Does job insecurity hinder innovative work behaviour? A threat rigidity perspective

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Abstract

Current work life is characterised by globalization, technological changes and the aftermath of the economic recession, thereby increasing the need for organisations to be innovative to maintain their competitive position. At the same time, this turbulent organizational landscape gave rise to perceptions of job insecurity, that is, the subjectively perceived likelihood of involuntary job loss. The present study investigates whether job insecurity relates to innovative work behaviour (IWB), and introduces threat rigidity theory as an explanatory framework for this relationship. Based on this theory, we propose a serial mediation model, in which job insecurity relates to an increase in irritation, which subsequently relates to a decrease in concentration, resulting in a decrease in both dimensions of IWB, namely idea generation and idea implementation. By means of survey data from 394 Dutch speaking Belgian employees, we used mediation structural equation modelling analysis (bootstrapping method). Our findings are in line with threat rigidity theory, as the results demonstrate that the threat of job loss impairs employees' innovativeness through increased irritation and decreased concentration. This study contributes to job insecurity as well as IWB research, by introducing a process model that sheds light on job insecurity outcomes and antecedents of IWB.

Keywords: job insecurity, irritation, concentration, idea generation, idea implementation, threat rigidity theory, structural equation modelling, serial mediation model

Worldwide competitiveness, the advancement of technology and the aftermath of the economic recession have caused organizations to employ various changes in the form of restructuring, downsizing, merging and outsourcing (Arnold, & Staffelbach, 2012; Iverson & Zatzick, 2011). As a result of these measures, employees may experience increased perceptions of job insecurity, defined as “the subjectively perceived likelihood of involuntary job loss” (Sverke, Hellgren, & Näswall, 2002, p.243). Various scholars have shown the detrimental consequences of job insecurity, demonstrating a negative relationship with employees’ work related well-being and job related attitudes (Tahira M. Probst, 2008; Staufenbiel & König, 2010). Similar findings emerged regarding non-work related outcomes such as fear, depression and lower levels of life satisfaction (Tahira M. Probst, 2008). Prior research has also addressed the behavioural outcomes of job insecurity, showing an increase in deviant behaviours and a decline in work performance and organisational citizenship behaviours (Reisel, Probst, Chia, Maloles, & König, 2010).

Global competition has also increased the importance of innovation for organizational success (Hammond, Neff, Farr, Schwall, & Zhao, 2011; West, 2000). Prior research has demonstrated that employees’ small, day-to-day innovations are important sources for an organization’s prosperity and thus the security of its members (Janssen, 2000; Ma Prieto & Pilar Perez-Santana, 2014; De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014). These innovations are coined as innovative work behaviour (IWB), that is, “the intentional introduction and application, within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group or wider society” (West & Farr, 1989, p. 9). Two sub-dimensions are typically distinguished in the innovation process, namely idea generation and idea implementation (Scott & Bruce, 1994; West, 2002), and the current study separately takes both into account. Since a

volatile organizational landscape plays a role in the need for IWB as well as in perceptions of job insecurity, knowledge on the relation between both becomes increasingly essential.

Surprisingly little research has addressed this relationship, which is why the first aim of the current study is to investigate the relationship between job insecurity and IWB. Some researchers have suggested the possibility of a ‘job preservation motivation’ framework, in which job insecure individuals might be more motivated to engage in behaviours that they view as instrumental in securing their job (Shoss, 2017). In line with this view, the literature on innovation has established that job demands may also trigger IWB (Janssen, 2000). The nature of the job stressor, however, matters in predicting employees’ IWB (Ren & Zhang, 2015). More specifically, stressors that employees appraise as challenges are positively related to IWB, while stressors that employees tend to appraise as hindrances are negatively related to IWB. Ren and Zhang (2015) argue that whereas job demands such as a high workload can be considered as challenge stressors, job insecurity can be viewed as a hindrance stressor. Moreover, an extensive body of research supports the notion that job insecurity is best considered a hindrance stressor, as prior research findings have demonstrated that job insecurity leads to a state of lassitude rather than activating employees to alter the current situation (Cheng & Chan, 2008; De Witte, Pienaar, & De Cuyper, 2016; De Witte, Vander Elst, & De Cuyper, 2015; Sverke et al., 2002). As a consequence, the current study expects that the relationship between job insecurity and IWB is rather negative than positive. Although previous research suggests a negative link between JI and IWB (De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014), the reasons for this relationship have not been sufficiently investigated. Our paper contributes to the literature by studying stress-related variables as explaining mechanisms, thereby providing a theoretically sound relationship. From a practical point of view, the expected negative relation between JI and IWB presents an interesting paradox: while many organisations expect that restructuring and

downsizing will enhance innovation, these organisational changes might actually lower IWB due to an increase in job insecurity (Probst, Stewart, Gruys, & Tierney, 2007). In addition, new technological changes such as automation and digitalisation are decreasing the demand for certain types of work, and, consequently, job insecurity might be a feature in many employees' careers (Lee, Huang, & Ashford, 2018; Shoss, 2017). Within this context, IWB becomes even more valuable, as the European innovation policy considers the area of technology as a focal point (Møller, 2010). Hence, it becomes increasingly important to consider the trade-off between job insecurity and IWB.

The second aim of this study is to introduce threat rigidity theory (Staw, Sandelands, & Dutton, 1981) as a theoretical framework that might explain the relationship between job insecurity and IWB. A large body of research on job insecurity has been grounded in social exchange theories (SET), such as psychological contract theory (De Witte, Pienaar, & De Cuyper, 2016). Yet, these theories do not allow us to grasp the full range of employee reactions to job insecurity. More specifically, research based on SET suggest that perceptions of job insecurity create a perceived imbalance between exerted work efforts and promised job security. To restore this imbalance in the employment relationship, employees respond by withdrawing from work and decreasing their effort (Vander Elst, De Cuyper, Baillien, Niesen, & De Witte, 2016). Although this framework has proven to be useful in explaining attitudinal as well as some behavioural consequences of job insecurity (De Cuyper & De Witte, 2006; Turnley & Feldman, 2000), it solely focuses on employees' willingness to engage in certain behaviours without taking into account that job insecurity might equally impair one's ability to engage in these behaviours. However, behaving in an innovative manner is jointly determined by one's willingness and one's cognitive ability (West, 2002). Therefore, we believe that the association between job insecurity and IWB would benefit from being analysed from a different viewpoint. To that end, we advance

threat rigidity theory (Staw et al., 1981) as an explanatory framework. This theory focuses on the impact of stress on intrapersonal cognitive processes, thereby contrasting with psychological contract theory, which highlights reciprocal interpersonal processes.

An Introduction Into Threat Rigidity Theory

Threat rigidity theory (TRT) states that individuals are more likely to behave rigidly under threatening circumstances (Staw et al., 1981). TRT focuses on the subjective perception of a threat, that is, the perception of “an environmental event that has impending negative or harmful consequences for the entity” (Lazarus, 1966, as cited in Staw et al., 1981, p. 502). As such, job insecurity corresponds to this definition of a threat, i.e., the subjective perception of an event that has negative consequences. Rigidity can be defined as the “persistence or perseverance in an induced method of problem solution which is possibly no longer the best way to solve the present problem or to reduce the threat” (Cowen, 1950, p. 512). By means of this definition, rigidity might be considered as the opposite of behaving innovatively. When employees behave rigidly, by emitting previously learned solutions, they display behaviour opposite from searching for (idea generation) and implementing (idea implementation) new ways to execute the task at hand (Staw et al., 1981). Therefore, we might argue that when exposed to a threat, employees will generate and introduce fewer ideas at work, and thus behave less innovative (Muurlink, Wilkinson, Peetz, & Townsend, 2012; Plotnick, Turoff, & Van Den Eede, 2009).

TRT ascribes this decrease in innovative behaviour to a restriction in information processing. A broad body of research has demonstrated that psychological stress cognitively manifests itself in tendencies to narrow attention, thereby including dominant cues and excluding peripheral cues (Staw et al., 1981, p.506). The present study focuses on a lack of concentration as an indicator of impaired information processing, as the ability to sustain attention, i.e., concentration, is considered as one of the key aspects of the executive functions (Miller & Cohen,

2001; Linden, Keijsers, Eling, & Schaijk, 2005; Manly, Robertson, Galloway, & Hawkins, 1999).

The inability to focus attention is expected to result in poor performance and decrease the probability of an innovative response.

Although empirical research on threat rigidity theory is scarce, we believe that it has the potential to explain the relationship between job insecurity and innovative work behaviour. In order to hypothesize the relationships between job insecurity and both idea generation and idea implementation, three steps will be taken. The first step includes elaborating on the association between job insecurity and irritation, after which the link between irritation and concentration will be described. Subsequently, the association between concentration and both components of IWB will be discussed. In the last section, an integration and overview of the entire research model will be provided.

Job Insecurity and Irritation

Threat rigidity theory states that the perception of a threat leads to psychological strain (Staw et al., 1981, p. 506). Along these lines, every definition of job insecurity refers to its stressful nature. Already in 1984, Greenhalgh and Rosenblatt categorised job insecurity as a stressor, therefore causing strain. Mak and Mueller (2000) found a consistent positive independent effect of job insecurity on a magnitude of strain indicators (vocational, psychological, interpersonal and physical). Furthermore, Näswall, Sverke and Hellgren (2005) empirically demonstrated the relationship between job insecurity and strain related outcomes such as job-induced tension. Two meta-analyses have further supported the job insecurity-strain relationship (Cheng & Chan, 2008; Sverke et al., 2002). The current study uses irritation as an indicator of mental strain. Irritation is a state of mental impairment characterised by negative emotions such as nervousness, oversensitivity and a touch of anger (Mohr, Müller, Rigotti, Aycan, & Tschan, 2006).

Previous research suggests that job insecurity is likely to positively relate to employees' irritation. An overview of the literature suggests that job insecurity is related to an increased level of irritation (De Witte, 2005). Similarly, Büssing (1999) found a positive relationship between job insecurity and irritation by conducting a quasi-experimental field investigation. The study of De Cuyper and De Witte (2005) also found support for the premise that perceptions of job insecurity relate to increased irritation. In keeping with theoretical and empirical evidence, we expect job insecurity to positively relate to irritation.

Irritation and Concentration

A second important feature of the threat rigidity thesis concerns the cognitive manifestations of psychological strain (Staw et al., 1981, p.506). When exposed to a threat (e.g., job insecurity) and experiencing strain (i.e., irritation), one's information processing capacity is likely to be impaired in the form of reduced concentration on the task. The resource allocation theory (Kanfer & Ackerman, 1989) provides further guidance as to why strain in the form of irritation leads to a lack of concentration. According to this theory, our cognitive resources are limited and need to be distributed between on-tasks, off-tasks and self-regulatory activities (Kanfer & Ackerman, 1989). More specifically, the experience of strain is likely to lead to an increased focus on the source of the strain, and a reduced concentration on non-strain related information or tasks. In addition, employees are more likely to engage in self-regulatory activities. This might manifest itself by monitoring one's level of job insecurity, which is reflected in behaviours such as estimating the likelihood of being impacted by organisational restructuring, keeping up to date with rumours, or worrying about possible future unemployment (Probst & Brubaker, 2001, p. 142). These coping reactions require cognitive effort, leaving less cognitive resources for work-related tasks (Sverke et al., 2002). Empirical evidence supports this premise, demonstrating a negative relation between strain and concentration on the task

(Meijman & Schaufeli, 1996) and a positive association between work stress and cognitive failures (Van Der Linden, Keijsers, Eling, & Van Schaijk, 2005). Moreover, a longitudinal study demonstrated that strain causes employees to be less concentrated at work (Demerouti, Taris, & Bakker, 2007).

Based on these findings, we expect a negative relationship between irritation (i.e., strain) and concentration on the task, as a manifestation of a decline in information processing.

Concentration and Innovative Work Behaviour

A final aspect of the threat rigidity theory concerns the behavioural consequences of impaired information processing in threat situations (Staw et al., 1981). The threat-rigidity model suggests that a restriction in information processing relates to a tendency to behave in a habitual manner, thereby leading to a decrease in IWB. Two forms of IWB are generally identified in the literature, namely idea generation and idea implementation (Scott & Bruce, 1994; West, 2002). Idea generation concerns the phase where employees create ideas that are new, or new in the context in which they will be implemented, to address a problem they have encountered (Amabile & Conti, 1999; Janssen, 2000). Idea implementation refers to advancing, defending and actually implementing these ideas in the workplace (De Spiegelaere et al., 2014). Prior research has revealed that these innovation phases may differ in their antecedents and in the strength or impact of these antecedents (Axtell, Holman, Unsworth, Wall, & Waterson, 2000; Bunce & West, 1994; Rank Pace, & Frese, 2004). We provide a broader understanding of the individual innovation process by separately including both factors of IWB, and by analysing how cognitive factors, which have received little to no attention when considering the antecedents of IWB, may impact both components of IWB.

We expect reduced concentration on the task to relate to a decrease in idea generation. This relation might exist because idea generation at work stems from experiencing work-related

problems or incongruities and taking a sufficient amount of time to think them through (Drucker & Noel, 1986; Van de Ven, 1986). Since employees who are not concentrated on their work-related tasks might not perceive incongruities and problems, they might not experience the need to find solutions for these problems. In addition, idea generation is a cognitive process, as relevant knowledge needs to be activated and associations need to be formed (Nijstad, Stroebe, & Lodewijckx, 2002; Wu, Parker, & de Jong, 2014).

Considering the antecedents of idea implementation, prior research has demonstrated that idea implementation is primarily an inter-individual social process, with core predictors at the group and organisational level (Anderson & King, 1993). Along these lines, idea implementation requires establishing a connection between innovative ideas and the daily functioning of the organisation as well as mastering several social processes in order to overcome resistance. However, prior research has revealed a significant but small association between cognitive factors and idea implementation, which is why we believe that cognitive processes also play a role in promoting idea implementation (Rank et al., 2004). Spillane, Reiser, and Reimer (2002) underpinned the importance of cognition for idea implementation, as it is of crucial importance that employees understand the innovation process and its relevance. Similarly, Agarwal and Prasad (1997) found that individuals deliberately engage in information processing by gathering and synthesising information before consciously deciding to implement the innovation. Therefore, we expect reduced concentration on the task to relate to a decrease in idea implementation.

Accordingly, we expect a positive relationship between concentration and both idea generation and idea implementation.

A Process Model: From Job Insecurity to Innovative Work Behaviour

In keeping with the theoretical and empirical evidence, we hypothesise that job insecurity has a negative indirect effect on idea generation and idea implementation via a sequence of relationships in which job insecurity positively relates to irritation, which, in turn, relates to a decrease in concentration on the task, which subsequently relates to a decrease in idea generation and idea implementation. This process is depicted in Figure 1.

[Insert Figure 1 about here]

Method

Sample and Procedure

The data were collected by master's students, who recruited participants by distributing an online self-report questionnaire to their professional and social network. A total of 394 employees participated in the study, who were all employed in organisations in the Flemish part of Belgium. The age of the respondents ranged from 20 to 66 ($M = 42.28$, $SD = 10.91$). The majority of the sample was male (57%). Approximately seven per cent ($n = 26$) of our sample did not obtain a degree of secondary school, 23 per cent ($n = 86$) had a diploma of secondary school, 32 per cent ($n = 120$) obtained a degree of higher education, 29 per cent ($n = 109$) had a university degree, and 9 per cent of the respondents ($n = 33$) finished a postgraduate degree. Concerning job status, our sample included 9% blue-collar workers, 19% lower white-collar workers, 23% higher level white collar workers, 36% working at middle-management functions and 13% respondents working in the management board. Over 85% of the respondents ($n = 312$) had a permanent contract. Organisational tenure ranged from zero to 40 years ($M = 11.66$; $SD = 10.52$). About one-third worked in the industrial sector or the construction sector, and 38 per cent worked in the private services sector. The remainder of the respondents worked in the public services sector (29%), of which 18% worked in healthcare or the social-cultural sector, 7 per cent

worked in public service or in a semi-governmental institution, and 4 per cent worked in education.

Measures

Table 1 presents the means, standard deviations and correlations of the research variables.

Job insecurity. Job insecurity ($\alpha = .89$) was measured with De Witte's four item Job Insecurity Scale (De Witte, 2000; validated by Vander Elst, De Witte, & De Cuyper, 2014), with responses ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is "I feel insecure about the future of my job".

Irritation. Irritation ($\alpha = .90$) was measured by five items based on a scale of Mohr and colleagues (2006). Responses were measured on a five-point Likert scale, with responses varying from 1 (strongly disagree) to 5 (strongly agree). A sample item is "When I come home tired after work, I feel irritable".

Concentration. Concentration was measured with four items ($\alpha = .84$) based on the scale of Demerouti and colleagues (2007), measured on a five-point Likert-scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is "My thoughts are wandering to other things during the task (R)".

Innovative work behaviour. Innovative work behaviour was measured with the ten item scale of de Jong and Den Hartog (2010), of which five items tap into idea generation ($\alpha = .80$) (e.g., "I generate original solutions for problems") and five items measure idea implementation ($\alpha = .91$) (e.g., "I contribute to the implementation of new ideas"). Respondents were asked to rate these statements on a five-point Likert-scale (1 (never) – 5 (always)).

Covariates. Gender (0 = male; 1 = female) and age (years) were included as a covariates as young, male employees are more oriented towards innovation (Mostafa, 2005; Mueller & Thomas, 2000; Scott & Bruce, 1994). Furthermore, education was incorporated, as prior research

has demonstrated that educational level positively relates to IWB (Janssen, 2000; Tierney & Farmer, 2004). We treated educational level (1 = elementary school; 2 = lower secondary school; 3 = upper secondary school; 4 = higher education; 5 = university; 6 = post-graduate degree) as a continuous variable, as these educational degrees form a range going from less educated to highly educated. Last, we included sector as a covariate since prior research has shown that the prevalence of innovative work behaviour is higher among employees of private-sector organisations (Mukherjee & Ray, 2009). Sector was recoded into two dummy variables with the industrial and construction sector as the reference group (i.e., ‘private service sector’: 0 = industrial and construction sector, and public service sector; 1 = private service sector, and ‘public service sector’: 0 = industrial and construction sector, and private service sector; 1 = public service sector).

[Insert Table 1 here]

Analyses

Before testing the structural paths between the latent variables, we conducted a confirmatory factor analysis (CFA) to investigate the measurement model. This allows to demonstrate discriminant validity of the separate constructs, which is especially important when self-report surveys are used. The CFA’s were performed using the maximum likelihood method. The hypothesized measurement model with five factors was tested and compared with two alternative models.

To test the hypotheses, mediator structural equation modelling (SEM) analysis with latent variables was computed using Mplus (version 6). Our structural model simultaneously included direct and indirect paths between job insecurity and both innovative work behaviour outcomes. The covariates education, gender, age and sector were included in the structural model. Following the recommendations of MacKinnon and colleagues (2004), we tested the significance

of indirect effects by means of a bootstrapping procedure (5000 bootstrap samples; 95% confidence intervals), as this technique does not assume normality of the sampling distribution of the indirect effect (Preacher & Hayes, 2008).

Several indices were used to evaluate the goodness-of-fit of the models, that is, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the value of standardized RMR (SRMR) and the root mean square error of approximation (RMSEA). We employed the fit index cut-off criteria suggested by Hu and Bentler (1999), that is, CFI and TLI should have a value over 0.95 and RMSEA and SRMR have cut-off points off 0.06 and 0.08, respectively.

Results

Measurement Model

We tested and compared four measurement models. First, we estimated a single-factor model in which all items loaded on one latent variable. Second, we tested a three-factor model in which all job insecurity, irritation and concentration items loaded on one factor and the items of idea generation and idea implementation loaded on two separate factors. Third, we tested a four-factor model differentiating between job insecurity, irritation, concentration and IWB, in which the items that were operationalised to measure idea generation, and the ones intended to measure idea implementation loaded on one “innovative work behaviour” factor, as it has been suggested that IWB may be a one-dimensional construct (Janssen, 2000). Lastly, we included a five-factor model, in which all items loaded on the hypothesized latent variables.

The hypothesized five-factor model provided a good fit to the data ($\chi^2(220) = 484.772$, CFI = 0.960, TLI = 0.954, RMSEA = 0.048, SRMR = 0.040). All items had significant loadings on the hypothesized factors (ranging from .42 to .91). Moreover, this model resulted in a significantly better fit than either of the alternative measurement models, as indicated by Chi-

square difference test (see Table 2). This provides evidence that the included measures in the current study represent different constructs.

[Insert Table 2 here]

Hypothesis Testing

Results of the mediation analyses are presented in Table 3. The structural model with the standardised path coefficients is demonstrated in Figure 2. The hypothesised research model provided a good fit ($\chi^2(313) = 514.468$, CFI = 0.964, TLI = 0.958, RMSEA = 0.040, SRMR = 0.040). We found a significant indirect effect of job insecurity on idea generation and idea implementation through both irritation and concentration on the task. In line with our hypotheses, higher levels of job insecurity were related to higher levels of irritation, which were negatively associated with concentration, which, in turn, related to lower levels of idea generation and idea implementation. No significant direct effect between job insecurity and idea generation or idea implementation was found. The hypothesised structural model allows us to account for approximately 13% of the variability in irritation, 26% of the variability in concentration, 10% of the variability in idea generation and about 12% of the variability in idea implementation.

In addition, we compared the hypothesized model to a structural model in which we included four additional indirect effects. More specifically, we tested the effect of job insecurity on idea generation and idea implementation through irritation only (bypassing concentration), and we included indirect effects that flow from job insecurity to concentration and then to idea generation and idea implementation (bypassing irritation). This model did not have a significantly better fit than the hypothesised model ($\chi^2(310) = 508.970$, CFI = 0.965, TLI = 0.958, RMSEA = 0.040, SRMR = 0.038), as indicated by an insignificant Chi-square difference test. In addition, none of the additional indirect effects were significant, nor were the path coefficients from job

insecurity to concentration, or from irritation to idea generation and idea implementation (results available upon request from the first joined author). As this model did not have a significantly better fit, the most parsimonious model (i.e., the hypothesized model) was chosen over the alternative model.

[Insert Table 3 here]

Discussion

The purpose of the current study was (1) to examine the association between job insecurity and two dimensions of innovative work behaviour (IWB), namely idea generation and idea implementation and, (2) to test threat rigidity theory (TRT) as an explanatory framework for this relationship (Staw et al., 1981). In particular, we first tested whether job insecurity was related to an increase in irritation (strain). This idea is grounded in TRT, which states that the perception of a threat, such as the possibility of losing one's job, leads to psychological stress. In line with this, our results demonstrated a positive relationship between job insecurity and the amount of irritation employees experience.

A further assumption was that irritation, in turn, related to a decrease in concentration. Along TRT, we argued that psychological stress manifests itself in a restriction in self-regulative cognitive processes, such as a lack of concentration. More specifically, individuals who perceive a threat are more likely to allocate their cognitive resources to coping with this stressor, leading to a decline in concentration on non-threat related information or tasks (Kanfer & Ackerman, 1989). In line with this, our findings demonstrated that strain in the form of irritation negatively related to concentration on the task.

A final aspect of our theoretical model concerns the link between cognitive processes and innovative work behaviour. A restraint in cognitive processing is expected to relate to a tendency to behave in a habitual manner, which then ultimately leads to a decline in innovative work

behaviour. Our results provided support for this idea: concentration positively related to the extent to which employees engage in idea generation as well as idea implementation. To summarize, we found support for a serial mediation model in which job insecurity and innovative work behaviour are *indirectly* related. Particularly, job insecurity is positively related to irritation, which is associated with idea generation and idea implementation through a decrease in concentration on the task.

It is interesting to notice that the indirect effect of the serial mediation was stronger for idea generation than for idea implementation. This difference may be explained by the nature of the implementation phase. Idea implementation implies turning an innovative idea into something tangible, and creating a shared vision towards this innovation (Perry-Smith & Mannucci, 2017). Transforming the idea into something concrete might be a cognitive process which requires concentration and attention, whereas creating support for the idea might be a primarily social process. As part of the idea implementation process consists of inter-individual processes, such as the persuasion of others, information processing may play a less important role.

Limitations and Future Research

There were four main limitations in this study. A first limitation refers to our sample and procedure. Our sample was not representative for the Belgian population. For instance, approximately 70 per cent of our sample had a degree of higher education, whereas approximately 30% of the Belgian population had a degree of higher education in 2016 (Belgian Federal Government Service of Economy, 2016). However, a highly-educated sample is relevant in the light of IWB, as higher levels of IWB are expected within this group of workers (Hammond, Neff, Farr, & Schwall, 2011). Nevertheless, future studies might benefit from generalizing our results to a representative sample. Furthermore, our sample was gathered by means of student-recruited sampling. Yet, prior research has demonstrated that research that used

student-recruited samples tends to provide equally representative samples compared with non-student recruited samples (Wheeler, Shanine, Leon, & Whitman, 2014). In addition, Wheeler and colleagues (2014) demonstrated that there were relatively few differences in relationships between student and non-student recruited samples, although student-recruited samples may lead to smaller effect sizes of observed statistical relationships, as opposed to non-student recruited samples. Hence, our sample might have resulted in an underestimation of the effect size of the relationship between job insecurity and IWB via irritation and concentration.

Second, only cross-sectional data were obtained, which does not allow causal inferences. We hypothesized a pathway in which job insecurity is an antecedent of IWB and not vice versa. Yet, a reversed relationship might also exist in which innovative employees are more valuable for their organisation and, as a consequence, feel more secure about their job. This reversed model was tested, and did not generate any significant indirect effects as both the idea generation – job insecurity and the idea implementation – job insecurity pathway were insignificant. Longitudinal data, however, are necessary to clarify the direction of the relationships.

Third, only self-report data were collected, possibly causing common method bias. To reduce the risk of inflated relationships between concepts, we followed the methodological recommendations of Podsakoff, MacKenzie, Lee and Podsakoff (2003), such as voluntary and anonymous participation. In addition, we employed measures from validated scales and tested their factor structure. Although the subjective nature of job insecurity requires a self-report measure, future studies could benefit from including objective measures of information processing and other-rated IWB.

Fourth, the current study differentiated between the type of innovative behaviour employees engage in (i.e., idea generation/idea implementation), based on the extensive body of research that employs this distinction, but did not specify the type or nature of the innovation

itself. As it might be possible that job insecure employees are more likely to engage in opportunistic behaviour or to focus on innovations with an immediate impact, future research might benefit from investigating the influence of job insecurity on the kind of innovation employees generate and implement.

A promising line of study is to test these relationships with other variables that measure strain (such as need for recovery) or information processing (such as memory), which might prove useful in gaining a more comprehensive understanding of the mechanisms underlying the threat rigidity response. In addition, future research could benefit from simultaneously including TRT and other frameworks in the research model, as to acquire information about which pathways explain the most variance in the relationship between job insecurity and IWB. On the one hand, it would be relevant to investigate the role of TRT in addition to other intra-individual processes, such as the motivation to innovate, which also influence employee IWB. On the other hand, future studies might also aim to examine TRT in concert with a framework based on inter-individual processes, such as psychological contract theory, to gain knowledge on which pathway has the most explanatory strength. Last, as mentioned previously, technological progress in the form of automation, digital platforms and other innovations might make certain job tasks, and certain jobs in general, redundant (Lee et al., 2018). Consequently, a direction for future research might be to investigate the extent to which these technological developments influence job insecurity, and, in turn, the repercussions these changes have for employee-driven innovation.

Implications

In terms of implications for the research literature, this study advances theoretical knowledge in at least two ways. First, the current study extends the job insecurity literature which focused on the mediating role of interpersonal variables (e.g., fair exchange or a fulfilled psychological contract) by demonstrating that intrapersonal variables such as irritation and

concentration might also be relevant factors to explain the detrimental consequences of job insecurity. Hence, future research on job insecurity and employee behaviour may benefit from also including *intrapersonal* factors such as cognitive processes.

Second, the present study advances knowledge on the applicability of threat rigidity theory, as recent tests of this framework are non-existent and prior research is mainly limited to the organisational level. The few studies that have applied this theory on the individual level focused on the top-management of the organisation (Aveni & Macmillan, 1990; Shimuzu, 2007). We generalised the relevance of this theory at the individual level, as it proved to be a useful lens for investigating an explaining mechanism in the relationship between job insecurity and IWB among employees.

In terms of managerial implications, our findings suggest that organisations should be aware of the relationship between job insecurity and the extent to which employees generate new ideas and implement these in the organisation. Changes in employee jobs due to digitalisation and automation, for instance, might have detrimental consequences for employees' IWB, which is also increasingly important within the context of technological advances. To prevent such adverse outcomes, organisations might benefit from investing in interventions that reduce perceptions of job insecurity, such as explicit communication about future organisational plans and participative decision-making (Abildgaard, Nielsen, & Sverke, 2017; Keim, Landis, Pierce, & Earnest, 2014; Vander Elst, Baillien, De Cuyper, & De Witte, 2010). Improving communication and participation heightens the perceived controllability and predictability of events, and, at the same time, increases the feeling that one is valued and respected by the organisations' management (De Witte et al., 2015).

In the current turbulent economy, however, it might not be possible to prevent perceptions of job insecurity from occurring in the first place. Therefore, practitioners can benefit from

implementing actions that buffer the job insecurity – strain relationship. First, a number of studies have demonstrated that *personal resources*, such as perceived employability and occupational self-efficacy, function as a buffer against the detrimental consequences of job insecurity (Kalyal, Berntson, Baraldi, & Näswall, 2010; König, Debus, Hausler, Lendenmann, & Kleinmann, 2010; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009). Investing in workers' employability, for instance, could be accomplished by providing job counselling and augmenting employees' employment skills (De Witte et al., 2015). Second, the aversive outcomes of job insecurity might also be mitigated by *job resources*. For example, increasing employees' job control and social support have been shown to attenuate the negative effects of job insecurity (Cheng, Mauno, & Lee, 2014). Third, prior research has demonstrated that *coping styles* are also relevant moderators when considering the job insecurity-strain relationship. Since job-insecure workers who use avoidance as a coping strategy report lower psychological well-being, interventions could also be aimed at facilitating more constructive coping styles (van Vuuren, Klandermans, Jacobson, & Hartley, 1991).

Last, the present study demonstrates that the literature on IWB should recognize concentration on the task as an antecedent for employee IWB. This study suggests that a stress response hampers concentration, which is in line with previous research that has demonstrated that stress is associated with difficulties in voluntary control over attention (Van Der Linden et al., 2005). Consequently, organisations aiming to activate workers to behave in an innovative way should guard their employees' concentration on the task by reducing levels of stress at work.

Conclusion

The aim of this paper was to investigate whether job insecurity hinders innovative work behaviour, and to investigate mediating mechanisms grounded in threat rigidity theory. Our results demonstrate that job insecurity indeed hinders idea generation and idea implementation

through an increase in irritation and a subsequent decrease in concentration on the task. This entails that it is important that organisations maintain the job security of their workforce if they want their employees to generate and implement new ideas. In addition, our results indicate the importance of taking cognitive processes into account in understanding the mechanisms underlying the relationship between job insecurity and innovative work behaviour.

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Table 1

Means, Standard Deviations and Correlations

Variables	Means	SD	1	2	3	4	5	6	7	8	9
1. Gender	-	-									
2. Age	42.56	10.74	-.17**								
3. Education	-	-	-.06	-.14**							
4. Private service sector	-	-	.06	-.03	.01						
5. Public service sector	-	-	.14**	.00	-.04	-					
6. Job insecurity	2.31	.86	-.06	.10	-.06	-.04	-.18***				
7. Irritation	2.40	.81	.04	-.02	-.04	.03	.01	.29***			
8. Concentration	3.66	.65	.06	.07	.01	-.06	.05	-.25***	-.38**		
9. Idea generation	3.50	.57	-.08	.00	.16**	-.03	.00	-.04	-.01	.18***	
10. Idea implementation	3.04	.76	-.18**	.10*	.22***	.00	-.03	-.09*	-.07	.15**	.70***

Table 2

Fit indices of competing nested factor models, standardized maximum likelihood estimates

Model no.	Model	χ^2	df	RMSEA	SRMR	CFI	TLI	Comparison to model no.	$\Delta \chi^2$
1	5-factor model	484.772	220	0.048	0.040	0.960	0.954		
2	4-factor model (idea generation and idea implementation items load on one factor)	652.437	224	0.060	0.045	0.935	0.927	1	167.665*
3	3-factor model (job insecurity, irritation and concentration items load on one factor)	2168.188	227	0.127	0.107	0.717	0.673	1	1683.416*
4	1-factor model	4094.652	230	0.178	0.197	0.416	0.357	1	3609.88*

Note: * $p < .001$

Table 3

Path coefficients and standardised total, indirect, and direct effects (5000 bootstrap resamples)

	Idea generation					Idea Implementation				
	Estimate	SE	Estimate /SE	p	95% CI	Estimate	SE	Estimate /SE	p	95% CI
<i>Total effect</i>	.019	.065	0.228	n.s.	[-0.0108; 0.146]	-.048	.059	-0.810	n.s.	[-0.163; 0.068]
<i>Indirect effect (JI – irritation – concentration – IWB)</i>	-.04	.014	-2.857	p < .01	[-0.069; -0.013]	-.025	.012	-2.03	p < .05	[-0.049; -0.001]
<i>Direct effect</i>	0.059	.062	1.084	n.s.	[-0.069; 0.188]	-.023	.061	-0.380	n.s.	[-0.142; 0.096]

Note: SE = standard error; JI = job insecurity; IWB = idea generation or idea implementation (depending on column heading)

Figure 1. Theoretical model

Figure 2. Full structural model with standardised estimates. Model fit: $\chi^2(313) = 514.468$, CFI = 0.964, TLI = 0.958, RMSEA = 0.040, SRMR = 0.040. For reasons of clarity, only significant direct and indirect effects are shown. As sector did not generate any significant coefficients for either of the dependent variables, it is not included in the figure. All factor loadings were significant at $p < .001$. *** $p < .001$, ** $p < .01$, * $p < .05$.