

## RESEARCH REPORT

# When and How Is Job Embeddedness Predictive of Turnover? A Meta-Analytic Investigation

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The present meta-analytic study introduces an overall model of the relationships between job embeddedness and turnover outcomes. Drawing on 65 independent samples ( $N = 42,907$ ), we found that on-the-job and off-the-job embeddedness negatively related to turnover intentions and actual turnover, after controlling for job satisfaction, affective commitment, and job alternatives. In addition, the negative relationships between on-the-job embeddedness (off-the-job embeddedness) and turnover criteria were stronger in female-dominated samples and public organizations (collectivistic countries). Finally, turnover intentions, job search behavior, and job performance fully (partially) mediated the effect of on-the-job embeddedness (off-the-job embeddedness) on actual turnover. The research and practical implications of our findings are noted, in light of study limitations and future research needs.

*Keywords:* job embeddedness, turnover, meta-analysis

Departing from the traditional approach that views job attitudes and job alternatives as primary reasons for employee retention and leaving (Griffeth, Hom, & Gaertner, 2000; Hom & Griffeth, 1995), Mitchell, Holtom, Lee, Sablinski, and Erez (2001) advanced a new construct, job embeddedness, to capture the integrated forces that keep employees stuck or embedded in their jobs. In line with this conceptualization, researchers have offered some initial evidence that job embeddedness can explain unique variation in employee turnover beyond job attitudes and job alternatives (e.g., Crossley, Bennett, Jex, & Burnfield, 2007; Mitchell et al., 2001). Despite these promising findings, challenges remain as to researchers' understanding of the relationship between job embeddedness and turnover-related criteria. One prominent issue is inconsistency regarding the unique effects of the two dimensions of job embeddedness, namely, on- and off-the-job embeddedness, on employee turnover. For example, Lee, Mitchell, Sablinski, Burton, and Holtom (2004) documented that off-the-job embedded-

ness, rather than on-the-job embeddedness, is negatively related to voluntary turnover, controlling for job satisfaction, affective commitment, and job alternatives, while others have found the opposite results (e.g., Mallol, Holtom, & Lee, 2007). These inconsistent findings suggest a more complex analysis of the job embeddedness–employee turnover relationship is warranted to assist practitioners in better managing turnover.

Our meta-analytic investigation of on- and off-the-job embeddedness as predictors of turnover contributes to the literature in three primary ways. First, a meta-analysis provides a summary of the incremental effects of on- and off-the-job embeddedness on turnover criteria beyond the more established predictors. Thus, the primary contribution of our meta-analysis is assessment of whether the two types of job embeddedness account for unique variance in turnover intentions and actual turnover beyond job satisfaction, affective commitment, and job alternatives.

Second, embeddedness researchers have generally confirmed the negative relationships between the two types of job embeddedness and turnover outcomes. Nonetheless, wide variability exists in the magnitudes of correlations between these constructs across individual studies (e.g., Crossley et al., 2007; Ramesh & Gelfand, 2010). Such variability in observed estimates indicates the presence of potential moderators or sample attributes that might better account for the linkages between job embeddedness and turnover criteria. As Holtom, Mitchell, Lee, and Eberly (2008) suggested, future theoretical development of job embeddedness would benefit greatly from exploration of the likely moderators of these relationships. Echoing this suggestion, the second contribution of our meta-analytic study is to explore potential moderators at three contextual levels (i.e., national, organizational, and indi-

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vidual) of the associations between the two forms of job embeddedness and turnover criteria.

Third, previous research has focused on the direct impact of job embeddedness on employee turnover. Yet relatively few studies have explored the mediating mechanisms through which job embeddedness relates to voluntary turnover (Crossley et al. 2007). Therefore, the third contribution of our research is to integrate theory and evidence from previous turnover studies and examine the underlying mechanism through which the two types of job embeddedness relate to turnover criteria.

### Theoretical Background and Hypotheses

Much of current research on voluntary turnover is grounded in March and Simon's (1958) general model of voluntary turnover, which proposes that turnover is predicted by the perceived desirability of and perceived ease of leaving an organization. Usually, perceived desirability is captured by job satisfaction and affective commitment, whereas perceived ease is represented by perceived job alternatives (e.g., Mobley, 1977; Steers & Mowday, 1981). Using field theory (Lewin, 1951), Mitchell, Lee, and colleagues (Felps et al., 2009; Lee et al., 2004; Mitchell et al., 2001) suggested that people may become "stuck" in their jobs and that community factors might contribute to this feeling. They stated that both organizational (not captured by the March and Simon's ideas)- and community-related forces may prevent employees from leaving their jobs and proposed a new construct, job embeddedness, which is "like a net or a web in which an individual can become stuck" (Mitchell et al., 2001, p. 1104). They proposed that a person can be embedded in a job in a variety of ways related to both on- and off-the-job factors.

Owing to the unique referents of on-the-job and off-the-job embeddedness, these constructs should be distinct from job satisfaction, affective commitment, and perceived job alternatives, as supported by previous research (e.g., Mitchell et al., 2001). In addition, several studies report the unique effects of both types of job embeddedness on turnover criteria beyond job satisfaction, affective commitment, and job alternatives (e.g., Lee et al., 2004; Mallol et al., 2007; Tanova & Holtom, 2008); thus, similarly, we expect on-the-job and off-the-job embeddedness to exhibit unique relations with turnover criteria after controlling for its traditional predictors.

*Hypothesis 1:* After controlling for job satisfaction, affective commitment, and job alternatives, (a) on-the-job and (b) off-the-job embeddedness will be negatively related to turnover intentions and actual turnover.

### Moderators of the Job Embeddedness–Turnover Relationships

Mitchell and associates (2001) posited that the relationships between job embeddedness and turnover outcomes may vary by context or sample attributes. Similarly, Johns (2006) emphasized that contextual factors could influence relationships between variables and, in particular, specified turnover research as ripe for the analysis of context effects. Prior research has suggested that the contextual factors can be divided into three levels: national, organizational, and individual (Holtom et al., 2008). At the national

level, studies have been conducted to examine the predictive validity of job embeddedness worldwide (e.g., China, Europe, India, United States, and others.); however, a key theoretical question is whether job embeddedness predicts turnover outcomes across different cultures (Ramesh & Gelfand, 2010). Based on the seminal work of Hofstede (Hofstede, Hofstede, & Minkov, 2010), collectivism–individualism has become the most widely studied national characteristic (Gelfand, Erez, & Aycan, 2007). Extending previous cross-cultural work, we contrast collectivistic and individualistic cultures to determine whether the job embeddedness–turnover relationships differ across national boundaries. At the organizational level, we focus on the job embeddedness–turnover relationships in different types of organizations (i.e., public vs. private organizations). Our rationale for investigating organizational type follows from awareness that public and private organizations have varying organizational cultures and employment relationships with workers, which may influence their turnover decisions (Abelson, 1993; Felps et al., 2009; Holtom et al., 2008; Hom et al., 2009). Finally, individual characteristics affect employee turnover. In particular, for decades, researchers have acknowledged gender differences in employee turnover (e.g., Cotton & Tuttle, 1986; Griffeth et al., 2000; Hom, Roberson, & Ellis, 2008; Lyness & Judiesch, 2001). Thus, it is also reasonable to expect that job embeddedness may impact female and male employees' turnover outcomes differentially.

**National culture.** Individualism–collectivism is a pivotal national cultural characteristic that may moderate the links between job embeddedness and turnover criteria (Ramesh & Gelfand, 2010). The fundamental difference between the two cultural values lies in the assumption about the relationship between an individual and others (Hofstede et al., 2010). In individualistic countries, people tend to have looser relationships with others and exhibit greater self-concern; in contrast, people from collectivistic countries tend to develop and value closer relationships with others, thereby rendering them more receptive to developing a sense of belongingness (Oyserman, Coon, & Kimmelmeier, 2002).

Based on these differences, we proposed that the negative relationships between the two types of job embeddedness and turnover outcomes will be stronger in collectivistic than individualistic countries. Workers from collectivistic countries devote a great deal of personal time and effort to establishing and maintaining harmonious relationships with coworkers and others in their communities (Markus & Kitayama, 1991). As a result, they respond actively to job embeddedness cues (e.g., perceiving links with their current coworkers as important for their well-being), thereby anticipating more psychological cost when they leave their jobs. On the contrary, job embeddedness may be less meaningful to employees in individualistic countries because they tend to place a high premium on their personal achievements and to be less receptive to embeddedness in general (e.g., considering their relationships with current coworkers as not important for their well-being). Consequently, they sense less loss associated with breaking away from the network of associations within which they are embedded. Moreover, collectivists often live close to their extended families, including parents, grandparents, uncles/aunts, siblings, or even close friends, whereas individualists tend to live with their immediate families composed of their spouse and children (Georgas et al., 1997). This difference may encourage individual-

ists to exercise more mobility than collectivists, thus rendering them less sensitive to job embeddedness. Accordingly, we proposed the following:

*Hypothesis 2:* National culture will moderate the relationships of (a) on-the-job and (b) off-the-job embeddedness with turnover intentions and actual turnover, such that on-the-job and off-the-job embeddedness will be more negatively related to turnover intentions and actual turnover in collectivistic countries than in individualistic countries.

**Organizational type.** Compared with private organizations, public organizations usually provide relatively secure and low-risk jobs (Bellante & Link, 1981; Buelens & Van den Broeck, 2007). Thus, according to attraction–selection–attrition theory (Schneider, 1987), those who value job security and risk aversion are more likely to work in public organizations. Job embeddedness fosters a sense of security and stability (Lee et al., 2004), so consequently, public workers are expected to be more receptive to the cues associated with job embeddedness. Further, according to Bureau of Labor Statistics data (U.S. Department of Labor, 2010), from 2000 to 2009, annual voluntary turnover rates for private organizations (17.8%–31.0%) were higher than the rates for government (5.6%–9.7%). This suggests that private organizations have a stronger turnover culture than public organizations, which could perpetuate spillover and contagion effects that could undermine job embeddedness by inciting employees to leave (Abelson, 1993; Felps et al., 2009). Subsequently, job embeddedness may have weaker effects on retaining employees in private firms.

Also, characteristics of workers in public and private organizations might influence the strength of the job embeddedness–turnover relationships. Workers in public organizations value extrinsic factors less (e.g., pay and promotion) and intrinsic factors more (e.g., interesting job content and desire to serve public interests) than their counterparts in private organizations (e.g., Lyons, Duxbury, & Higgins, 2006; Perry, 1997, 2000). Owing to their emphasis on the intrinsic aspects of work, public personnel are apt to place higher priority on the extent of fit between their values and those of organizations and communities. By contrast, private workers, who are more motivated by extrinsic factors such as pay and promotion, relish achievement aspects of their jobs, rather than those associated with organizational or community value congruence. Therefore, compared with individuals in private organizations, we expect employees in public organizations to place greater emphasis on job embeddedness.

*Hypothesis 3:* Organizational type will moderate the negative relationships of (a) on-the-job and (b) off-the-job embeddedness with turnover intentions and actual turnover, such that on-the-job and off-the-job embeddedness will be more negatively related to turnover intentions and actual turnover in public organizations than in private organizations.

**Gender.** According to the social role theory of gender differences (Eagly, 1987), men and women develop and exhibit different attributes and social behaviors in conformance with their expected gender roles. Men tend to exhibit greater agentic qualities, including being independent, masterful, and assertive, whereas women often display high levels of communal attributes

such as having more social and affiliative interests and concern for others (Eagly & Wood, 1991; Marsden, Kalleberg, & Cook, 1993). These gender disparities should lead women, relative to men, to value the links they have with organizations and communities and possibly bear more emotional cost when they depart from their jobs. Moreover, from an external labor market perspective, researchers have found that women often face more limited job opportunities (Marsden et al., 1993) and have lower expectations regarding career opportunities and attainments (Ng, Eby, Sorensen, & Feldman, 2005). This reasoning suggests that compared with men, women may be more receptive to job embeddedness cues and, accordingly, pay more attention to the accruals they have earned within their organizations (Lyness & Judiesch, 2001). Hence, we propose that the job embeddedness–turnover relationship will be stronger for women.

*Hypothesis 4:* Gender will moderate the negative relationships of (a) on-the-job and (b) off-the-job embeddedness with turnover intentions and actual turnover, such that on-the-job and off-the-job embeddedness will be more negatively related to turnover intentions and actual turnover in female-dominated samples than in male-dominated samples.

### Mediating Mechanisms of the Job Embeddedness–Turnover Relationships

Finally, building on previous employee turnover and retention studies, we explored the mediating process through which job embeddedness influences turnover. Many theoretical frameworks hold that turnover intentions are an immediate outcome of decreased job satisfaction, affective commitment, and job embeddedness as well as job alternatives (e.g., Holtom et al., 2008). Also, previous research supports the mediating role of turnover intentions in the relationships between actual turnover and its antecedents (e.g., Lee & Mowday, 1987; Tett & Meyer, 1993). Drawing upon these findings, we anticipated that high levels of job embeddedness first reduce employees' turnover intentions, which, subsequently, relate to actual turnover. Moreover, we proposed that job search behavior and job performance mediate the relationship between turnover intentions and actual turnover. Holtom and colleagues (2008) suggested that employee intentions to leave organizations result in actual turnover through intervening behaviors. Those who desire to quit engage in searches for alternative jobs and withdraw work efforts from current positions. Empirical research confirms the positive impact of job search behavior and the negative effect of job performance on actual turnover (e.g., Becker & Cropanzano, 2011; Swider, Boswell, & Zimmerman, 2011; Zimmerman & Darnold, 2009).

*Hypothesis 5:* Turnover intentions will mediate the influences of (a) on-the-job and (b) off-the-job embeddedness on job search behavior and job performance, which, in turn, will relate to actual turnover.

## Method

### Literature Search and Coding Procedures

We searched for published articles and dissertations up to June 2011 in PsycINFO, ISI Web of Science, Business Source Premier,

ProQuest, and Google Scholar with search terms such as *job embeddedness*, *organizational embeddedness*, and *community embeddedness*. The electronic search was supplemented with a manual search of peer-reviewed management and psychology journals. Moreover, we searched conference programs from the Academy of Management and the Society of Industrial and Organizational Psychology from 2006 to 2011. We also obtained unpublished research through the electronic mailing lists of academic associations. Finally, we searched for articles published in other language databases (e.g., the China Knowledge Resource Integrated Database and Taiwan Digital Meta-Library).

Each primary study had to meet four criteria for inclusion in the analyses. First, a study had to be an empirical investigation of on- and/or off-the-job embeddedness at the individual level of analysis. Second, an investigation had to report at least one correlation coefficient between one of the two types of job embeddedness and our other variables of interest. Third, a study had to report sample size for us to calculate the sample size-weighted effect size. Finally, when the same sample was used in two or more articles, we considered only the one that provided greater information. These inclusion criteria resulted in 52 studies reporting relationships from 65 independent samples ( $N = 42,907$ ).

The coding process involved two phases. First, after developing coding instructions, the first author and a research assistant independently coded a random selection of 10 articles to assess the level of agreement regarding sample sizes, effect sizes, reliabilities, and characteristics of samples. After both coders checked data entry and resolved errors, the first author then completed the coding for the remaining articles and discussed any ambiguities with the second author to achieve consensus.

### Coded Variables

We coded *on-the-job embeddedness* and *off-the-job embeddedness* using the scale developed by Mitchell and Lee and their colleagues (Lee et al., 2004; Mitchell et al., 2001). Measures of *turnover intentions* included intentions to leave, turnover, exit, quit, or stay (reverse coded). *Actual turnover* refers to voluntary turnover reported in the primary studies. We examined *job satisfaction* as individuals' overall satisfaction with their jobs, work, and organizations. Regarding the *commitment* measure, we limited the analyses to those studies that used affective commitment, as this was the most frequently studied commitment construct in identified studies. Most studies measuring *job alternatives* used employees' perceived job alternatives (e.g., Mitchell et al., 2001). Only Swider and colleagues (2011) measured job alternatives using an index reflecting the national and local unemployment levels. We included both measures in the analyses. *Job search behavior* was coded as both preparatory job search actions and actual job search behavior. *Job performance* was operationalized as the core duties associated with a particular job as evaluated by others (e.g., supervisors, coworkers, or archival data).

We categorized the identified studies into *individualistic* and *collectivistic* countries according to the individualism scores of the countries where the primary data were collected. We obtained the individualism scores from Hofstede et al. (2010, pp. 95–97) and categorized the countries with individualism scores higher than 50 as individualistic countries ( $M = 88.78$ ,  $SD =$

7.55) and those with individualism scores lower than 50 as collectivistic countries ( $M = 21.94$ ,  $SD = 7.60$ ). In addition, we classified the organizations from which the data were collected as either *public organizations*, referring to publicly owned organizations that provide production and services for the government and society (e.g., government agencies), or *private organizations*, referring to organizations run by private individuals or groups as a means of pursuing profit (e.g., manufacturing firms). Moreover, we classified studies into *female-dominated* and *male-dominated* groups according to the percentage of women in the samples (Shockley & Singla, 2011). The female-dominated group was composed of studies that included more than 50% women ( $M = 71%$ ,  $SD = 9%$ ), while the male-dominated groups included studies with less than 50% women in the samples ( $M = 33%$ ,  $SD = 12%$ ). Appendix A presents a summary of our moderator classification scheme, and Appendix B lists the studies we considered but excluded from our meta-analysis grouped by the reason for exclusion.

### Meta-Analytic Calculation

Following the statistical procedure outlined by Hunter and Schmidt (2004), we corrected observed correlations from individual samples for unreliability and sampling error. First, Cronbach's alpha coefficients were used to correct turnover intentions, job satisfaction, affective commitment, job alternatives, job search behavior, and job performance for unreliability at the single-study level. For studies that failed to report reliabilities, we used the average weighted value from other identified studies (Hunter & Schmidt, 2004). We did not correct actual turnover or on-the-job and off-the-job embeddedness for unreliability because actual turnover was measured objectively, whereas job embeddedness is a formative variable that is composed by its indicators (Mitchell et al., 2001). Furthermore, at the level of single studies, all the point-biserial correlations between actual turnover and other variables were corrected to reflect a standard 50–50 split in the distribution of actual turnover (Kemery, Dunlap, & Griffeth, 1998). Finally, we corrected for sampling error at the meta-analytic level to calculate average weighted correlations ( $r$ ) and average weighted corrected correlations ( $r_c$ ) among variables. Also, we computed the standard deviation ( $SD r_c$ ) and 95% confidence interval for the corrected correlation, and the  $Q$  homogeneity statistic, the latter of which is significant when potential moderating effects are present (Hunter & Schmidt, 2004). To test the moderating hypotheses, we calculated the average weighted corrected correlation for each moderator subset. Then, we examined whether the difference between the correlations of the two subsets of each moderator was significant with the  $Z$  statistic (Quiñones, Ford, & Teachout, 1995). We utilized meta-analytic structural equation modeling (SEM) to examine the unique influence of job embeddedness on turnover criteria beyond job attitudes and job alternatives, and estimated our hypothesized mediation model (Viswesvaran & Ones, 1995). We relied on the chi-square statistic, comparative fit index (CFI), and standardized root-mean-square residual (SRMR) to assess the path model fit to the data (Kline, 2005).

Table 1  
 Meta-Analytic Estimates for Job Embeddedness–Turnover Criteria Relationships

Criteria and job embeddedness type	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>SD r<sub>c</sub></i>	95% CI of <i>r<sub>c</sub></i>	<i>Q</i>
Turnover intention							
On-the-job embeddedness	26	9,287	-.44	-.48	.17	[-.56, -.41]	290.30**
Off-the-job embeddedness	22	7,057	-.21	-.22	.14	[-.29, -.16]	146.20**
Actual turnover							
On-the-job embeddedness	18	15,224	-.15	-.19	.04	[-.27, -.11]	140.65**
Off-the-job embeddedness	18	15,580	-.10	-.12	.05	[-.18, -.06]	79.60**

Note. *k* = number of correlations; *N* = combined sample size; *r* = mean sample size weighted observed correlations; *r<sub>c</sub>* = mean sample size weighted corrected correlation; *SD r<sub>c</sub>* = standard deviation of the corrected correlation; CI = confidence interval.  
 \*\* *p* < .01.

**Results**

**Test of Main Effects of Job Embeddedness on Turnover Criteria**

Table 1 summarizes the overall relationships between the two types of job embeddedness and turnover outcomes. Table 2 presents the meta-analytic corrected correlation matrices. The results presented in Table 3 indicate that on-the-job embeddedness ( $\beta = -.14, p < .01$ ) and off-the-job embeddedness ( $\beta = -.08, p < .01$ ) had significant relations with turnover intentions beyond job attitudes and job alternatives. Similarly, on-the-job embeddedness ( $\beta = -.05, p < .05$ ) and off-the-job embeddedness ( $\beta = -.07, p < .01$ ) had significant effects on actual turnover after job attitudes and job alternatives were controlled.<sup>1</sup> In addition, the results show that the two types of job embeddedness accounted for significant incremental variance in both turnover intentions ( $\Delta R^2 = .03, p < .01$ ) and actual turnover ( $\Delta R^2 = .01, p < .05$ ). Therefore, Hypothesis 1 is supported.

**Tests of Moderators**

The moderation hypotheses results are shown in Table 4 and Table 5. National culture failed to moderate the on-the-job embeddedness–turnover intentions relationship; however, the negative off-the-job embeddedness–turnover intentions linkage was significantly stronger in collectivistic countries ( $r_c = -.30$ ) than in individualistic countries ( $r_c = -.18$ ) with  $Z = -2.45 (p < .05)$ . Due to an insufficient number of studies from collectivistic countries, we could not examine the moderating role of national culture on the relationships between on-the-job and off-the-job embeddedness and actual turnover. Therefore, Hypothesis 2a is not supported, while Hypothesis 2b is partially confirmed.

The results show that the negative on-the-job embeddedness–turnover intentions relationship was significantly stronger in public organizations ( $r_c = -.55$ ) than in private organizations ( $r_c = -.47; Z = 1.96, p < .05$ ); however, the difference between the off-the-job embeddedness–turnover intentions correlations in public versus private organizations was nonsignificant. Similarly, organizational type moderated the relationship between on-the-job embeddedness and actual turnover ( $r_c = -.19$  for private organizations vs.  $r_c = -.27$  for public organizations;  $z = -3.34, p < .01$ ), but not the off-the-job embeddedness–actual turnover asso-

ciation; thus, Hypothesis 3a is supported, while Hypothesis 3b is not.

As presented in Table 4, gender moderated the on-the-job embeddedness–turnover intentions linkage ( $r_c = -.49$  for female-dominated samples vs.  $r_c = -.41$  for male-dominated samples;  $Z = 2.36, p < .05$ ). Nevertheless, gender failed to moderate the off-the-job embeddedness–turnover intentions relationship. Likewise, a similar pattern emerged for the on-the-job and off-the-job embeddedness–actual turnover relationships. Gender moderated the negative on-the-job embeddedness–actual turnover relationship, such that it was significantly stronger in female-dominated samples ( $r_c = -.20$ ) than in male-dominated samples ( $r_c = -.16; z = 2.03, p < .05$ ). By contrast, gender had little influence on the off-the-job embeddedness–actual turnover linkage. These results indicate support for Hypothesis 4a, but not for Hypothesis 4b.

**Tests of Mediation**

We used meta-analytic SEM to examine the mediating hypothesis. As shown in Figure 1, all the proposed relationships were significant, and the model fit the data well (see Model 1 of Table 6),  $\chi^2(16) = 596.80, p < .01, CFI = .96, SRMR = .05$ . We further assessed alternative models by adding the direct effects of the two types of job embeddedness on actual turnover or eliminating the direct effects of turnover intentions on actual turnover. As presented in Table 6, results generally support the proposed mediating model of the relationships between job embeddedness and actual

<sup>1</sup> With the aggregate data gathered from the primary studies, we were unable to conduct logistic regression when examining the influence of predictors on actual turnover, a binary outcome. To use logistic regression in structural equation modeling, we need to have the raw data from the original primary studies, which cannot be completed in a meta-analysis (e.g., Van Iddekinge, Roth, Putka, & Lanivich, 2011). Previous meta-analyses involving actual turnover met the same situation, and used linear regression analyses to test the relations between a set of predictors and actual turnover (e.g., Harrison, Newman, & Roth, 2006; Podsakoff, LePine, & LePine, 2007; Tett & Meyer, 1993; Van Iddekinge et al., 2011; Zhao, Wayne, Glibkowski, & Bravo, 2007; Zimmerman, 2008; Zimmerman & Darnold, 2009). Moreover, prior voluntary turnover research has shown that logistic regression tends to achieve very similar conclusions to those derived from linear regression analyses (Barrick & Zimmerman, 2005; Huselid & Day, 1991).

Table 2  
Correlations Among Job Embeddedness and Other Variables

Variable	1	2	3	4	5	6	7	8
1. On-the-job embeddedness	—							
2. Off-the-job embeddedness								
<i>r</i> , <i>r<sub>c</sub></i>	.31, .31							
<i>k</i> ( <i>N</i> )	32 (20,900)							
3. Actual turnover								
<i>r</i> , <i>r<sub>c</sub></i>	-.15, -.19	-.10, -.12						
<i>k</i> ( <i>N</i> )	18 (15,224)	18 (15,580)						
4. Turnover intention								
<i>r</i> , <i>r<sub>c</sub></i>	-.44, -.48	-.21, -.22	.23, .35					
<i>k</i> ( <i>N</i> )	26 (9,287)	22 (7,057)	11 (2,898)					
5. Job alternatives								
<i>r</i> , <i>r<sub>c</sub></i>	-.22, -.25	-.06, -.07	.14, .19	.37, .45				
<i>k</i> ( <i>N</i> )	12 (4,627)	11 (4,004)	10 (4,578)	12 (3,366)				
6. Job search behavior								
<i>r</i> , <i>r<sub>c</sub></i>	-.22, -.24	-.09, -.09	.31, .40	.48, .56	.25, .31			
<i>k</i> ( <i>N</i> )	9 (11,694)	10 (12,255)	10 (13,001)	11 (3,380)	11 (3,402)			
7. Job satisfaction								
<i>r</i> , <i>r<sub>c</sub></i>	.60, .64	.21, .22	-.12, -.16	-.44, -.52	-.15, -.19	-.33, -.40		
<i>k</i> ( <i>N</i> )	24 (19,003)	24 (19,406)	19 (26,473)	17 (5,570)	14 (5,269)	13 (13,240)		
8. Affective commitment								
<i>r</i> , <i>r<sub>c</sub></i>	.55, .61	.15, .16	-.17, -.22	-.38, -.44	-.18, -.23	-.33, -.39	.58, .68	
<i>k</i> ( <i>N</i> )	17 (9,475)	15 (7,705)	12 (13,636)	13 (5,246)	10 (3,888)	9 (2,610)	20 (18,183)	
9. Job performance								
<i>r</i> , <i>r<sub>c</sub></i>	.17, .18	.10, .10	-.14, -.15 <sup>a</sup>	-.10, -.15 <sup>b</sup>	.02, .03	-.02, -.02 <sup>c</sup>	.16, .19 <sup>d</sup>	.13, .18 <sup>e</sup>
<i>k</i> ( <i>N</i> )	9 (3,305)	2 (931)	72 (25,234)	42 (8,361)	2 (745)	3 (658)	64 (15,749)	87 (20,973)

Note. *k* = number of correlations; *N* = combined sample size; *r* = mean sample size weighted observed correlations; *r<sub>c</sub>* = mean sample size weighted corrected correlation.

The letter superscripts in the body of the table indicate the sources of the meta-analytic correlations as follows: <sup>a</sup> Griffeth, Hom, and Gaertner (2000). <sup>b</sup> Zimmerman and Darnold (2009). <sup>c</sup> Additional meta-analysis of Birnbaum and Somers (1993); Holtom, Crossley, and Burton (2010); and Shaw and Gupta (2001). <sup>d</sup> Fried, Shirom, Gilboa, and Cooper (2008). <sup>e</sup> Riketta (2002).

turnover with a direct effect of off-the-job embeddedness on actual turnover. Sobel (1982) tests reveal significant indirect effects of on-the-job embeddedness ( $Z = -7.77, p < .01$ ) and off-the-job embeddedness ( $Z = -5.84, p < .01$ ) on actual turnover. Therefore, Hypothesis 5a is fully supported, whereas Hypothesis 5b receives partial support.

### Discussion

This meta-analytic study, the first quantitative review of the relationship between job embeddedness and turnover, produces valuable

insights and important theoretical and practical implications. We elaborate upon these ramifications in the following sections.

### Theoretical Implications

First, our research contributes to the turnover literature by demonstrating that on-the-job and off-the-job embeddedness explain incremental variance in both turnover intentions and actual turnover beyond commonly studied work attitudes and job alternatives. Deeply rooted in the March and Simon's (1958) general model of voluntary turnover, a majority of previous turnover

Table 3  
Meta-Analytic Regression Results

Predictor	Turnover intention β						Actual turnover β					
	(7,056)	(9,417)	(4,578)	(5,659)	(5,131)	(6,602)	(18,060)	(14,635)	(4,004)	(6,960)	(7,215)	(8,266)
Job satisfaction	-.41**	-.31**			-.39**	-.32**	-.02	.03			-.01	.03*
Affective commitment	-.16**	-.09**			-.09**	-.05**	-.21**	-.18**			-.18**	-.16**
Job alternatives			.45**	.35**	.35**	.34**			.19**	.15**	.15**	.14**
On-the-job embeddedness		-.20**		-.37**		-.14**		-.07**		-.13**		-.05*
Off-the-job embeddedness		-.07**		-.08**		-.08**		-.07**		-.07**		-.07**
R <sup>2</sup>	.28**	.32**	.20**	.35**	.40**	.43**	.05**	.06**	.03**	.06**	.07**	.08**
ΔR <sup>2a</sup>		.04**		.15**		.03**		.01*		.03**		.01*

Note. Values in parentheses are *N*s. Coefficients presented are standardized estimates.

<sup>a</sup> For changes in R<sup>2</sup>, models were compared with their previous ones.

\*  $p < .05$ . \*\*  $p < .01$ .

Table 4  
*Moderating Effects of National Culture, Gender, Age, and Organizational Characteristic on the Relationship Between Job Embeddedness and Turnover Intention (Intention to Leave as the Dependent Variable)*

Moderator	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>SD r<sub>c</sub></i>	95% CI of <i>r<sub>c</sub></i>	<i>Q</i>	<i>Z</i>
On-the-job embeddedness								
National culture								
Individualism	16	5,006	-.45	-.49	.16	[-.58, -.40]	141.67**	0.37
Collectivism	10	4,281	-.42	-.47	.19	[-.61, -.33]	148.62	
Organizational type								
Private	11	3,787	-.43	-.47	.14	[-.56, -.38]	63.20**	-1.96*
Public	6	1,972	-.50	-.55	.16	[-.67, -.43]	40.36**	
Gender								
Female-dominated	12	3,860	-.45	-.49	.18	[-.61, -.37]	153.70**	2.36*
Male-dominated	10	4,300	-.39	-.41	.16	[-.51, -.31]	80.65**	
Off-the-job embeddedness								
National culture								
Individualism	14	4,255	-.17	-.18	.13	[-.26, -.10]	69.36**	-2.45*
Collectivism	8	2,820	-.27	-.30	.14	[-.43, -.18]	64.67**	
Organizational type								
Private	10	3,319	-.20	-.22	.13	[-.31, -.13]	47.74**	0.74
Public	6	2,038	-.18	-.19	.14	[-.31, -.07]	28.87**	
Gender								
Female-dominated	10	2,644	-.22	-.24	.15	[-.36, -.12]	77.65**	0.53
Male-dominated	8	3,200	-.20	-.22	.14	[-.31, -.12]	43.83**	

Note. *k* = number of correlations; *N* = combined sample size; *r* = mean sample size weighted observed correlations; *r<sub>c</sub>* = mean sample size weighted corrected correlation; *SD r<sub>c</sub>* = standard deviation of the corrected correlation; CI = confidence interval.  
 \* *p* < .05. \*\* *p* < .01.

studies have focused on investigating the role of perceived desirability and perceived ease of leaving in predicting turnover (Holtom et al., 2008). Although researchers have begun to clarify the unique predictive role of job embeddedness (e.g., Tanova & Holtom, 2008), studies rarely control for perceived job desirability and

ease of moving, simultaneously, in order to demonstrate fully the additional predictive power of job embeddedness for both turnover intentions and actual turnover. Hence, our meta-analysis should help bolster evidence regarding the validity and utility of job embeddedness in studying employee turnover.

Table 5  
*Moderating Effects of National Culture, Gender, Age, and Organizational Characteristic on the Relationship Between Job Embeddedness and Actual Turnover*

Moderator	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>SD r<sub>c</sub></i>	95% CI of <i>r<sub>c</sub></i>	<i>Q</i>	<i>Z</i>
On-the-job embeddedness								
National culture								
Individualism	17	14,750	-.17	-.19	.04	[-.27, -.11]	140.34**	0.71
Collectivism	1	474	-.13	-.16	—	[-.28, -.05]	—	
Organizational type								
Private	9	3,084	-.15	-.19	.01	[-.23, -.14]	5.35	-3.34**
Public	4	2,169	-.22	-.27	.03	[-.33, -.20]	4.20	
Gender								
Female-dominated	9	2,443	-.17	-.20	.05	[-.26, -.15]	9.79	2.03*
Male-dominated	4	10,502	-.13	-.16	.01	[-.19, -.13]	2.73	
Off-the-job embeddedness								
National culture								
Individualism	17	15,106	-.11	-.13	.05	[-.19, -.06]	76.27**	2.87**
Collectivism	1	474	.00	.00	—	[-.11, .11]	—	
Organizational type								
Private	9	3,185	-.09	-.11	.10	[-.20, -.02]	23.91**	-0.90
Public	5	2,730	-.12	-.13	.05	[-.24, .04]	34.07**	
Gender								
Female-dominated	9	2,443	-.13	-.15	.10	[-.23, -.07]	19.48*	0.04
Male-dominated	3	10,297	-.10	-.15	.05	[-.28, -.01]	15.60**	

Note. *k* = number of correlations; *N* = combined sample size; *r* = mean sample size weighted observed correlations; *r<sub>c</sub>* = mean sample size weighted corrected correlation; *SD r<sub>c</sub>* = standard deviation of the corrected correlation; CI = confidence interval.  
 \* *p* < .05. \*\* *p* < .01.

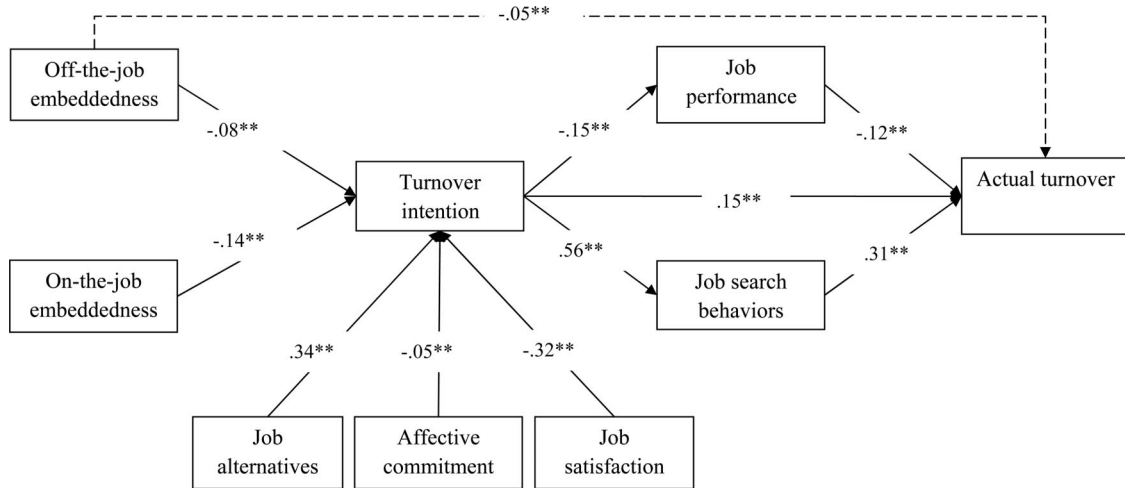


Figure 1. Results of path analyses of the influence of job embeddedness on actual turnover. Coefficients presented were standardized estimates. Solid lines represent the hypothesized model; dotted lines represent the significant paths added to the hypothesized model. Harmonic  $N = 4,056$ . \*\*  $p < .01$ .

Second, answering the call for examining the boundary conditions of the job embeddedness–turnover model (Ramesh & Gelfand, 2010), this investigation uncovered contextual factors at three levels (i.e., national culture, organizational type, and gender) that qualify the job embeddedness–turnover linkage. While a burgeoning body of literature provides evidence of job embeddedness as a significant antecedent of turnover (e.g., Allen, 2006), researchers are yet to understand the situations where the effects of job embeddedness on turnover are augmented or attenuated. Moreover, moderation analyses may help to clarify why job embeddedness accounts for small incremental variance in turnover criteria (Table 3). The post hoc analysis reveals that in certain contexts, job embeddedness is more predictive of turnover criteria. As an illustration, our analyses show that job embeddedness explains more variance in turnover intentions ( $\Delta R^2 = .05, p < .01$ ) and actual turnover ( $\Delta R^2 = .03, p < .01$ ) in public organizations. Results of this nature should stimulate further exploration of the contextual factors that influence when, and to what extent, job embeddedness relates to employee turnover.

Third, our results foster understanding of how job embeddedness is related to actual turnover. Whereas the job embeddedness–actual turnover linkage has been studied extensively (e.g., Crossley et al., 2007), the psychological mechanisms underlying it have not yet been elucidated. While we were not able to examine the causal

links over time, our data suggest that a decline in on-the-job and off-the-job embeddedness is associated with increased turnover intentions, which is further related to reduced effort or time devoted to the job and enhanced engagement in job search, which are more directly related to actual turnover. Showing that these behavioral mechanisms could surface helps to develop a more complete understanding of how job embeddedness, as a job attitude, relates to actual turnover.

### Managerial Implications

Our investigation also offers insights regarding the importance of job embeddedness in curbing turnover, which causes organizations to incur significant costs in recruiting, selecting, and training new employees. For example, costs associated with replacing a front-desk associate in the U.S. hotel industry have been estimated at \$6,000–\$12,000 (Hinkin & Tracey, 2000). Therefore, although job embeddedness was found to explain a small incremental amount of variance in reducing turnover, it can still result in large cost savings for organizations. Moreover, the value of job embeddedness in retaining employees might be amplified when an organization wants to retain its key employees. The knowledge and experiences that key employees hold can add value in terms of organizational memory, tacit know-how, human capital, and firm-

Table 6  
Comparison of the Fit of the Alternative Job Embeddedness–Actual Turnover Models

Models	$\chi^2(df)$	CFI	SRMR	$\Delta\chi^2(df)$
1. Hypothesized model	596.80 (16)	.96	.05	
2. Off-the-job embeddedness → actual turnover added	586.14 (15)	.96	.05	10.66** (1)
3. On-the-job embeddedness → actual turnover added	585.58 (14)	.96	.05	0.56 (1)
4. Turnover intention → actual turnover removed	664.64 (16)	.96	.05	80.50** (1)

Note. For changes in chi-square, Model 2 was compared with Model 1, and Model 3 and Model 4 were compared with Model 2. CFI = comparative fit index; SRMR = standardized root-mean-square residual. Harmonic  $N = 4,056$ . \*\*  $p < .01$ .



Table 7  
Correlations Between Moderator Variables

Correlation variables	Voluntary turnover		Turnover intention	
	On-the-job	Off-the-job	On-the-job	Off-the-job
National culture and organizational type	-.21 (14)	-.23 (13)	.04 (19)	.19 (14)
National culture and gender	.43 (13)	.52* (12)	.30 (23)	.27 (17)
Organizational type and gender	-.38 (9)	-.33 (8)	.09 (15)	.07 (11)

Note. Correlation coefficients were the correlations between moderators when examining the relationship between two types of job embeddedness and turnover criteria. The numbers in parentheses were numbers of studies that reported the moderator variables and the relationships between job embeddedness and turnover criteria. For national culture, 0 = individualism, 1 = collectivism; for organizational type, 0 = private organization, 1 = public organization; for gender, 0 = female-oriented, 1 = male-oriented.

\*  $p < .05$  (one-tailed).

specific knowledge beyond the costs associated recruitment, selection, and training (Holtom et al., 2008). Thus, even modest reductions in turnover resulting from enhanced job embeddedness can pay off generally, particularly for key employees.

Managers should take steps to foster employee job embeddedness in and beyond the workplace. For example, to cultivate on-the-job embeddedness, long-term career development plans might be adopted by an organization (Mitchell et al., 2001). To promote off-the-job embeddedness (Ramesh & Gelfand, 2010), managers can encourage employees to volunteer their time in their community activities and, perhaps, subsidize employees' home purchases in their favorite neighborhoods. In addition, based upon our results, such efforts may be particularly impactful for firms that operate in collectivistic cultures. Finally, a key implication regarding the mediation effects is for firms to routinely survey employees' on-the-job and off-the-job embeddedness. Low embeddedness could be symptomatic of workers' intentions to leave, thereby setting off a cascade of activities reflective of their withdrawal from the firm (and job), namely low performance and high job search activity. Therefore, an important point for managers is to respond in a timely manner to indications of low embeddedness before they culminate into a tide of withdrawal cognitions and subsequent behavior. Moreover, managers may consider alternative approaches to improving employee performance, which may further retain employees in organizations.

**Limitations and Future Research Opportunities**

Our research has some limitations that raise interesting possibilities for future research. First, the moderating effects of gender were examined using a grouping variable. Operationalizing gender in this fashion meant including both males and females in samples, regardless of the degree to which either of the genders was predominant in a particular sample. Consequently, this procedure is a conservative test of our hypotheses and lowers the likelihood of finding significant results. To assess gender effects on the job embeddedness–turnover relationship more rigorously, future researchers should collect field samples and examine the gender composition more extensively. Second, due to limited sample size, we were unable to test our hypotheses with regard to the specific dimensions of on- and off-the-job embeddedness (i.e., fit, links, and sacrifice). To date, very little research has explored when and how the three dimensions of job embeddedness relate to turnover criteria. Therefore, additional work that tests our hypotheses at the

dimension level will be valuable in further refining job embeddedness theory. Third, we did not examine the joint moderating effect of multiple moderators due to small sample size; however, as shown in Table 7, the moderators did not significantly correlate with each other, thus implying a low likelihood that our moderation effects are confounded by multicollinearity between moderators. With that said, we encourage future meta-analyses that examine multiple moderators simultaneously and additional moderators (e.g., occupational types, rural vs. urban inhabitants) as more studies accumulate over time. Fourth, the numbers of studies for several relationships we meta-analyzed are small (e.g., the correlation between off-the-job embeddedness and job performance in Table 2), which may have produced results reflective of chance. Although this issue may not change the main findings of this study, we encourage investigators in future studies to replicate our results when more empirical studies of these relationships are available.

**Conclusion**

Although job embeddedness has emerged as a major predictor of employee turnover, questions remained about its unique predictive power beyond more established constructs, as well as the boundary conditions of and the mechanism underlying its relation with turnover. This research directly addresses these questions, and our findings hold implications for scholars and practitioners alike. We hope our preliminary meta-analysis spurs additional research to further clarify when and how job embeddedness relates to other important work outcomes.

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Appendix A

Summary of Studies and Samples Included in the Meta-Analysis<sup>a</sup>

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
Allen (2006)	222	On-the-job Off-the-job	Voluntary turnover (25%) Voluntary turnover (25%)	-.23 -.05	US (I)	Financial service organization (PR)	66 (F)
Bergiel, Nguyen, Clenney, & Taylor (2009)	495	On-the-job	Turnover intention (.78)	-.59	US (I)	State Department (PU)	—
Besich (2005)	799	Dimensions of on-the-job	Turnover intention (.88) Job satisfaction (.74) Overall commitment (.80) Job alternatives (.72)	—	US (I)	Federal agency (PU)	—
Burton, Holtom, Sablynski, Mitchell, & Lee (2010)	623	On-the-job	Turnover intention (—) Job performance (.91)	-.28 .08	US (I)	International financial institution (PR)	76 (F)
Y. Chen (2007)	262	On-the-job Off-the-job	Job alternatives (.72) Turnover intention (.78) Job satisfaction (.90) Turnover intention (.78)	-.38 -.62 .64 -.42	China (C)	Public service organization (PU)	11 (M)
J. Chen (2009)	270	On-the-job Off-the-job	Job satisfaction (.90) Job satisfaction (.83) Overall commitment (.82) Job satisfaction (.83)	.50 .66 .64 .23	China (C)	School (PU)	64 (F)
Crossley, Bennett, Jex, & Burnfield (2007)	306	On-the-job	Overall commitment (.82) Voluntary turnover (11%) Turnover intention (.89) Job satisfaction (.89) Affective commitment (.76) Job alternatives (.69) Job search behavior (.89) Voluntary turnover (11%) Turnover intention (.89) Job satisfaction (.89) Affective commitment (.76) Job alternatives (.69)	.28 -.08 -.47 .41 .57 -.18 -.20 -.04 -.28 .19 .21 -.10 -.37	US (I)	Health care organization	80 (F)
Cunningham, Fink, & Sagas (2005)	213	Dimensions of on-the-job and off-the-job	Job search behavior (.89) Turnover intention (.84)	—	US (I)	NCAA softball teams (PU)	84 (F)

(Appendices continue)

Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
Felps, Mitchell, Hekman, Lee, Holtom, & Harman (2009)	189	Dimensions of on-the-job and off-the-job	Job satisfaction (.92)	—	US (I)	NCAA athletic department (PU)	40 (M)
			Affective commitment (.89)				
			Job alternatives (.75)				
			Job search behavior (.75)				
			Turnover intention (.84)				
			Job satisfaction (.92)				
			Affective commitment (.89)				
			Job alternatives (.73)				
			Job search behavior (.74)				
			Voluntary turnover (23%)				
Fletcher (2005)	224	Overall	Job satisfaction (.93)	—	US (I)	Recreation and hospitality organization (PR)	39 (M)
			Affective commitment (.85)				
			Voluntary turnover (26%)				
			Job satisfaction (.93)				
Fu (2010)	353	On-the-job	Overall commitment (.89)	—	US (I)	Military (PU)	15 (M)
			Job alternatives (—)				
			Job search behavior (.83)				
			Turnover intention (.97)				
			Job satisfaction (.90)				
			Overall commitment (.89)				
			Job alternatives (.79)				
			Job search behavior (.66)				
			Turnover intention (.97)				
			Job satisfaction (.90)				
Overall commitment (.89)							
Giosan, Holtom, & Watson (2005)	172	On-the-job	Job search behavior (.66)	—	China (C)	Mixed	65 (F)
			Turnover intention (.75)				
			Turnover intention (.75)				
			Turnover intention (.83)				
Giosan, Holtom, & Watson (2005)	122	Off-the-job	Job alternatives (.79)	—	US (I)	Business students	62 (F)
			Turnover intention (.83)				
			Job alternatives (.79)				
			Turnover intention (.79)				
			Job alternatives (.79)				
			Voluntary turnover (15%)				
			Turnover intention (.74)				
			Job alternatives (.74)				
			Job performance (—)				
			Voluntary turnover (15%)				
Turnover intention (.74)							
Job alternatives (.74)							
Job performance (—)							

(Appendices continue)

Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
Halbesleben & Wheeler (2008)	573	On-the-job	Turnover intention (.91)	-.18	US (I)	Mixed	61 (F)
			Job satisfaction (.90)	.49			
			Affective commitment (.79)	.52			
			Job performance (.85)	.28			
Harman, Blum, Stefani, & Taho (2009)	159	On-the-job	Turnover intention (.83)	-.34	Albania (C)	Bank (PR)	62 (F)
			Job satisfaction (.85)	.71			
			Affective commitment (.83)	.40			
			Job alternatives (.90)	.09			
			Job search behavior (.80)	-.15			
			Turnover intention (.83)	-.13			
			Job satisfaction (.85)	.28			
			Affective commitment (.83)	.18			
			Job alternatives (.90)	.12			
			Job search behavior (.80)	-.08			
Harris, Wheeler, & Kacmar (2011)	205	On-the-job	Voluntary turnover (24%)	-.19	US (I)	Automotive dealership (PR)	28 (M)
			Turnover intention (.84)	-.62			
			Job satisfaction (.80)	.71			
			Voluntary turnover (50%)	-.17			
Heilmann (2005)	561	Off-the-job	Turnover intention (.92)	-.12	US (I)	Military (PU)	—
			Job satisfaction (.79)	.12			
			Affective commitment (.80)	.15			
			Job search behavior (—)	.05			
Holton, Crossley, & Burton (2010)	279	Overall	Job search behavior (.91)	—	US (I)	Government (PU)	47 (M)
			Job performance (.91)	—			
			Voluntary turnover (42%)	—			
			Job satisfaction (.83)	—			
Holton & Inderrieden (2006)	1,898	Overall	Turnover intention (.87)	-.24	US (I)	GMAT students	42 (M)
			Affective commitment (.75)	.62			
			Turnover intention (.90)	-.32			
			Affective commitment (.91)	.52			
Hom, Rogers, Allen, & Zhang (2010)	133	Overall	Voluntary turnover (8%)	—	US (I)	Financial services firms (PR)	—
			Turnover intention (—)	—			
			Voluntary turnover (8%)	—			
			Turnover intention (—)	—			
Huang (2009)	536	Overall	Turnover intention (—)	—	China (C)	Mixed	—
			Turnover intention (.80)	—			
			Self-rated job performance (.89)	—			
			Turnover intention (—)	-.23			
Jhang (2007)	167	On-the-job	Turnover intention (—)	-.23	China (C)	Mixed	26 (M)
			Turnover intention (—)	-.23			
			Self-rated innovative performance (.89)	—			
			Dimensions of on-the-job	—			
Kiazad, Seibert, & Kraimer (2010)	101	On-the-job	Voluntary turnover (19%)	-.17	US (I)	Universities (PU)	66 (F)
			Voluntary turnover (19%)	-.01			
			Voluntary turnover (16%)	-.11			
			Job satisfaction (.86)	.73			
Kraimer, Shaffer, Harrison, & Ren (in press)	112	On-the-job	Affective commitment (.85)	.71	Australia, UK, US (I)	Mixed	—
			Job performance (.85)	.11			
			Voluntary turnover (16%)	-.11			
			Job performance (.92)	.11			
Lee, Mitchell, Sablinski, Burton, & Holtom (2004)	809	On-the-job	Voluntary turnover (16%)	-.11	US (I)	International financial institute (PR)	75 (F)
			Job satisfaction (.86)	.73			
			Affective commitment (.85)	.71			
			Job performance (.92)	.11			

(Appendices continue)

Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
Lev & Koslowsky (2012) Li & Liu (2009)	115 227	Off-the-job On-the-job Overall	Voluntary turnover (.16%)	-.13	Israel (I) China (C)	School (PU) High-tech companies (PR)	76 (F) —
			Job satisfaction (.86)	.23			
			Affective commitment (.85)	.22			
			Job performance (.92)	.10			
			Job performance (.86)	.17			
Job performance (—)	—						
Mallol (2002)	422	On-the-job	Turnover intention (.97)	-.52	US (I)	Bank (PR)	71 (F)
			Job satisfaction (.91)	.69			
			Overall commitment (.81)	.67			
			Turnover intention (.97)	-.15			
			Job satisfaction (.91)	.24			
			Overall commitment (.81)	.28			
			Voluntary turnover (.15%)	-.16			
			Turnover intention (.70)	-.60			
			Job satisfaction (.70)	.69			
			Overall commitment (.70)	.69			
Voluntary turnover (.15%)	-.08						
Turnover intention (.70)	-.26						
Job satisfaction (.70)	.22						
Overall commitment (.70)	.27						
Voluntary turnover (.7%)	-.13						
Turnover intention (.70)	-.50						
Job satisfaction (.70)	.72						
Overall commitment (.70)	.66						
Voluntary turnover (.7%)	-.06						
Turnover intention (.70)	-.05						
Job satisfaction (.70)	.23						
Overall commitment (.70)	.20						
Job satisfaction (.77)	—						
Job alternatives (.81)	—						
Turnover intention (.85)	-.19						
Job satisfaction (.74)	.12						
Affective commitment (.85)	.08						
Voluntary turnover (10%)	-.24						
Turnover intention (.95)	-.57						
Job satisfaction (.92)	.60						
Affective commitment (.86)	.68						
Job alternatives (.93)	-.22						
Job search behavior (.80)	-.34						
McGown (2005)	124	Dimensions of on-the-job and off-the-job			US (I)	Public sectors (PU)	73 (F)
Mignonac (2008)	584	Off-the-job			France (I)	Private sectors (PR)	7 (M)
Mitchell, Holtom, Lee, & Erez (2001)	177	On-the-job			US (I)	Grocery store (PR)	77 (F)

(Appendices continue)



Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
		Off-the-job	Voluntary turnover (10%)	-.14			
			Turnover intention (.95)	-.14			
			Job satisfaction (.92)	.17			
			Affective commitment (.86)	.11			
			Job alternatives (.93)	.02			
			Job search behavior (.80)	-.03			
	208	On-the-job	Voluntary turnover (13%)	-.21	US (I)	Public hospital (PU)	84 (F)
			Turnover intention (.97)	-.44			
			Job satisfaction (.85)	.65			
			Affective commitment (.89)	.76			
			Job alternatives (.93)	-.14			
			Job search behavior (.82)	-.43			
			Voluntary turnover (13%)	-.20			
		Off-the-job	Turnover intention (.97)	-.19			
			Job satisfaction (.85)	.30			
			Affective commitment (.89)	.34			
			Job alternatives (.93)	.02			
			Job search behavior (.82)	-.07			
		On-the-job	Job performance (.90)	-.07	China (C)	Mixed	48 (M)
	162		Affective commitment (.94)	.41	US (I)	Mixed	55 (F)
	329	On-the-job	Self-rated innovative behavior	.27			
			(-)				
		On-the-job	Job satisfaction (.93)	.70	US (I)	Students	44 (M)
	226	Off-the-job	Job satisfaction (.93)	.28			
		On-the-job	Job satisfaction (.92)	.69	US (I)	Universities (PU)	68 (F)
	122	Off-the-job	Job satisfaction (.92)	.39			
		Overall	Turnover intention (.95)	—	Korea (C)	Mixed	48 (M)
	247		Job satisfaction (.87)				
		On-the-job	Overall commitment (.93)	-.14	US (I)	Call center (PR)	70 (F)
	323	On-the-job	Voluntary turnover (19%)	-.51			
			Turnover intention (-)	.63			
			Job satisfaction (.86)	.51			
			Affective commitment (.89)	-.35			
			Job alternatives (.89)	-.26			
			Job search behavior (.92)	.03			
		Off-the-job	Voluntary turnover (19%)	-.03			
			Turnover intention (-)	-.28			
			Job satisfaction (.86)	-.15			
			Affective commitment (.89)	.03			
			Job alternatives (.89)	-.10			
			Job search behavior (.92)	-.13	India (C)	Call center (PR)	29 (M)
	474	On-the-job	Voluntary turnover (13%)	-.35			
			Turnover intention (-)	.52			
			Job satisfaction (.76)	.47			
			Affective commitment (.82)	-.11			
			Job alternatives (.85)	-.28			
			Job search behavior (.94)				

(Appendices continue)

Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
Sekiguchi, Burton, & Sablynski (2008)	125	Off-the-job	Voluntary turnover (13%)	.00	US (I)	Telecommunications company (PR)	59 (F)
			Turnover intention (—)	-.23			
			Job satisfaction (.76)	-.24			
			Affective commitment (.82)	-.15			
			Job alternatives (.85)	-.22			
			Job search behavior (.94)	-.01			
			Job performance (.90)	.30			
			Job performance (.87)	.13			
			Voluntary turnover (13%)	-.25			
			Job satisfaction (.84)	.61			
Smith, Holtom, & Mitchell (2011)	750	On-the-job	Affective commitment (.77)	.61	US (I)	Manufacturing company (PR)	44 (M)
			Job alternatives (.66)	-.34			
			Voluntary turnover (13%)	-.06			
			Job satisfaction (.84)	.41			
			Affective commitment (.77)	.34			
			Job alternatives (.66)	-.13			
			Voluntary turnover (79%)	-.19			
			Job satisfaction (.88)	.64			
			Affective commitment (.82)	.62			
			Job alternatives (.54)	-.13			
Swider, Boswell, & Zimmerman (2011)	895	Overall	Voluntary turnover (79%)	-.09	US (I)	Military (PU)	—
			Job satisfaction (.88)	.52			
			Affective commitment (.82)	.45			
			Job alternatives (.54)	-.10			
			Voluntary turnover (15%)	—			
			Job satisfaction (.85)	—			
			Objective alternatives (1.00)	—			
			Job search behavior (.94)	—			
			Voluntary turnover (4%)	-.08			
			Job satisfaction (—)	.26			
Tanova & Holtom (2008)	9,277	On-the-job	Job search behavior (—)	-.06	Europe (I)	Mixed	39 (M)
			Voluntary turnover (4%)	-.07			
			Job satisfaction (—)	.22			
			Job search behavior (—)	-.07			
			Voluntary turnover (12%)	-.18			
			Turnover intention (.88)	-.24			
			Job search behavior (.91)	-.14			
			Voluntary turnover (12%)	-.24			
			Turnover intention (.88)	-.34			
			Job search behavior (.91)	-.18			
Tharenou & Caulfield (2010)	546	On-the-job	Self-rated job performance (.89)	—	Australia (I)	For profit organizations (PR)	35 (M)
			Dimensions of on-the-job	—			
D. Wang & Shan (2010)	210	Dimensions of on-the-job	Self-rated job performance (.89)	—	China (C)	High-tech companies (PR)	29 (M)

(Appendices continue)

Appendix A (continued)

Study	N	Embeddedness	Other variables <sup>b</sup>	r <sup>c</sup>	Country	Organizational type	Female %
H. Wang & Bai (2009)	304	On-the-job	Turnover intention (.78)	-.57	China (C)	Mixed	
L. Wang & Shi (2007)	428	Off-the-job	Turnover intention (.78)	-.36	China (C)	Manufacturing companies (PR)	29 (M)
		On-the-job	Overall commitment (.80)	.32			69 (F)
Wheeler (2008)	534	On-the-job	Job satisfaction (.90)	.49	US (I)	Mixed	82 (F)
Wheeler, Halbesleben, & Sablynski (2011)	134	On-the-job	Affective commitment (.79)	.52	US (I)	Mixed	82 (F)
			Voluntary turnover (63%)	-.19			
Wheeler, Harris, & Harvey (2010)	142	On-the-job	Job satisfaction (.89)	.35	US (I)	Mixed	56 (F)
			Affective commitment (.71)	.39			
			Voluntary turnover (63%)	-.22			
			Job satisfaction (.89)	.12			
			Affective commitment (.71)	.11			
			Voluntary turnover (29%)	-.26			
			Job satisfaction (.90)	.25			
			Affective commitment (.79)	.21			
			Voluntary turnover (29%)	-.35			
			Job satisfaction (.90)	.14			
			Affective commitment (.79)	.09			
			Turnover intention (.92)	-.57			
			Turnover intention (.92)	-.10			
			Job satisfaction (.92)	.73			
Affective commitment (.89)	.66						
Wijayanto & Kismono (2004)	150	On-the-job	Self-rated job performance (.64)	.16	Indonesia (C)	Private hospital (PR)	84 (F)
			Job satisfaction (.92)	.16			
			Affective commitment (.89)	.10			
			Self-rated job performance (.64)	.18			
			Organizational citizenship behavior (.81)	.19			
			Organizational citizenship behavior (.81)	.10			
			Turnover intention (.93)	-.45			
			Turnover intention (.93)	-.11			
			Turnover intention (.71)	-.80			
			Turnover intention (.71)	-.51			
Yan (2010)	661	On-the-job	Turnover intention (.93)	-.45	China (C)	Military (PU)	21 (M)
		Off-the-job	Turnover intention (.93)	-.11			
Yang (2007)	422	On-the-job	Turnover intention (.71)	-.80	China (C)	Mixed	52 (F)
		Off-the-job	Turnover intention (.71)	-.51			

Note. Actual turnover rates and coefficient alphas for turnover intention, job satisfaction, affective commitment, job alternatives, and job search behavior are shown in parentheses. I = individualistic country; C = collectivistic country; PU = public organization; PR = private organization; F = female-dominated sample; M = male-dominated sample, NCAA = National Collegiate Athletic Association; GMAT = Graduate Management Admission Test; MBA = master's degree in business administration; US = United States; UK = United Kingdom.  
<sup>a</sup> Complete references can be found in the reference section. <sup>b</sup> Values in the parentheses are voluntary turnover rates and internal reliabilities for variables. <sup>c</sup> This column does not include the correlations of overall job embeddedness (i.e., combining on-the-job and off-the-job embeddedness) or dimensions of on-the-job and off-the-job embeddedness (i.e., link, fit, and sacrifice) with other variables.

(Appendices continue)

## Appendix B

### References of the Studies Considered but Excluded

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