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The relative roles of engagement and embeddedness in predicting job performance and intention to leave

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Both work engagement and job embeddedness have seen dramatic growth in research interest over the past few years. Briefly, work engagement can be defined as a positive, fulfilling state of mind, most commonly characterized by vigour, dedication, and absorption. Job embeddedness, in contrast, captures components of an individual's attachment to their job and can be said to consist of links, perceptions of person–environment fit, and the sacrifices involved in quitting. Despite some strong similarity in the constructs in their theoretical bases, there has been no attempt to distinguish them empirically. Thus, the primary research question driving this study was whether work engagement and job embeddedness were empirically distinct constructs. Using a sample of US employees from a wide variety of industries and occupations ($n = 587$), their supervisors, and their closest co-worker, we found via confirmatory factor analysis that engagement and embeddedness were unique constructs. Moreover, using usefulness analysis, we found that engagement and embeddedness each shared unique variance with in-role performance and intention to leave. We discuss the implications of these findings relative to work on motivation and attachment and develop practical implications from our findings as well as directions for future research.

Keywords: work engagement; job embeddedness; performance; turnover; intention to leave; decision to perform; decision to participate

Introduction

Engagement and embeddedness have become popular terms over the past few years. Whereas engagement represents a positive work-focused psychological state, embeddedness represents the collection of forces keeping an employee in the job (e.g., links within the organization, fit with the job, and sacrifices associated with leaving the job). Interestingly, although research on both constructs suggests a positive relationship with both employee retention and performance, and despite the rapid increase in popular attention given to these constructs, there has been no attempt to determine whether they are in fact unique constructs. As we will argue below, engagement and embeddedness share some important common characteristics, so it is critical that research be undertaken to determine whether they are indeed independent.

The purpose of the present paper is to examine the construct and predictive validity of engagement relative to embeddedness. With that goal in mind, we have two specific objectives for the paper. First, we seek to provide evidence for the discriminant validity of engagement

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vis-à-vis embeddedness. Second, we seek to understand the relative roles of engagement and embeddedness in predicting outcomes such as job performance and turnover intention.

Work engagement and job embeddedness

Work engagement is "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002, p. 74; see also Bakker, Schaufeli, Leiter, & Taris, 2008). As implied in its definition, engagement has three primary components. Vigour refers to high energy that is invested in work performance, even in cases where performance is challenging. Dedication is characterized by strong involvement in one's work, which results in positive feelings about work such as pride and inspiration. Finally, absorption is a state of engrossment in work such that one has difficulty detaching from work (Schaufeli & Salanova, 2007).

The academic study of engagement has seen dramatic growth in interest over the past few years, following a general trend toward the study of positive organizational behaviour constructs. This interest is justified, in large part, due to empirical findings suggesting that there are relationships between employee engagement and key outcomes, both for individual employees and organizations (Harter, Schmidt, & Hayes, 2002). However, with such strong interest, a natural concern is the potential overlap of engagement with related constructs. This concern arises for a number of reasons. First, there has been a general increase of interest in more positive states that explain why employees work hard and stay on the job; through this increase there has not always been a clear separation of concepts and terminology between concepts such as engagement, involvement, commitment, and embeddedness (Hallberg & Schaufeli, 2006; Maslach & Leiter, 1997; Meyer & Allen, 1997; Mowday, 1998). If we are to continue to treat engagement as a unique construct, we must ensure that it is indeed independent of similar concepts so that it adds unique value to the nomological network.

Second, methodologists have long advocated careful construct validation of new concepts as they are introduced (Campbell & Fisk, 1959; Schwab, 1980). There has been encouraging work in this area, distinguishing engagement from constructs such as commitment, job involvement, workaholism, and burnout (e.g., Hallberg & Schaufeli, 2006; Schaufeli, Taris, & Bakker, 2006; Storm & Rothmann, 2003). However, construct validation is a continuous process and there remains a significant void with regard to validation of engagement in the light of another potentially related construct, job embeddedness.

Job embeddedness is defined as "the combined forces that keep a person from leaving his or her job" (Yao, Lee, Mitchell, Burton, & Sablynski, 2004, p. 159). While job embeddedness comprises two dimensions, organizational and community embeddedness (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001), researchers have found that the organizational dimension better predicts employee job performance than does the community dimension (Allen, 2006; Lee, Mitchell, Sablynski, Burton, & Holtom, 2004). Furthermore, when job relocation is not a factor, the organizational dimension better predicts employee retention than does the community dimension (Allen, 2006; Lee et al., 2004). Thus, in the present study, we limit our examination to the organizational dimension when referring to job embeddedness. Mitchell et al. (2001) conceptualized job embeddedness as including one's *links* to other aspects of the job (people and groups), *perceptions of person-job fit*, and *sacrifices* involved in leaving the job. The links aspect of embeddedness suggests that employees have formal and informal connections with other entities on the job and, as the number of those links increases, embeddedness is higher (Holtom, Mitchell, & Lee, 2006). Fit refers to the match between an employee's goals and values and those of the organization; higher fit indicates higher

embeddedness (Holtom et al., 2006). Finally, sacrifice concerns the perceived costs of leaving the organization, both financial and social. The higher the perceived costs, the greater the embeddedness (Holtom et al., 2006). Job embeddedness captures components of one's attachment to his or her job, similar to the proposed role of engagement in attachment (González-Romá, Schaufeli, Bakker, & Lloret, 2006). Both work engagement and job embeddedness have grown out of the movement toward positive psychology (Maslach, Schaufeli, & Leiter, 2001; Mitchell et al., 2001), yet researchers have not carefully examined the similarities and differences between the two constructs.

The theoretical basis for separating engagement from embeddedness

Both job embeddedness and work engagement have their roots in the literature on how one is attached to their job. That said, they have unique characteristics and have taken somewhat different "paths" through the literature. However, their conceptualizations suggest some clear differences. For example, Schaufeli and Salanova (2007) characterize engagement in terms of a mood that, while not entirely momentary and fleeting, is not particularly stable. One can contrast this with embeddedness, where the components of links and sacrifice (and to a lesser extent, fit) should develop slowly over time, and as a result, should remain more stable. While engagement may change if job conditions (such as demands or resources) change, embeddedness should change more slowly and would likely require more radical events or "shocks" to decrease (Mitchell et al., 2001).

One way to conceptualize these differences is to consider the role of resources in the development of each construct. Conservation of Resources (COR) theory (Hobfoll, 1988, 1998) proposes that individuals are motivated by the desire to obtain and protect resources, or those things they personally value. As resources are acquired, they may be further invested to obtain additional resources (Hobfoll, 2001). Both engagement and embeddedness develop as a result of an abundance of resources (Gorgievski & Hobfoll, in press). However, as suggested in the preceding paragraph, engagement and embeddedness have different resource bases. As such, we would expect them to be independent constructs.

For example, the resources contributing to engagement are more specific to the nature of the work (De Lange, De Witte, & Notelaers, 2008; Hakanen, Schaufeli, & Ahola, 2008; Van den Broeck, De Witte, Lens, & Vansteenkiste, 2008). While these resources may be somewhat job- or workplace-dependent (e.g., one may be afforded more flexibility at some organizations or in certain positions), they tend to focus on the nature of the work. As an example, many of the resources that faculty can draw on to further their engagement in research and teaching are quite similar as they move from university to university (e.g., skill utilization and task autonomy; cf., Van den Broeck et al., 2008). Conversely, embeddedness resources are restricted to the organization and position. When an individual moves to another organization, he or she would not move the links with other people with him or her; further, the perceived fit necessarily changes due to the new work environment.

Gorgievski and Hobfoll (in press) suggest that specific motivational resources (e.g., flexibility, balance, diversity, interdependence, and tolerance for failure) increase engagement with work. For example, they define individual flexibility as including cognitive flexibility (ability to consider alterative viewpoints) and emotional flexibility (tolerating a wide range of emotions). Balance is defined in terms of the appropriate management of demands within various domains (e.g., work, family) in order to replenish motivational resources. Diversity supports engagement through the challenge of coordinating conflicting ideas and a mix of skills among team members. Interdependence encourages engagement by developing

collective efficacy, supporting the desire to perform at high levels for group success. Tolerance for failure is necessary for engagement to the extent that it supports creativity and risk-taking, the rewards from which can further support engagement. These resources may be more fleeting than those associated with embeddedness, which tend to emerge over long periods (e.g., links to other people in the organization, higher sacrifice if one leaves). Moreover, engagement can be eroded when resources are expended to meet demands at work. For example, where balance of role demands (e.g., work–family balance) is a resource leading to engagement, it may be expended when an employee is swamped with a specific project that requires all of his or her attention.

In sum, both engagement and embeddedness result from an accumulation of individual resources. As such we would expect them to be related constructs (both resource-based), but because their resource bases differ, they are independent constructs. As we will argue in the following sections, these differences in resources help to explain their unique contribution to outcome variables.

Hypothesis 1: Work engagement and job embeddedness represent empirically distinct constructs.

Relationships of engagement and embeddedness with performance

Researchers of both engagement and embeddedness have established relationships of those constructs, both theoretical and empirical, to job performance. Recently, Gorgievski and Hobfoll (in press) linked engagement with broader motivational processes associated with COR. They suggest that engagement is a state where resources exceed the demands of the job, allowing the employee to perform in unique ways and at very high levels, particularly when the demands of their job are very high (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Employees are able to perform at such high levels because they are better able to invest resources in different aspects of performance (Halbesleben & Bowler, 2007). This notion was supported by a recent study by Llorens, Salanova, Bakker, and Schaufeli (2007; see also Salanova, Bakker, & Llorens, 2006) that found that engagement, self-efficacy, and task resources created a positive gain spiral; such a spiral would be expected to lead to improved performance over time. As a result, we would expect that engagement would be positively associated with job performance, a prediction consistent with other studies of engagement (Bakker et al., 2008; Saks, 2006; Salanova, Agut, & Peiró, 2005).

Job embeddedness has also been associated with job performance (Allen, 2006; Lee et al., 2004). As noted, Lee and colleagues found a positive relationship between embeddedness and performance. They based the relationship between embeddedness and performance on the idea that if an employee is highly linked within an organization, fits well, and will have to sacrifice a great deal if they quit (or if they are fired for poor performance), his or her motivation to perform should be high. In other words, the links with others will increase the obligation to perform well (as they might be dependent on an employee's performance). Moreover, the fit between the person and the job will lead to an intrinsic motivation to perform well. Finally, if sacrifice is high, the employee will feel that they have a lot to lose by not performing well. Together, these factors all suggest that embeddedness should be associated with performance, a finding Lee et al. (2004) confirmed empirically in their study.

Using a slightly different, but very similar, conceptualization of embeddedness, Van Emmerik and Sanders (2004) suggested that performance would be related to network embeddedness (similar to the links component discussed above) in their sample of

academics, because relationships with coworkers might facilitate performance to the extent that they can provide resources (e.g., advice or assistance on the job). They also argued that institutional embeddedness (similar to the sacrifice component of Mitchell et al., 2001) would be associated with performance. In their view, one feels prestige and pride as part of working in a group or for an organization (Van Emmerik, Lambooy, & Sanders, 2002); as a result, they will be motivated to protect that pride by performing well (Van Emmerik & Sanders, 2004).

In summary, both constructs have been linked empirically with performance; thus, a relationship should be expected between both embeddedness and engagement and performance. COR theory suggests that the accumulation of resources inherent in both constructs would allow employees to invest those resources, leading to better job performance. That said, as we have noted above, the resource bases for engagement and embeddedness are somewhat different. Engagement resources are related to energy and psychological attachment to the work (e.g., the specific tasks). Embeddedness resources are more related to the organization and the workplace. As such, while both should be related to job performance, their underlying mechanisms are somewhat different, and thus we should expect that each construct has unique shared variance with performance.

Hypothesis 2: Both embeddedness and engagement will be associated with, and share unique variance with, job performance (rated by participant, supervisor, and coworker).

Relationships with intention to leave

Researchers of both engagement and embeddedness have found significant relationships with turnover intention. A recent meta-analysis of the engagement literature (Halbesleben, in press) found strong relationships between engagement and intention to leave, with corrected population correlations ranging from $-.25$ (for the vigour dimension) to $-.45$ (for the dedication dimension; see also Koyuncu, Burke, & Fiksenbaum, 2006; Saks, 2006). When considering embeddedness, Mitchell et al. (2001) found, using a sample of retail employees and hospital workers, that job embeddedness was associated with lower intention to leave as well as actual voluntary turnover. Crossley, Bennett, Jex, and Burnfield (2007) confirmed these findings, extending Mitchell et al.'s study by finding that embeddedness interacted with satisfaction to predict turnover in a study of employees of an assisted living organization.

The link between engagement and turnover stems from high levels of investment in and dedication to work. An employee who is highly engaged may find it difficult to detach from the job, in large part because they have invested so much energy in the job and because they have high levels of identification with the work that they do. Because the work has provided so many resources (e.g., flexibility, work-related skills) to the employee, he or she may be hesitant to leave the job (De Lange et al., 2008). By changing jobs, the employee may need to start again, which may be a risky investment of resources that he or she is not willing to make. As specified by COR theory, individuals tend to take steps to protect their current resources and are quite careful in their investment of resources (Hobfoll, 2001).

As it developed from the retention and turnover literatures, we expect that embeddedness will be related strongly to turnover intention. One could adopt a similar COR framework to understanding this relationship. Embeddedness represents the accumulation of certain resources (e.g., links within the organization) that will be difficult to duplicate outside the organization. In fact, the sacrifice dimension of embeddedness neatly reflects

the idea that changing jobs would be a risky investment in resources. Higher sacrifice (thus higher embeddedness) suggests higher cost in terms of resources; thus, a move would require a very good alternative to be worth the resource investment (March & Simon, 1958; Mobley, 1977).

When we integrate the reasoning for the two constructs, negative associations with intention to leave are suggested. Both can be explained using COR-based reasoning, suggesting that they result from the accumulation of resources that would be risked should they decide to leave the job. Much like the rationale for the unique relationships of engagement and embeddedness with performance, the psychological processes linking engagement and intention to leave differ somewhat from embeddedness and intention to leave; thus we expect each construct to predict unique variability in employee turnover intentions.

Hypothesis 3: Both embeddedness and engagement will be negatively associated with, and share unique variance with, intention to leave.

Method

Participants and procedure

The participants were derived from a larger-scale data collection that included 606 working adults in the USA. Responses from 33 participants were not analyzed because of incomplete data (e.g., missing supervisor or coworker data, incomplete surveys), leaving a final usable sample of 573 participants. The sample included 225 males and 348 females with a mean age of 39.21 ($SD = 11.01$) years of age. The participants had been working for their current organization for a mean of 12.18 years ($SD = 7.99$). A significant majority (74%) of the participants indicated that they were Caucasian. A wide variety of industries and organizations were represented, including education ($n = 106$), health care ($n = 79$), government/military ($n = 77$), banking or financial services ($n = 71$), manufacturing ($n = 58$), telecommunications ($n = 46$), and retail ($n = 29$).

The data were collected with the assistance of approximately 250 introductory management students as part of a research experience assignment. The students collected data from three to five working adults at two points during the semester (with approximately two months separating Time 1 and Time 2 data collection). A total of 713 surveys were distributed. Using a modification of snowball sampling, the students gave surveys to the participant, who was asked to give another short survey to his or her supervisor and his or her closest coworker. The supervisor and coworker surveys were returned directly to the participant in sealed envelopes. (This procedure was made known to the participant and all envelopes were still sealed upon their return to the researchers.) Once the survey packet was completed, it was returned to the researchers.

After the Time 1 data collection, we had usable data from 606 working adults (response rate of 85%). From Time 1 and 2, we were able to match complete data from 573 participants, their supervisors, and one of their coworkers. That left us with a final retention rate across the data collection administrations of 95% and a final usable response rate of 80%. To ensure that the surveys were indeed completed by the working adults, we randomly selected 50% of the surveys and directly contacted the participant to verify their participation; all verified that they had completed the survey (and recruited surveys from their supervisor and coworker). This method of survey collection has been effectively used by field researchers in organizational settings (cf., Halbesleben & Bowler, 2007).

Measures

Job embeddedness

At Time 1, job embeddedness was measured using the 23 organization embeddedness items published by Mitchell et al. (2001). It consists of three subscales, links to organization (sample items: "how long have you been in your present position?" "how many coworkers do you interact with regularly?"), fit to organization (sample item: "my coworkers are similar to me"), and organization-related sacrifice (sample item: "I would sacrifice a lot if I left this job"). The links items were measured on an open-ended numerical scale (e.g., years, number of coworkers); the fit and sacrifice items were scored on a five-point Likert-type scale from strongly disagree (1) to strongly agree (5). Prior to combining items into subscales (links, fit, and sacrifice) and embeddedness scores, item scores were standardized. Higher scores indicated higher levels of embeddedness.

Work engagement

Engagement was measured at Time 1 using the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2003). It contained 17 items designed to assess the three components of engagement: vigour, dedication, and absorption. Example items include "When I get up in the morning, I feel like going to work" (Vigour), "To me, my job is inspiring" (Dedication), and "When I am working, I forget everything else around me" (Absorption). Items were scored on a five-point, Likert-type scale from strongly disagree (1) to strongly agree (5).

Job performance

At Time 2, we assessed in-role performance by utilizing the in-role performance subscale of the performance measure developed by Williams and Anderson (1991). It is a seven-item measure using five-point Likert-type scales scored from strongly disagree (1) to strongly agree (5) that assesses in-role (task) performance behaviours (sample item included "adequately completes assigned duties"). This scale was completed by the participant, his or her supervisor, and his or her closest coworker. We utilized the Williams and Anderson scale because it allowed us to assess performance in a consistent manner over a broad spectrum of occupations and jobs; it was the measure used by Lee et al. (2004) in their study of embeddedness and performance.

Turnover intention

At Time 2, we assessed turnover intention using the measure used by Mitchell et al. (2001). A sample item was "Do you intend to leave the organization in the next 12 months?" The three items were scored on a five-point, Likert-type scale from strongly disagree (1) to strongly agree (5). Higher scores indicated higher levels of turnover intention.

Control variables

Theoretically, job embeddedness describes the psychological field of how employees experience their work environment (Lewin, 1951). Central to job embeddedness as a construct is that it predicts the outcomes of retention and performance beyond the effects of job satisfaction and organizational commitment (Lee et al., 2004; Mitchell et al., 2001); thus, we also controlled for these two general work attitudes. Moreover, we also controlled for the

effects of participant gender and age, as these demographic variables have also been found to covary with employee retention and performance (Hom, Griffeth, & Sellaro, 1984; Lee et al., 2004; Mitchell et al., 2001). Job satisfaction was assessed using the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967). We assessed affective commitment using the six-item subscale created by Meyer and Allen (1997) on a five-point Likert-type scale from strongly disagree (1) to strongly agree (5). Control variables were assessed at Time 1.

Analyses

To examine the discriminant validity of engagement vis-à-vis embeddedness, we followed a three-step process similar to that outlined by Hallberg and Schaufeli (2006) to explore the discriminant validity of engagement, commitment, and involvement. First, we inspected latent intercorrelations between engagement and embeddedness for conceptual overlap. Second, we conducted a confirmatory factor analysis (CFA) to test a model suggesting the two are empirically separate constructs (as well as a model suggesting that they are the same construct).

As a third step, we examined the relationships between engagement and embeddedness and the variables of performance and turnover intention. We conducted usefulness analysis (Darlington, 1968) to examine the unique contribution of engagement and embeddedness on performance and turnover intention. Usefulness analysis examines the squared semi-partial correlation of each predictor with the outcome variable, as the squared semi-partial correlation indicates the incremental change in R^2 beyond the effects of other variables in the model. The advantage of this procedure is that it removes the common variance between embeddedness and engagement in assessing their impact on performance and turnover intention (Korsgaard & Roberson, 1995). This allows for the most stringent test of the impact of each variable on performance and turnover intention; we felt that such a test was necessary given the somewhat high correlations between the variables in the study (see Table 1).

Results

Discriminant validity analysis

As indicated above, our first step in the discriminant validity analysis and consistent with our test of Hypothesis 1 was to examine the latent correlation between embeddedness and engagement. The latent correlation was .39, indicating just over 15% shared variance. This suggests a relationship between engagement and embeddedness; however, the shared variance is low enough that we can conclude that there is not a significant overlap between the constructs (Hallberg & Schaufeli, 2006).

In the second step, we examined a confirmatory factor analysis model where engagement and embeddedness were separate, correlated constructs, each with three latent subscales with the items as manifest indicators (see Figure 1 for a graphical representation). Several goodness-of-fit indices were used to assess the overall fit, including the Comparative Fit Index (CFI; Bentler, 1990), the Tucker-Lewis Index (TLI; Bentler & Bonett, 1980), Akaike's Information Criterion (AIC; Akaike, 1987), and the Root Mean Squared Error of Approximation (RMSEA). In the testing of the models, residuals were not free to correlate (Gerbing & Anderson, 1984).

The predicted two-factor model fitted the data well, χ^2 ($df = 581$) $= 1229.86$, GFI $= .94$, CFI $= .93$, TLI $= .92$, AIC $= 1518$, RMSEA $= .043$. We contrasted this model with an alternative model where the three indicators of engagement and the three indicators of

Table 1. Descriptive statistics and intercorrelations among study variables.

	M	*SD*	1	2	3	4	5	6	7	8
1. Satisfaction	3.67	0.62	(.90)							
2. Affective commitment	3.28	0.78	.60	(.79)						
3. Job embeddedness	3.45	0.76	.49	.52	(.91)					
4. Work engagement	3.47	0.71	.40	.37	.60	(.93)				
5. Self-rated performance	4.20	0.74	.19	.12	.24	.28	(.88)			
6. Supervisor-rated performance	4.01	0.76	.22	.19	.28	.32	.34	(.85)		
7. Coworker-rated performance	3.96	0.75	.18	.14	.25	.27	.36	.34	(.82)	
8. Turnover intention	2.13	1.16	−.10	−.12	−.18	−.16	−.02	−.03	−.03	(.91)

Note: $N = 573$. Internal consistency estimates (Cronbach's alpha) appear in parentheses along the diagonal. Correlations greater than .08 are $p < .05$; correlations greater than .10 are $p < .01$.

embeddedness were all indicators of one overall factor. If this model provided good fit, it would suggest that engagement and embeddedness are not actually unique factors. This model did not fit the alternative model as well as the predicted two-factor model, χ^2 ($df = 582$) = 2801.73, GFI = .76, CFI = .82, TLI = .80, AIC = 1637, RMSEA = .082, as confirmed by a χ^2 difference test, $\Delta\chi^2(df = 1) = 1571.87$, $p < .001$. Along with the relatively low-shared variance between engagement and embeddedness, we conclude that the two constructs are related, but independent, supporting Hypothesis 1.

Usefulness analysis

As a final step in the process of determining the discriminant validity between engagement and embeddedness, we examined the unique contributions of engagement and embeddedness in predicting performance and turnover intention. The results of the usefulness analysis are presented in Table 2. For purposes of the usefulness analysis and consistent with both the engagement and embeddedness literatures, we treated both engagement and embeddedness as single variables (in other words, not breaking them up into their three respective components). This treatment of embeddedness is consistent with recent studies that have treated it as a more global construct (e.g., Allen, 2006; Crossley et al., 2007). With regard to engagement, while researchers occasionally separate the dimensions for analysis, it is also common to see them collapsed into a composite measure when examining the relationship of

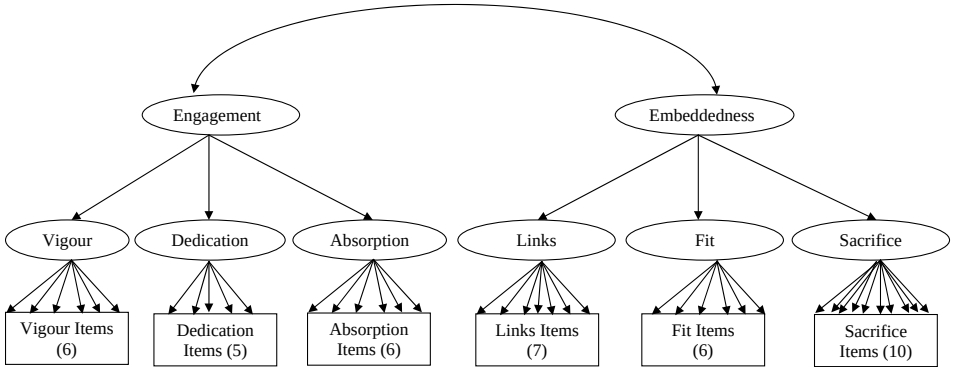

Figure 1. Measurement model used to test discriminant validity.

Table 2. Usefulness analysis: relationship between job embeddedness, engagement, performance, and turnover intention.

	Self-rated performance		Supervisor-rated performance		Coworker-rated performance		Turnover intention	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Control variables								
Gender	.000	.000	.001	.001	.000	.001	.000	.000
Age	.001	.001	.001	.001	.002	.002	.003	.004
Satisfaction	.002	.003	.004	.004	.001	.002	.001	.000
Affective commitment	.001	.001	.000	.000	.000	.000	.000	.000
Predictors								
Job embeddedness		.005*		.003		.006*		.006*
Work engagement		.02*		.03**		.02*		.003
R^2	.03	.07	.05	.10	.03	.07	.02	.03
ΔR^2		.04*		.05*		.04*		.01*

Note: $N = 587$. With the exception of R^2 values, the entries are squared semi-partial correlations.
*$p < .05$; **$p < .01$.

engagement with other constructs (e.g., Schaufeli & Bakker, 2004; Hallberg & Schaufeli, 2006).

For the usefulness analysis, we first entered the control variables (gender, age, satisfaction, and commitment, Step 1), finding that they offered limited relative value in predicting performance or turnover intention (see Table 2). We then entered embeddedness and engagement to the model (Step 2). Hypothesis 1 predicted that engagement and embeddedness would have unique shared variance with performance. Examining the squared semi-partial correlations in Table 2 suggests that this is indeed the case. For self-, supervisor-, and coworker-rated performance, work engagement had a significant squared semi-partial correlation (.02, .03, and .02, respectively, all $p < .05$). Job embeddedness had significant squared semi-partial correlations with self-rated (.005, $p < .05$) and coworker-rated (.006, $p < .05$), but not with supervisor performance (.003, n.s.). These findings partially support Hypothesis 1, with the exception that job embeddedness did not offer unique variance when added to the model predicting performance.

Hypothesis 2 predicted that engagement embeddedness would have unique shared variance with turnover intentions. Again, examining the squared semi-partial correlations in Table 2 suggest that this was mostly the case. Embeddedness had a significant squared semi-partial correlation with turnover intention (.006, $p < .05$). However, the squared semi-partial correlation between engagement and turnover intention was not significant (.003, n.s.). These findings offer partial support for Hypothesis 2.

Discussion

From this study, we can draw two primary conclusions. First, engagement and embeddedness appear to be unique constructs. Second, both variables held unique shared variance with performance (with the exception of embeddedness and supervisor-rated performance). Only job embeddedness offered unique prediction of turnover intention. With both performance and turnover intention, these findings were beyond the effects of job satisfaction and affective commitment.

This study extends the literature on engagement in a number of meaningful ways. As noted at the outset, while there has been limited work on validation of the engagement construct, there have been no previous attempts to distinguish engagement from embeddedness. It is important to provide evidence that the two constructs are indeed independent is important, given their implications for employees' attachment to work and their conceptual similarity with regard to resources. The present study based its conceptualization of engagement on the popular conceptualization of Schaufeli et al. (2002) that is manifest in the Utrecht Work Engagement Scale. It is worth noting that other conceptualizations do exist; some are quite similar (e.g., May, Gilson, & Harter, 2004), whereas others differ more significantly (e.g., Shirom, 2003). Research to continue to explore the appropriate conceptualization and measurement of engagement will be valuable as the literature develops.

Contribution to research

Interestingly, only embeddedness shared unique variance with turnover intention: engagement did not. These findings are consistent with the job embeddedness literature, as Mitchell and his colleagues initially construed embeddedness as an "anti-withdrawal" construct; moreover, published research on job embeddedness consistently demonstrates that job embeddedness is a stronger predictor of employee turnover intentions than job performance. This finding is contrary to previous research on engagement, which has tended to find significant relationships between engagement and turnover intention (e.g., Halbesleben, in press; Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004). A number of potential explanations exist. First, we cannot rule out the possibility of a sample-dependent finding that would not replicate. Second, previous findings have been based on cross-sectional research (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004); it is quite possible that the longitudinal nature of the present study reduced the relationship between the variables (this is supported somewhat by our finding of lower correlations between engagement and turnover compared to other research.) Attrition (people who turned intention to leave into actual turnover) may have caused our range to be restricted.

Finally, one will note that there was a significant correlation between engagement and turnover intention ($r = .16$, $p < .05$). This suggests that there is a relationship between the variables; however, the unique contribution to turnover intention may not be as high as the correlation implies. When other variables are accounted for (e.g., satisfaction, commitment, and embeddedness), the additional contribution of engagement is relatively weak. This has significant implications for future research that explores the relationships between engagement and turnover intentions, as future studies may need to consider carefully the *unique* contribution of engagement rather than the simple zero-order correlation.

While we believe the predictive validity aspect of the study makes an important contribution, we also recognize that the amount of variance in performance and turnover intention accounted for by engagement and embeddedness was somewhat low (R^2 ranging from .03 to .10). Of course, one explanation is that there are a great number of factors that might lead to performance and intention to leave. Moreover, the time separation between predictors and outcomes, while a strength of the study in some ways, may have actually reduced the shared variance if other events occurred in that 1-month period to influence performance or turnover intention (e.g., a promotion). The findings were a little surprising given the theoretically strong links between engagement and embeddedness and suggest a need to further explore these relationships to ensure that measures of engagement and embeddedness are appropriately capturing their motivational and attachment aspects.

Strengths and limitations

The longitudinal nature of the study is a strength of the present study and advances the literature. To date, all published job embeddedness research and much of the engagement research has been cross-sectional in terms of all variables being measured at the same point in time. Moreover, the measurement of the outcome variables in previous research has been captured from a single source (e.g., managerial ratings or employee ratings). In the present study, we assessed employee job performance from multiple sources, which increases the validity of this measure. While our measures are time-lagged, we were unable to obtain repeated measures of performance and turnover intention. Future research that can expand data collection to include repeated measures, perhaps in the context of a cross-lagged panel design, will offer further advancements to the literature.

We recognize that the conclusions we have drawn need to be tempered given the limitations of our study. As we have noted above, we can only attribute relatively small effects of performance and turnover intention to engagement and embeddedness. There are myriad predictors of performance and turnover intention that were not included in the study but that would be important to understand fully the contributions of engagement and embeddedness. With regard to our performance measures, asking a participant to choose his or her closest coworker could have meant they chose a positively biased person to rate performance. Given that coworker performance ratings actually had lower mean values than supervisor or self-ratings, this seems unlikely; however, it is a limitation that we cannot entirely rule out.

We also acknowledge that we did not include the community dimension of job embeddedness. To some extent, this was intentional, as a comparison between engagement and community embeddedness would have limited value as they are conceptually quite different constructs. However, community embeddedness has specific value in predicting work outcomes, particularly turnover (Lee et al., 2004) and thus should be considered in future research. Finally, we acknowledge that the study would have been improved if we had measured actual voluntary turnover rather than intention to leave.

Practical implications

Recognizing our limitations with regard to making causal conclusions from this study, its findings suggest that programs to develop engagement and embeddedness may lead to positive outcomes in the form of performance and retention. The engagement literature has frequently cited increasing resources as a way to increase engagement (e.g., Bakker et al., 2007; Salanova et al., 2005Salanova et al., 2006). Bakker et al. (2007) suggest job redesign as one mechanism for increasing resources and subsequent engagement. That literature frequently cites action research programs as one way of developing employee resources that are tailored to the specific work context (cf., Halbesleben, Osburn, & Mumford, 2006; Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007; Le Blanc & Schaufeli, in press). We suggest organizations consider programs that involve employees in developing interventions.

Wheeler, Gallagher, Brouer, and Sablynski (2007) suggested employee assistance programs as one mechanism for improving embeddedness and, subsequently, reducing turnover (see also Wayne, Shore, & Liden, 1997). The idea behind their suggestion was that if employees had assistance from the organization in dealing with off-the-job issues, this may lead to higher embeddedness. This is highly consistent with conservation of resources theory and the arguments we have outlined above. Overall, this study suggests that engagement and embeddedness are related but independent constructs that both have value in predicting important work outcomes. Given the relationships between engagement and embeddedness

with outcomes as important as job performance and intention to leave, organizations are encouraged to take note of the potential impact of the two constructs in developing resource-based interventions.

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