Job Embeddedness and Employee Embeddedness: measurement of the concepts. (Working paper 2015b)

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Introduction

Background

Social capital is an important concept in sociological theory, and it is strongly related to the concepts of social groups, social cohesion and conflict. According to Bourdieu (1986:249), social capital is the product of a determined and continuous strategy of social investment in social relationships that are useful in the short or long term, in either a conscious or unconscious way (Decoster, 2001:4). Despite the many different dimensions of this concept, there is a general agreement that social capital reflects the accumulated historical, cultural, and social factors that give rise to (formal and informal) networks, shared norms, values, beliefs, mutual reciprocity, and collective action (Van Scheppingen et al., 2013:371).

The theoretical model of Job Embeddedness (JE) is a subtle elaboration on the more abstract concept of social capital. Two components are distinguished within job embeddedness. One, the 'on-the-job' factor, measures the extent to which an employee is embedded in the organization and work. The other is the 'off-the-job' factor, which measures the degree of embeddedness in the community in which a person lives (Lee et al., 2004:711). Each component has three dimensions: Link, Fit and Sacrifice. Link is the extent to which an employee has 'links' to other people or activities; Fit is the extent to which his job and community 'fits' other aspects of his 'life-spaces'; and Sacrifice is the ease with which individuals are able to relinquish existing fringe benefits, the so-called 'sacrifices' (Lee et al., 2004:712).

In other studies, the concept of job embeddedness has been considered and treated as an aggregate model, operationalized as a composite measured by six sub-dimensions (Holtom and Inderrieden, 2006:443; Mitchell et al., 2001:1111). In nearly all known studies on the concept of JE, each of the six sub-dimensions was measured with a few questions in a survey. People can become embedded in many different ways; thus, the strength of attachment that is derived from the different sub-dimensions will vary. For these reasons, like Mitchell et al. (2001), most researchers have focused on the effect of the overall level of on-the-job or off-the-job embeddedness, rather than on specific sub-dimensions of embeddedness (Holtom, Interrieden, 2006:442). However, given their broad conceptualization, they define 'links' broadly as discernible connections, characterized as formal or informal connections between a person and institutions or other people. The 'fit' is defined as an employee's perceived compatibility or comfortableness with an organization, and with his or her environment, respectively (Mitchell et al., 2001:1104). In other words, the employee's personal values, career goals, and plans for the future must fit with the broader corporate culture and with the demands of his or her job (e.g. job knowledge, skills, and abilities), as well as with the demands of the community and surrounding environment (Mitchell et al., 2001:1104). 'Sacrifice' at work refers to the perceived material or psychological benefits that may be forfeited when leaving a job, such as leaving behind colleagues, interesting projects, or perks (Mitchell et al., 2001:1105). Community sacrifices become an issue when someone has to relocate: leaving an

attractive and safe community in which one is liked or respected can be difficult (Mitchell et al., 2001:1105). In other studies, the construct of job embeddedness is seen mainly as a mediating construct between various 'on-the-job' and 'off-the-job' factors and job retention (Reitz and Anderson†, 2011:320). A study developed by Crossley et al. (2007:1035, table 2) measured perceived job embeddedness: the so-called global perception of job embeddedness. Respondents were asked to answer seven items, all regarding the organizational level. Participants were asked to reflect on the links, sacrifices and fit issues that applied to them, both at work and in their community, and to respond to questions such as 'it would be difficult for me to leave this organization' while bearing these issues in mind (Holtom, Burton and Crossley, 2011:437).
In nearly all these studies a cross-sectional survey was chosen, sometimes in combination with a longitudinal perspective (Reitz and Anderson†, 2011:Table 2:324-325). The variables were always verified at an aggregated/overall level. In these studies, the items for on and off-the-job embeddedness were averaged over the three sub-dimensions into composite scores (Lee et al., 2004:716).

While the concept of job embeddedness relates above all to the employee's embeddedness in his or her job, we have also introduced the theoretical concept of employee embeddedness (EE), including the 'on-the-job' factors as well the 'off-the-job' factors (Scholte et al., 2015a). Our concept of EE includes employee's social and professional network structures and refers to the employee's embeddedness in the most important life domains: at work, at home and in the community. It is our opinion that the concept of EE may serve as a better expression of our research perspective, namely that of general social participation by the employee. Siegrist (2000) has proven that participation in social institutions influences the degree to which an employee tends to report sick for work (Ter Hoeven, 2009:98). The fulfilment of central social roles at work (such as those of employee and colleague), in the family (as a parent and as a partner), and as a citizen (such as volunteering in local politics or on a school board) offers a pre-eminent opportunity for people to satisfy their need to exert an influence over their own lives. According to Siegrist (2000), these social roles constitute the primary opportunity for people to contribute to society and to develop themselves, to belong to something, and to receive recognition and appraisal, which ultimately lead to a sense of self-worth (Ter Hoeven, 2009:98).

The Dutch context

In our overall study design (Scholte et al., 2015a), we looked for factors in the employee's background that may shed some light on the origins of disputes between employees and employers regarding sick leave and requests for a second opinion. For that reason, it is relevant to first briefly outline the Dutch system of sick leave and the second opinion.
With the introduction of the Work and Income (Capacity for Work) Act (in Dutch: WIA) in the Netherlands, a major change was made to the Act on Sick Leave (in Dutch: ZW) in 2004. Since then, the employer is responsible for the continued payment of salary for a maximum of two years. During these two years, both employer and employee are responsible for the reintegration of the sick employee, and receive advice from an occupational physician who is either an employee of the company or externally hired by the company. UWV – the Dutch national Social Security Association – does not assist in this process of rehabilitation. Only at the end of the two-year period does UWV take action, in case the employee is still sick and files a claim with UWV for social benefits under the WIA act. There are some exceptions, however. If the employer and employee disagree on whether the employee's illness is a valid

reason for absence from work during the two-year period, the employer and the employee can both request a second opinion by an insurance physician and/or by a vocational expert employed by UWV. According to the Dutch Code of Civil Law, an employee risks a reduction in salary or dismissal on the grounds of being absent from work without a legitimate reason. The Dutch parliament intended to protect employees because of their weak position in such disputes. The law therefore states that an employee has the right to request a second opinion by the professionals of UWV.

If the concept of employee embeddedness can be proven to bear relations to the origins of the dispute and the request for a second opinion, this may have major implications for daily practice in this area. Now, in daily practice only the insurance physician has to judge if the employee is incapable to do his work because of illness. For example, it is a conceivable implication that the UWV professionals – especially a vocational expert – would want to obtain more information on the degree of embeddedness of the employee in daily life.

Goal and research questions

Our first goal in this study is to measure the concepts of job embeddedness, both on-the-job and off-the job, and how these relate to sick leave among employees. Our second goal is to measure the concept of EE as a central dimension in on-the-job and off-the-job embeddedness. Our research questions are therefore as follows: 1) can the concepts of on-the-job and off-the-job embeddedness be confirmed by the aspects of link, fit and sacrifice?, 2) what is the relationship between the measured concepts of on-the-job and off-the-job embeddedness?, and 3) is employee embeddedness the central dimension for the measured concepts of on-the-job and off-the-job embeddedness?
We have previously formulated the following hypotheses on the basis of theoretical considerations (Scholte et al., 2015a):
1. On-the-job embeddedness and off-the-job embeddedness are positively related to on- and off-the-job factors: link, fit and sacrifice, respectively.
2. Employee embeddedness is positively related to on-the-job embeddedness and off-the-job embeddedness.

Method

Research design

We designed our study as a cross section case-control survey study of employees who have requested a second opinion from UWV. From previous research we knew that in general, about two-thirds of second opinion requests by any party (employer, employee, etc) are made within six months after the beginning of the employee's sick leave (‘t Jong, St. de Ombudsman, 2011: 26). From an analysis of data from the UWV databases in 2010 and 2011 for second opinions requested by employees (n=4615) we know that on average, the second opinions were requested 307 days (median 259 days) into the period of sick leave. All employers in the Netherlands are required to report all employees who have been on sick leave for 42 weeks (294 days) or more to UWV. Because a period of 42 weeks approximately corresponds to the aforementioned average of 307 days, as controls we chose employees who had been reported as having been on sick leave for 42 weeks and had not requested a second opinion. We expected that the

information on this control group would allow us to fulfil the requirements for avoiding a "poor quality" case control study: "By poor quality case-control study we mean one that failed to clearly define comparison groups and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both cases and controls and/or failed to identify or appropriately control known confounders" (Philips et al., 1998).

Study procedure

In August 2012, we asked UWV for the names, addresses, birth dates and sexes of those cases which were had been closed in the period from May 2012 to July 2012 (three months) in relation to employees who had requested a second opinion. This concerned 1277 unique cases. We excluded 127 cases in which the processing of the second opinion by UWV had taken longer than 42 days (the legal duration within which a second opinion must be issued by UWV). The employees involved in the remaining 1150 cases were sent an introduction letter at the end of August 2012 by UWV, which was signed by the manager of the Central Expertise Centre of UWV's the Social Medical Affairs Division. This letter explained the goal of the study and invited the employees to participate by answering the enclosed questionnaire. The letter emphasized that anonymity was guaranteed and that participation in this research would not have any effect on the treatment of future or present applications for social benefits at UWV. An additional registered letter explained the context and goal of the study in further detail. After about three weeks (mid-September 2012), a reminder letter was sent to all persons included. All letters were checked in advance for clarity and comprehensibility by seven members of the official clients council of UWV. The final questionnaires were received by the end of September 2012, about six months after the first request for a second opinion was made among our research population. We found this interval acceptable with regard to the problem of recall bias (Middel et al., 2006), particularly because a request for a second opinion may be considered a salient event (Garon, 2013). The expected response percentage was estimated ex ante at 20%. The actual response number was 326 (28.3%), 20 cases of which concerned situations in which the employee had applied for a second opinion for other reasons than illness. These 20 cases were excluded, resulting in a case group of 306 cases.
For the control group we expected the same response rate as for the case group (30%). Because we wanted the control group to be larger than the case group, in November 2012 we sampled 1500 persons from 5615 employees who were reported as having been on sick leave for 42 weeks in October 2012 and who lived in the Netherlands. This sample of employees were sent nearly the same letters and the same kind of questionnaire as the response group. These were sent at the beginning of December 2012. After three weeks, a reminder letter was sent. The response was 639 cases (42.6%) of which 53 were excluded, mainly because they were already working full-time when they were reported as being on sick leave for 42 weeks. For this reason, 586 cases were included in the control group, nearly twice the number of the case group, which can be considered sufficient for a non-matched case-control study (Rose & Van der Laan, 2009).

Content of the relevant blocks of questions in the questionnaires

The questionnaire was tested for length and comprehensibility by the same seven persons who had tested the accompanying letters (see above). The questionnaire for the case group consisted of fourteen blocks of questions and for the control group it included thirteen blocks of questions, of which twelve

were the same as for the case group. The same core section of both questionnaires is relevant to this study. This core section consisted of three blocks of questions for on-the-job (link, fit, sacrifice) and three blocks of questions for off-the-job (link, fit, sacrifice). These questions were mainly derived from items and questions in previously applied and validated questionnaires (Gründemann et al., 1991; Mitchell et al., 2001a; Mitchell et al., 2001b; Lee et al., 2004; Vendrig, 2005; Holtom et al., 2006; Felps et al., 2009; Hooftman et al., 2010). The appendix lists the items of the questions for on-the-job factors and off-the-job factors and their source in the literature. The possible answers for the questions relating to the factors fit and sacrifice for on-the-job and off-the-job were given using a five-point Likert scale, ranging from totally agree (1) to totally disagree (5). The questions of the link factors for on-the-job and off-the-job were more factual, and the categories of the answers differed from each other: e.g. ranging from two categories (e.g. for being a member of a hobby club or association: 'yes' or 'no') to five categories (e.g. for having next of kin living in the region: 'all', 'many', 'rather/fairly', 'some', 'none'). The concept of 'community' was difficult to operationalize in the questionnaire, as indeed it is difficult to define clearly in sociology more generally (Scott et al., 2005:93). The word 'community' (in Dutch: gemeenschap) is not commonly used in the Netherlands and would, perhaps, have been liable to misinterpretation in terms of our research subject. We therefore chose to make a differentiation. In our research model, the concept of community includes four geographical levels increasing in scale: the neighbourhood, the district in which the neighbourhood is located, the village or town, and the region in which the village or town is located.

Analyses

Firstly, we compared the age and gender of the response group with those of the population of the case group and control group separately. Age and gender were the only exogenous variables for which this comparison was possible in this study. We then also looked at missing values in the answers of the six blocks of questions under study.

We looked at the missing values in the answers of the blocks under study. Most variables had less than 3.5% missing values (of the 892 cases), and this was not systematically higher or lower in the case group than in the control group. We imputed these missing values on a logical basis, by means of substitution or by means of the estimates of the variable on the basis of regression models with relevant variables of the same block and demographic variables. However, there was a large number of missing values concerning the number of years working in the job (138 missing values, 15.5%) and for the number of years working in the sector (211 missing values, 23.6%). We imputed these missing values using a regression model with other relevant variables based on demographic factors and the job in which the sick leave began. We looked at these variables for the case group and the control group separately before and after the imputation: the mean, median and standard deviation of the variables were of the same order.

We carried out factor analyses (principal components, varimax rotation) on the answers of all respondents – case group and control group – for each of the six blocks of questions separately (i.e. link, fit and sacrifice for on-the-job and off-the-job), using mean substitution. We checked whether the values of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and of Bartlett's Test of Sphericity (Bartlett) were sufficient. On the basis of the number of dimensions with an eigenvalue > 1.0 and on the basis of the scree, we determined the number of dimensions and whether these were easily interpretable. Using the number of dimensions determined, we calculated factor scores for each

dimension. We reversed the factor scores with a pole with "minus is more" into "plus is more", in order to give all factor scores the same direction.
Since the number of cases was sufficient, we sampled 50% of the respondents in the case group and the control group, respectively, in order to have cases for a cross validation in due time. This resulted in a file of 447 respondents, 155 from the case group and 292 from the control group. All these analyses were performed with SPSS20.
We estimated a first-order start measurement model with on-the-job and off-the-job as latent variables, both loading on the matching factor score variables. We fitted the start measurement model to obtain a final measurement model for on-the-job and off-the-job by closing non-significant parameters and opening parameters with the largest Modification Index (> 3.84).
Finally, we estimated a second-order measurement model for employee embeddedness, in which this latent variable was loaded on the latent variables on-the-job and off-the-job. Six parameters had to be estimated in this part of the second-order model (two disturbance terms of on-the-job and off-the-job and their correlation, the two loadings of employee embeddedness on on-the-job and off-the-job, and the correlation of the latent variable employee embeddedness on the diagonal). However, only three (co)variances were available: the two variances of the latent variables on-the-job and off-the-job, and their covariance. We therefore needed to introduce three constraints to identify this model. First, we constrained the correlation of the latent variable employee embeddedness on the diagonal (i.e. with itself) to be unity. The second constraint was that the disturbance terms of the latent variables on-the-job and off-the-job were equal. Finally, we constrained the correlation in the disturbance terms of the latent variables on-the-job and off-the-job at zero. This kind of constraint is normally chosen for non-identified models (Jöreskog & Sörbom, 2001).
These analyses for the measurement models were performed with Lisrel 8.72 (Jöreskog & Sörbom, 2004). Maximum Likelihood was used as the estimation procedure ($p < 0.05$). The model fit for the structural model (and for the measurement model as well) was valued as good (Hooper et al., 2008) if the Chi-Square of the model was less than twice the number of degrees of freedom, if the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) were both under 0.05, and if the Comparative Fit Index (CFI) was equal to or greater than 0.90. We verified whether the standardized residuals were normally distributed using the Q-plot. In addition, we ensured that the correlations of the parameter estimates of the loadings were <0.7, since large correlations may indicate that the model is nearly non-identified and that some of the parameters cannot be determined from the data (Jöreskog & Sörbom, 2001).

Results

Representativeness of the response group

The response group was somewhat older than the population under study. The percentage of women was nearly the same in the case group and in the control group.

Table 1 Age and sex of the population under study and of the response group for the case group and the control group

	Case group Age, years mean (median; sd)	Case group Sex, female (%)	Control group Age, years mean (median; sd)	Control group Sex, female (%)
Population under study	43.9 (44.0; 10.7) (n=1150)	52.1% (n=1150)	47.1 (48.0; 10.6) (n=1500)	59.7% (n=1500)
Response group	46.5 (48.0; 10.3) (n = 306)	51.6% (n = 306)	49.9 (52.0; 9.8) (n= 586)	58.5% (n= 586)

Results of the six factor analyses

The six factor analyses for link, fit and sacrifice on-the-job (On) and off-the-job (Off), respectively, resulted in thirteen dimensions. The sample adequacy for the link-on and link-off factor analyses was 0.669 and 0.643, respectively, while for the other four analyses it ranged from 0.849 to 0.899. For all factor analyses, Bartlett's test showed it to be unlikely ($p<0.0005$) that the matrices were an identity. The explained variances of the six factor analyses range from 51.2% to 56.1%.

Link-On had four dimensions, i.e. the link by
- time spent in the position, with the employer, and in the sector (Link-On1, plus is more link)
- working in a team (Link-On2, plus is more link)
- following work-related courses (Link-On3, plus is more link)
- the quality of the work of colleagues and no negative signals at work (Link-On4, plus is more link).

Fit-On had three dimensions, i.e. the fit by
- good relations with colleagues (Fit-On1, minus is more fit)
- good opportunities to regulate own work (Fit-On2, minus is more fit)
- work that matches own values, home situation etc. (Fit-On3, minus is more fit).

Sacrifices-On had only one dimension, i.e. the sacrifices concerning the various fringe benefits of the job (Sac-On, minus is more sacrifices)

Link-Off had three dimensions, i.e. the link with:
- one's own family (Link-Off1, minus is more link)
- relatives and friends (Link-Off2, minus is more link)
- activities in the region (Link-Off3, plus is more link)

Fit-Off had one dimension, i.e. the fit (Fit-Off, minus is more fit) with the location of the home.

Sacrifice-Off had one dimension, i.e. the sacrifices concerning the various benefits of the location in which one lives (Sac-Off, minus is more sacrifices).

Result of the start measurement model of on-the-job and off-the-job

The results of the theoretical start model are shown in Table 2. The model fit parameters and the Q-plot indicated that the fit of the model was poor. The factor loadings for on-the-job were significant, while those for off-the-job were not. The correlation between the disturbance terms of the two latent variables

was negative and not significant. There were about thirty modification indices >3.84 in the various matrices, indicating that the model could be improved.

Table 2 Results of the start measurement model of on-the-job and off-the-job (N=447)

Scale/dimension (standardized measurement error term); plus pole is more link, fit and sacrifice	Standardized factor loadings latent variables (standard error)	
	On-the-job embedded	Off-the-job embedded
Link-On1 (0.984) for the length of time in the job	0.128 (NA)	
Link-On2 (0.963) for working in a team	0.194 (0.098)*	
Link-On3 (0.958) for following work-related courses	0.206 (0.103)*	
Link-On4 (0.860) for the quality of work by colleagues, no negative signals	0.375 (0.167)*	
Fit-On1 (0.772) for good relations with colleagues	0.478 (0.209)*	
Fit-On2 (0.872) for good opportunities for regulating own work	0.358 (0.161)*	
Fit-On3 (0.815) for work appropriate to own values, home etc.	0.430 (0.190)*	
Sac-On (0.353) for various work fringe benefits	0.804 (0.347)*	
Link-Off1 (0.995) for one's own family	-	0.069 (NA)
Link-Off2 (0.834) for relatives and friends		0.407 (0.304)
Link-Off3 (0.923) for activities in the region		0.278 (0.211)
Fit-Off (0.501) for the location of place of residence		0.707 (0.523)
Sac-Off (0.163) for various advantages of own living situation		0.915 (0.678)
Fit measurement model	Fit parameters	
Chi-square	257.884	
Degrees of freedom	64	
Probability	0.000	
Root Mean Square Error of Approximation	0.0780	
Comparative fit index	0.795	

All scale variables have the direction with the pole "plus is more". The latent variables "on-the-job embedded" and "off-the-job embedded" were estimated with Maximum Likelihood in one measurement model. The correlation between the disturbance terms of the two latent variables is 0.415 (standard error: 0.359; not significant). Parameters marked with * are significant (student's t > 1.96) at the p=0.05 level. The standard errors for the first loadings of the two latent variables are not available (NA), because they were used as scale variables by the Lisrel program.

Results of the fitted measurement model for on-the-Job and off-the-job

Table 3 shows the results of the fitted model. All model fit parameters were appropriate. Most loadings in the fitted model were significant and according to the theoretical start model. The strongest loading for on-the-job was on sacrifices of various work-related fringe benefits (Sac-On, beta=0.981), while the strongest loadings for off-the-job were on sacrifices of various advantages of one's living situation (Sac-Off, beta=0.814) and on fit with the location of the residence (Fit-Off, beta=0.793). The correlation between (the disturbance terms of) on-the-job and off-the-job is 0.393 (significant).

There were four deviations from theoretical start model. The link with the length of time in the position (Link-On1; significant) was now loaded by the latent variable off-the-job, with a positive sign. The fit with good relations with colleagues (Fit-On1; weakly significant) and the fit with work appropriate to one's own values, home situation etc (Fit-On3; significant) was now loaded not only for on-the-job, but also for off-the-job. The link with family (Link-Off1) was no longer loaded with off-the-job (or with on-the-job).

Table 3 Results of the fitted measurement model of on-the-job and off-the-job (N=447)

Scale/dimension (standardized measurement error term) Plus pole is more link, fit and sacrifice	Standardized factor loadings latent variables (standard error)	
	on-the-job embedded	off-the-job embedded
Link-On1 (0.953) for the length of time in the job		0.214 (NA)
Link-On2 (0.977) for working in a team	0.148 (NA)	
Link-On3 (0.966) for following work-related courses	0.184 (0.072)	
Link-On4 (0.664) for the quality work by colleagues, no negative signals	0.594 (0.198)	
Fit-On1 (0.840) for good relations with colleagues	0.363 (0.108)	0.090 (0.055)*

Fit-On2 (0.884) for good opportunities to regulate own work	0.341 (0.109)	
Fit-On3 (0.830) for work appropriate to own values, home etc.	0.322 (0.106)	0.156 (0.060)
Sac-On (0.050) for various work-related fringe benefits #	0.981 (0.291)	
Link-Off1 (1.000) for own family	-	-
Link-Off2 (0.805) for relatives and friends		0.447 (0.111)
Link-Off3 (0.884) for activities in the region		0.362 (0.102)
Fit-Off (0.376) for the location of place of residence		0.793 (0.194)
Sac-Off (0.338) for various advantages of own living situation		0.814 (0.197)
Fit measurement model	Fit parameters	
Chi-square	57.239	
Degrees of freedom	50	
Probability	0.224	
Root Mean Square Error of Approximation	0.0180	
Comparative fit index	0.992	

All scale variables have the direction with the pole "plus is more". The latent variables "on-the-job embedded" and "off-the-job embedded" were estimated with Maximum Likelihood in one measurement model. The correlation between the disturbance terms of the two latent variables is 0.393 and significant (standard error: 0.161, $p<0.05$). All loadings are significant (student's $t > 1.96$) at the $p=0.05$ level, except the loading marked with * which is weakly significant ($p \approx 0.10$). The standard errors for the first loadings of the two latent variables are not available (NA), because they were used as scale variables by the Lisrel program.
Sac-On was estimated with the value of the measurement error fixed at 0.05 to avoid a Heywood case.

Results of the second-order measurement model of employee embeddedness

The results of the second-order measurement model of employee embeddedness are shown in Table 4. The model fit parameters were appropriate and, given the constraints, some were even better than those of the fitted model for on-the-job and off-the-job. The loadings of on-the-job and off-the-job were nearly the same in this model as in the fitted model for on-the-job and off-the-job. Given the constraints used, the loading of employee embeddedness on on-the-job was positive and nearly significant, while that on off-the-job was positive and significant.

Table 4 Results of the measurement model of Employee Embeddedness (N=447)

Scale/dimension (standardized measurement error term) Plus pole is more link, fit and sacrifice	Standardized factor loadings latent variables standard error)	
	on-the-job embedded	off-the-job embedded
Link-On1 (0.954) for length of time in the job		0.214 (NA)
Link-On2 (0.975) for working in a team	0.148 (NA)	
Link-On3 (0.965) for following work-related courses	0.178 (0.070)	
Link-On4 (0.718) for the quality work by colleagues, no negative signals	0.520 (0.175)	
Fit-On1 (0.839) for good relations with colleagues	0.357 (0.105)	0.083 (0.055)*
Fit-On2 (0.882) for good opportunities to regulate own work	0.335 (0.107)	
Fit-On3 (0.835) for work appropriate to own values, home etc.	0.304 (0.100)	0.159 (0.061)
Sac-On (0.050) for various work-related fringe benefits #	0.953 (0.280)	
Link-Off1 (1.000) for own family	-	-
Link-Off2 (0.806) for relatives and friends		0.444 (0.110)
Link-Off3 (0.884) for activities in the region		0.361 (0.102)
Fit-Off (0.380) for the location of place of residence		0.788 (0.193)
Sac-Off (0.333) for various advantages of own living situation		0.816 (0.198)
Latent variables (standardized disturbance terms##)	Employee Embeddedness	
On-the-job embeddedness (0.619)	0.661 (0.367)**	
Off-the-job embeddedness (0.619)	0.633 (0.297)	
Fit measurement model	Fit parameters	
Chi-square	44.928	
Degrees of freedom	48	
Probability	0.599	
Root Mean Square Error of Approximation	0.000	
Comparative fit index	1.00	

All scale variables have the direction with the pole "plus is more". The latent variables "on-the-job embedded" and "off-the-job embedded" were estimated with Maximum Likelihood in one measurement model. The correlation between the two latent variables on-the-job and off-the-job is 0.409. All loadings from the two latent variables on-the-job and off-the-job on the scales are significant (Students $t > 1.96$) at the $p=0.05$ level, except the loading marked with *, which is weakly significant ($p \approx 0.10$). For the loading of employee embeddedness on on-the-job embedded, marked **, the probability is nearly significant ($p \approx 0.06$). The standard errors for the first loadings of the two latent variables are not available (NA): their parameters were fixed on the basis of the values in the final measurement model for on-the-job and off-the-job (see Table 3).

Sac-On was estimated with the value of the measurement error fixed at 0.05 to avoid a Heywood case.
The standardized disturbance terms of the two latent variables on-the-job embedded and off-the-job were constrained to be equal.

Discussion

Most significant results

We succeeded in measuring all the relevant aspects of on-the-job with eight factors and those of off-the-job with five factors. We were able to interpret these factors theoretically. In the fitted measurement model, the latent variables for on-the-job and off-the-job were loaded on the various factor score variables, mostly according to our theoretical assumptions. The exceptions were as follows: a) on-the-job did not load on length of time in the job, with the employer, and in the sector (Link-On1), and this variable was loaded positively for off-the-job instead; b) off-the-job did not load on the link with one's own family (Link-Off1) and did load positively on good relations with colleagues (Fit-On1) and on work appropriate to own values, home situation etc. (Fit-On3). Furthermore, the results in the measurement model of Employee Embeddedness indicated that this new construct loaded positively on the latent variables 'On- and Off-the-Job Embeddedness', albeit under certain constraints.

Interpretation of the results

The results of the loadings in the measurement models may be surprising at first sight, but they can be explained.
Factor Link-On1 represents 'the length of time in the job, with the employer, and in the sector'. This factor was loaded by off- the-job embeddedness instead of by on-the-job embeddedness. A possible explanation could be that older employees tend to be more embedded in their community. Older people are more likely to have more and/or older children, which may increase and intensify the number of connections with the community. Another explanation could be that employees with long-standing work agreements have more close relationships with colleagues who live in the same community and perceive these relationships more as friendships.
Factor Fit-On3 represents 'work appropriate to own values and, among other things, balance in the home-work situation'. This factor was loaded by on-the-job embeddedness, but also by off-the-job embeddedness. The result can be interpreted as follows: if one's job matches one's personal values, it will obviously also match one's values in private life and at home. This is certainly the case as far as balance between work and the life at home is concerned.
Factor Fit-On1 was loaded not only by on-the-job embeddedness, but also by off-the-job embeddedness. The latter, however, was significant to a lesser degree. Fit-On1 relates to whether an employee has 'good relations with colleagues'. If this is the case, it is plausible that the employee has adequate social skills and will likely also have strong friendships in his or her private life.
Factor Link-Off1 (link with having a partner and/or children) was not loaded by off-the-job embeddedness (and not by on-the-job embeddedness). Perhaps this can be explained because the relation of this factor with off-the-embeddedness is more implicitly experienced in the linkages of employees' social networks.

As we described in another article (Scholte et al., 2015:4), people vary in their degree of attachment to the social groups in which they participate. The overall network of different connections can be seen as an individual's social capital. For this reason, it is possible that employees may consider their link with an organization (e.g. the duration of work, Link-On1) as being more dependent on attachments at home and those with family or colleagues who have become friends. These can be seen as examples of the horizontal dimensions of social capital described in the article of Scheppingen et al. (2013:371). In their

view, the horizontal aspect is represented by social support and relationships of trust and reciprocity between individuals at the same level, whereas vertical relationships are a reflection of similar connectedness between people at different levels in the hierarchy.

With respect to the results concerning appropriate work values and work-life balance (Fit-On3), these can be explained as a situation in which horizontal and vertical dimensions of social capital (Scheppingen, 2013:371) coincide. This and the results for the factor of Fit-On1 may be good examples of the continuous strategy described by Bourdieu (1986:249) of social investment in social relationships, in a conscious or unconscious manner (Decoster, 2001:4). The factor Link-Off1 – which relates to having a partner and children – was not loaded by any of the latent factors. Perhaps this can be explained because it concerns a primary factor of socialization, namely the kinship relationships through which individuals develop a basic level of general trust (Decoster, 2001:55), and long-term social investments as described by Bourdieu (1986:249).

After all, an important result was that the correlation between the latent variables 'on-the-job embeddedness' and 'off-the-job embeddedness' appeared to be positive and significant. Apparently, social investment in horizontal dimensions keeps pace with investments in the more vertical dimension of social capital. Furthermore, was a positive central dimension of 'on- and off-the-job embeddedness', albeit under certain constraints. On the basis of these results, we can now state that our two hypotheses have been largely confirmed and that employee embeddedness can be seen as a useful concept with which to express the social capital of an employee.

Findings of other research studies

In their research on predicting turnover, Mitchell et al. (2001:1111) found that organizational links were not highly positively correlated with job satisfaction or organizational commitment. The community-based sub-dimensions generally had lower positive correlations with overall job satisfaction and overall organizational commitment than the organization-based sub-dimensions. These findings indicate evidence of a convergent and discriminant validity for job embeddedness (2001:1111-1112).
In their 2004 study (Lee et al.: 716), the authors averaged the items for on-the-job and off-the-job-embeddedness into composite scores. All items for satisfaction, commitment, and on-the-job embeddedness (fit and sacrifice) were loaded by a single factor. This was predictable, given their conceptual overlap, and suggested some evidence for convergent validity. The separate factors for off-the-job embeddedness, fit and sacrifice and links, suggest some evidence of discriminant validity (2004: 716). Off-the-job and on-the-job embeddedness appeared to be significantly positively related to turnover, citizenship, performance, satisfaction and commitment, but only off-the-job embeddedness related positive significantly to volitional absences, unlike on-the-job embeddedness, (2004:716-717).
Following Mitchell et al. (2001), Holtom and Interrieden (2006:443) also used the concept of job embeddedness as an aggregate model by averaging its six sub-dimensions. After entering two control variables – 'gender' and 'job satisfaction' – this model improved the prediction of (negatively related) voluntary turnover above and beyond that of (positively related) job satisfaction (2006:444).
In a study by Crossley et al. (2007:1037), the concept of global job embeddedness appeared to have a validated convergence with first-level organization facets as well as with community facets, but the correlations between the latter and that of the composite measure were smaller.

In addition to these findings, our results indicate the internal validity of the concepts of on-the-job embeddedness and off-the-job embeddedness. They also show that these two concepts may have a common dimension, which we have named employee embeddedness.

Strengths and weaknesses

One strength of our study is that theoretical concepts concerning the link, fit and sacrifice for on-the-job embeddedness and off-the-job embeddedness were operationalized on the basis of literature. The questionnaire used was pilot-tested for length and comprehensibility. The response to the survey was representative. Another strength is that we used factor analyses and first-order measurement models to confirm the theoretical concepts of on-the-job embeddedness and off-the-job embeddedness. Furthermore, the confirmation of the theoretical concept of employee embeddedness was implemented using a second-order measurement model, albeit under constraints.

There are also weaknesses in this study, however. The concept of 'community' was difficult to operationalize in the Dutch context. We therefore needed to improvise for the operationalization of this concept. Nevertheless, our operationalization raised no problems when the questionnaire was pilot-tested. Another weakness is that it was only possible to investigate the representativeness of the responses for age and gender. It is therefore possible that other variables, which we could not take into account, may have affected the representativeness of our study. Furthermore, the study was retrospective, which may raise issues of recall bias. However, the period of time between the events being recalled and the selection of the case group was relatively short, ranging from one month (i.e. the end of July 2012 until the end of August 2012) to a maximum of four months (i.e. the start of May 2012 until the end of August 2012). The time lapsed between the 42-week mark for being on sick leave and the invitation to participate in the control group of the survey was a maximum of two months (i.e. the start of October 2012 until the end of November 2012).

Because both events – applying for a second opinion in the case group and being on sick leave for 42 weeks in the control group – are salient, we believe that the problem of recall bias did not occur in our study (Garon 2013). A final weakness is that the relationship of employee embeddedness with on-the-job and off-the-job embeddedness could only be estimated under constraints and was therefore not fully confirmed.

Relevance for further research

In the first place, our results have to be cross validated in due time on the other part of our dataset. Having a valid measurement instrument to determine the extent of the employee's social capital makes it possible to determine whether differences in social capital correlate with the chance of a dispute over sickness absence occurring or not, as well as with the likelihood that the employee will request a second opinion. As such, it may be also possible to shed some light on the further refinement of potential correlation scores within one group (the case group or the control group).

If the hypothesized negative correlations between the theoretical constructs of on-the-job, off-the-job, and employee embeddedness, respectively, and requests for a second opinion are proven correct, then these results are also meaningful for other fields of the labour market. For example, this may mean that employers facing a shortage of staff need to take special actions to recruit new employees, such as offering facilities for carrying out volunteering activities during working hours, or sponsoring tickets to

football games or local theatres. With respect to the return of disabled people to the labour market, this may mean that more has to be done to re-integrate unemployed people in jobs on a more permanent basis.

Conclusion

Our overall conclusion is the following. On the one hand, we can distinguish between 'on-the-job embeddedness' and 'off-the-job embeddedness', which means that in real life these constructs appear manifest themselves differently in the population of this research. On the other hand, there is a positive correlation between the constructs of 'on-the-job embeddedness' and 'off-the-job embeddedness': we can distinguish a common dimension in both constructs, albeit under certain constraints. This indicates that our concept of employee embeddedness may be considered an internally valid and reliable measurement instrument which can be used to determine the extent to which an employee is embedded in society in general, i.e. the social capital of an employee. However, if the measurement instruments for the three concepts are really internally valid and reliable, will depend on the results of the cross validation on the other part of our dataset in due time.

Appendix Items of questions and their source for on-the-job factors and off-the-job factors

Theoretical construct	*Operationalization of the theoretical construct*
On-the-job factors:	
Link with the organization/job	- type of work agreement (temporary, casual, permanent)[7] - number of years in service/having done the same job/having worked in the same sector[1,5,6,7] - working alone or in a team (number of people in a team)[3] - frequency of contact with colleagues[1,3,5] - being in charge at work or not[1,6] - autonomy in taking (short-term) leave[4,7] - working in other settings than the usual (and how frequently), e.g. as a member of a committee or project group[1,5] - perceived quality of the work of colleagues[2,7] - receiving signals about shortcomings due to factors in private life[7] - having received external or internal training during the last two years[7]
Fit with the organization/job	- job skills' demands[1,3,7] - fit with standards and values of the organization[1,3] - appreciation by colleagues/manager[1,6,7,8] - being settled in the organization[8] - fit with the content of the job[2,6,7] - comradeship with colleagues (in finishing the job)[7,8] - appreciation of colleagues[5,6] - resemblance to colleagues in conduct[5] - match between work hours and personal preferences[1] - possibility of combining work with private obligations, e.g. by teleworking or working part-time[4] - autonomy in working, to set own pace etc.[3,6.7] - autonomy in finding solutions in daily issues[7] - existence of bottlenecks in work-life balance[7,8] - attraction of one's job[2,8] - opportunities to achieve professional goals[5,7] - positive feelings about the progress at work[5]
Sacrifices concerning leaving/losing the job	- loss of freedom in work[1,3,5] - loss of work-related perks[1,2,5] - loss of particular facilities such as sports, daycare and/or education[5] - missing the appreciation of colleagues[1,5] - missing professional prospects[1,2,3,5,6] - missing good salary[1,2,5] - missing a pension plan[2,5]

Off-the-job factors:	
Link with the community	- being married[1,2,3,5] - having children[2,4] - the composition of the household[1,5,7] - having a partner with a job outside the house[1,3,5] - having a rented house or an owner-occupied house[1,3,5] - having family that was born and bred in one's community[1,3] - having best friends living in one's community[3] - having a family-friendly community[1] - having next of kin living in one's community - being a member of a club or institution [2,3] - being active in the board of a club or institution [2,3] - being able to spend enough time on activities in the community[4]
Fit with the community	- being fond of the community where one lives[1,3,5] - appreciation of the weather/climate in the region where one lives[5] - fit with the people who live in the community where one lives[1,3,5] - job is in the community where one prefers to live and where one lives[2,5] - community offers enough facilities to spend free time according to one's wishes[1,2,3,4,5]
Sacrifices concerning leaving the community in which one lives	- feeling strongly about leaving the community[1,3,5] - losing friends by leaving the community[3] - missing safety by leaving the community[1,5] - missing a club/institution by leaving the community[2] - missing the contacts one has by leaving the community[3] - missing the facilities one has by leaving the community[4] - missing voluntary activities by leaving the community[3,4]

1) Lee, Mitchell, Sablynski, Burton, Holtom, 2004: 721-722; 2) Holtom, Inderrieden, 2006: 449; 3) Felps, Mitchell, Hekman, Lee, Holtom and Harman, 2009:561; 4) Mitchell, Holtom, Lee, Graske, November 2001 (as items, no used questions); 5) Mitchell, Holtom, Lee, Sablynski, Erez, December 2001; 6) Vragenlijst WAO-intrede, December 1991; 7) Nationale Enquête Arbeidsomstandigheden, TNO/CBS/minSZW, 2010; 8) Vragenlijst Arbeidsreïntegratie VAR, Lex Vendrig, maart 2005

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