



## The incremental validity of organizational commitment, organizational trust, and organizational identification



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### ARTICLE INFO

#### Article history:

Received 17 December 2014

Available online 11 March 2015

#### Keywords:

Organizational commitment

Organizational trust

Organizational identification

Perceived organizational support

Psychological contract breach

Meta-analysis

### ABSTRACT

Organizational commitment (OC), organizational trust (OT), and organizational identification (OI) are three types of psychological attachment to an organization. Each of these three variables captures an organization-targeted attitude toward an employment relationship, but it is unclear whether they have incremental validity over each other. To address this question, this study examined the incremental validity of each variable in predicting job involvement, job satisfaction, turnover intentions, and non-self-report measures of task performance and citizenship behavior. It also examined whether perceived organizational support and psychological contract breach, two other organization-targeted attitudinal variables, were related to OC, OT, and OI when the latter were considered jointly. Meta-analytical evidence suggests that OC, OT, and OI have incremental validity over and above one another in their relationships with some, but not all, of the above correlates. This highlights the need for future research to distinguish these three types of psychological attachment to an organization.

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Many organizations strive to increase employee loyalty (Morrow, 2011; Rousseau, 1998), as employees who are psychologically attached to an organization are more satisfied and more productive (Hunter & Thatcher, 2007; Vandenberg & Lance, 1992). Three streams of research examine psychological attachment to organizations: research on organizational commitment (OC), on organizational trust (OT), and on organizational identification (OI). These three variables are all organization-targeted attitudes that reflect some degree of bonding with an organization. Despite their conceptual overlap, these streams of research have developed separately, with very little effort expended to establish the value of each variable above and beyond the other two.

This is an important problem for several reasons. First, many constructs in the organizational sciences are rather similar (e.g., LePine, Erez, & Johnson, 2002; Morrow, 1983) and such redundancy undermines theory development, as separate theories might be developed for slightly different constructs that could in fact be explained parsimoniously by a single theory (Le, Schmidt, Harter, & Lauver, 2010; Singh, 1991). Although OC, OT, and OI are certainly not identical, the extent to which they overlap or differ has not been assessed. Second, although researchers usually choose only one of these variables as a focal outcome of a study, they have seldom provided a justification for their choice; that is, the choice of one construct over another often seems arbitrary. Consequently, one can easily question, for example, a researcher's decision to focus only on OT rather than on OC and OI, given that all three constructs capture psychological attachment to the firm. There is, thus, a need to assess how focusing on one construct while omitting the other two affects empirical results. Third, from a practical standpoint, there is a growing need to better understand the intimate relationships between these three forms of psychological attachment, as organizations today find it harder to retain workers in a labor market characterized by a strong preference for job mobility (Briscoe, Henagan, Burton, & Muphy, 2012; Verbruggen, 2012). Discovering whether OC, OT, and OI are distinct forms of psychological attachment to a firm and whether each is strengthened by different means would be useful to organizations.

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The main goal of this study is to examine the incremental validity of OC, OT, and OI with respect to selected work outcomes (job involvement, job satisfaction, turnover intentions and behavior, task performance, organizational citizenship behavior (OCB), perceived organizational support (POS), and psychological contract breach (PCB)). Incremental validity is a construct's predictive power over and above other constructs that are theoretically similar (Pierce, Gardner, Cummings, & Dunham, 1989; Watson et al., 2008). Investigating the incremental validity of a construct is particularly important in applied psychology research because it helps to clarify the practical value of a theoretical construct to both researchers and organizations (Cortina, Goldstein, Payne, Davison, & Gilliland, 2000; Dudley, Orvis, Lebiecki, & Cortina, 2006; Lievens & Patterson, 2011).

## 1. Theoretical background

### 1.1. The nature of OC, OT, and OI

Psychological attachment is a stabilizing force that binds individuals to organizations.

OC is one of the most frequently examined forms of such psychological attachment (Meyer & Herscovitch, 2001). Allen and Meyer (1990) propose that three different mind-sets underlie OC: affective commitment, normative commitment, and continuance commitment. Affective commitment is driven largely by positive emotional feelings about an organization (O'Reilly & Chatman, 1986), whereas normative commitment is driven by moral obligations and continuance commitment is driven by side-bets (Meyer & Parfyonova, 2010; Powell & Meyer, 2004). The focus of this study is affective organizational commitment, called simply OC hereafter. OC is an intense emotional attachment to an organization (Meyer, Allen, & Gellatly, 1990; Meyer, Stanley, Herscovitch, & Topolyntsky, 2002), and is believed to be the result of a high-quality exchange between an organization and its employee (Colquitt, Baer, Long, & Halvorsen-Ganepola, 2014; Song, Tsui, & Law, 2009); an employee responds to an organization's positive treatment with positive affective feelings toward the organization, manifesting in high levels of OC.

OT is the extent to which employees are willing to become vulnerable to an organization's behavior, because they believe that the future conduct of the organization will be positive (Lewicki, McAllister, & Bies, 1998). Individuals with a high level of OT are willing to rely on an organization despite the risk that it might not follow through on its obligations (Colquitt, Scott, & LePine, 2007; Mayer, Davis, & Schoorman, 1995). This willingness to become vulnerable to organizational actions is a defining characteristic of OT (Dirks & Ferrin, 2001; McAllister, 1995). Due to the risk involved, a high level of OT represents an intense form of psychological attachment to an organization (Williams, 2001). Mayer et al. (1995) argue that OT emerges when individuals believe that an organization has the virtues of ability, benevolence, and integrity. These virtues enable employees to assume the risk associated with depending on the organization in the future. Empirical research has also shown that trust is related to the removal of psychological barriers that stifle improvement in the quality of a relationship, such as the delegation of crucial tasks to others, full disclosure of information, and rejection of safeguards (Colquitt et al., 2007).

OI is the extent to which employees see an organization as part of their identity (Ashforth, Harrison, & Gorley, 2008; Ashforth & Mael, 1989). However, it captures more than just a cognitive self-categorization, representing also a sense of oneness with the organization. Individuals with strong OI see the essence of an organization as self-defining. In addition, individuals with strong OI are particularly likely to experience pride; they are proud to be a member of the organization (Ashforth & Mael, 1989). OI thus often refers to a deep-level psychological phenomenon rather than a surface-level attachment (Rousseau, 1998). Ashforth et al. (2008) argue that a high level of OI emerges through a continuous cognitive process of sense-making and sense-breaking. Identity cues in the workplace help employees to define who they are and who they are not, until the most satisfying and stable self-concept is attained (Brickson, 2013). For instance, when employees come to believe that their values and those of their organization are congruent, they are likely to develop a strong OI (Riketta, 2005).

### 1.2. Similarity of OC, OT, and OI

The concepts of OC, OT, and OI certainly overlap. First, all three variables represent organization-targeted attitudes. They capture employees' feelings, perceptions, and assessments of the core characteristics of their organizations, independent of their supervisors, co-workers, or occupations. Second, all three concepts serve the same functional purpose: they help employees to find personal meaning in their daily job activities. Organizational membership becomes a salient social category that motivates individuals to work hard on behalf of their organization (Rosso, Dekas, & Wrzesniewski, 2010). Previous research has identified a wide range of positive attitudinal and behavioral outcomes associated with high levels of OC (Meyer et al., 2002), OT (Colquitt et al., 2013), and OI (Riketta, 2005), suggesting that all three generate important psychological benefits for workers.

Third, and most importantly, all three variables represent some form of psychological attachment to an organization; that is, all three are a stabilizing binding force in an employment relationship. Cooper-Hakim and Viswesvaran (2005) argue that there is likely to be a common psychological construct underlying different forms of organizational attachment. OC reflects a highly favorable emotional reaction to an organization; so favorable that employees feel a strong sense of belonging to that organization (Mathieu & Zajac, 1990). OT is a binding force based on positive expectations about the future conduct of an employer. Schoorman, Mayer, and Davis (2007) emphasize that OT defines the strength and nature of an employment relationship. Employees with high levels of OT are psychologically attached to an organization because they anticipate that it will treat them fairly and favorably. Finally, OI reflects a form of psychological attachment that is identity-based; employees with high levels of OI see their fate and that of their organization as convergent and inseparable (Ashforth et al., 2008), because the organization has become part of their identity and it cannot readily be detached.

### 1.3. Distinctiveness of OC, OT, and OI

Although OC, OT, and OI can all be viewed as a form of psychological attachment to an organization, they are distinct concepts. OC captures an intense emotional reaction that is not emphasized in the other two concepts. Researchers hold that there are strong affective underpinnings to certain job attitudes, of which OC is one (Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). Employees feel satisfied, grateful, and invigorated in the workplace when they have a high level of OC. Like OC, OT has an affective component, but it also has a cognitive component (McAllister, 1995). OI might culminate in the emotion of pride (Restubog, Hornsey, Bordia, & Esposito, 2008), but the perception of oneness is itself a largely cognitive phenomenon that is not necessarily related to any emotions.

OT is distinct because it is the only construct (of these three) in which the “risk factor” plays such an important role (Fulmer & Gelfand, 2012). Beyond an affective attachment, OT reflects a rational processing of information about an organization's ability, integrity, and trustworthiness; individuals' willingness to assume the risk of attaching themselves to an organization depends on their assessment of these characteristics. Mayer et al. (1995) consider a defining element of OT to be the calculation of the risks involved in being vulnerable to the actions of an organization. An example of this is the suggestion of Pirson and Malhotra (2011) that employees' trust in an organization is strongly determined by the perceived competence of the organization. When an organization is judged to be competent, individuals develop greater OT, as a high level of perceived competence decreases the perceived risk associated with depending on the organization. This cognizance of risks is clearly absent from the other two concepts.

In turn, OI is distinct from the other two constructs in being the only construct to tap into employees' self-concept. Developing a high level of OI helps an employee to define his or her self-concept, answering such questions as “Who am I?” and “Who do I want to become?” (Edwards, 2005; He & Brown, 2013). For instance, employees might develop a high level of OI if they believe that their organization has similar commitments to social responsibility as themselves (Oliver, Statler, & Roos, 2010). Conversely, if an organization behaves poorly toward the public, this is strongly detrimental to employees' self-evaluation. A high level of OI thus reflects a high degree of overlap between self-concept and perceived organizational image (Brickson, 2013). However, an individual may be committed to an organization or trust an organization without letting the organization shape his or her self-evaluation. Thus, Ashforth et al. (2008) stress that OI is different from OC because, despite the positive emotions experienced by individuals with high OC, the self is still separate from the organization.

In summary, OC, OT, and OI are distinct concepts although all three represent a binding force that attaches an individual to an organization. OC is characterized by strong emotional investment in and positive emotional experiences deriving from an employment relationship; OT is characterized by a willingness to take risks with an organization; and OI is characterized by the integration of an individual's self-concept with an organizational image. Based on the above discussion, OC, OT, and OI are expected to have incremental validity in predicting the work outcomes selected for this investigation, which are discussed in greater detail below.

### 1.4. Job attitudes, withdrawal, and performance as work outcomes

Job attitudes (here represented by job involvement and job satisfaction) are attitudes toward a job rather than to an organization per se. Job involvement is the degree of psychological identification with one's work (Lawler & Hall, 1970). OC, OT, and OI should each predict distinct variances in job involvement, as they each have a different relationship to job involvement. OC relates to job involvement because committed employees with a sense of belonging to an organization perceive their jobs as core parts of their organizational membership and their seriousness about those jobs as a core indicator of their loyalty (Brown, 1996). OT relates to job involvement because employees who trust an organization see their jobs as salient means for helping their organizations achieve their goals (Schoorman et al., 2007). OI relates to job involvement because employees who see an organization as vital to their self-image will as a consequence regard their jobs as central to their self-image. In fact, employees have multiple identities constructed from their work careers that are likely to reinforce one another (Walsh & Gordon, 2008).

OC, OT, and OI should also predict distinct variances in job satisfaction, as they each have a different relationship to job satisfaction. Highly committed employees are likely to experience greater job satisfaction because they evaluate their job conditions with a more positive cognitive framework (Vandenberg & Lance, 1992). Employees with a high level of OT experience greater job satisfaction because being able to fully trust an employer removes the stress created by ambiguous job aspects and provides a sense of contentment due to the benevolent intent of the organization (Young & Daniel, 2003). Employees with a high level of OI experience greater job satisfaction because an employee who endorses an organization's image is likely to focus on the positive rather than negative elements of their work environment (Efraty & Wolfe, 1988; Knapp, Smith, & Sprinkle, 2014). These observations lead to the following hypotheses:

**Hypothesis 1.** OC (H1a), OT (H1b), and OI (H1c) have incremental validity over and above one another in positively predicting job involvement.

**Hypothesis 2.** OC (H2a), OT (H2b), and OI (H2c) have incremental validity over and above one another in positively predicting job satisfaction.

One of the most logical outcomes of high levels of psychological attachment to an organization is the lower likelihood of leaving the organization (Griffeth, Hom, & Gaertner, 2000; Tett & Meyer, 1993). High levels of OC, OT, and OI motivate individuals to stay with their organizations, albeit for different reasons. Highly committed employees are likely to stay because of an emotionally meaningful bond (Beck & Wilson, 2000). Employees who trust their organization are likely to stay because they expect positive treatment from the employer (Lewicki, McAllister, & Bies, 1998). Employees who identify with their organization are likely to stay because they

see the organization's future as coinciding with their own (Ashforth et al., 2008). I therefore expect OC, OT, and OI to explain distinct variances in turnover intentions, which in turn are related to turnover behavior (Tett & Meyer, 1993).

**Hypothesis 3.** OC (H3a), OT (H3b), and OI (H3c) have incremental validity over and above one another in negatively predicting turnover intentions, which in turn positively predict turnover behavior (H3d).

Individuals with higher levels of psychological attachment to an organization also have a stronger motivation to perform well in their jobs (Colquitt et al., 2007; Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989; Riketta, 2002). Here, I consider both task (or in-role) performance and OCB as indicators of job performance. OC, OT, and OI motivate employees to dedicate efforts to their jobs in different ways.

Highly committed workers are motivated to work hard in part because they are more psychologically resourceful; for example, they tend to feel more upbeat about their job situations (Thoresen et al., 2003). These psychological resources, in turn, can be used to enhance productivity (Staw & Barsade, 1993). Employees with high OT are motivated to do well because they are willing to invest their efforts in an employer that they see as benevolent and competent (Pirson & Malhotra, 2011). Finally, employees with high OI are motivated to do well because the organization's performance directly affects their self-evaluations; working for a high-performing organization promotes their self-esteem (Carmeli, Gilat, & Waldman, 2007). Therefore, I propose the following hypotheses:

**Hypothesis 4.** OC (H4a), OT (H4b), and OI (H4c) have incremental validity over and above one another in positively predicting task performance.

**Hypothesis 5.** OC (H5a), OT (H5b), and OI (H5c) have incremental validity over and above one another in positively predicting OCB.

### 1.5. Perceived organizational support and psychological contract breaches as antecedents

POS and PCB have both been frequently used as indicators of the quality of social exchange within an organization (Colquitt et al., 2014). POS is the extent to which employees perceive that their organizations value their contributions and care about their well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). PCBs are employees' perceptions of the extent to which their employers have failed to fulfill their obligations or promises to them (Morrison & Robinson, 1997).

Both POS and PCB are derived from an employee's assessment of the amount of resources that an employer has dedicated to him or her; a high level of POS suggests that employees perceive their organization as having made considerable resources available, whereas a high level of PCB suggests that employees believe that the organization has not given them the resources to which they are entitled (Rhoades & Eisenberger, 2002; Zhao, Wayne, Glibkowski, & Bravo, 2007). Resource surpluses provide employees with evidence on which high OC, OT, and OI can be constructed, whereas resource deficits are cues that employees should refrain from investing further in an employment relationship.

At the same time, I expect POS to relate to OC, OT, and OI even when the latter three are considered jointly, because POS relates to these three variables for different reasons. POS relates to OC because resources rendered by the organization create positive feelings about the organization (Panaccio & Vandenberghe, 2009), as employees are hedonistic, preferring to accumulate more resources and to avoid resource losses (Hobfoll, 1989). POS relates to OT because supportive actions on the part of the organization are concrete evidence that an employee can risk his or her future with this organization (DeConinck, 2010). POS relates to OI because the image of a supportive and benevolent organization is attractive to employees and therefore motivates them to align their own identities with that of the organization (Sluss, Klimchak, & Holmes, 2008).

Similarly, PCB relates to OC, OT, and OI for different reasons. First, PCB relates to lowered OC because individuals who lose resources experience stress and this undermines the affective bond between an employee and an employer (Zhao et al., 2007). PCB relates to lowered OT because breaches clearly signal a risky future with the organization, which now has a history of failing the employees (Robinson, 1996). Finally, PCB relates to lowered OI largely because an organization that cannot honor its promises and obligations is evaluated negatively and therefore victims of breaches are reluctant to associate their self-identities with it (Epitropaki, 2013). Thus, I make the following hypotheses:

**Hypothesis 6.** POS positively predicts OC (H6a), OT (H6b), and OI (H6c) even when the three variables are considered simultaneously.

**Hypothesis 7.** PCB negatively predicts OC (H7a), OT (H7b), and OI (H7c) even when the three variables are considered simultaneously.

## 2. Methods

I collected data from the literature and performed meta-analyses on these data. The data were gathered in two steps. First, for relationships that had previously undergone meta-analysis (e.g., the relationship between OC and turnover intentions), I used the meta-analytical correlations provided in quantitative reviews. In a few cases, multiple quantitative reviews were available for the same relationship; for these cases, I used the effect sizes that were based on the more cumulative studies. These previously published reviews yielded 41 bivariate meta-analytical correlations.

Second, for relationships that had not yet undergone meta-analysis (e.g., the relationship between OT and OI), I conducted new meta-analyses to obtain the estimated population effect sizes. The new meta-analyses yielded 14 bivariate correlations. To obtain these 14 correlations, I conducted a thorough search of all of the studies published in or before 2014 that examined the 14 relationships of interest. I identified 118 independent samples, 11 of which were from unpublished dissertations. A list of all of the articles included in these analyses is available upon request.

These two steps (which provided 41 effect sizes from other meta-analyses and 14 effect sizes from my own meta-analyses) allowed me to test my hypotheses using a correlation matrix based on data from cumulative studies, rather than from individual studies. This meta-analytical correlation matrix is provided in Table 1.

## 2.1. Measures

I mainly used common and established operationalizations of the study constructs. Specifically, the core variables of interest, OC, OT, and OI, were all measured using validated scales. For OC, only affective commitment to an organization was measured; measures of other types of commitment and commitment to other targets were excluded. Similarly, measures of OT used only the organization as the target, with trust in other targets being excluded. In cases where researchers had measured components of OT, such as affective trust and cognitive trust, I averaged the effect sizes to obtain an overall effect size. Finally, measures of OI used only the organization as the target; measures of identification with other targets were excluded. All of the variables were self-reported by employees. POS and PCB were also operationalized using established scales with the organization as the sole target; supervisor and co-worker support, for example, were excluded. Studies of PCB have also fairly consistently investigated breaches of promise by the organization. Both POS and PCB were self-reported by employees.

The six outcome variables were operationalized as follows. First, I used only those measures that tapped overall *job satisfaction* rather than satisfaction with a specific facet of a job (e.g., pay, promotion). The operationalization of *job involvement* and *turnover intentions* was straightforward; the scales used for job involvement included measurement of the extent to which employees were engaged in their work roles, and the scales of turnover intentions included measurements of the extent of individuals' intentions to leave an organization. All of these outcome variables were self-reported by employees.

*Task performance*, *OCB*, and *turnover* involved non-self-report measures. For task performance, I included measures of in-role performance, other scales of productivity/effectiveness rated by either supervisors or peers, and objective measures of task performance (e.g., sales quotas). OCB was consistently measured using validated scales rated by either supervisors or peers. In those cases where sub-dimensions of OCB ratings were provided, I averaged those dimensions to obtain an overall rating. Finally, voluntary turnover was operationalized as a dichotomous variable; the researchers obtained these data from organizations.

**Table 1**  
Meta-analytical correlation matrix (harmonic mean = 3332).

	1	2	3	4	5	6	7	8	9	10
1. OC	–									
2. OT	.57 <sup>c</sup> (20, 3831)	–								
3. OI	.78 <sup>b</sup> (16, 4263)	<b>.41<sup>o</sup></b>	–							
4. POS	.73 <sup>d</sup> (42, 11,706)	<b>.75<sup>c</sup></b> (5, 560)	<b>.56<sup>o</sup></b> (25, 7810)	–						
5. PCB	–.39 <sup>f</sup> (39, 19,407)	–.61 <sup>f</sup> (15,4800)	–.51 <sup>o</sup> (11, 2640)	–.47 <sup>o</sup> (20, 11,628)	–					
6. JI	.51 <sup>m</sup> (53, 22,188)	<b>.44<sup>o</sup></b> (7, 2657)	.61 <sup>b</sup> (12, 2837)	.39 <sup>d</sup> (4, 1015)	–.24 <sup>o</sup> (5, 2452)	–				
7. JS	.65 <sup>a</sup> (69, 23,656)	.48 <sup>c</sup> (13, 3708)	.54 <sup>b</sup> (38, 8759)	.62 <sup>d</sup> (21, 5886)	–.52 <sup>f</sup> (36, 17,333)	.45 <sup>m</sup>	–			
8. TI	–.58 <sup>j</sup> (97, 41,002)	–.41 <sup>c</sup> (7, 954)	–.48 <sup>b</sup> (34, 7243)	–.51 <sup>d</sup> (14, 3146)	.42 <sup>q</sup> (22, 6268)	–.31 <sup>m</sup> (23, 9230)	–.58 <sup>l</sup> (88, 35,494)	–		
9. TO	–.27 <sup>s</sup> (67, 27,540)	–.10 <sup>o</sup> (4, 6410)	–.20 <sup>o</sup> (6, 1206)	–.11 <sup>d</sup> (6, 2490)	–.12 <sup>s</sup> (5, 730)	–.12 <sup>s</sup> (16, 7666)	–.22 <sup>s</sup> (67, 24,566)	.45 <sup>l</sup> (39, 10,307)	–	
10. TP	.19 <sup>i</sup> (59, 14,906)	<b>.10<sup>o</sup></b> (8, 1671)	<b>.38<sup>o</sup></b> (24, 8575)	.18 <sup>d</sup> (12, 2873)	–.42 <sup>o</sup> (12, 2119)	.09 <sup>m</sup> (8, 2313)	.30 <sup>e</sup> (312, 54,471)	–.16 <sup>k</sup> (38, 7643)	–.16 <sup>t</sup> (55, 15,138)	–
11. OCB	.27 <sup>a</sup> (8, 1815)	<b>.17<sup>o</sup></b> (12, 2388)	<b>.47<sup>o</sup></b> (16, 5513)	.22 <sup>d</sup> (16, 4050)	–.36 <sup>o</sup> (14, 2791)	.25 <sup>s</sup> (7, 3478)	.26 <sup>f</sup> (22, 5549)	–.22 <sup>p</sup> (90, 26,510)	–.22 <sup>h</sup> (5, 1619)	.23 <sup>h</sup> (24, 9912)

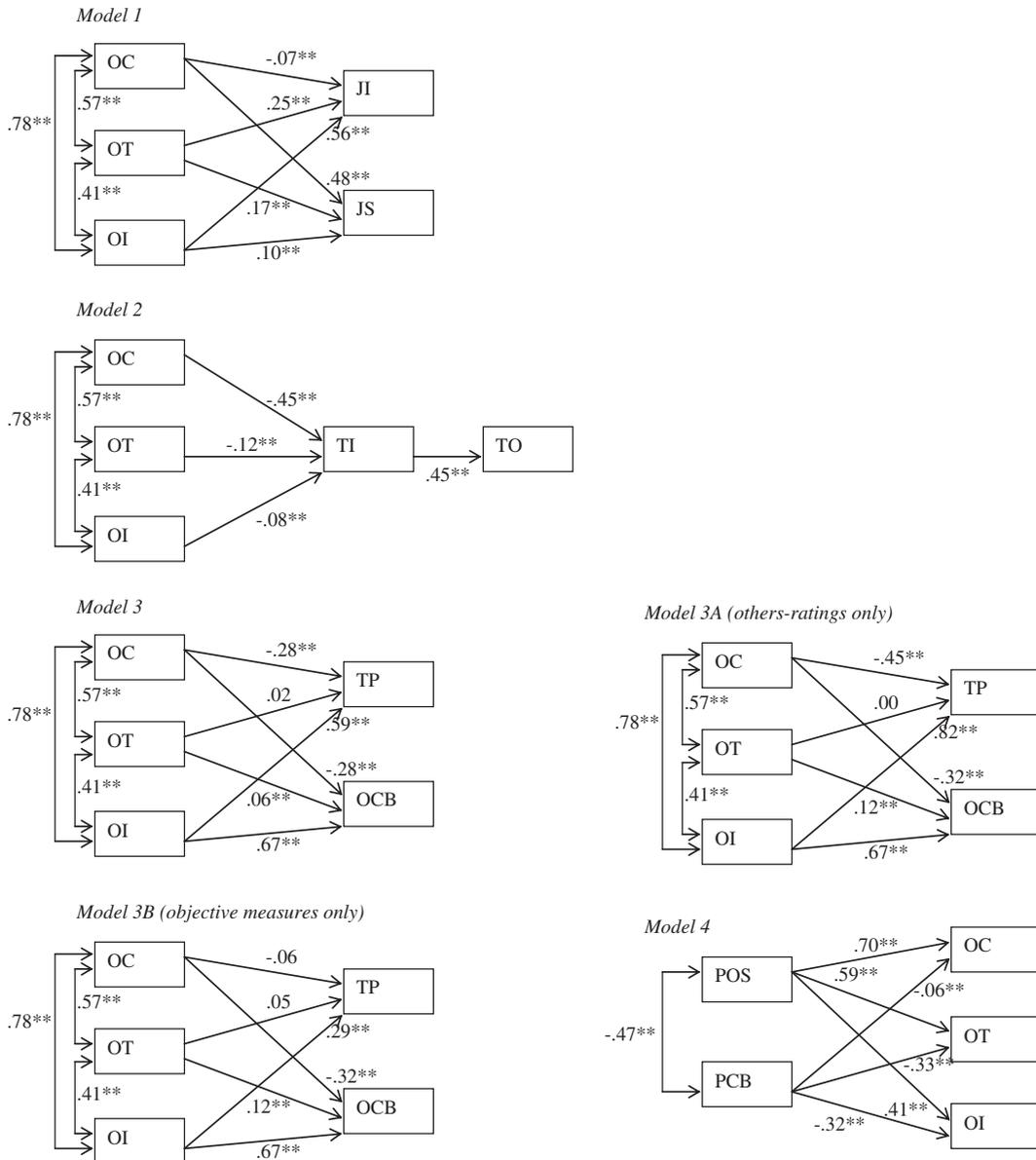
Note. The first figure in parentheses represents the number of studies cumulated (k). The second figure represents the total sample size (N). The data from new meta-analyses are in bold. JI = job involvement; JS = job satisfaction; OC = organizational commitment; OCB = organizational citizenship behavior; OI = organizational identification; OT = organizational trust; PCB = psychological contract breach; POS = perceived organizational support; TI = turnover intentions; TO = turnover behavior; TP = task performance.

The superscripted letters in the body of the table indicate the source of the meta-analytical correlations: "a," Meyer et al. (2002); "b," Riketta (2005); "c," Dirks and Ferrin (2002); "d," Rhoades and Eisenberger (2002); "e," Judge et al. (2001); "f," Organ and Ryan (1995); "g," Griffith et al. (2000); "h," Harrison, Newman, and Roth (2006); "i," Riketta (2002); "j," Cooper-Hakim and Viswesvaran (2005); "k," Zimmerman and Darnold (2009); "l," Tett and Meyer (1993); "m," Brown (1996); "n," Colquitt et al. (2013); "o," Original meta-analyses; "p," Podsakoff, Whiting, Podsakoff, and Blume (2009); "q," Zhao et al. (2007); "r," Bal, De Lange, Jensen, and Van Der Velde (2008); "s," Christian, Garza, and Slaughter (2011); "t," Williams and Livingstone (1994).

2.2. Analytical procedures

My primary analytical technique, meta-analytical structural equation modeling (Viswesvaran & Ones, 1995), required a correlation matrix containing meta-analytical correlations. If appropriate correlations had not been generated in previous meta-analyses, I followed the technique of Raju, Burke, Normand, and Langlois (1991) to conduct new meta-analyses. First, I corrected the observed correlations between two study variables for measurement error variance to obtain purer effect sizes. Second, I corrected the observed correlations for sampling error variance by aggregating independent samples, and then calculated average correlations across studies.

The corrected correlations obtained from my own meta-analyses, together with the meta-analytical correlations gathered from previous meta-analyses, served as the input matrix (Table 1) for the structural equation modeling. As the cumulative sample size associated with each bivariate relationship in the model varied, I used the harmonic mean to represent the total sample size associated with the input correlation matrix, as recommended by Viswesvaran and Ones (1995). For the current meta-analytical correlation matrix, the harmonic mean was 3332.



Notes. \*\*p < .01; JI = job involvement; JS = job satisfaction; OC = organizational commitment; OCB = organizational citizenship behavior; OI = organizational identification; OT = organizational trust; PCB = psychological contract breach; POS = perceived organizational support; TI = turnover intentions; TO = turnover behavior; TP = task performance.

Fig. 1. The path-analytical models tested.

Using the meta-analytically derived matrix and the harmonic mean, I then examined the study hypotheses. The meta-analytical models used to examine these hypotheses are shown in Fig. 1. Testing the fit of these models required an assessment of model fit. Because the chi-square statistic is known to be sensitive to sample size, I used the three fit indices recommended by Hu and Bentler (1998) to assess model fit: Bollen's Fit Index (BL89), the Comparative Fit Index (CFI), and the Standardized Root-Mean-Squared Residual (SRMR). Hu and Bentler (1998) recommend these fit indices as they (especially SRMR) are sensitive to model misspecification. Hu and Bentler (1999) suggest that BL89 and CFI should be .95 or higher and SRMR should be .08 or lower. Once a model demonstrated an acceptable fit according to these criteria, I proceeded to examine the parameter estimates. Due to the large number of parameters estimated, I considered only those effect sizes that were significant at  $\alpha = .01$  (rather than at .05) to reduce the type I errors.

### 3. Results

**Hypothesis 1** states that OC (H1a), OT (H1b), and OI (H1c) have incremental validity over and above one another in positively predicting job involvement, whereas **Hypothesis 2** states that OC (H2a), OT (H2b), and OI (H2c) have incremental validity over and above one another in positively predicting job satisfaction. To examine these two hypotheses, I tested Model 1, shown in Fig. 1. This model had acceptable fit (BL89 = .99, CFI = .99, and SRMR = .02). OT ( $\beta = .25, p < .01$ ) and OI ( $\beta = .56, p < .01$ ), but not OC ( $\beta = -.07, p < .01$ ), had significant positive effects on job involvement in the presence of each other (and of job satisfaction). Thus, H1b and H1c were supported, but H1a was not. Moreover, OC ( $\beta = .48, p < .01$ ), OT ( $\beta = .17, p < .01$ ), and OI ( $\beta = .10, p < .01$ ) all had significant positive effects on job satisfaction in the presence of one another (and of job involvement), supporting H2a, H2b, and H2c.

**Hypothesis 3** states that OC (H3a), OT (H3b), and OI (H3c) have incremental validity over and above one another in negatively predicting turnover intentions, which in turn positively predicts turnover behavior (H3d). To examine this hypothesis, I tested Model 2, shown in Fig. 1. This model had a good fit with the data (BL89 = .99, CFI = .99, and SRMR = .02). The parameter estimates indicated that OC ( $\beta = -.45, p < .01$ ), OT ( $\beta = -.12, p < .01$ ), and OI ( $\beta = -.08, p < .01$ ) all had significant negative effects on turnover intentions in the presence of one another, supporting H3a, H3b, and H3c. In addition, turnover intentions had significant positive effects ( $\beta = .45, p < .01$ ) on turnover behavior, as expected. Thus, H3d was fully supported.

**Hypothesis 4** states that OC (H4a), OT (H4b), and OI (H4c) have incremental validity over and above one another in positively predicting task performance, whereas **Hypothesis 5** states that OC (H5a), OT (H5b), and OI (H5c) have incremental validity over and above one another in positively predicting OCB. To examine these two hypotheses, I tested Model 3, shown in Fig. 1. This model had an excellent fit (BL89 = 1.0, CFI = 1.0, and SRMR = .01). The parameter estimates indicated that OI had a significant positive effect on task performance ( $\beta = .59, p < .01$ ), but that OC ( $\beta = -.28, p < .01$ ) and OT ( $\beta = .02, ns$ ) did not. Thus, H4c was supported, but H4a and H4b were not. In addition, both OT ( $\beta = .06, p < .01$ ) and OI ( $\beta = .67, p < .01$ ) had significant positive effects on OCB, but OC had a negative effect ( $\beta = -.28, p < .01$ ), supporting H5b and H5c, but not H5a.

I further ran two sub-models that differentiated between others' ratings and objective measures of job performance. Among the previous meta-analyses I used, only Judge, Thoresen, Bono, and Patton (2001) provided meta-analytical data broken down into different sources. In my own meta-analyses, I identified four relationships (OC–task performance, OI–task performance, PCB–task performance, and OT–OCB) that involved both others' ratings and objective measures of job performance. Next, I re-tested Model 3 with others' ratings of job performance where these data were available. The results are presented in the Model 3A in Fig. 1. I found that the pattern results discussed above remained unchanged, although there were slight changes in the magnitudes of effect sizes. Similarly, I re-tested Model 3 with objective measures of job performance where these data were available. The results are presented in the Model 3B in Fig. 1. I observed that the OC–task performance relationship was not significant in this model. Other significant findings discussed earlier in Model 3 remained unchanged, although there were slight changes in effect sizes. These results suggest that others' ratings and objective measures of job performance do not produce vastly different results.

**Hypotheses 6 and 7** state that POS positively predicts OC (H6a), OT (H6b), and OI (H6c), and PCB negatively predicts OC (H7a), OT (H7b), and OI (H7c), even when the latter three variables are considered simultaneously. To examine these hypotheses, I tested Model 4, shown in Fig. 1. I controlled for the correlated residual variance when testing this model, as it is likely that OC, OT, and OI have other common predictors. By controlling for the correlations between their residual variances, I ruled out the effects of omitted predictors. Consequently, this model is a saturated model with a perfect fit. POS had a significant positive effect on OC ( $\beta = .70, p < .01$ ), OT ( $\beta = .59, p < .01$ ), and OI ( $\beta = .41, p < .01$ ) in the presence of one another (and of PCB), supporting H6a, H6b, and H6c. In addition, PCB had a significant negative effect on OC ( $\beta = -.06, p < .01$ ), OT ( $\beta = -.33, p < .01$ ), and OI ( $\beta = -.32, p < .01$ ) in the presence of one another (and of POS), providing support for H7a, H7b, and H7c.

### 4. Discussion

The goal of this study was to examine the incremental validity of OC, OT, and OI. Researchers agree that detecting the incremental predictive power of one construct over other similar constructs is necessary for theoretical development (Cortina et al., 2000; Dudley et al., 2006; Lievens & Patterson, 2011; Schwab, 1980). The empirical evidence I gathered from the literature provides modest support for the incremental validity of OC, OT, and OI over and above one another. More specifically, the results largely depend on the nature of the correlates. First, OI appears to have the strongest incremental validity among the three. That is, OI is significantly related to all of the study correlates in the expected direction and in the presence of OC and OT. Second, OT has incremental validity (in the expected direction and in the presence of OC and OI) in predicting all of the study correlates with one exception. That is, OT predicts job involvement, job satisfaction, turnover intentions, and OCB, and is significantly predicted by both POS and PCB. However, it has non-

significant effects on task performance. Third, OC appears to have the weakest incremental validity of the three concepts. It relates (in the expected direction and in the presence of OT and OI) to job satisfaction and turnover intentions, and is significantly predicted by both POS and PCB. However, OC has unexpected negative effects on both task performance and OCB, and an unexpected negative, albeit weak, effect on job involvement.

It is certainly possible that this pattern of results partially reflects the influence of multicollinearity. When multicollinearity exists, regression coefficients may emerge in unexpected directions or as non-significant (Marsh, Dowson, Pietsch, & Walker, 2004; York, 2012). This could explain why OC has positive correlations with job involvement, task performance, and OCB (Table 1), whereas these effects are negative in the presence of OT and OI. The problem, however, should not be very serious, as Grewal, Cote, and Baumgartner (2004) observe in their simulation studies that multicollinearity is less problematic when composite reliability is high and when sample size is large. Given that the population (disattenuated) correlations used in this study have perfect reliability and that the harmonic mean is greater than 3000, the multicollinearity problem should be alleviated.

However, the existence of multicollinearity is expected here, as the central theoretical question of this study is whether OC, OT, and OI have incremental validity over and above one another, given that they are highly correlated. The fundamental question, therefore, is why OC, but not OT and OI, is overshadowed by the other two variables. I offer two speculative theoretical reasons.

First, because positive emotions can result from many aspects of an employment relationship, it is possible that the positive emotions that drive OC stem, in part, from finding a trustworthy employer (OT) and from finding a meaningful identity (OI). In other words, both OT and OI create positive feelings about an employment relationship, which in turn generate the sense of belonging manifested in OC. Thus, OT and OI might be the deeper reasons why people feel positively about an organization and therefore experience higher levels of OC. Second, OT and OI provide strong motivation for employees to work hard; individuals who trust their organization are willing to invest efforts in their jobs in return for a positive future with the organization, and individuals who identify with their organizations are willing to invest effort in their jobs because the success of the organization signifies personal success. In contrast, OC does not directly capture the psychological stake an employee has in an organization's success. For these reasons, OC may be overshadowed by OT and OI in predicting variables that capture one's job efforts, like job involvement, task performance, and OCB.

In summary, although the present findings provide modest support for the assertion that OC, OT, and OI have incremental validity over and above one another, a few non-significant and unexpected findings emerge that suggest that the incremental validity of these variables depends on the nature of the outcomes examined. For researchers, these findings point to the need to use different theories to understand the distinct and incremental effects of OC, OT, and OI on different outcome variables. To that end, researchers should consider including all three constructs in their investigations, while assuming a priori that they play different theoretical roles. In fact, in light of the lack of strong incremental validity over one another (especially for OC), researchers need to provide more justification for why they focus on one construct rather than the other two. Finally, researchers should also adopt scales that fully reflect the content domains of OC, OT, and OI, especially those that capture the elements specific to one of these constructs. For instance, in many measures of OC, respondents are asked to evaluate their feelings of being a part of the organization. This feeling, however, also overlaps with OI, which emphasizes "oneness" of an employee and his or her organization. Thus, it is important that researchers clearly distinguish OC, OT, and OI in their measurement scales.

#### 4.1. Study limitations

In interpreting the current findings, it is important to take the following study limitations into consideration. First, because most of the individual studies included in the present meta-analysis used cross-sectional designs, I cannot draw definite causal inferences from the results. However, the goal of this study was to investigate whether OC, OT, and OI are distinct constructs with incremental validity over and above one another, and this goal was largely achieved despite the use of predominantly cross-sectional data. Second, the core variables of OC, OT, and OI were self-reported in the original studies. Because these variables capture employees' psychological attachments to their own organizations, the predominant use of self-reporting methodology was deemed acceptable and inevitable. Fortunately, I was able to include non-self-report measures of work outcomes so that the data were not entirely sourced from the employees themselves. Third, some of the new meta-analyses I conducted were based on a relatively small number of studies, and some demonstrated weak effects; these effect sizes should be interpreted more tentatively. Finally, because I was addressing incremental validity alone, no moderators were examined in this study. It is possible that some moderators exist that might weaken or strengthen the incremental validity of OC, OT, and OI.

## 5. Conclusions

In this study, I present modest evidence that OC, OT, and OI have incremental validity over one another, although the evidence is still far from conclusive. The results suggest that although OC, OT, and OI all capture an employee's psychological attachment to an organization, their incremental validity is still not fully and clearly established. Hopefully, these results will prompt researchers to compare the nomological network of these three constructs. For managers who hope to increase employees' psychological attachment to the firm, the present findings suggest that using a single management strategy aimed at enhancing OC, OT, and OI is unlikely to be effective, as OC, OT, and OI might need to be promoted through different means according to the unique core of each of these three constructs.

## References

- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1–18.
- Ashforth, B. E., Harrison, S. H., & Gorley, K. G. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management*, 34, 325–374.
- Ashforth, B. E., & Mael, F. A. (1989). Social identity theory and the organization. *Academy of Management Review*, 14, 20–39.
- Bal, P. M., De Lange, A. H., Jensen, P. G. W., & Van Der Velde, M. E. G. (2008). Psychological contract breach and job attitudes: A meta-analysis of age as a moderator. *Journal of Vocational Behavior*, 72, 143–158.
- Beck, K., & Wilson, C. (2000). Development of affective organizational commitment: A cross-sequential examination of change with tenure. *Journal of Vocational Behavior*, 56, 114–136.
- Brickson, S. L. (2013). Athletes, best friends, and social activists: An integrative model accounting for the role of identity in organizational identification. *Organization Science*, 24, 226–245.
- Briscoe, J. P., Henagan, S. C., Burton, J. P., & Muphy, W. M. (2012). Coping with an insecure employment environment: The differing roles of protean and boundaryless career orientations. *Journal of Vocational Behavior*, 80, 308–316.
- Brown, S. P. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin*, 120, 235–255.
- Carmeli, A., Gilat, G., & Waldman, D. A. (2007). The role of perceived organizational performance in organizational identification, adjustment and job performance. *Journal of Management Studies*, 44, 972–992.
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64, 89–136.
- Colquitt, J. A., Baer, M. D., Long, D. M., & Halvorsen-Ganepola, M. D. K. (2014). Scale indicators of social exchange relationships: A comparison of relative content validity. *Journal of Applied Psychology*, 99, 599–618.
- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92, 909–927.
- Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., et al. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, 98, 199–236.
- Cooper-Hakim, A., & Viswesvaran, C. (2005). The construct of work commitment: Testing an integrative framework. *Psychological Bulletin*, 131, 241–259.
- Cortina, J. M., Goldstein, N. B., Payne, S. C., Davison, H. K., & Gilliland, S. W. (2000). The incremental validity of interview scores over and above cognitive ability and conscientiousness scores. *Personnel Psychology*, 53, 325–351.
- DeConinck, J. B. (2010). The effect of organizational justice, perceived organizational support, and perceived supervisor support on marketing employees' level of trust. *Journal of Business Research*, 63, 1349–1355.
- Dirks, K. T., & Ferrin, D. L. (2001). The role of trust in organizational settings. *Organization Science*, 12, 450–467.
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytical findings and implications for research and practice. *Journal of Applied Psychology*, 87, 611–628.
- Dudley, N. M., Orvis, K. A., Lebiecki, J. E., & Cortina, J. M. (2006). A meta-analytic investigation of conscientiousness in the prediction of job performance: Examining the intercorrelations and incremental validity of narrow traits. *Journal of Applied Psychology*, 91, 40–57.
- Edwards, M. R. (2005). Organizational identification: A conceptual and operational review. *International Journal of Management Reviews*, 7, 207–230.
- Efraty, D., & Wolfe, D. M. (1988). The effect of organizational identification on employee affective and performance responses. *Journal of Business and Psychology*, 3, 105–112.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500–507.
- Epitropaki, O. (2013). A multi-level investigation of psychological contract breach and organizational identification through the lens of perceived organizational membership: Testing a moderated-mediated model. *Journal of Organizational Behavior*, 34, 65–86.
- Fulmer, C. A., & Gelfand, M. J. (2012). At what level (and in whom) we trust? Trust across multiple organizational levels. *Journal of Management*, 38, 1167–1230.
- Grewal, R., Cote, J. A., & Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Marketing Science*, 23, 519–529.
- Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the millennium. *Journal of Management*, 26, 463–488.
- Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49, 305–325.
- He, H., & Brown, A. D. (2013). Organizational identity and organizational identification: A review of the literature and suggestions for future research. *Group and Organization Management*, 38, 3–35.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513–524.
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to unparameterized model misspecification. *Psychological Methods*, 3, 424–453.
- Hu, L., & Bentler, P. M. (1999). Cutoff criterion for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Hunter, L. W., & Thatcher, S. M. B. (2007). Feeling the heat: Effects of stress, commitment, and job experience on job performance. *Academy of Management Journal*, 50, 953–968.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376–407.
- Knapp, J. R., Smith, B. R., & Sprinkle, T. A. (2014). Clarifying the relational ties of organizational belonging: Understanding the roles of perceived insider status, psychological ownership, and organizational identification. *Journal of Leadership and Organizational Studies*, 21, 273–285.
- Lawler, E. E., III, & Hall, D. T. (1970). Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, 54, 305–312.
- Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes*, 112, 112–115.
- LePine, J. A., Erez, A., & Johnson, D. E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, 87, 52–65.
- Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. *Academy of Management Review*, 23, 438–458.
- Lievens, F., & Patterson, F. (2011). The validity and incremental validity of knowledge tests, low-fidelity simulations, and high-fidelity simulations for predicting job performance in advanced-level high-stakes selection. *Journal of Applied Psychology*, 96, 927–940.
- Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. *Academy of Management Review*, 23, 438–458.
- Marsh, H. W., Dowson, M., Pietsch, J., & Walker, R. (2004). Why multicollinearity matters: A reexamination of relations between self-efficacy, self-concept, and achievement. *Journal of Educational Psychology*, 96, 518–522.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108, 171–194.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20, 709–734.
- McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38, 24–59.
- Meyer, J. P., Allen, N. J., & Gellatly, I. R. (1990). Affective and continuance commitment to the organization: Evaluation of measures and analysis of concurrent and time-lagged relations. *Journal of Applied Psychology*, 75, 710–720.
- Meyer, J. P., & Herscovitch, L. (2001). Commitment in the workplace: Toward a general model. *Human Resource Management Review*, 11, 299–326.

- Meyer, J. P., & Parfyonova, N. M. (2010). Normative commitment in the workplace: A theoretical analysis and re-conceptualization. *Human Resource Management Review*, 20, 283–294.
- Meyer, J. P., Paunonen, S. V., Gellatly, I. R., Goffin, R. D., & Jackson, D. J. (1989). Organizational commitment and job performance: It's the nature of the commitment that counts. *Journal of Applied Psychology*, 74, 152–156.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20–52.
- Morrison, E. W., & Robinson, S. L. (1997). When employees feel betrayed: A model of how psychological contract violation develops. *Academy of Management Review*, 16, 92–120.
- Morrow, P. C. (1983). Concept redundancy in organizational research: The case of work commitment. *Academy of Management Review*, 8, 486–500.
- Morrow, P. C. (2011). Managing organizational commitment: Insights from longitudinal research. *Journal of Vocational Behavior*, 79, 18–35.
- O'Reilly, C. A., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification and internalization on prosocial behavior. *Journal of Applied Psychology*, 71, 492–499.
- Oliver, D., Statler, M., & Roos, J. (2010). A meta-ethical perspective on organizational identity. *Journal of Business Ethics*, 94, 427–440.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48, 775–802.
- Panaccio, A., & Vandenberghe, C. (2009). Perceived organizational support, organizational commitment and psychological well-being: A longitudinal study. *Journal of Vocational Behavior*, 75, 224–236.
- Pierce, J. L., Gardner, D. G., Cummings, L. L., & Dunham, R. B. (1989). Organization-based self-esteem: Construct definition, measurement, and validation. *Academy of Management Journal*, 3, 622–648.
- Pirson, M., & Malhotra, D. (2011). Foundations of organizational trust: What matters to different stakeholders? *Organization Science*, 22, 1087–1104.
- Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual- and organization-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, 94, 122–141.
- Powell, D. M., & Meyer, J. P. (2004). Side-bet theory and the three-component model of organizational commitment. *Journal of Vocational Behavior*, 65, 157–177.
- Raju, N. S., Burke, M. J., Normand, J., & Langlois, G. M. (1991). A new meta-analytic approach. *Journal of Applied Psychology*, 76, 432–446.
- Restubog, S. L. D., Hornsey, M. J., Bordia, P., & Esposito, S. R. (2008). Effects of psychological contract breach on organizational citizenship behavior: Insights from the Group Value Model. *Journal of Management Studies*, 45, 1377–1400.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87, 698–714.
- Riketta, M. (2002). Attitudinal organizational performance and job performance: A meta-analysis. *Journal of Organizational Behavior*, 23, 257–266.
- Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior*, 66, 358–384.
- Robinson, S. L. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly*, 41, 574–599.
- Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior*, 30, 91–127.
- Rousseau, D. M. (1998). Why workers still identify with organisations. *Journal of Organizational Behavior*, 19, 217–233.
- Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review*, 32, 344–354.
- Schwab, D. E. (1980). Construct validity in organizational behavior. *Research in Organizational Behavior*, 2, 3–43.
- Singh, J. (1991). Redundancy in constructs: Problem, assessment, and an illustrative example. *Journal of Business Research*, 22, 255–280.
- Sluss, D. M., Klimchak, M., & Holmes, J. J. (2008). Perceived organizational support as a mediator between relational exchange and organizational identification. *Journal of Vocational Behavior*, 73, 457–464.
- Song, L. J., Tsui, A. S., & Law, K. S. (2009). Unpacking employee responses to organizational exchange mechanisms: The role of social and economic exchange perceptions. *Journal of Management*, 35, 56–93.
- Staw, B. M., & Barsade, S. G. (1993). Affect and managerial performance: A test of the sadder-but-wiser vs. happier-and-smarter hypotheses. *Administrative Science Quarterly*, 38, 304–331.
- Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *Personnel Psychology*, 46, 259–293.
- Thoresen, C. J., Kaplan, S. A., Barsky, A., Warren, C. R., & de Chermont, K. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytical review and integration. *Psychological Bulletin*, 129, 914–945.
- Vandenberg, R. J., & Lance, C. E. (1992). Examining the causal order of job satisfaction and organizational commitment. *Journal of Management*, 18, 167.
- Verbruggen, M. (2012). Psychological mobility and career success in the “New” career climate. *Journal of Vocational Behavior*, 81, 289–297.
- Viswesvaran, C., & Ones, D. S. (1995). Theory testing: Combining psychometric meta-analysis and structural equations modeling. *Personnel Psychology*, 48, 865–885.
- Walsh, K., & Gordon, J. R. (2008). Creating and individual work identity. *Human Resource Management Review*, 18, 46–61.
- Watson, D., O'Hara, M. W., Chmielewski, M., McDade-Montez, E. A., Koffel, E., Naragon, K., et al. (2008). Further validation of the IDAS: Evidence of convergent, discriminant, criterion, and incremental validity. *Psychological Assessment*, 20, 248–259.
- Williams, M. (2001). In whom we trust: Group membership as an affective context for trust development. *Academy of Management Review*, 26, 377–396.
- Williams, C. R., & Livingstone, L. P. (1994). Another look at the relationship between performance and voluntary turnover. *Academy of Management Journal*, 37, 269–298.
- York, R. (2012). Residualization is not the answer: Rethinking how to address multicollinearity. *Social Science Research*, 41, 1379–1386.
- Young, L., & Daniel, K. (2003). Affective trust in the workplace. *International Journal of Human Resource Management*, 14, 139–155.
- Zhao, H., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology*, 60, 647–680.
- Zimmerman, R. D., & Darnold, T. C. (2009). The impact of job performance on employee turnover intentions and the voluntary turnover process: A meta-analysis and path model. *Personnel Review*, 38, 142–158.