

On the Relation of Job Insecurity, Job Autonomy, Innovative Work Behaviour and the Mediating Effect of Work Engagement

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European policy is focusing on innovation as a way out of the economic crisis. At the same time, job insecurity is rising as Europe is still in crisis. In this paper, we examine whether job insecurity affects the innovative work behaviour of employees by focusing on the relation between job insecurity, job autonomy, work engagement and innovative work behaviour (IWB). Using employee level survey data, we use structural equation modelling to disentangle the relations between these variables. The partially mediated model shows the best fit with the data. This model shows that job insecurity and autonomy are both directly and indirectly, through work engagement, related with IWB. For autonomy these relations are positive, while they are negative (and smaller) for job insecurity. Moreover, a negative covariance is observed between job insecurity and autonomy.

Introduction

The ambition of the EU 2020 strategy is to focus on smart, sustainable and inclusive growth. Smart growth refers to the importance of innovation. The EU's ambition is to become an innovative union in which good ideas are picked up and swiftly commercialized (European Commission, 2010). Although the focus is primarily on science and technology, attention is also paid to social innovation and bottom-up employee-driven innovation (Møller, 2010). According to multiple studies, the importance of these small, day-to-day workplace innovations is crucial for an organization's survival and prosperity (Oldham & Cummings, 1996; Janssen, 2000; Getz & Robinson, 2003). Consequently, attention in academia and in policy circles is rising into how employees' innovative work behaviour (IWB) can be stimulated and triggered (e.g., EUWIN, 2012).

At the same time, Europe is facing an economic crisis with serious labour market effects. One of these effects is an overall

increase in 'job insecurity', which causes various psychological, sociological and health problems (see De Witte, 1999; Sverke & Hellgren, 2002; Sverke, Hellgren & Näswall, 2002). A growing number of workers in Europe are feeling insecure about their future employment (Van Gyes & Szekér, 2013).

This study focuses on the effect of job insecurity on IWB. In doing so, we also take into account the effects of two antecedents of IWB (autonomy and work engagement) and examine both direct and indirect relations between these variables.

Job autonomy has frequently been identified as one of the major antecedents of employee creativity, yet the discussion on how and why it affects employee innovative behaviour remains ongoing (e.g., Chang, Huang & Choi, 2012; Battistelli, Montani & Odoardi, 2013). In this respect, this study focuses not only on the direct relation of job autonomy with IWB, but also on the indirect effect through work engagement. Work engagement has recently been given a lot of attention as an important mediator in the relation between job

characteristics and employee outcomes. By studying these direct and indirect relations, this article responds to the various calls in the innovation literature (Shalley & Gilson, 2004; Shalley, Zhou & Oldham, 2004) to explicitly model both the direct effects of employee innovation antecedents and the mediated effects through work engagement.

This study is one of the first to study the relation between job insecurity and innovative work behaviour (Niesen, De Witte & Battistelli, 2011). In this respect, our study contributes to both the innovation literature, which largely ignores job security as a possible antecedent, and to the employee innovation literature as it extends its scope of employee outcomes to IWB.

In terms of practice, this study has implications for innovation managers and policy makers. If job insecurity is negatively related to IWB, innovation managers should provide secure jobs to employees that are expected to contribute to innovations. The same goes for autonomy; if we find a significant effect, innovation managers should give employees enough discretion in how they perform their work tasks. For policy makers, this study could indicate that the observed rise in job insecurity in Europe is not a neutral process and can potentially negatively affect the innovation agenda (De Spiegelaere, Van Gyes & Van Hootegem, 2013).

Literature

Innovative Work Behaviour

Following West and Farr (1990), we define innovative work behaviour as 'all employee behaviour directed at the generation, introduction and/or application (within a role, group or organization) of ideas, processes, products or procedures, new to the relevant unit of adoption that supposedly significantly benefit the relevant unit of adoption'. IWB is about employees finding, suggesting and implementing new and beneficial work-related ideas. As such, IWB is generally considered as behaviour beneficial for the organization. Building on the work of Kanter (1988) and Scott and Bruce (1994), IWB is conceived as a multi-dimensional concept. Employees generate innovative ideas, seek support for these ideas from colleagues and supervisors and implement the ideas in the workplace (De Spiegelaere, Van Gyes & Van Hootegem, 2014). Although researchers distinguish between three, four or even five sub-dimensions of IWB (see Janssen, 2000; Kleysen & Street, 2001; De Jong & Den Hartog, 2010), a large share of the literature identifies just two sub-dimensions:

idea generation and idea implementation (Krause, 2004; Yuan & Woodman, 2010). Idea generation refers to the phase where employees identify problems and generate innovative solutions to address the problems. In the implementation phase, the employee proposes, defends and actually implements the innovation in the workplace. Following Kanter (1988), Scott and Bruce (1994) and Tuominen and Toivonen (2011), these dimensions should not be regarded as sequential stages. Innovation is a discontinuous process, and so is the innovative behaviour of employees.

IWB can be distinguished from employee creativity for two main reasons. First, creativity focuses exclusively on the idea generation phase, while IWB encompasses all employee behaviour related to different phases of the innovation process. Second, creativity traditionally refers to the creation of something absolutely new. IWB, on the contrary, focuses on something new *for the relevant unit of adoption* (Amabile et al., 1996; De Spiegelaere, Van Gyes & Van Hootegem, 2014). Employees who take the initiative to copy successful work habits from other departments, for example, are clearly staging important 'innovative behaviour' while not engaging in workplace creativity. The literature on creativeness will be useful for the development of our hypotheses since the two concepts show a considerable overlap.

Job Insecurity

Job insecurity can be defined as 'an overall concern about the continued existence of the job in the future' (De Witte, 1999; Sverke, Hellgren & Näswall, 2002; Cheng & Chan, 2008). Job insecurity has been linked to a variety of negative employee outcomes in terms of health (Sverke, Hellgren & Näswall, 2002; Cheng & Chan, 2008), turnover (Probst, 2008; Staufienbiel & König, 2010) and reduced organizational citizenship behaviours (Reisel et al., 2010).

Regarding the relation of job insecurity with employee innovative behaviour or creativity, the literature is far less developed. Three central review articles on employee innovative behaviour and creativity do not even mention job insecurity as a possible explanatory variable (Shalley & Gilson, 2004; Shalley, Zhou & Oldham, 2004; Hammond et al., 2011). Nevertheless, a variety of theoretical models predict significant (negative) consequences of job insecurity in terms of innovative behaviour. These models essentially go back to what Greenhalgh and Rosenblatt (1984) termed the 'disinvolvement syndrome': employees in insecure jobs feel less obliged and motivated to solve work-related problems that go beyond

the scope of their normal job description. Similarly, job adaptation theory (Hulin, 1991) suggests that employees facing job insecurity will develop strategies of withdrawal from the stressor (i.e., job insecurity). This withdrawal can relate to higher employee mobility turnover intentions or decreased levels of commitment (Probst, 2002; Sverke, Hellgren & Näswall, 2002; Cheng & Chan, 2008).

One could argue that a decreased level of commitment or disinvolvement of the employee will affect innovative work behaviour for two reasons. Firstly, because of the time-intensive and long-term character of innovation processes, employees are likely to opt out of these kinds of behaviours when facing job insecurity. Secondly, IWB is a kind of employee behaviour focused on changing aspects of the work or the organization. As such, IWB can be related to worsened relations with co-workers and supervisors. Innovative employees run the risk of getting into conflict with other employees as these might resist the change. Their attachment to current habits and work practices can lead to worsened personal relations with the innovative employee (Janssen, 2003; Janssen, Van de Vliert & West, 2004). Employees facing job insecurity might not be willing to take these risks, as a conflict with the supervisor could further jeopardize their future employment chances.

Unfortunately, studies which relate job insecurity to employee innovative behaviour are scarce. Amabile and Conti (1999) studied the work environment for creativity in the context of downsizing and found significant negative relations. Although this study did not measure creativity or IWB, it gives an indication about the relation between job insecurity and IWB. A study within the contexts of layoffs and company restructuring found that employees facing these challenges are more risk averse (Cascio, 1993). A more recent study by Probst et al. (2007) combined both experimental and survey research to analyse how job insecurity affects employee creativity. Through both methodologies the researchers found significant negative relations. Consequently, we expect to find a direct negative relation between job insecurity and IWB.

H1: Job insecurity is negatively related to innovative work behaviour.

Extending the Scope: Job Autonomy

In studying the effect of job autonomy on IWB, we build upon the recent meta-analysis of Hammond et al. (2011), which identified job autonomy as one of the main antecedents of employee innovative behaviour. Autonomy refers to the degree of control of an employee

over how to carry out the job task (Hackman & Oldham, 1980). For many years, autonomy has taken a central place in various theories of job design (e.g., Hackman and Oldham's Job Characteristics theory (1980), Karasek's Job-Demands Control theory (1979) and Bakker and Demerouti's Job-Demands Resources theory (2007)).

Autonomy enables employees to experiment with different work approaches and methods. It enables them to find ideas and develop them further through the small-scale application of these ideas. Moreover, research also found that in jobs with a lot of autonomy, employees tend to participate more in knowledge sharing (Cabrera, Collins & Salgado, 2006). As a result, research identified autonomy as a strong predictor of employee innovative behaviour (e.g. Axtell et al., 2000; Parker et al., 2003; Krause, 2004; Ramamoorthy et al., 2005; Unsworth, Wall & Carter, 2005; Ohly, Sonnentag & Pluntke, 2006; Slåtten & Mehmetoglu, 2011).

H2: Autonomy is positively related to IWB.

Mediation by Work Engagement

In research on employee creativity and innovative work behaviour, it is frequently assumed that antecedents like job autonomy affect employee innovative behaviour through changed levels of employee motivation or work engagement (Shalley & Gilson, 2004; Shalley, Zhou & Oldham, 2004). These studies, in other words, suggest the existence of important mediation effects in the relation between job characteristics and employee innovation.

In this study we aim to explicitly study this mediation effect in the relation between autonomy, job insecurity and IWB. We do so by focusing on work engagement as a mediating variable. Traditionally, work engagement is defined as 'a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption' (Schaufeli & Bakker, 2004). Work engagement is not a momentary state of mind, but is persistent and not directly focused on a particular object, event, individual or behaviour (Salanova, Agut & Peiro, 2005; Bakker & Demerouti, 2008). Work engagement consists of three dimensions: vigour, dedication and absorption. *Vigour* refers to a mental state of employees characterized by high levels of energy, resilience, willingness to invest effort and persistence in the face of problems. *Dedication* is characterized by an employee's enthusiasm and pride about work, the feeling of getting inspiration from work and an overall sense of significance related to work. *Absorption* refers to a state of mind in which the employee is

highly concentrated and engrossed in his/her work. Time flies and s/he has difficulties to get detached from the work.

In previous studies, the focus was mostly on intrinsic motivation as a mediator, instead of work engagement (e.g. Carmeli & Spreitzer, 2009; Yuan & Woodman, 2010). Work engagement and intrinsic motivation are similar, though not identical, concepts. In previous work on employee creativity and innovation, reference is mostly made to the importance of intrinsic motivation, i.e. motivation rooted in the content of the task as such (Shalley & Gilson, 2004; Shalley, Zhou & Oldham, 2004). This motivation is mostly contrasted with extrinsic motivation, which refers to a motivation driven by the external outcomes of performing the task (earning a salary, enjoying a certain social status). Contrary to intrinsic motivation, work engagement does not refer to a specific driver of employee engagement, but merely measures the degree of vigour, dedication and absorption experienced by the employee (Schaufeli, Bakker & Salanova, 2006), without discriminating between the different sources of that work engagement. In practice, both concepts are relatively similar (e.g., Mauno, Kinnunen & Ruokolainen, 2007). Many of the identified antecedents are the same, and work engagement is often used as a specific type of employee motivation (Salanova, Agut & Peiro, 2005).

Work engagement has been linked to various positive organizational outcomes in terms of productive employee behaviour (Salanova, Agut & Peiro, 2005; Bakker & Demerouti, 2008) and was found to be an important mediating variable in the relation between job characteristics and employee outcomes (Saks, 2006; Bakker & Xanthopoulou, 2013).

Building on this, we hypothesize that the relation between job autonomy and IWB is also mediated by work engagement. Indeed, autonomy not only enables employees to experiment with innovative work practices, it also fosters their overall engagement and motivation (see Karasek, 1979; Hackman & Oldham, 1980; Bakker & Demerouti, 2007). Job autonomy enables employees to attain their work goals (Nahrgang, Morgeson & Hofmann, 2011) and to react swiftly to changing job demands, and buffers the negative impact of stressors (Bakker & Demerouti, 2007). This is likely to enable employees to perform their job with vigour and dedication. Multiple studies have confirmed that autonomy and work engagement are positively related (Schaufeli & Bakker, 2004; Saks, 2006; Bakker et al., 2007; Mauno, Kinnunen & Ruokolainen, 2007) and we consequently

hypothesize that work engagement will mediate the relation between job autonomy and IWB.

H3: Work engagement mediates the relation between job autonomy and IWB.

Also job insecurity is related to work engagement. Job insecurity is considered as a stressor (Van Vuuren et al., 1991; De Witte, 1999) that can negatively affect the work engagement of employees (Bosman, Rothmann & Buitendach, 2005; Vander Elst et al., 2013). As employees perceive their job as insecure, they are likely to feel powerless and perceive a lack of control (Vander Elst, De Cuyper & De Witte, 2011). These factors will negatively affect the degree to which employees get engaged in their work. Empirical work on this relation indeed confirms the negative relation between job insecurity and work engagement. For example, a cross-sectional study by Mauno et al. (2005) showed that job insecurity is negatively related to work engagement, and that this relation is especially strong for permanent workers. The finding was confirmed by the cross-sectional studies of De Cuyper et al. (2008) and Vander Elst et al. (2010, 2013) and by a longitudinal study of Mauno, Kinnunen and Ruokolainen (2007) which showed that job insecurity had a negative effect on the dedication level of employees. We therefore propose the following hypothesis.

H4: Work engagement mediates the relation between job insecurity and IWB.

Models under Research: Direct vs. Indirect Effect of Job Insecurity and Autonomy

Taken together, our hypotheses predict that there are multiple direct and indirect relations between autonomy, job insecurity, work engagement and IWB. More concretely, we hypothesize that job insecurity is both directly related to IWB (Hypothesis 1) and indirectly through a negative effect on work engagement (Hypothesis 4). The same goes for autonomy: we hypothesize a direct (positive) effect on IWB (Hypothesis 2) and an indirect effect through work engagement (Hypothesis 3). The predicted full model is depicted in Figure 1.

Method

Sample

The employee level data were collected using a face-to-face standardized questionnaire. The sample consisted of Flemish workers from five

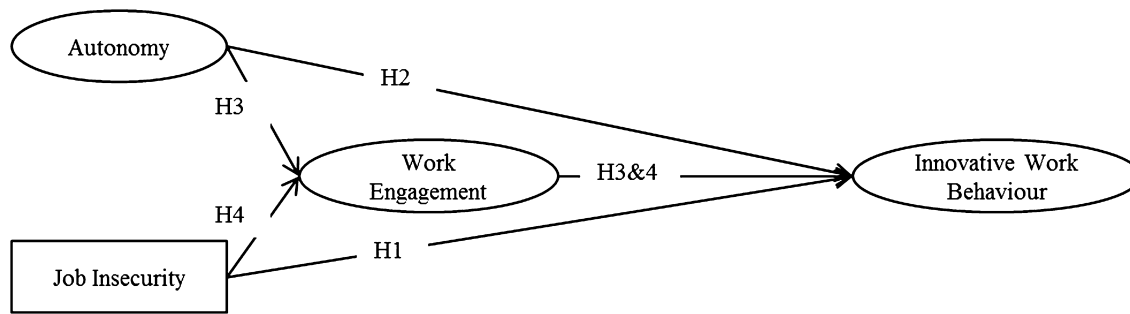


Figure 1. Predicted Model

different industries: banking, retail, hotels & restaurants, the chemical industry and the social work sector. The sample was compiled with the help of the two trade unions that represent these sectors. As such, an a-select sample was drawn from the membership databases of these unions which together represent over 50 per cent of the Belgian working population (Vandaele & Faniel, 2012) and are representative for the working population (Van Gyes, 2011). The sample consisted of employees from a multitude of organizations and HR policies. In total 927 questionnaires were collected with an overall response rate of 57 per cent. Sixty per cent of the respondents had a degree of at most secondary education; 62 per cent were hired as full-time employees and the average age of the respondents was 43 years. About half of the sample (48 per cent) was male. About 30 per cent of the respondents were blue-collar workers, 59 per cent were white-collar employees and 11 per cent held managerial positions. Response was enhanced through direct, personal communication between the interviewer and the respondent and through the provision of both conditional and unconditional incentives (Church, 1993). The first information letter contained a gift, unconditional of participation. Furthermore, a lottery was announced and organized between the participants (conditional incentive) from which five were awarded a gift voucher.

Measures

For most measures, respondents could answer on a seven-point Likert scale ranging from 'totally disagree' to 'totally agree' or from 'always' to 'never'. Only for the measurement of job insecurity was a five-point scale used. Working with different answer formats is advised by Podsakoff et al. (2003, pp. 887–8) and Gardner et al. (1998) as a method of reducing common method bias.

The measure of **autonomy** includes four items with questions like 'I can arrange my own work pace' and 'I can decide for myself how I perform my work'. The items were based on the 'Nova-Webb' survey (Schouteten & Benders, 2004). The internal reliability of the scale was high ($\alpha = 0.83$).

Innovative work behaviour is measured using a nine-item scale adopted from De Jong and Den Hartog (2010) including four items related to idea generation (e.g., 'How frequently do you wonder how things can be improved?'), three items related to idea championing (e.g., 'How frequently do you make important organizational members enthusiastic about innovative ideas?') and two items referring to idea implementation (e.g., 'How frequently do you systematically introduce innovative ideas into work practices?'). The dimensionality of these items was analysed using confirmatory factor analysis (CFA). A single-factor solution resulted in poor fit ($\chi^2 = 877$, $df = 28$, $RMSEA = 0.18$). A two-factor solution distinguishing between idea generation and idea implementation resulted in a better fit ($\chi^2 = 157$, $df = 26$, $RMSEA = 0.07$). As studies sometimes point to the existence of three dimensions – idea generation, idea championing and idea implementation (e.g., Janssen, 2000) – a three-factor solution was also modelled, which resulted in the best fit ($\chi^2 = 133$, $df = 14$, $RMSEA = 0.07$). Yet, given the high inter-correlation between the idea championing and the idea implementation factors (0.96), we chose to optimize the two-factor solution by allowing the errors of the items referring to idea championing and idea implementation to correlate. As the last item ('How frequently do you put effort in the development of new things?') loaded on both factors, we deleted the item from the analysis. This resulted in a model with good fit ($\chi^2 = 55$, $df = 20$, $RMSEA = 0.04$). The internal reliabilities of the two dimensions were high ($\alpha = 0.91$ and $\alpha = 0.93$). The IWB structure in this study was identical to that of Dorenbosch, van Engen and Verhagen (2005).

Work engagement is measured using a seven-item scale developed by Schaufeli, Bakker and Salanova (2006) including two items related to vigour (e.g., 'When I get up in the morning, I feel like going to work'), three items related to dedication (e.g., 'I am enthusiastic about my job'), and two items related to absorption (e.g., 'I feel happy when I am working intensely'). Using CFA, the dimensionality of the work engagement measure was tested. A single-factor solution with free parameter estimates and uncorrelated errors resulted in poor fit ($\chi^2 = 230$, $df = 14$, $RMSEA = 0.13$). A second-order CFA with three factors (vigour, dedication and absorption) and one second-order latent variable (work engagement) with uncorrelated errors resulted in better fit ($\chi^2 = 41$, $df = 11$, $RMSEA = 0.06$). Yet, given the high inter-correlation between two of the three latent variables (vigour and absorption = 0.87), we fitted a second-order factor CFA with two first-order latent variables. We constrained the loadings of the two first-order latent variables to be equal, constrained the loadings of the theoretical dimensions to be equal and correlated the errors of the items related to absorption and two of the items referring to dedication. The resulting model showed an excellent fit ($\chi^2 = 25$, $df = 13$, $RMSEA = 0.03$). The internal reliabilities of the two dimensions were high ($\alpha = 0.81$ and $\alpha = 0.85$).

Job insecurity was measured using a single item. The respondents were asked how they evaluated their chances of becoming unemployed for four weeks in the following 12 months. As a great number of respondents felt very secure about their job and their employment in the coming 12 months, the response on this variable did not meet the normality assumption. Yet, building on the results of Lei and Lomax (2005), we should not be too concerned with the bias of the estimates in SEM modelling with non-normal variables. We controlled the models by including a log transformation of the job insecurity variable instead of the original variable. These additional analyses confirmed the validity of our findings.

Common Method Variance

As the data for this research were all measured at the employee level using a single method, the results of the analysis and the estimates might be biased because of common method variance (CMV), i.e. variance stemming from the use of a single source of information (Podsakoff et al., 2003). CMV could inflate correlations and could lead to incorrect or inflated results. Although several statistical methods have been developed in order to assess or model the impact of CMV (e.g., Harman's

single factor test), proactive strategies for avoiding CMV are still preferred (Conway & Lance, 2010). In line with the suggestions of Podsakoff et al. (2003), we tried to reduce the bias of CMV by mixing up questions related to various concepts, using different response categories throughout the questionnaire and including temporal separations between similar questions. Furthermore, we assessed the presence of a method effect by including a latent 'common method factor' in the structural equations model (Podsakoff et al., 2003; Chang, van Witteloostuijn & Eden, 2010). The loadings on this method factor were statistically insignificant and the relations between the variables were not affected in any way by the inclusion of this common method factor. We therefore conclude that it is unlikely that a method effect seriously biases the results of our analysis.

Analysis – SEM

We used structural equations modelling (SEM) analysis using the SAS 9.3 software (PROC CALIS; SAS Institute, Inc., Cary, NC). This methodology is particularly adapted to analyse direct and indirect relations between variables (Hatcher, 1994; Schumacker & Lomax, 2012). In the analysis, different models are compared regarding their overall fit and the estimated coefficients. Model fit is assessed using a series of indicators which sometimes have cut-off points defined by the literature, while others are used for model comparison. As such, the χ^2 is inspected in relation to the degrees of freedom of a model. As a rule of thumb, the χ^2/df ratio should be less than two (Hatcher, 1994). The χ^2 is sensitive to sample size (Hooper, Coughlan & Mullen, 2008; Schumacker & Lomax, 2012). Therefore, other indices are used to assess model fit. We report the goodness-of-fit index ($GFI > 0.95$), the adjusted goodness-of-fit index (adjusted for the degrees of freedom) ($AGFI > 0.95$), the root mean square error of approximation ($RMSEA < 0.05$), the standardised root mean square residual ($SRMR < 0.05$), the comparative fit index ($CFI > 0.95$) and the non-normed fit index ($NNFI > 0.95$). These tests are used to assess the overall fit of the various models under study. Secondly, the tests are used in order to compare the fit of the various models proposed. The comparison of models is also performed using the ' χ^2 difference test' for nested models.

Analytical Strategy

The different hypotheses are tested first of all through the comparison of multiple models and the inspection of their overall fit indices

and secondly through the individual relation estimates. In a first step, a measurement model was fitted which included covariance terms between all (second-order) latent variables. This analysis showed that one item related to dedication (*'my work inspires me'*) loaded high on both dedication and innovative work behaviour. Given the fact that 'inspiration' can be interpreted ambiguously and in order to avoid confusion between the dedication and IWB scale, this item was dropped from the analysis. The resulting measurement model showed good fit ($\chi^2 = 248$, df. = 128, RMSEA = 0.0320, SRMR = 0.0346, AGFI = 0.9620).

This measurement model also showed that there is a significant negative covariance between autonomy and job insecurity. Given the fact that we aim to study the effect of job insecurity on IWB, controlling for direct and indirect effects of job autonomy and work engagement, we decided to include this covariance term in our model. As such, the observed relations are controlled for job autonomy and for the negative covariance between job autonomy and job insecurity.

In a second step, a full reference model was fitted on the data. This model included all hypothesized relations and corresponded to the model shown in Figure 1. Subsequently, different models were fitted in which individual relations were eliminated from the model (restricted to zero). If the overall fit indices of a restricted model show a significant decrease in model fit (using the χ^2 difference test), this signals that the eliminated relation should be included in the model. Model 2 refers to a model in which the effect of job insecurity is fully mediated by work engagement (refuting Hypothesis 1), Model 3 refers to a model in which there is no indirect effect of job insecurity

(refuting Hypothesis 4), Model 4 reflects a model in which the effect of autonomy is fully mediated (refuting Hypothesis 2) and, finally, Model 5 refers to a model in which there is no direct effect of autonomy on IWB (refuting Hypothesis 3).

Before the models were fitted, the descriptive statistics were inspected (Table 1). Most variables are positively correlated with each other, except for 'job insecurity' which has a significant negative correlation with all other variables. Given the moderate inter-correlations between the variables, multicollinearity is not a concern. Only the correlation between the two IWB dimensions is very high. As they are included in the model as a second-order latent IWB factor, this high correlation will not affect the estimates between the other variables and the IWB variable. Other IWB studies similarly compute single factors for IWB when the different dimensions are highly correlated (e.g., Janssen, 2001, 2003).

Results

Model Comparison

The fit indices of the several models are shown in Table 2. The first full model (M1) fits the data well. The χ^2 degrees of freedom ratio (column 3) is lower than the cut-off point of two and all the other fit indicators show a good fit. Comparing this model with the restricted models shows that all alternative models (M2–M5) fit the data significantly worse than the full reference model. The decreased fit is reflected in a significant decrease in χ^2 (last column) and worse fit indicators such as the GFI, AGFI, SRMR, RMSEA, CFI and NNFI (see Table 2). These

Table 1. Correlations, Means, Standard Deviations and Cronbach's Alphas

| | # items | Range | M | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---------------------|-------|-----|------|------|--------|--------|--------|--------|--------------|
| 1 | Autonomy | 4 | 1–7 | 4.63 | 1.33 | (0.83) | | | | |
| 2 | Job insecurity | 1 | 1–5 | 0.43 | 0.94 | –0.16* | - | | | |
| 3 | Vigour-Absorption | 4 | 1–7 | 5.48 | 0.80 | 0.26* | –0.11* | (0.81) | | |
| 4 | Dedication | 3 | 1–7 | 5.75 | 0.93 | 0.30* | –0.14* | 0.67* | (0.85) | |
| 5 | Idea generation | 4 | 1–7 | 4.52 | 1.10 | 0.38* | –0.16* | 0.19* | 0.26* | (0.91) |
| 6 | Idea implementation | 3 | 1–7 | 3.90 | 1.17 | 0.32* | –0.12* | 0.22* | 0.29* | 0.74* (0.93) |

* $p < 0.01$. Cronbach's alphas in brackets on the diagonal.

Table 2. SEM Results, Model Comparison

| | χ^2 | df. | $\chi^2/df.$ (<2.0) | GFI (>0.95) | AGFI (>0.95) | SRMR (<0.05) | RMSEA (<0.06) | CFI (>0.95) | NNFI (>0.95) | χ^2 diff. |
|---------------------|----------|-----|------------------------|----------------|-----------------|-----------------|------------------|----------------|-----------------|----------------|
| M1: Full model | 264 | 142 | 1.860 | 0.971 | 0.962 | 0.033 | 0.031 | 0.988 | 0.986 | |
| M2: Hyp 1 incorrect | 270 | 143 | 1.885 | 0.971 | 0.961 | 0.035 | 0.031 | 0.988 | 0.986 | M1>M2* |
| M3: Hyp 4 incorrect | 272 | 143 | 1.903 | 0.970 | 0.961 | 0.035 | 0.031 | 0.988 | 0.985 | M1>M3* |
| M4: Hyp 2 incorrect | 343 | 143 | 2.402 | 0.963 | 0.951 | 0.077 | 0.039 | 0.981 | 0.977 | M1>M4* |
| M5: Hyp 3 incorrect | 346 | 143 | 2.419 | 0.963 | 0.951 | 0.082 | 0.039 | 0.981 | 0.977 | M1>M5* |

χ^2 difference test performed with M1 as a reference. * $p < 0.01$

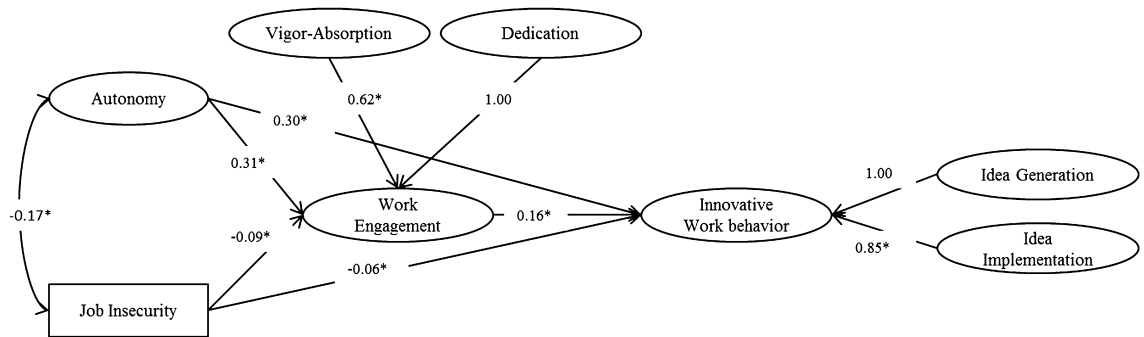


Figure 2. Fitted Model

* $p < 0.01$.

analyses show that the full model including all hypothesized relations fits the data best.

Fitted Model

In Figure 2 we plotted the fitted model (Model 1) with the estimated coefficients. Hypothesis 1 on the negative relation between job insecurity and IWB is confirmed ($\beta = -0.07$, $SE = 0.03$). The same goes for Hypothesis 2 on the positive relation between autonomy and IWB ($\beta = 0.30$, $SE = 0.03$). Both relations have the expected signs, yet when comparing the size of the effects, we note that autonomy is more strongly related to IWB than job insecurity. Hypothesis 3 on the mediating effect of work engagement in the relation between autonomy and IWB is also confirmed. Autonomy is positively related to work engagement ($\beta = 0.31$, $SE = 0.03$) which, in turn, is positively related to IWB ($\beta = 0.16$, $SE = 0.04$). Hypothesis 4, finally, is also confirmed as job insecurity is negatively related to

work engagement ($\beta = -0.09$, $SE = 0.03$), which is in turn positively related with IWB ($\beta = 0.16$, $SE = 0.04$).

Building on our inspection of the measurement model (mentioned earlier), we decided to include a covariance term between job insecurity and job autonomy. This covariance term was negative and significant ($\beta = -0.17$, $SE = 0.03$). Insecure jobs are significantly less rich in terms of autonomy than secure jobs.

Our fitted model shows that both direct and indirect relations exist between autonomy and job insecurity on the one hand, and IWB on the other. In Table 3 we calculated the direct, indirect and total effects of these antecedents of IWB. As hypothesized, the positive direct relationship between job autonomy and IWB is further strengthened by an indirect positive relationship through enhanced levels of work engagement. Given the modest relation between work engagement and IWB, the indirect effect is relatively weak. The same goes for the effect of job insecurity. Job insecurity

Table 3. Direct and Indirect Relations

| | Direct effect | Indirect effect | Total effect |
|----------------------------------|---------------|-----------------|--------------|
| <i>Innovative work behaviour</i> | | | |
| Autonomy | 0.297 | 0.050 | 0.347 |
| Job insecurity | -0.065 | -0.014 | -0.079 |

primarily affects work engagement through a direct negative relation (-0.07). The indirect effect of job insecurity on IWB, through lower levels of work engagement, is weak. Nevertheless, given the direct negative relation between job insecurity and IWB, the total negative relation between job insecurity and IWB amounts to approximately -0.08. It should further be noted that the negative relation between job insecurity and IWB holds, even after controlling for the negative covariance between job insecurity and autonomy.

Discussion

Throughout our study we observe that job insecurity is negatively related to the innovative behaviour of employees, both directly and indirectly through work engagement. Autonomy, on the other hand, has a positive (direct and indirect) relation with IWB, and the estimated effect sizes are larger than those for job insecurity.

These findings suggest that job insecurity should not be ignored as a factor in employee innovation research. Up until now most review articles on employee innovation (or creativeness) have ignored this factor (Shalley & Gilson, 2004; Shalley, Zhou & Oldham, 2004; Hammond et al., 2011). Together with Probst et al. (2007), this study shows the importance of including job insecurity in innovation research. Indeed, job insecurity negatively affects the overall work engagement of employees, making them less willing to invest in innovative behaviours. Moreover, the fact that innovation processes are frequently disturbing for co-worker relations (Janssen, 2003; Janssen, Van de Vliert & West, 2004), are lengthy and require a considerable extra-role investment of employees (Tuominen & Toivonen, 2011) further decreases the likelihood that job-insecure employees will engage in innovative behaviours.

The size of the negative relation is nevertheless rather small, in particular compared to the effect sizes of the positive direct and indirect relation of job autonomy with IWB. Obviously,

job autonomy is a much more crucial antecedent of IWB than job insecurity. Given the theoretical arguments that suggest a negative relation between job insecurity and IWB, the small effect of job insecurity might be surprising. Our model, however, controls for the negative covariance between job insecurity and job autonomy. The relatively small negative effect sizes between job insecurity and the outcomes are thus controlled for the fact that employees in insecure jobs generally have less discretion regarding their work methods, which is an important enabler of employee innovation. Such a negative correlation between job insecurity and job autonomy was also observed in previous research, although never explicitly modelled (Feather & Rauter, 2004; Mauno, Kinnunen & Ruokolainen, 2007; Schreurs et al., 2010).

In line with previous research findings, we found a positive relation between autonomy and IWB. This relation was partially mediated by a positive effect on work engagement. Giving employees a certain discretion of how they approach their work enables them to find creative solutions, and to develop, propose and implement them in the workplace.

Implications

This study has several implications for the research literature, HR practitioners and policy makers. For the research literature, this study shows that job insecurity is a significant factor when it comes to employee innovative behaviour. Although its impact is limited in scope, the literature should recognize job insecurity as a factor for employee innovative behaviour. In doing so, the employee innovation literature can build on the extensive literature on the effects of job insecurity for employee outcomes and their findings on moderator effects in the relation between job insecurity and employee outcomes (Sverke, Hellgren & Näswall, 2002).

In terms of implications for HR practice, this research shows that the job content (job autonomy) could serve as a major trigger for

employee engagement and innovative work behaviour. Employees who are given a degree of discretion over their work are both more engaged and willing to take initiatives regarding workplace innovation. HR managers aiming to activate employees for innovation should focus on structural changes in the job content. Providing insecure jobs to employees might partially offset this positive effect as it is related to less engaged employees and prevents them from proposing and implementing new innovative ideas in their jobs. In this same way, the overall rise in job insecurity in Europe can be seen as a problem in the context of the Europe 2020 (European Commission, 2010) strategy focusing primarily on innovation.

Limitations

This study has some limitations. The first limitation is the cross-sectional character of the data. Consequently, we cannot establish firm causal relations in the hypothesized model. Next, a single method is used to measure all the concepts in this analysis. Different authors suggested that this could inflate associations between concepts, yet others state that this problem is not to be overestimated (Spector, 2006). By taking into account the recommendations of Podsakoff et al. (2003), we tried to prevent common method bias and assessed whether it significantly impacted our results. Furthermore, job insecurity was measured using a single item. Single-item measurements are generally seen as a limitation. Job insecurity is nonetheless frequently measured using single-item scales (De Witte, 1999; Mohr, 2000) and the meta-analysis of Sverke, Hellgren and Näswall (2002) found that studies using single-item measurements for job insecurity report weaker relations with employee outcomes, indicating that using a single-item measurement can lead to a small underestimation of the effect size. Also, Gardner et al. (1998) indicated that the inclusion of single-item scales with a different response format can prevent common method bias (Gardner et al., 1998). Nevertheless, future research could include a more elaborate measurement of job insecurity and could distinguish between various conceptualizations of job insecurity such as between qualitative and quantitative job insecurity (Hellgren, Sverke & Isaksson, 1999).

Conclusion

While Europe aims to become a competitive and innovative union, workers in the EU are

confronted with an increasing sense of job insecurity. Whether job insecurity affects the EU's ambition of innovation is a rarely treated, yet highly significant policy issue. In this paper we treat this question at the micro level and study the relation between job insecurity and IWB. In doing so, the analysis takes into account the effect of two main drivers of employee innovation: work engagement and job autonomy (Hammond et al., 2011).

The analyses show that job insecurity is negatively related to IWB, both directly and indirectly through lower levels of work engagement. The relation of job autonomy with IWB is also partially mediated by work engagement, but the coefficients here are positive and considerably larger than the negative coefficients of job insecurity. Further, a negative association was found between job insecurity and job autonomy.

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