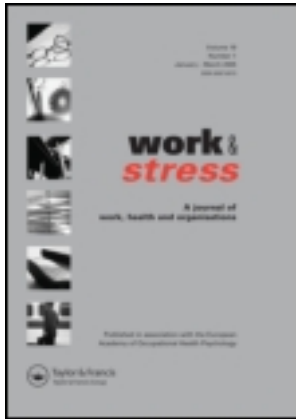


This article was downloaded by: [KU Leuven University Library]

On: 28 January 2013, At: 08:38

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Work & Stress: An International Journal of Work, Health & Organisations

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/twst20>

The mediating role of frustration of psychological needs in the relationship between job insecurity and work-related well-being

Tinne Vander Elst^a, Anja Van den Broeck^{a b}, Hans De Witte^{a c} & Nele De Cuyper^a

^a Research Group on Work, Organizational and Personnel Psychology, KU Leuven, Belgium

^b Human Relations Research Group, HUBrussel, Belgium

^c Vanderbijlpark Campus, North-West University, South Africa

Version of record first published: 08 Aug 2012.

To cite this article: Tinne Vander Elst, Anja Van den Broeck, Hans De Witte & Nele De Cuyper (2012): The mediating role of frustration of psychological needs in the relationship between job insecurity and work-related well-being, *Work & Stress: An International Journal of Work, Health & Organisations*, 26:3, 252-271

To link to this article: <http://dx.doi.org/10.1080/02678373.2012.703900>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings,

demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

The mediating role of frustration of psychological needs in the relationship between job insecurity and work-related well-being

Tinne Vander Elst^{a*}, Anja Van den Broeck^{a,b}, Hans De Witte^{a,c} and Nele De Cuyper^a

^aResearch Group on Work, Organizational and Personnel Psychology, KU Leuven, Belgium; ^bHuman Relations Research Group, HUBrussel, Belgium; ^cVanderbijlpark Campus, North-West University, South Africa

This study aims to test a new process underlying the negative relationship between job insecurity and work-related well-being. Specifically, based on Self-Determination Theory, frustration of the psychological needs for autonomy, belongingness and competence was expected to explain the associations between job insecurity and emotional exhaustion and vigour (i.e. the core energy-related components of burnout and work engagement, respectively). Structural equation modelling using data from a heterogeneous sample of 3185 Flemish employees confirmed that frustration of the three needs mediated the association between job insecurity and both outcomes. These results suggest that job insecurity is related to impaired work-related well-being, because it frustrates employees' psychological needs. This study contributes to a rather small, but growing body of research on the theoretical explanations of the negative consequences of job insecurity for employees' work-related well-being.

Keywords: uncertainty; insecurity; emotional exhaustion; vigour; work-related stress; Self-Determination Theory; psychological need satisfaction; motivation

Introduction

Job insecurity is the perceived threat of losing one's current job, as well as the worries related to that threat (De Witte, 2005; Sverke et al., 2004). It is known as an important work stressor, causing impaired health and well-being (for an overview, see Cheng & Chan, 2008; Probst, 2008; Sverke, Hellgren, & Näswall, 2002). Several processes have been proposed to explain the health-impairing impact of job insecurity, such as powerlessness and breach of the psychological contract (De Witte, 2005). However, despite some efforts to investigate these processes empirically (see e.g. De Cuyper & De Witte, 2007; Vander Elst, De Cuyper, & De Witte, 2011), it is still not totally clear how the aversive consequences of job insecurity can be explained. Furthermore, scholars seem to neglect the role of motivational mechanisms as possible explanations. Job insecurity may, however, also be regarded as a demotivating factor, frustrating various needs. It might thwart not only the need for

*Corresponding author. Email: Tinne.VanderElst@ppw.kuleuven.be

financial security, but also various psychological needs (De Witte, 1999; Jahoda, 1982), and therefore result in poor functioning of the individual.

In order to fill these gaps, we turn to Self-Determination Theory (SDT; Deci & Ryan, 2000; Vansteenkiste, Ryan, & Deci, 2008) to test psychological need frustration as an intervening construct in the association between job insecurity and impaired work-related well-being. SDT defines the psychological needs for autonomy, belongingness and competence as the motivational mechanisms through which the environment may impact on individuals' functioning (Deci & Ryan, 2000). Building upon this assumption, the current study tests whether frustration of these needs may also constitute the mediational mechanism through which job insecurity relates to workers' well-being (e.g. emotional exhaustion and vigour). In the following paragraphs, we elaborate upon the negative relationship between job insecurity and work-related well-being and the concept of psychological need frustration. We then detail how the frustration of psychological needs may account for the negative relationship between job insecurity and work-related well-being.

Job insecurity and work-related well-being

Job insecurity can be framed as an anticipation of job loss in the future (Sverke et al., 2002). Based on the idea that the anticipation of a threat may have consequences that are equally severe to those of the threat itself (Lazarus & Folkman, 1984), scholars consider job insecurity as an important work stressor, yielding a diversity of aversive outcomes for both the employee and the organization: job insecurity is, for example, related to impaired health and well-being in terms of burnout, lower levels of work engagement, and mental and physical health complaints. Furthermore, it is associated with adverse attitudes towards the job and the organization, such as decreased job satisfaction and organizational commitment, and deteriorated work performance (for overviews see Cheng & Chan, 2008; Probst, 2008; Sverke et al., 2002).

The current study aims to investigate the relationship of job insecurity with two indicators of work-related well-being, namely emotional exhaustion (i.e. mental fatigue) and vigour (i.e. high levels of mental energy) (Bakker, Schaufeli, Leiter, & Taris, 2008; Maslach, Schaufeli, & Leiter, 2001). These indicators are the core *energy-related* dimensions of burnout and work engagement, respectively. Hence, they more closely fit the concept of well-being than do the dimensions of cynicism and dedication, which are the *attitudinal* components of burnout and engagement, respectively (Demerouti, Mostert, & Bakker, 2010). While emotional exhaustion represents poor functioning, vigour pertains to optimal functioning. Emotional exhaustion and vigour can thus be considered as different, non-reducible aspects of employees' well-being (Demerouti et al., 2010; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). These well-being indicators may be relevant not only for the individual employee, but also for the organization, as they have repercussions for organizational commitment, performance and sickness absence (Bakker & Demerouti, 2007).

Past research has indicated that job insecurity may indeed be related to emotional exhaustion (e.g. De Cuyper, De Witte, Vander Elst, & Handaja, 2010; Kausto, Elo, Lipponen, & Elovainio, 2005) and lower levels of vigour (e.g. De Cuyper et al., 2010; Kinnunen, Mauno, & Siltaloppi, 2010). Furthermore, a longitudinal study by

Dekker and Schaufeli (1995) showed that job insecurity may cause burnout (including the component of emotional exhaustion) over time. The current study aims to replicate the findings regarding these relationships. Most importantly, however, this study aims to provide insight into the mechanisms underlying the associations between job insecurity and both emotional exhaustion and vigour.

Frustration of psychological needs

Within SDT, psychological needs satisfaction (versus needs frustration) is defined as the nutriment that “must be procured by a living entity to maintain its growth, integrity and health” (Deci & Ryan, 2000, p. 326). Following SDT, not the extent to which an individual expresses a particular need, but the degree to which he or she is experiencing need satisfaction is considered to be predictive for his or her optimal functioning (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). While SDT posits need satisfaction as a crucial condition for individuals’ psychological flourishing, frustration of the psychological needs is expected to lead to energy depletion, malfunctioning and sickness, and might develop under chaotic, controlling or other hard circumstances. Job insecurity may constitute such a condition and is likely associated with need *frustration*, which in turn may be linked to poor work-related well-being (see later in the following section). In the current study we therefore focus on frustration rather than on satisfaction of the psychological needs.

Within SDT, three psychological needs are seen as essential, that is, the needs for autonomy, belongingness and competence. The need for autonomy represents individuals’ inherent desire to experience a general sense of choice and volition (Deci & Ryan, 2000). In particular, it refers to having authorship of one’s actions and to feel psychologically free. The need for autonomy is frustrated when employees cannot stand behind their actions or feel they have to act against their will. In this sense, the need for autonomy differs from more conventional conceptualizations of autonomy, such as job autonomy and participation in organizational decision making, in two ways (Van den Broeck et al., 2010). First, whereas the latter concepts refer to an objective job characteristic, frustration of need for autonomy entails a personal experience. Second, the need for autonomy takes a broader perspective. Low levels of job autonomy and participation in decision making might add to frustration of the need for autonomy: employees with low levels of job autonomy and participation in decision making may, for example, have few possibilities to make their own decisions or express their voice. However, when following others’ requests, employees may feel low autonomy frustration if the rationale underlying this request is meaningful to them.

The need for relatedness, or belongingness, is defined as individuals’ inherent propensity to feel connected to others; that is, to be a member of a group, to love and care, and to be loved and cared for (Baumeister & Leary, 1995). This need is frustrated when employees do not feel a sense of communion and lack the experience of having close and intimate relationships with other people (Deci & Ryan, 2000). Although the need for belongingness is closely related to concepts such as social support and loneliness, SDT additionally assumes that social contacts have to be meaningful and close relations need to be developed in order that employees feel

connected to one another (Van den Broeck, De Witte, Vansteenkiste, Lens, & Andriessen, 2009).

Finally, the need for competence refers to individuals' inclination to influence the environment and to obtain desired outcomes (White, 1959; Deci & Ryan, 2000). Competence frustration occurs when employees feel like they are ineffective and cannot achieve desirable end states in their work. The need for competence closely resembles, but differs from, notions such as self-efficacy and the expectancy to obtain valued outcomes (Van den Broeck et al., 2010): self-efficacy and outcome expectancies represent acquired cognitions regarding employees' capacities to successfully accomplish specific future tasks. The need for competence, in contrast, refers to a more general, affective experience of effectiveness as a result of mastering the environment.

The mediating role of need frustration in the relationship between job insecurity and poor work-related well-being

We argue that psychological need frustration may explain (i.e. mediate) the associations of job insecurity with emotional exhaustion and vigour. In the following sections, we discuss (1) the direct link between job insecurity and frustration of the three needs, (2) the relationship between need frustration and poor work-related well-being, and (3) our prediction that psychological need frustration may account for the relationship between job insecurity and impaired work-related well-being.

We see the relationship between job insecurity and frustration of the three needs as follows: job insecurity concerns the perception of an involuntary and undesired change concerning the continuity and the security of the work situation (Greenhalgh & Rosenblatt, 1984; Sverke & Hellgren, 2002). Job-insecure employees thus experience a discrepancy between the desired level and the perceived actual level of security (Hartley, Jacobson, Klandermans, & van Vuuren, 1991). They are forced into a situation that they did not initiate nor desire, with few possibilities to change the situation. Insecurity about one's job may therefore affect employees' sense of choice and volition, and may thus frustrate the need for autonomy. Furthermore, insecurity about job loss obviously implies uncertainty about employees' place in the organization and the team, as well as the threat of losing one's colleagues (Greenhalgh & Rosenblatt, 1984; Hellgren, Sverke, & Isaksson, 1999). Moreover, job insecurity may have an adverse effect on the social atmosphere in the workplace, as it affects employees' trust, stimulates gossip or rumour, and elicits competition and conflicts among colleagues (Bordia, Jones, Gallois, Callan, & DiFonzo, 2006; De Cuyper, Baillien, & De Witte, 2009; DiFonzo & Bordia, 1998). This may affect employees' sense of communion and therefore may thwart their need for belongingness. Finally, job insecurity may also frustrate the need for competence. Job insecurity concerns insecurity about the continuity of the job in the *future* (De Witte, 1999; Sverke et al., 2002). Inherently, job-insecure employees do not know what to expect, and therefore lack the possibility to undertake actions (Dekker & Schaufeli, 1995). Hence, job insecurity may affect the feeling of being able to master the environment and to achieve the desired outcomes, which lie at the core of competence frustration. To summarize, we expect job insecurity to relate to frustration of the psychological needs for autonomy, belongingness and competence.

Based on SDT, we expect frustration of the three needs to be negatively associated with employees' well-being. As mentioned above, SDT considers the degree to which an individual is experiencing need frustration as predictive for his or her poor psychological and role-related functioning. In line with this claim, various studies have indicated that satisfaction (as opposed to frustration) of psychological needs is positively associated with work-related well-being (e.g. job satisfaction, work engagement and lower burnout), general well-being (e.g. vigour, life satisfaction, less anxiety and fewer somatic disorders), positive attitudes towards the organization and organizational changes, decreased turnover intentions and better in-role performance (for overviews, see Gagné & Deci, 2005; Van den Broeck et al., 2008).

Based on this empirical evidence and SDT, we model psychological need frustration as a possible mediator of the relationship between job insecurity and work-related well-being. This is because job insecurity is considered to be detrimental for employees' well-being and SDT holds that frustration of the psychological needs is the basic principle underlying the association between harmful environmental influences and individuals functioning in a way that is not effective (Ryan & Deci, 2000). To our knowledge, no previous studies have investigated the mediating role of psychological need frustration in the relationship between job insecurity and work-related well-being. However, previous research linking the work environment to need satisfaction (as opposed to need frustration) may hint at this mediating role. Need satisfaction may, for example, account for the relationships between various stimulating (e.g. task autonomy, positive feedback) and stressful job characteristics (e.g. workload, emotional demands), and employees' emotional exhaustion and vigour (Van den Broeck et al., 2008).

Based on the theoretical arguments and research results presented, the following specific hypotheses are formulated:

Hypothesis 1: Frustration of the needs for autonomy (1a), belongingness (1b) and competence (1c) mediates the positive relationship between job insecurity and emotional exhaustion.

Hypothesis 2: Frustration of the needs for autonomy (2a), belongingness (2b) and competence (2c) mediates the negative relationship between job insecurity and vigour.

The proposed mediation model is shown graphically in Figure 1. Notably; with this study we aim to take a first step in investigating the proposed mediating role of need frustration in the job insecurity–work-related well-being relationship. We therefore use a cross-sectional design. As such a design does not permit causal inferences to be made, we ground the expected relationships from job insecurity to need frustration and from need frustration to exhaustion and vigour in the literature on job insecurity, SDT and previous research. First, previous research has established that job insecurity impacts mental health complaints, rather than the other way around (e.g. Hellgren & Sverke, 2003). Second, SDT holds that the work environment determines workers' need frustration (Gagné & Deci, 2005), and that need frustration is expected to lead to poor functioning and to sickness (Deci & Ryan, 2000). Furthermore, based on the job insecurity literature, we may expect that need frustration explains only a part of the relationship between job insecurity and work-related well-being, as other explanations have been put forward to account for

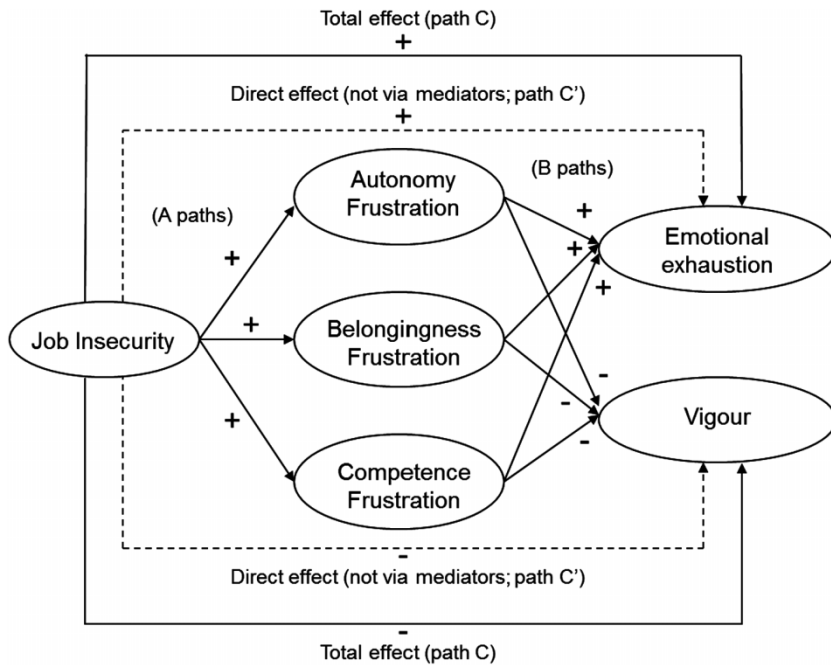


Figure 1. Theoretical model. Although the word “effect” may suggest a causal relationship, inferences about causality are not intended. The terminology introduced by Preacher and Hayes (2008) was used for reasons of consistency and clarification.

this relationship (i.e. perceived lack of control and breach of the psychological contract, as mentioned earlier).

Method

Sample and procedure

Data were collected by means of a large-scale internet survey on work-related well-being among Flemish employees (Belgium). This study was set up in collaboration with a Flemish human resources magazine during May 2009. Readers of the magazine were invited to participate in this anonymous study via the website and the magazine’s weekly electronic newsletter. A link on the website gave access to the online questionnaire. Respondents who filled out the entire questionnaire could answer a contest question in order to win a gift box. Respondents who were not engaged in paid employment were directly diverted to the contest question to prevent them from filling out the questionnaire. After a period of three weeks, 5846 workers started the questionnaire, of which 3868 provided complete answers. A strict data cleaning procedure was conducted in order to delete respondents who filled out the questionnaire multiple times (e.g. based on email address and the combination of background characteristics), persons with suspicious answer patterns (e.g. no variance in their responses) and self-employed workers. The final sample consisted of 3185 employees from both the private ($n = 2139$, 67%) and the public sector ($n = 1046$, 33%).

The study sample was representative for the Flemish working population regarding age, number of temporary workers and contract type (R. Boey, personal communication, December 6, 2011). The mean age in the sample was 39.6 ($SD = 10.6$): eight per cent of the respondents were younger than 25 years, 72% ranged between 25 and 49 years, and 20% was older than 49 years, compared to 8%, 69% and 23% respectively, in the Flemish working population. Ninety one per cent of the respondents had a permanent contract and 67% of the sample worked on a full-time basis, compared to 93% and 76% respectively, in the Flemish working population. Women were overrepresented in the study sample (62%), compared to the Flemish population (45%). Finally, the sample included 10% blue-collar workers, 59% white-collar workers, caretakers and teachers, and 31% managers and professionals. Hence, blue-collar workers were underrepresented in the study sample (10% versus 28% in the Flemish working population).

Measures

Job insecurity. Job insecurity was measured with four items from the Job Insecurity Scale developed by De Witte (2000) and validated by Vander Elst, De Witte, and De Cuyper (2010). A sample item is “I think I will lose my job in the near future”. The items were rated on a five-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The Cronbach’s alpha coefficient was .92, indicating good internal consistency (Nunnally & Bernstein, 1994).

Need frustration. The 18-item Work-related Basic Need Satisfaction scale was used to assess frustration of the needs for autonomy, belongingness and competence at work (developed and validated by Van den Broeck et al., 2010). Six items tapped into autonomy frustration (e.g. “I feel like I can pretty much be myself at work”, reverse coded), six items measured belongingness frustration (e.g. “I don’t really feel connected with other people at my job”), and also competence frustration was measured with six items (e.g. “I don’t really feel competent in my job”). Respondents were asked to evaluate the items on a five-point scale from 1 (*totally disagree*) to 5 (*totally agree*). All three scales were reliable, with Cronbach’s alpha coefficients of .85, .86, and .86 for autonomy, belongingness and competence frustration respectively.

Work-related well-being. Emotional exhaustion was measured using the five-item emotional exhaustion scale of the Utrecht Burnout Scale (UBOS; Schaufeli & van Dierendonck, 2000). An example of an item is “I feel totally exhausted in my job”. Vigour was measured with the five-item vigour scale of the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2004). An example of an item is “At my work, I feel bursting with energy”. The participants rated these items on a seven-point scale from 0 (*never*) to 6 (*always, every day*). Both scales were reliable, with Cronbach’s alpha coefficients of .89 and .91 for emotional exhaustion and vigour respectively.

Control variables

In testing the hypotheses, we controlled for several relevant demographic and work-related characteristics that covary with job insecurity (e.g. De Witte, 2005; Näswall &

De Witte, 2003), namely age (years), men (0 = female, 1 = male), sector (0 = public sector, 1 = private sector), contract type (0 = temporary, 1 = permanent), full-time versus part-time employment (0 = part-time, 1 = full-time), and occupational status (dummy 1: 0 = white-collar workers, caretakers and teachers, and managers and professionals, 1 = blue-collar workers; dummy 2: 0 = blue- and white-collar workers, caretakers and teachers, 1 = managers and professionals). White-collar workers, caretakers and teachers were grouped together as they fall under the same employment regulations.

Analyses

Before testing the hypotheses, we conducted Confirmatory Factor Analysis (CFA), using the software package AMOS, to evaluate the construct validity of the study measurements. We tested and compared the hypothesized measurement model with four alternative models. The measurement model was a six-factor model in which all items loaded on the corresponding latent variable: job insecurity, autonomy frustration, belongingness frustration, competence frustration, emotional exhaustion and vigour. The alternative models were (1) a one-factor model in which all items loaded on the same factor, (2) a three-factor model with job insecurity, general need frustration (i.e. the items of all three types of need frustration) and work-related well-being (i.e. the items of emotional exhaustion and vigour) as the latent factors, (3) a four-factor model including job insecurity, general need frustration, emotional exhaustion and vigour as the latent factors, and (4) a five-factor model with job insecurity, autonomy frustration, belongingness frustration, competence frustration and work-related well-being as the latent variables. In all models, the latent variables were allowed to correlate. We further evaluated the risk for common method bias by comparing the hypothesized six-factor model with a model in which the items loaded on the expected latent factor, as well as on a latent common method factor (Conway & Lance, 2010; Podsakoff, Mackenzie, Lee, & Podsakoff, 2003).

Following the recommendations of Bollen and Long (1993) and Byrne (2001), the fit of the models was evaluated using the following goodness-of-fit statistics: the Comparative Fit Index (CFI), the Non-Normed Fit Index (NNFI), the Root Mean Square Error of Approximation (RMSEA) and the Standardised Root Mean square Residual (SRMR). Values on CFI and NNFI indicate an excellent fit when they equal to or exceed .95. Values across .90 indicate a good fit (Byrne, 2001; Holye, 1995; Hu & Bentler, 1999). Values below .05 for RMSEA and values below .09 for SRMR indicate excellent fit, while values less than or equal to .08 and .10 respectively, indicate a good fit (Browne & Cudeck, 1993; Byrne, 2001). The χ^2 difference test was used to compare the alternative measurement models (Weston & Gore, 2006).

The hypotheses were tested by means of SPSS, using the macro of Preacher and Hayes (2008) for testing indirect effects in multiple mediator models. Separate analyses were conducted for emotional exhaustion and vigour. Job insecurity was programmed as the independent variable, the three types of need frustration as the mediator variables, and a series of control variables were included as covariates (see above). This macro allowed us to test the *total* indirect effect (i.e. indirect effect of the frustration of the three needs in general) and the *specific* indirect effects of frustration

of the needs for autonomy, belongingness and competence, as well as to investigate the differences between these three specific indirect effects (i.e. contrast test of indirect effects). Bootstrapping with the number of bootstrap samples set on 5000 was used to calculate 95% confidence intervals. Preacher and Hayes (2008) recommend bootstrapping for testing mediation, as it does not require normality of the sampling distribution of the indirect effects. Effect ratios were calculated to examine the proportion of the relationship of job insecurity with emotional exhaustion and vigour that was explained by the three mediators.

Results

Descriptive statistics

The means, standard deviations and correlations for all the study variables are shown in Table 1. As expected, job insecurity was positively correlated with frustration of the needs for autonomy, belongingness and competence. Furthermore, job insecurity correlated positively with emotional exhaustion and negatively with vigour. Finally, frustration of the three needs was positively related to emotional exhaustion and negatively to vigour. The three types of need frustration were mutually positively related.

Measurement model

Table 2 summarizes the results of the CFA. The hypothesized measurement model including six latent constructs (i.e. job insecurity, autonomy frustration, belongingness frustration, competence frustration, emotional exhaustion and vigour) yielded a good fit to the data. All items loaded significantly and in the expected direction on their corresponding latent factors ($M_{\text{standardized loadings}} = .76$; $\text{Range}_{\text{standardized loadings}} = [.50; .91]$). Furthermore, this model fitted the data better than each of the alternative models.

Importantly, comparisons of the alternative models indicated that common method variance is rather unlikely to significantly distort participants' responses. First, the hypothesized measurement model fitted the data better than the one-factor model (Podsakoff et al., 2003; see Table 2). Second, the common method factor explained only 5% of the variance. This is well below the threshold of 25% suggested by Williams, Cote, and Buckley (1989). Moreover, the Parsimony Normed Fit Index (PNFI) was larger for the expected measurement model (PNFI = .83) than for the common factor model (PNFI = .79). We therefore decided to work with the six scales specified in the measurement model to test the study hypotheses.

Test of the hypotheses

Table 3 presents the results obtained from the analyses for multiple mediation employing the SPSS macro of Preacher and Hayes (2008). After controlling for the relevant control variables, the interrelationships between the study variables remained significant: job insecurity was positively related to emotional exhaustion and negatively to vigour (C paths in Figure 1). Furthermore, job insecurity

Table 1. Means, standard deviations, reliabilities (Cronbach's alphas in parentheses) and correlations ($N = 3185$).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	39.57	10.60	na	.19**	.07**	.07**	.21**	-.18**	-.10**	-.08**	.03	-.06**	.11**	-.04*	.12**
2. Men ^a	na	na	na	.15**	.18**	.12**	.29**	.04*	.05**	-.06**	-.09**	.01	.01	.01	-.01
3. Blue-collar workers ^a	na	na	na	na	-.23**	.01	-.05**	.15**	.09**	-.08**	-.05**	-.01	.01	.01	-.02
4. Managers and professionals ^a	na	na	na	na	na	.08**	.19**	.06**	.04*	.09**	-.03	.01	-.01	.06**	
5. Permanent contract ^a	na	na	na	na	na	na	.10**	.11**	-.24**	.01	.03	.11**	.01	.01	
6. Full-time employment ^a	na	na	na	na	na	na	na	-.01	.03	-.01	-.01	.03	.02	.03	
7. Private sector ^a	na	na	na	na	na	na	na	na	.26**	-.01*	-.03	.01	.01	-.02	
8. Job insecurity ^b	2.24	0.96							(.92)	.33**	.23**	.23**	.21**	-.26**	
9. Autonomy frustration ^b	2.52	0.72								(.85)	.47**	.38**	.50**	-.57**	
10. Belongingness frustration ^b	2.29	0.72									(.86)	.31**	.31**	-.42**	
11. Competence frustration ^b	1.90	0.58										(.86)	.26**	-.37**	
12. Emotional exhaustion ^c	1.90	1.36											(.91)	-.49**	
13. Vigour ^c	4.12	1.25												(.90)	

Notes: na = not applicable. ^aDummies: the reference groups were females; white-collar workers, caretakers and teachers; white-collar workers, caretakers and teachers; temporary workers; part-time workers and public sector, respectively. ^bScales scored from 1 to 5. ^cScales scored from 0 to 6.

* $p < .05$; ** $p < .01$.

Table 2. Results of the confirmatory factor analysis: fit indices for alternative factor structures of job insecurity, autonomy frustration, belongingness frustration, competence frustration, emotional exhaustion and vigour ($N = 3185$).

Model	Latent factors	χ^2	df	CFI	NNFI	RMSEA	SRMR	Model comparison	$\Delta\chi^2$	Δdf
1. Measurement model	JI, A, B, C, Exh, Vig	4821.87***	449	.93	.92	.06	.05			
2. One-factor model	General factor	32932.42***	464	.46	.42	.15	.13	2 versus 1	28110.55***	15
3. Three-factor model	JI, General Need Frustration, Strain	20205.83***	461	.67	.64	.12	.10	3 versus 1	15383.96***	12
4. Four-factor model	JI, General Need Frustration, Exh, Vig	14437.36***	458	.77	.75	.10	.09	4 versus 1	9615.49***	9
5. Five-factor model	JI, A, B, C, Strain	10580.78***	454	.83	.81	.08	.08	5 versus 1	5758.91***	5
6. Measurement model with common method factor	JI, A, B, C, Exh, Vig, CMF	3422.32***	412	.95	.94	.05	.03	6 versus 1	1399.55***	37

Note. JI = Job Insecurity; A = Autonomy Frustration; B = Belongingness Frustration; C = Competence Frustration; Exh = Emotional Exhaustion; Vig = Vigour; CMF = Common Method Factor.

* $p < .05$; ** $p < .01$; *** $p < .001$.

associated positively with all types of need frustration (A paths in Figure 1), which in turn were positively related to emotional exhaustion and negatively related to vigour (B paths in Figure 1).

In line with Hypothesis 1, the relationship between job insecurity and emotional exhaustion was mediated by frustration of the three needs (i.e. total indirect effect; see Table 3): 77% of the relationship between job insecurity and emotional exhaustion was explained by frustration of the needs for autonomy, belongingness and competence. Furthermore, we found that each type of need frustration significantly accounted for the relationship between job insecurity and emotional exhaustion (i.e. specific indirect effects): autonomy, belongingness and competence frustration accounted for 63%, 8% and 6% respectively, of the relationship between job insecurity and emotional exhaustion. These results thus support Hypotheses 1a, 1b and 1c. The tests of the differences between the specific indirect effects (see Table 3) indicate that autonomy frustration was the most important factor in mediating the relationship between job insecurity and emotional exhaustion. The specific indirect effects of belongingness frustration and competence frustration did not differ from each other. Note that the direct relationship between job insecurity and emotional exhaustion remained significant when considering the mediators (path C' in Figure 1).

Analogous to Hypothesis 2, need frustration also accounted for the negative relationship between job insecurity and vigour (i.e. total indirect effect; see Table 3). Seventy nine per cent of this relationship was explained by autonomy frustration, belongingness frustration and competence frustration together. Furthermore, all specific indirect effects turned out to be significant. These results thus confirmed Hypotheses 2a, 2b and 2c. Again, autonomy frustration was the most important mediator (see Table 3). It explained 53% of the total relationship between job insecurity and vigour, while belongingness frustration explained 16% and competence frustration 10%. Additionally, the direct relationship between job insecurity and vigour stayed significant after including the mediators in the model (path C' in Figure 1).

Discussion

This study contributes to the understanding of job insecurity by demonstrating a new explanatory mechanism for the relationship between job insecurity and poor work-related well-being. Besides the rather cognitive and emotional explanations that have been suggested (e.g. perceived (lack of) control and breach of psychological contract), we turn to motivational mechanisms in explaining the negative impact of job insecurity on work-related well-being. In support of the expectations, the results provide evidence for the mediating role of frustration of the psychological needs for autonomy, belongingness and competence, as outlined in Self Determination Theory (Deci & Ryan, 2000; Vansteenkiste et al., 2008), in the relationship between job insecurity and both emotional exhaustion and vigour. We found that although each of the needs played a mediating role, particularly autonomy frustration was important in explaining the job insecurity–work-related well-being relationship.

Table 3. Results of the analyses for multiple mediation by means of the SPSS macro of Preacher and Hayes (2008) ($N = 3185$).

	Emotional exhaustion					Vigour				
	Normal theory ^c			Bootstrap 95% CI	Effect ratio	Normal theory ^c			Bootstrap 95% CI	Effect ratio
	Coefficient	SE	<i>p</i>			Coefficient	SE	<i>p</i>		
<i>IV to mediators (A paths)</i>										
Autonomy frustration	.27	.01	<.001			.27	.01	<.001		
Belongingness frustration	.19	.01	<.001			.19	.01	<.001		
Competence frustration	.14	.01	<.001			.14	.01	<.001		
<i>Direct effects of mediators to DV (B paths)^b</i>										
Autonomy frustration	.80	.04	<.001			-.72	.03	<.001		
Belongingness frustration	.16	.03	<.001			-.31	.03	<.001		
Competence frustration	.14	.04	<.001			-.29	.03	<.001		
Total effect of IV on DV (C path) ^b	.35	.03	<.001			-.38	.02	<.001		
Direct effect of IV on DV (C' path) ^b	.08	.03	.002			-.09	.02	<.001		
<i>Partial effect of the covariates on DV^b</i>										
Age	.00	.00	<i>ns</i>			.01	.00	<.001		
Men	-.07	.05	<i>ns</i>			-.01	.04	<i>ns</i>		
Private sector	-.10	.05	.042			.09	.04	.025		
Blue-collar workers	-.06	.07	<i>ns</i>			.09	.06	<i>ns</i>		
Managers and professionals	.08	.05	<i>ns</i>			.04	.04	<i>ns</i>		
Permanent contract	.22	.08	.005			-.28	.07	<.001		
Full-time employment	.01	.05	<i>ns</i>			.18	.05	<.001		
Model R^2	.26					.39				

Table 3 (Continued)

	Emotional exhaustion					Vigour				
	Normal theory ^c			Bootstrap 95% CI	Effect ratio	Normal theory ^c			Bootstrap 95% CI	Effect ratio
	Coefficient	SE	p			Coefficient	SE	p		
<i>Total indirect effect of IV on DV through proposed mediators^b</i>	.27	.01	<.001 ^a	[.24; .31]	.77	-.30	.02	<.001 ^a	[-.33; -.26]	.79
Autonomy frustration	.22	.02	<.001 ^a	[.19; .26]	.63	-.20	.01	<.001 ^a	[-.22; -.17]	.53
Belongingness frustration	.03	.01	<.001 ^a	[.02; .05]	.08	-.06	.01	<.001 ^a	[-.07; -.04]	.16
Competence frustration	.02	.01	<.001 ^a	[.01; .03]	.06	-.04	.01	<.001 ^a	[-.06; -.03]	.10
<i>Autonomy frustration vs. belongingness frustration</i>	.19	.02	<.001 ^a	[.15; .23]		-.14	.02	<.001 ^a	[-.17; -.11]	
<i>Autonomy frustration vs. competence frustration</i>	.20	.02	<.001 ^a	[.16; .24]		-.16	.02	<.001 ^a	[-.19; -.12]	
<i>Belongingness frustration vs. competence frustration</i>	.01	.01	ns ^a	[-.01; .03]		-.02	.01	ns ^a	[-.04; .00]	

Note. IV = independent variable; DV = dependant variable. ^aCalculations are based on analyses without covariates (Preacher & Hayes, 2008). ^bAlthough the word 'effect' may suggest a causal relationship, inferences about causality are not intended. The terminology introduced by Preacher and Hayes (2008) was used for reasons of consistency and clarification. ^cFor reasons of consistency, all coefficients, standard errors and *p* values were calculated using the standard normal distribution.

Theoretical considerations and avenues for future research

The finding that frustration of the three psychological needs explains the negative relationship between job insecurity and work-related well-being adds to the job insecurity literature and SDT (Deci & Ryan, 2000; Vansteenkiste et al., 2008). First, autonomy frustration was shown to be the most important factor in explaining the relationships of job insecurity with employees' work-related well-being. As such, and in line with the definition of job insecurity, the results indicate that the lack of choice and volition is the most detrimental characteristic of an insecure job situation (Greenhalgh & Rosenblatt, 1984; Sverke & Hellgren, 2002). This result adds to the discussion in SDT that particular needs might be more relevant in particular processes than others (see also Greguras & Diefendorff, 2009; Lynch, Plant, & Ryan, 2005). However, frustration of the needs for belongingness and competence also played a part in the negative relationship of job insecurity with work-related well-being. This confirms that job insecurity may also affect employees' sense of communion (e.g. Hellgren et al., 1999; De Cuyper et al., 2009) and mastery (Dekker & Schaufeli, 1995).

Interestingly, psychological need frustration can be linked to the other theoretical explanations that have been presented in the job insecurity literature, such as perceived lack of control or powerlessness (e.g. Vander Elst et al., 2011) and breach of the relational psychological contract (e.g. De Cuyper & De Witte, 2007). For example, autonomy and competence frustration may relate to the perceived lack of control regarding the maintenance of the job, as perceived lack of control may go together with a lack of authorship of one's behaviours and the inability to master the insecure job situation. Furthermore, belongingness frustration may be associated with psychological contract breach, because broken expectations regarding the exchange between the employee and the employer may create distrust in the social relationships at work (Zhao, Wayne, Glibkowski, & Bravo, 2007). Hence, an interesting topic for future research would be to investigate the intervening role of psychological need frustration relative to these alternative explanations of the job insecurity–work-related well-being relationship. As need frustration was only a partial mediator, such analysis might reveal which other processes are involved. Besides perceived lack of control and psychological contract breach, insecurity regarding employees' future financial income may be investigated as an alternative explanation (De Witte, 1999; Jahoda, 1982). As such, we recommend that researchers strive for more holistic models on the pathways through which job insecurity may affect employees' work-related well-being.

Those holistic models could also include other indicators of mental and physical health, as well as employees' attitudes and behaviours. Future research may, for example, examine whether psychological need frustration can account for the relationship between job insecurity and other work-related outcomes, such as physical health complaints (e.g. neck and shoulder pain), job satisfaction, organizational commitment and performance. In addition, scholars could also expand our results by not only examining the energy-related dimensions of burnout and work engagement (i.e. emotional exhaustion and vigour respectively), but also investigating the attitudinal dimensions of cynicism and dedication. In examining the relationship between the motivational construct of need frustration and the energy-related dimensions of burnout and work engagement, the current results,

however, make a strong case for the assumption that motivation and energy are intertwined. This corresponds to well-known definitions of motivation as “a set of energetic forces which direct individuals’ behaviour and determine form, direction, intensity and duration” (Pinder, 2008, p. 11). Besides investigating work-related outcomes, scholars could also refer to SDT to explain the non-work-related consequences of job insecurity, such as work-home interference and life satisfaction. After all, work-related psychological needs may also influence workers’ well-being outside the job (Baard, Deci, & Ryan, 2004).

Finally, future research could also tap into the explanatory mechanisms of the consequences of qualitative job insecurity, that is, the insecurity about valued characteristics of the job, such as one’s colleagues, promotion possibilities and job content (Hellgren et al., 1999). To our knowledge, no previous research has focused on intervening mechanisms in the qualitative job insecurity–outcomes relationship. However, we expect that the insecurity of valued job characteristics may also frustrate the three psychological needs as presented in SDT, and consequently may affect employees’ functioning.

Practical implications

The study results show that frustration of psychological needs, and particularly frustration of the need for autonomy, may account for the adverse consequences of job insecurity in terms of increased emotional exhaustion and lowered vigour. Hence, in preventing job insecurity from resulting in poor work-related well-being, it seems of importance that policy makers introduce other ways to satisfy employees’ psychological needs. This can be achieved when employers invest in autonomy support (Liu & Fu, 2011), for example, by recognizing employees’ feelings in this adverse situation, providing clear organizational communication about the reason why the situation remains insecure and when more information can be expected, and by allowing for employee participation, especially in uncertain times of change (e.g. Schweiger & Denisi, 1991; Vander Elst, Baillien, De Cuyper, & De Witte, 2010). This may help employees to feel understood and hence buffer for belongingness frustration, enhance their feeling of having a grip over the work situation and of being competent, and take away some of the resistance to change by acknowledging their need for autonomy.

Limitations

Some limitations of this study need to be mentioned. First, because of the cross-sectional design, we cannot make inferences about causal relationships. Relying on the job insecurity literature and SDT, however, we assumed causal links from job insecurity to need frustration, emotional exhaustion and vigour, and from need frustration to emotional exhaustion and vigour, but we cannot exclude the possibility that effects may also occur in the opposite direction. Nevertheless, previous longitudinal studies have accounted for the causal relationships in the direction outlined in this study. Job insecurity was, for example, found to have an impact on mental health complaints, instead of the other way around (e.g. Hellgren & Sverke, 2003).

A second drawback is that all measurements were based on self-reports, which may have inflated the relationships and thus increased common method bias (Conway & Lance, 2010). Other kinds of measurements, like objective measures or

perceptions of external evaluators, may be used to avoid such problems (Podsakoff et al., 2003). However, as perceived job insecurity, need frustration, emotional exhaustion and vigour are highly subjective by nature, asking the respondents may be the best way to capture these mental states adequately (Conway & Lance, 2010). Therefore, we tried to decrease the risk of common method bias by highlighting the anonymous treatment of the study results and the voluntary character of the survey (Conway & Lance, 2010). Furthermore, we used internationally validated measurements and investigated their construct validity using CFA. Finally, the statistical tests for common method bias indicated that it is rather unlikely that common method variance distorted participants' responses in this study.

The last limitation concerns the sample of this study. Men and blue-collar workers were underrepresented in the sample compared to the population of Flemish workers. This may have influenced the results and therefore we are unable to generalize the results to samples with more men and blue-collar workers. However, as psychological need frustration represents an inborn and fundamental mechanism (Deci & Ryan, 2000), we would expect need frustration to account for the effects of job insecurity regardless of employees' gender and occupational status (Van den Broeck et al., 2008). Moreover, these factors were included in the analyses as control variables, but were found not to be related to emotional exhaustion and vigour. Nevertheless, future studies working with representative samples are necessary to provide further evidence for the generalizability of our results.

Conclusion

Overall, the results of this study showed that frustration of psychological needs (i.e. autonomy, belongingness and competence), as outlined in Self Determination Theory, accounted for the negative relationships between job insecurity and two indicators of work-related well-being, namely emotional exhaustion and vigour. As such, this study contributes to a growing body of research on the theoretical explanations of the negative consequences of job insecurity.

Acknowledgements

The authors would like to thank Raf Boey of the Departement Werk en Sociale Economie [Department of Work and Social Economy] of the Vlaamse Overheid [Flemish Government] for providing us with the statistics on the Flemish working population regarding age, gender, occupational status, contract type and full-time versus part-time employment in 2009. The statistics derive from the Enquête naar de Arbeidskrachten [Questionnaire on the Work Forces].

References

- Baard, P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology, 34*(10), 2045–2068.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309–328.

- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, *22*, 187–200.
- Baumeister, R., & Leary, M. (1995). The need to belong. Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.
- Bollen, K. A., & Long, J. S. (Eds.). (1993). *Testing structural equation models*. Newbury Park, CA: Sage.
- Bordia, P., Jones, E., Gallois, C., Callan, V., & DiFonzo, N. (2006). Management are aliens! Rumors and stress during organizational change. *Group & Organization Management*, *31*(5), 601–621.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.
- Byrne, B. M. (2001). *Structural equation modelling with Amos. Basic concepts, application and programming*. Mahwah, NJ: Erlbaum.
- Cheng, G. H.-L., & Chan, D. K.-S. (2008). Who suffers more from job insecurity? A Meta-analytic review. *Applied Psychology: An International Review*, *57*(2), 272–303.
- Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology*, *25*(3), 325–334.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the selfdetermination of behavior. *Psychological Inquiry*, *11*(4), 227–268.
- De Cuyper, N., Baillien, E., & De Witte, H. (2009). Job insecurity, perceived employability and targets’ and perpetrators’ experiences of workplace bullying. *Work & Stress*, *23*, 206–224.
- De Cuyper, N., & De Witte, H. (2007). Job insecurity in temporary versus permanent workers: Associations with attitudes, well-being, and behaviour. *Work & Stress*, *21*, 65–84.
- De Cuyper, N., De Witte, H., Vander Elst, T., & Handaja, Y. (2010). Objective threat of unemployment and situational uncertainty during a restructuring: Associations with perceived job insecurity and strain. *Journal of Business and Psychology*, *25*(1), 75–85.
- Dekker, S., & Schaufeli, W. (1995). The effects of job insecurity on psychological health and withdrawal: A longitudinal study. *Australian Psychologist*, *30*(1), 57–63.
- Demerouti, D., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, *15*(3), 209–222.
- De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology*, *8*(2), 155–177.
- De Witte, H. (2000). Arbeidsethos en jobonzekerheid: Meting en gevolgen voor welzijn, tevredenheid en inzet op het werk [Work ethic and job insecurity: Assessment and consequences for well-being, satisfaction and performance at work]. In R. Bouwen, K. De Witte, H. De Witte, & T. Taillieu (Eds.), *Van groep naar gemeenschap [From group to community]. Liber Amicorum Prof. Dr. Leo Lagrou* (pp. 325–350). Leuven: Garant.
- De Witte, H. (2005). Job insecurity: Review of the international literature on definitions, prevalence, antecedents and consequences. *SA Journal of Industrial Psychology*, *31*(4), 1–6.
- DiFonzo, N., & Bordia, P. (1998). A tale of two corporations: Managing uncertainty during organizational change. *Human Resource Management*, *37*(3–4), 295–304.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331–362.
- Greenhalgh, L., & Rosenblatt, Z. (1984). Job insecurity: Toward conceptual clarity. *Academy of Management Review*, *9*(3), 438–448.
- Greguras, G. J., & Diefendorff, J. M. (2009). Different fits satisfy different needs: Linking person-environment fit to employee commitment and performance using self-determination theory. *Journal of Applied Psychology*, *94*(2), 465–477.
- Hartley, J., Jacobson, D., Klandermans, B., & van Vuuren, T. (1991). *Job insecurity: Coping with jobs at risk*. London: Sage.

- Hellgren, J., & Sverke, M. (2003). Does job insecurity lead to impaired well-being or vice versa? Estimation of cross-lagged effects using latent variable modelling. *Journal of Organizational Behavior*, 24(2), 215–236.
- Hellgren, J., Sverke, M., & Isaksson, K. (1999). A two-dimensional approach to job insecurity: Consequences for employee attitudes and well-being. *European Journal of Work and Organizational Psychology*, 8(2), 179–195.
- Hoyle, R. H. (Ed.). (1995). *Structural Equation Modeling*. Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55.
- Jahoda, M. (1982). *Employment and unemployment. A social-psychological analysis*. Cambridge: Cambridge University Press.
- Kausto, J., Elo, A. L., Lipponen, J., & Elovainio, M. (2005). Moderating effects of job insecurity in the relationships between procedural justice and employee well-being: Gender differences. *European Journal of Work and Organizational Psychology*, 14(4), 431–452.
- Kinnunen, U., Mauno, S., & Siltaloppi, M. (2010). Job insecurity, recovery and well-being at work: Recovery experiences as moderators. *Economic and Industrial Democracy*, 31(2), 179–194.
- Lazarus, R. S., & Folkman, S. (1984). *Stress appraisal and coping*. New York, NY: Springer.
- Liu, D., & Fu, P.-P. (2011). Motivating proteges' personal learning in teams: A multilevel investigation of autonomy support and autonomy orientation. *Journal of Applied Psychology*, 96(6), 1195–1208.
- Lynch, M., Plant, R., & Ryan, R. (2005). Psychological needs and threat to safety: Implications for staff and patients in a psychiatric hospital for youth. *Professional Psychology – Research and Practice*, 36(4), 415–425.
- Maslach, C., Schaufeli, W., & Leiter, M. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- Näswall, K., & De Witte, H. (2003). Who feels insecure in Europe? Predicting job insecurity from background variables. *Economic and Industrial Democracy*, 24(2), 189–215.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Pinder, C. (2008). *Work motivation in organisational behaviour* (2nd ed). New York, NY: Psychology Press.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891.
- Probst, T. M. (2008). Job insecurity. In C. L. Cooper & J. Barling (Eds.), *Handbook of organizational behavior* (pp. 178–195). Thousand Oaks, CA: Sage.
- Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, 11(4), 319–338.
- Schaufeli, W. B., & Bakker, A. B. (2004). Bevoegenheid: Een begrip gemeten [Work engagement: The measurement of a concept]. *Gedrag & Organisatie*, 17, 89–112.
- Schaufeli, W. B., & van Dierendonck, D. (2000). *Utrechtse burnout schaal–UBOS: Handleiding* [Utrecht burnout scale–UBOS: Testmanual]. Lisse, Neth: Swets & Zeitlinger.
- Schweiger, D. M., & Denisi, A. S. (1991). Communication with employees following a merger: A longitudinal field experiment. *Academy of Management Journal*, 34(1), 110–135.
- Sverke, M., & Hellgren, J. (2002). The nature of job insecurity: Understanding employment uncertainty on the brink of a new millennium. *Applied Psychology: An international review*, 51(1), 23–42.
- Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology*, 7(3), 242–264.

- Sverke, M., Hellgren, J., Näswall, K., Chirumbolo, A., De Witte, H., & Goslinda, S. (2004). *Job insecurity and union membership: European unions in the wake of flexible production*. Brussels: P.I.E.-Peter Lang.
- Van den Broeck, A., De Witte, H., Vansteenkiste, M., Lens, W., & Andriessen, M. (2009). De zelf-determinatie theorie: Kwalitatief goed motiveren op de werkvloer [Self-Determination Theory: About the quality of work motivation]. *Gedrag en Organisatie*, 22(4), 316–335.
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress*, 22, 277–294.
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the work-related basic need satisfaction scale. *Journal of Occupational and Organizational Psychology*, 83(4), 981–1002.
- Vander Elst, T., Baillien, E., De Cuyper, N., & De Witte, H. (2010). The role of organizational communication and participation in reducing job insecurity and its negative association with work-related well-being. *Economic and Industrial Democracy*, 31(2), 249–264.
- Vander Elst, T., De Cuyper, N., & De Witte, H. (2011). The role of perceived control in the relationship between job insecurity and psychosocial outcomes: Moderator or mediator? *Stress and Health*, 27(3), e215–e227.
- Vander Elst, T., De Witte, H., & De Cuyper, N. (2010, June). The Job Insecurity Scale: A psychometric evaluation across six European countries. In H. De Witte & N. De Cuyper (Eds.) (Chairs), *Job insecurity: New issues and debate*. Symposium conducted at the ICOH-WOPS Conference, Amsterdam, The Netherlands.
- Vansteenkiste, M., Ryan, R. M., & Deci, E. L. (2008). Self-determination theory and the explanatory role of psychological needs in human well-being. In L. Bruni, F. Comim, & M. Pugno (Eds.), *Capabilities and happiness*. Oxford: Oxford University Press.
- Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34(5), 719–751.
- White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66(5), 279–333.
- Williams, L. J., Cote, J. A., & Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: Reality or artifact? *Journal of Applied Psychology*, 74(3), 462–468.
- Zhao, H., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology*, 60(3), 647–680.