however, remained statistically significant ($p < .01$) when we controlled for either job stressors ($\beta = .18$) or core self-evaluations ($\beta = .18$).

Analyses for OCB-O

The relationship between job satisfaction and OCB-O remained statistically significant ($p < .01$) regardless of whether we controlled for (a) job characteristics ($\beta = .35$), (b) job stressors ($\beta = .46$), (c) leader behaviors ($\beta = .36$), (d) FFM traits ($\beta = .46$), (e) core self-evaluations ($\beta = .45$), or (f) all of the third variables ($\beta = .32$).

To summarize, we found some evidence that controlling for various third variables produced a statistically nonsignificant relationship between job satisfaction and OCB-I. We observed no such effects, however, in analyses examining job satisfaction's relationships with overall OCB or its relationship with OCB-O. These analyses thus support the spurious hypothesis for OCB-I but not for overall OCB or OCB-O.

6.2.2 | Does controlling for third variables produce practical nonsignificance?

As in Study 1, we used structural equation modeling to compare our baseline models to a series of models where the job satisfaction–OCB

TABLE 8 Analyses testing the genuineness/spuriousness of the job satisfaction–overall OCB relationship in Study 2

Other variables	r	β	$\Delta\chi^2 (df = 1)$ Constraint = .10	$\Delta\chi^2 (df = 1)$ Constraint = .24	Part r	% Spurious
	.44**					
Job characteristics		.23**	4.51*	24.47**	.23**	73%
Job stressors		.37**	32.72**	2.55	.37**	29%
Leader behaviors		.26**	9.02**	20.76**	.27**	62%
FFM traits		.30**	22.24**	7.03**	.33**	44%
Core self-evaluations		.37**	32.85**	1.80	.37**	29%
All control variables		.22**	1.67	55.10**	.23**	73%

Note: $N = 420$. Overall OCB = organizational citizenship behavior total scale. r = zero-order correlation between job satisfaction and overall OCB. β = standardized path coefficient for job satisfaction–overall OCB relationship controlling for other variables. $\Delta\chi^2 (df = 1)$ Constraint = Chi-squared difference test when the model constrains the job satisfaction–overall OCB relationship to either .10 or .44. Part r = semipartial correlation between job satisfaction and overall OCB after controlling for other variables. % Spurious = percentage of job satisfaction–overall OCB relationship strength accounted for by other variables.

* $p < .05$; ** $p < .01$.

TABLE 9 Analyses testing the genuineness/spuriousness of the job satisfaction-OCB-I relationship in Study 2

Other variables	<i>r</i>	β	$\Delta\chi^2 (df = 1)$ Constraint = .10	$\Delta\chi^2 (df = 1)$ Constraint = .24	Part <i>r</i>	% Spurious
	.22**					
Job characteristics		.03	2.95	17.67**	.03	98%
Job stressors		.18**	2.63	0.56	.17**	40%
Leader behaviors		.09	0.14	8.45**	.09	83%
FFM traits		.08	0.26	8.32**	.08	88%
Core self-evaluations		.18**	2.96	0.31	.18**	33%
All control variables		.04	4.54*	27.18**	.03	98%

Note: $N = 420$. OCB-I = organizational citizenship behavior directed toward individuals. r = zero-order correlation between job satisfaction and OCB-I. β = standardized path coefficient for job satisfaction-OCB-I relationship controlling for other variables. $\Delta\chi^2 (df = 1)$ Constraint = Chi-squared difference test when the model constrains the job satisfaction-OCB-I relationship to either .10 or .22. Part r = semipartial correlation between job satisfaction and OCB-I after controlling for other variables. % Spurious = percentage of job satisfaction-OCB-I relationship strength accounted for by other variables.

* $p < .05$; ** $p < .01$.

TABLE 10 Analyses testing the genuineness/spuriousness of the job satisfaction-OCB-O relationship in Study 2

Other variables	<i>r</i>	β	$\Delta\chi^2 (df = 1)$ Constraint = .10	$\Delta\chi^2 (df = 1)$ Constraint = .24	Part <i>r</i>	% Spurious
	.53**					
Job characteristics		.35**	28.25**	10.18**	.35**	56%
Job stressors		.46**	68.08**	0.03	.46**	25%
Leader behaviors		.36**	31.04**	8.62**	.36**	54%
FFM traits		.46**	66.05**	0.01	.46**	25%
Core self-evaluations		.45**	64.71**	0.05	.45**	28%
All control variables		.32**	17.33**	29.56**	.32**	64%

Note: $N = 420$. OCB-O = organizational citizenship behavior directed toward the organization. r = zero-order correlation between job satisfaction and OCB-O. β = standardized path coefficient for job satisfaction-OCB-O relationship controlling for other variables. $\Delta\chi^2 (df = 1)$ Constraint = Chi-squared difference test when the model constrains the job satisfaction-OCB relationship to either .10, .44, .22, or .53. Part r = semipartial correlation between job satisfaction and OCB-O after controlling for other variables. % Spurious = percentage of job satisfaction-OCB-O relationship strength accounted for by other variables.

** $p < .01$.

relationship was constrained to be .10 (i.e., the benchmark for a practically irrelevant relationship; see Cohen, 1992). We report the analyses for overall OCB, OCB-I, and OCB-O in Tables 8–10, respectively.

Analyses for overall OCB

We found that simultaneously controlling for all of the third variables produced a relationship between job satisfaction and overall OCB that was indistinguishable from a practically nonsignificant effect of .10 ($\chi^2\Delta(DF \Delta = 1, N = 420) = 1.67, p > .05$). The strength of the relationship between job satisfaction and overall OCB, however, was significantly above the .10 threshold in similar analyses that controlled for job characteristics ($\chi^2\Delta(DF \Delta = 1, N = 420) = 4.51, p < .05$), job stressors ($\chi^2\Delta(DF \Delta = 1, N = 420) = 32.72, p < .01$), leader behaviors ($\chi^2\Delta(DF \Delta = 1, N = 420) = 9.02, p < .01$), FFM traits ($\chi^2\Delta(DF \Delta = 1, N = 420) = 22.24, p < .01$), and core self-evaluations ($\chi^2\Delta(DF \Delta = 1, N = 420) = 32.85, p < .01$).

Analyses for OCB-I

We found that simultaneously controlling for all of the third variables produced a relationship between job satisfaction and OCB-I that was significantly weaker than .10 ($\chi^2\Delta(DF \Delta = 1, N = 420) = 4.54, p < .05$). Furthermore, we found that the relationship between job satisfaction and OCB-I was indistinguishable from a practically nonsignificant effect of .10 when controlled for job characteristics ($\chi^2\Delta(DF \Delta = 1, N = 420) = 2.95, p > .05$), job stressors ($\chi^2\Delta(DF \Delta = 1, N = 420) = 2.63, p > .05$), leader behaviors ($\chi^2\Delta(DF \Delta = 1, N = 420) = .14, p > .05$), FFM traits ($\chi^2\Delta(DF \Delta = 1, N = 420) = 0.26, p > .05$), and core self-evaluations ($\chi^2\Delta(DF \Delta = 1, N = 420) = 2.96, p > .05$).

Analyses for OCB-O

The strength of the relationship between job satisfaction and OCB-O was significantly above the .10 threshold in analyses that controlled

for either job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 28.25, p < .01$), job stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 68.08, p < .01$), leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 31.04, p < .01$), FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 66.05, p < .01$), core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 64.71, p < .01$), or simultaneously controlled for all of the third variables ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 17.33, p < .01$).

Overall, these analyses suggest that controlling for various third variables produced a relationship between job satisfaction and OCB-I that was practically nonsignificant. In contrast, job satisfaction relationships with overall OCB and with OCB-O generally remained practically significant regardless of which third variables we controlled.

6.2.3 | Does controlling for third variables produce a weaker relationship?

As in Study 1, we calculated the variance reduction rate in order to test whether the job satisfaction–OCB relationships became weaker after we controlled for various sets of third variables. We used structural equation modeling to test the statistical significance of this reduction. As we report in the following subsections, we conducted separate analyses for overall OCB (Table 8), OCB-I (Table 9), and OCB-O (Table 10).

Analyses for overall OCB

In analyses for overall OCB, we observed variance reduction rates ranging from 29% (when either job stressors or core self-evaluations were controlled) to 73% (when either job characteristics or all of the third variables were controlled). Constraining the job satisfaction–overall OCB relationship to be .44 (the zero-order r between those two variables) produced significant misfit in analyses controlling for either job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 24.47, p < .01$), leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 20.76, p < .01$), FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 7.03, p < .01$), or all of the third variables ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 55.10, p < .01$). Imposing this constraint, however, did not produce significant misfit in analyses controlling for either job stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 2.55, p > .05$) or core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 1.80, p > .05$).

Analyses for OCB-I

In analyses for OCB-I, we observed variance reduction rates ranging from 33% (when core self-evaluations were controlled) to 98% (when either job characteristics or all of the third variables were controlled). Constraining the relationship between job satisfaction and OCB-I to be .22 (the zero-order r between those two variables) produced significant misfit in analyses controlling for either job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 17.67, p < .01$), leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 8.45, p < .01$), FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 8.32, p < .01$), or all of the third variables ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 27.18, p < .01$). Imposing this constraint, however, did not produce significant misfit in analyses controlling for either job

stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 0.56, p > .05$) or core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 0.31, p > .05$).

Analyses for OCB-O

In analyses for OCB-O, we observed variance reduction rates ranging from 25% (when either job stressors or FFM traits were controlled) to 64% (when all of the third variables were controlled). Constraining the relationship between job satisfaction and OCB-O to be .53 (the zero-order r between those two variables) produced significant misfit in analyses controlling for either job characteristics ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 10.18, p < .01$), leader behaviors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 8.62, p < .01$), or all of the third variables ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 29.56, p < .01$). Imposing this constraint, however, did not produce significant misfit in analyses controlling for either job stressors ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 0.03, p > .05$), FFM traits ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 0.01, p > .05$), or core self-evaluations ($\chi^2\Delta(\text{DF } \Delta = 1, N = 420) = 0.05, p > .05$).

Overall, these analyses suggest that controlling for various third variables generally produced a significant decrease in job satisfaction's relationship with all three types of OCB.

7 | GENERAL DISCUSSION

Job satisfaction consistently yields positive relationships with OCB (Dalal, 2005; LePine et al., 2002; Organ & Ryan, 1995). But why does this relationship exist? Although researchers have generally assumed that the job satisfaction–OCB relationship reflects a causal effect of job satisfaction on OCB (see Barnes et al., 2013; Bateman & Organ, 1983; Fassina et al., 2008; Organ & Ryan, 1995), we contend that the relationship is at least partially spurious. Specifically, we argue that the job satisfaction and OCB relationship is overestimated because third variables are likely causing both variables to occur. The most likely third variables responsible for a spuriousness effect are job characteristics, job stressors, leader behaviors, FFM personality traits, and core self-evaluations.

We used meta-analysis (Study 1) and a two-wave primary study (Study 2) to examine whether controlling for these third variables caused the job satisfaction–OCB relationship to become either (a) statistically nonsignificant, (b) practically nonsignificant, or (c) significantly weaker than their zero-order relationship. Results across the two studies found that the job satisfaction–OCB relationship generally remained statistically significant after various third variables were controlled. We did, however, observe several instances in which controlling for third variables caused the job satisfaction–OCB relationship to become either practically nonsignificant or significantly weaker than the zero-order relationship between job satisfaction and OCB.

In short, we found evidence that the job satisfaction–OCB relationship is spurious, but the degree of spuriousness varies depending upon the third variable being considered and the type of OCB measured. The greatest degree of spuriousness occurred when controlling for job characteristics and least degree of spuriousness

occurred when OCBO were assessed. These findings extend a previous study by Farh et al. (1990), which found that job characteristics and leader behaviors contribute to a spurious job satisfaction–OCB relationship. As we described in the Introduction section, our research builds on Farh et al.'s findings in several ways: (a) In Study 1, we used meta-analytic data, which provides more stable estimates of effects than are possible in a relatively small primary sample (Farh et al. had an N of 195); (b) in Studies 1 and 2 we, examined a larger set of potential third variables than Farh et al. did; and (c) in Study 2, we used an OCB measure that was uncontaminated with CWB content (as we described in the Introduction, the OCB scale used by Farh et al. appeared to be contaminated with CWB content). As a whole, these features allowed for a more rigorous test of the spuriousness of the job satisfaction–OCB relationship than was possible in previous research.

7.1 | Implications

Questions about the causal nature of the job satisfaction–OCB relationship have important practical implications. If the causal relationship is strong in magnitude, then, organizational practices that increase employees' job satisfaction levels are likely to produce increases in OCB. And indeed, managers generally believe that "a happy worker is likely to be a productive worker" (see Fisher, 2003, Study 1), which could lead organizations to adopt satisfaction-enhancing interventions as a means of increasing OCB. On the contrary, if the job satisfaction–OCB relationship is largely spurious, then, organizational practices that increase employees' job satisfaction levels are unlikely to produce increases in OCB (assuming that the given practice does not affect OCB via one or more alternative, nonsatisfaction mechanism). This possibility implies that efforts to increase OCB should not focus on enhancing employees' satisfaction levels; instead, such efforts should focus on other factors that are causally related to OCB. Given these practical implications, it is important to examine whether the job satisfaction–OCB relationship is indeed spurious.

We found evidence that the job satisfaction–OCB relationship is at least partially spurious, but some relationships remained statistically significant after we controlled for various third variables. These statistically significant job satisfaction–OCB relationships were generally modest, thus suggesting that targeting job satisfaction may not be the most effective means of increasing employees' OCB levels. Targeting these third variables (e.g., by selecting employees with personalities that predispose them to engaging in OCB or by modifying the work environment) may be the most effective means of increasing OCB.

Despite our findings about the spurious nature of the job satisfaction–OCB relationship, job satisfaction should continue to play an important role in organizational theory, research, and practice. Indeed, job satisfaction serves many purposes: (a) its status as an indicator of employee well-being makes it an inherently valuable outcome; (b) it is useful for diagnosing organizational dysfunction;

and (c) it may have causal effects on employee behaviors other than OCB, such as CWB and various withdrawal behaviors (see Dalal, 2005; Spector, 1997).

7.2 | Limitations

We observed varying degrees of spuriousness within the current studies, which may be due to limitations in the methods used. Williams and colleagues (1996) review several limitations that must be addressed in order to make stronger conclusions about the presence of spuriousness. First, the effect of third variables may be due to common-method factor (e.g., self-report surveys) rather than a substantive spurious effect. Testing the spurious effect with objective ratings of OCB or third variables (e.g., job characteristics) is a way to address this concern. Another limitation is whether there are unconsidered variables that cause the third variables, job satisfaction, and OCB. We attempted to address this concern by including many potential third variables and testing them both independently and collectively. However, our list may not be exhaustive. Other variables that may be causing all variables to occur may be variables that permeate workplaces more broadly, such as society culture, organizational culture, or organizational climate. In sum, addressing these limitations will lead to stronger conclusions about if the spurious hypothesis is accurate and which variables are causing the spurious effect.

Study 1 has several limitations due to the reliance upon meta-analytic data. However, the inclusion of Study 2 reduces the severity of these limitations. First, in Study 2, we were able to examine the strength of the job satisfaction–OCB relationship after controlling for various combinations of third variables. Most importantly, we were able to simultaneously control for every third variable described in the Introduction section. Such analyses were omitted from Study 1 because we were unable to create a complete meta-analytic correlation matrix (i.e., some cells in the matrix could not be computed due to the unavailability of primary studies). Second, because it used a primary data set, Study 2 was able to avoid several problems inherent to meta-analytic path modeling (for discussions of these problems, see Landis, 2013). Each of the previously published meta-analyses we used to conduct the Study 1 analyses, for example, may have used different literature search strategies, different statistical corrections, and different participants. Study 2 avoids these problems.

Third, Study 2 used a two-wave design. This feature allowed us to minimize the effects of common-method variance (CMV; for discussions of the use of multiwave designs as a means to minimize the effects of CMV, see Podsakoff et al., 2003; Podsakoff & Organ, 1986; Spector, 2006), thus extending the cross-sectional findings of Study 1. It is of further note that in Study 2 we assessed the third variables in the Wave 1 questionnaire and both job satisfaction and OCB in the Wave 2 questionnaire. Study 2's design, therefore, may have provided a conservative test of the spurious hypothesis: The job satisfaction–OCB relationship may have been inflated (i.e., because

both variables were assessed within the same wave), but the third variables' relationships with both job satisfaction and OCB were unlikely to be inflated (i.e., because the third variables were assessed within a different wave from both job satisfaction and OCB). As a result, Study 2 may have underestimated the extent to which the job satisfaction–OCB relationship is spurious. Finally, Study 2 allowed us to examine the spuriousness hypothesis separately for overall OCB, OCB-I, and OCB-O (for examples of studies that make this distinction, see Carpenter et al., 2014; Dalal, 2005; Lee & Allen, 2002). We were unable to conduct such analyses in Study 1 because many of the studies included in our database failed to distinguish between OCB-I and OCB-O.

7.3 | Future research

We examined the job satisfaction–OCB relationship at the between-person level of analysis, the approach that has traditionally been adopted in the job satisfaction literature (see Judge et al., 2001). More recently, however, researchers have also examined job satisfaction–job performance relationships using within-person (Fisher, 2003, Study 2) and between-unit (e.g., team-, department-, or organization-level; Whitman et al., 2010) levels of analysis. The processes that produce job satisfaction–job performance relationships within these latter levels may differ from those that function at the between-person level; thus, one should not assume that our findings will generalize beyond the between-person level. Future research should thus examine whether within-person and between-unit job satisfaction–OCB relationships are also spurious. We recommend researchers use third variables from the corresponding level of analyses (see Ajzen & Fishbein, 2005) when designing such studies.

Future studies should also examine the degree of spuriousness within other job attitude–performance relationships. Research, for example, has found that organizational commitment (Riketta, 2002) and employee engagement (Christian et al., 2011) are positively related to OCB—could these relationships be spurious? Because of growing organizational interest in the assessment and management of employee engagement (see Bakker & Leiter, 2010; Macey & Schneider, 2008), it is particularly important to examine the degree of spuriousness within the engagement–performance relationship is spurious. If this relationship is indeed spurious, then, efforts to improve performance by boosting employee engagement may be fruitless.

Future research examining the degree of spuriousness should also consider the role of moderators. The job satisfaction–task performance relationship is stronger within high-complexity jobs than within low-complexity jobs (Judge et al., 2001) and it is stronger within low-situational strength jobs than within high-situational strength jobs (Bowling et al., 2015). If these findings generalize to OCB, then, the job satisfaction–OCB relationship may remain strong among workers in particular types of jobs (e.g., those high in complexity or low in situational strength) even after the effects of various third variables are controlled.

Finally, our tests to determine the degree of spuriousness assume that environmental and personality variables have causal effects on both job satisfaction and OCB. In the Introduction section, we articulated the conceptual bases for these causal effects. Our use of nonexperimental data, however, precludes the testing of causal relationships. Unfortunately, neither job satisfaction nor OCB lend themselves to experimental manipulation. Future research, however, could manipulate some of the third variables we examined in the current research (e.g., studies have experimentally manipulated job characteristics within a laboratory setting; e.g., Griffin et al., 1987; Levin & Stokes, 1989). We expect that such manipulations could produce a spurious satisfaction–OCB relationship.

7.4 | Summary

We used meta-analytic data (Study 1) and a primary data set (Study 2) to test the degree of spuriousness within the satisfaction–OCB relationship. Across both studies, we found that controlling for various third variables often yielded a job satisfaction–OCB relationship that was (a) statistically nonsignificant, (b) practically nonsignificant, and (c) significantly weaker than the zero-order relationship between job satisfaction and OCB. The spurious effect was strongest when controlling for job characteristics as third variables. These findings have important theoretical implications, such that the causal relationship between job satisfaction and OCB is overestimated when relying upon the zero-order correlation.

Peer Review

The peer review history for this article is available at <https://publons.com/publon/10.1002/jts5.84>.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Kevin J. Eschleman  <https://orcid.org/0000-0003-2763-7688>

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How to cite this article: King M, Bowling NA, Eschleman KJ. The degree of spuriousness within the job satisfaction-organizational citizenship behavior relationship. *J Theo Soc Psychol*. 2021;00:1–21. <https://doi.org/10.1002/jts5.84>