

Challenge accepted! Distinguishing between challenge- and hindrance demands

Challenge- and
hindrance
demands

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Abstract

Purpose – The purpose of this paper was to test a model that differentiated between two types of job demands in relation to basic psychological need satisfaction, work motivation, and, in turn, employee well-being. In particular, job challenges and job hindrances were hypothesized to relate to this motivational process in different ways.

Design/methodology/approach – Survey data from a sample of 160 entrepreneurs were used in path analyses to test the hypothesized relations.

Findings – The results showed that job challenges related positively to autonomy- and competence need satisfaction as well as to autonomous work motivation, while job hindrances related negatively to satisfaction of the needs for autonomy, competence and relatedness. Further, satisfaction of the need for autonomy, competence and relatedness related positively to autonomous work motivation. Finally, all of the three basic psychological needs as well as autonomous work motivation related directly and positively to vitality.

Originality/value – These results support a view on job challenges and job hindrances as distinct within the job demands-resources model by showing how they are differently related to basic psychological needs, autonomous work motivation and, subsequently, worker well-being.

Keywords Well-being, Motivation, Job demands, Job characteristics

Paper type Research paper

Research on the job demands-resources (JD-R) model (Demerouti *et al.*, 2001) has shown that various characteristics of employees' work have important implications for employee well-being. Traditionally, a distinction has been made between job demands and job resources. Job demands refer to aspects of a job that require sustained physical, emotional or cognitive effort, and may therefore have some associated psychological and/or physiological costs (Demerouti *et al.*, 2001). These job demands include characteristics such as workload, work-home interference, worrying, role conflict and cognitive and emotional demands. Job resources refer to the physical, psychological, social and organizational aspects of the job that may reduce potential negative impacts of job demands, are functional in achieving work goals, and stimulate growth, development and learning (Bakker and Demerouti, 2007). Such job characteristics include, among others, task autonomy, skill utilization, social support, positive feedback and variety. Given the distinct characteristics of job demands and job resources, research has linked job demands to various indicators of employee ill-being, while job resources are linked to indicators of well-being and optimal functioning (for a review, see Bakker and Demerouti, 2007). However, despite the distinct implications of job demands and job resources in previous research, not all findings have been consistent with these two categories of job characteristics. For example, time pressure and workload have been found to relate positively to engagement (Schaufeli *et al.*, 2008). Similarly, workload and cognitive demands have been found to relate positively to dedication and vigor (Bakker *et al.*, 2005).

Given these findings, a qualitative distinction between job challenge demands and job hindrance demands has been proposed. Consequently, this has resulted in three categories



of job characteristics within the JD-R model, namely job resources, job challenges and job hindrances (Van Den Broeck, De Cuyper, De Witte and Vansteenkiste, 2010). Job hindrances represent the traditionally perceived energy-draining job demands linked to employee burnout and disengagement. Job challenges, on the other hand, are job characteristics that can have stimulating capacities as well as energy-depleting tendencies. Job hindrances include job demands such as work-home interference, role conflict and worrying. These job characteristics are associated with purely negative outcomes by draining employees' energy as they make employees feel a lack of control and experience negative emotions (Van Den Broeck, De Cuyper, De Witte and Vansteenkiste, 2010). Job challenges include job characteristics such as workload, cognitive demands and time pressure. Besides being energy-depleting, these job characteristics also have the potential to appeal to employees' curiosity, competence and thoroughness, thus fostering a problem-focused coping style that can contribute to achieving work goals (Cavanaugh *et al.*, 2000). Therefore, job challenges may also relate to positive work outcomes.

The purpose of the current study is to contribute to the literature on the distinction between job challenges and job hindrances. While the JD-R model has been used to show the difference in outcomes of these job characteristics, it does not offer any insight as to how and why these particular outcomes emerge. An examination of the underlying psychological process may contribute to understanding how and why these two types of job demands relate differently to work outcomes. Self-determination theory (SDT; Deci and Ryan, 2000; Ryan and Deci, 2017) is used as a theoretical framework to empirically account for the underlying process. SDT proposes that basic psychological needs and quality of motivation are important mechanisms in the relation between context, such as job characteristics, and outcomes, thus having the potential to explain how and why job challenges and job hindrances relate differently to work outcomes.

While some studies have used SDT in the study of the JD-R model, this line of research has mainly focused on the distinction between job resources and job demands, and/or has examined these relations with respect to an overall need satisfaction variable. To offer increased insight into how and why different job demands related differently to work outcomes, the current study examines the implications of each of the categories of job demands for employee well-being by taking the SDT motivational model with distinct needs into account. Moreover, the current study links the process to the full motivational model accounting for both basic psychological needs as well as motivational regulation to explain employee well-being. This can potentially refine the JD-R model and enrich its value in multiple ways. First, it lends support to the literature showing a distinction between two types of job demands (i.e. job challenges and job hindrances). Second, it provides measurable psychological and motivational mechanisms to explain the distinct association between each of these two categories of job demands and employee outcomes, which can shed light on the different implications of these categories of job demands in previous studies. Third, getting insights into these categories of job demands is important, in order to avoid inaccurate theoretical models yielding biased result and flawed recommendations for practitioners.

Self-determination theory

SDT is a macro-theoretical approach to human motivation, emotion and personality in social contexts of relevance in the workplace (Deci *et al.*, 2017). Basic psychological needs are a unifying concept within SDT, and defined as "innate psychological nutriment that are essential for ongoing psychological growth, integrity, and well-being" (Deci and Ryan, 2000, p. 229). Indeed, satisfaction of these psychological needs contributes to higher levels of psychological and physical health and wellness, social integration and persistence and performance across life domains, cultures and demographics.

Within SDT, three basic psychological needs are identified: the need for autonomy, the need for competence and the need for relatedness. The need for autonomy (DeCharms, 1968) refers to the need for feeling that one is the source of one's own actions and acting in line with personal interests and integrated values. The need for competence (White, 1959) refers to the need for feeling effective in one's interaction with the environment and having opportunities to exercise one's capabilities. The need for relatedness (Baumeister and Leary, 1995) refers to the need for feeling connected to others and having a sense of belonging to a community or social group. A broad range of studies have supported the notion of satisfaction of these three needs as essential for optimal motivation, functioning and wellness in the work domain (for a review, see Deci *et al.*, 2017).

Another important contribution of SDT is the differentiated view of motivation. That is, while the traditional view of motivation treats motivation as a unitary concept in terms of varying in amount, SDT highlights the importance of considering distinct types of motivation that function in different ways. Within SDT, a distinction is made between intrinsic and extrinsic motivation. Intrinsic motivation refers to behavior that stems from a feeling of interest or joy associated with the task at hand, while extrinsic motivation refers to behavior based on external contingencies such as behavior related to the pursuit of a reward or punishment avoidance (Gagné and Deci, 2005). However, a more central distinction within SDT is between autonomous and controlled motivation, as it is assumed that extrinsic motivation can vary in its degree of integration, that is, the degree to which external contingencies are taken in and made one's own. In particular, SDT distinguishes between four types of extrinsic motivation varying in their degree of autonomy. External regulation refers to the traditional view of extrinsic motivation based on external contingencies where a person engages in an activity to, for instance, obtain a reward or avoid punishment. Introjection refers to behavior that has been adopted by a person, but that has not been accepted as his or her own. As this type of behavior has not been integrated into the sense of self, the ego is involved as the motivation comes from the urge to attain positive feelings like pride or avoid negative ones like guilt. Identified regulation refers to behavior that is of personal value to the individual. Lastly, integrated regulation refers to behavior that is congruent with a broader set of values and goals within the person. External regulation and introjection fall under the category of controlled motivation driven by external or internal contingencies, while identified and integrated regulation, as well as intrinsic motivation, are labeled autonomous motivation, and is self-directed. The distinction between autonomous and controlled motivation has shown important implications in the work domain. In particular, autonomous work motivation has been almost exclusively linked to better work functioning and employee wellness, while controlled work motivation has shown less positive implications for work behavior and employee well-being (for a review, see Deci *et al.*, 2017).

SDT is an organismic dialectical approach in that it assumes that humans have a natural tendency to strive for development, growth and psychological adjustment at the same time as the social environment will either support or thwart this natural tendency. The social-contextual climate at work is hence an important predictor of whether the basic psychological needs are satisfied or frustrated and, in turn, of the degree of internalization of work activities. Accordingly, the implications of the various job characteristics within the JD-R framework can be explained by how they are related to this motivational process. Having outlined some of the important underpinnings of SDT that are of relevance to the current study, the next section elaborates on this line of reasoning and presents the hypotheses of the present study.

The present study

A distinction between job challenges and job hindrances is supported by previous work. First, a distinction can be made based on their relations to work outcomes. For instance, LePine *et al.* (2005) showed in a meta-analysis that while both challenge stressors and

hindrance stressors related positively to strain, challenge stressors were positively related and hindrance stressors were negatively related to motivation and performance. Similarly, Crawford *et al.* (2010) found in their meta-analysis that while both challenges and hindrances related to employee burnout, challenges were positively related and hindrances were negatively related to engagement. Second, Van Den Broeck, De Cuyper, De Witte and Vansteenkiste (2010) found support for a three-factor model that included job resources, job challenges and job hindrances across two samples. In extension, this study showed that while job hindrances had a negative relation to well-being (i.e. work engagement) and a positive relation to employee ill-being (i.e. burnout), job challenges related positively to well-being and were found to be unrelated to ill-being. The three-factor structure was supported in another study by Van Den Broeck *et al.* (2009). Moreover, that study supported the distinct relations of job challenges and job hindrances to employee well-being. That is, while job hindrances related positively to ill-being (i.e. exhaustion) and negatively to well-being (i.e. vigor) across two samples, job challenges only related positively to well-being and showed a non-significant relation to ill-being.

The JD-R model theorizes two distinct processes, the motivational process through which job resources lead to higher well-being and performance, and the energetic process through which job demands result in ill-being and other negative work outcomes (Bakker and Demerouti, 2007). Previous literature has argued that these processes can be explained by the notion in SDT that describes the relation between the social-contextual climate and employee outcomes, through satisfaction of the basic psychological needs and work motivation. In particular, the motivational process of job resources can be explained by their contribution to the satisfaction of the basic psychological needs and, in turn, the internalization of work activities. The energetic process of job demands, on the other hand, can be explained by their negative impact on basic need satisfaction, leading to less internalization (Van Den Broeck *et al.*, 2008). As such, SDT provides measurable mechanisms to account for the theoretical processes assumed in the JD-R model. Considering the distinction between hindrances and challenges, this reasoning implies that while job hindrances relate negatively to basic need satisfaction, job challenges may stimulate satisfaction of at least some of the basic psychological needs (Van Den Broeck, De Cuyper, De Witte and Vansteenkiste, 2010).

Indeed, Albrecht (2015) showed that job challenges were positively related to satisfaction of basic psychological needs, which in turn related positively to well-being (i.e. engagement) and negatively to ill-being (i.e. emotional exhaustion). That same study also showed that job hindrances were negatively related to basic psychological need satisfaction. Olafsen and Halvari (2017) showed that workload – identified as a job challenge in the above-mentioned studies – was positively related to satisfaction of the need for competence and, in turn, to autonomous work motivation. This motivational process was subsequently positively related to performance and negatively related to ill-being (i.e. somatic symptom burden). To add to the work by Olafsen and Halvari, it would appear beneficial to consider both challenges and hindrances in the same model, as well as consider several job characteristics within these categories in a model where the three basic needs within SDT are considered separately, and work motivation is included in the model. In line with the above-mentioned research, a positive relation from job challenges to competence satisfaction is expected. The present study, however, proposes a hypothesis for the relation between job challenges and satisfaction of all of the three basic psychological needs, in order to examine the potential relation between job challenges and each need (i.e. *H2*).

While all of the above-mentioned articles are cross-sectional and, therefore, cannot establish directionality, the JD-R model theoretically assumes job characteristics giving implications for work outcomes by the dual processes described. In addition to this theoretical assumption, there are previous empirical studies that show how changes in job

characteristics give implications for work outcomes over time (Schaufeli *et al.*, 2009). This is in line with the motivational process described in SDT and shown empirically in several studies. Of particular relevance is the longitudinal study by Olafsen *et al.* (2017), which showed that the context (i.e. managerial need support) predicted basic psychological need satisfaction, and, in turn, autonomous work motivation, in a model where reciprocal relations were also tested. This combination of theory and empirical support provides the basis for the directionality in the hypotheses of the current study.

In the current study, work-home interference and worrying about the future of the enterprise were used as indicators of job hindrances, as they reflect interpersonal conflicts that are likely to elicit an emotion-focused coping style. Workload and cognitive demands were included as indicators of job challenges. While both may be energy-depleting by representing demanding obstacles at work, such job characteristics may also contribute to the motivational process by providing opportunities for growth and learning (LePine *et al.*, 2005). These are also characteristics that were shown to relate to well-being in previous studies (Bakker *et al.*, 2005; Van Den Broeck, De Cuyper, De Witte and Vansteenkiste, 2010; Van Den Broeck *et al.*, 2009). Furthermore, vitality – defined as having physical and mental energy – is used as a measure of employee well-being as it is recognized as a representation of eudaimonic well-being and found related to other, both mental and physical, measures of wellness (see Ryan and Deci, 2008).

- H1. Job hindrances negatively predict satisfaction of the three basic psychological needs.
- H2. Job challenges positively predict satisfaction of the three basic psychological needs.
- H3. Satisfaction of the basic psychological needs positively predicts autonomous work motivation.
- H4. Autonomous work motivation positively predicts worker well-being.

Methods

Procedures and participants

The study is based on a convenience sample of 160 entrepreneurs (124 men, 33 women, 3 unidentified). Entrepreneurs were appropriate for the purposes of the current study as this work population can be argued to have a high degree of both job challenges and job hindrances as part of their work. The respondents were aged between 21 and 73 years, with a mean age of 39.82 years. A total of 89.3 percent identified themselves as Scandinavian (70 Danish, 42 Swedish, 30 Norwegian, 1 Finnish). Of the respondents, 90 percent had higher education and 53.8 percent indicated that they had entrepreneurial experience before their current venture.

The participants received an e-mail with a short introduction to the study and a link to an online questionnaire. The e-mail addresses were collected from various incubators, accelerators and other organizations for entrepreneurs. The entrepreneurs were informed that participation was voluntary and assured that their responses would be anonymous. A total of 446 invitations were sent out resulting in 130 responses. In addition, 30 responses were collected through invitations in closed social media groups for entrepreneurs. The demographics of the current study seem comparable to that of the entrepreneurial population in general (Statistics Norway, 2013).

Measures

Job challenges. Workload was measured using three items (e.g. “I have a lot of work to do,” $\alpha = 0.74$) and cognitive demands were assessed with seven items (e.g. “My work requires a lot of concentration,” $\alpha = 0.85$) taken from Van Veldhoven and Meijman (1994). Responses were made on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Job hindrances. Work-home interference was measured with four items (e.g. “I have so much work to do I don’t have time for my hobbies,” $\alpha = 0.91$) taken from Geurts *et al.* (2005). Worry was assessed with four items (e.g. “I worry about my venture failing,” $\alpha = 0.82$) adapted from Boehnke *et al.* (1998). Responses were made on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Basic psychological need satisfaction. The work-related basic need satisfaction scale (Van Den Broeck, Vansteenkiste, De Witte, Soenens and Lens, 2010) assessed basic psychological need satisfaction. Six items for the autonomy need (e.g. “I feel like I can be myself at my job,” $\alpha = 0.76$), six items for the competence need (e.g. “I feel competent at my job,” $\alpha = 0.86$) and six items for the relatedness need (e.g. “At work, I feel part of a group,” $\alpha = 0.86$) were reported on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Autonomous work motivation. The autonomous work motivation of the entrepreneurs was assessed using the multidimensional work motivation scale (Gagné *et al.*, 2015). The participants were asked to report different reasons for doing their job (“I put effort into my job [...]”). Identified motivation (three items, e.g. “Because I personally consider it as important to put efforts in this job,” $\alpha = 0.86$) and intrinsic motivation (three items, e.g. “Because the work I do is interesting,” $\alpha = 0.93$) were measured on a scale ranging from 1 (not at all for this reason) to 7 (exactly for this reason).

Well-being. Vitality was assessed using six items (e.g. “I feel energized,” $\alpha = 0.90$) from Ryan and Frederick (1997). The items were assessed on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Common method bias

In order to avoid common method variance (CMV) it is recommended to use certain design remedies, such as emphasizing anonymity, using well-established measurement scales and optimizing the sequencing of the measurements (Podsakoff *et al.*, 2003), all of which were implemented. In addition, a *post hoc* statistical test examined whether an unmeasured common method factor (CMF) would indicate evidence of CMV (Williams and McGonagle, 2016). The factor loadings in a model including a CMF were compared with the factor loadings without such a factor. All factor loadings were significantly related to their respective constructs when controlling for a CMF and the difference between the loadings with and without the CMF was below 0.2 for all indicators with the exception of one indicator for workload and one indicator for autonomy need satisfaction, which was slightly above (i.e. 0.238 and 0.262, respectively). Although an unmeasured common latent factor analysis has its limitations and some, in general, criticize *post hoc* tests, the results did not indicate that CMV should bias the conclusions drawn from the analyses conducted.

Data analyses

The analyses are based on path analyses in Mplus (Muthén and Muthén, 1998/2015). Model fit was evaluated with the χ^2 and its degrees of freedom (df), the root mean square error of approximation (RMSEA) and its confidence interval (CI), the standardized root mean square residual (SRMR) and the comparative fit index (CFI). Acceptable fit indices are between 0.05 and 0.08 for the RMSEA and SRMR (Hu and Bentler, 1999). Values above 0.95 for the CFI are generally recommended for good-fitting models (Hu and Bentler, 1999), although values over 0.90 are seen as acceptable (Hoyle, 1995). Due to a small sample size relative to the number of indicators and variables, the test of the hypotheses was preferred as path analyses with manifest variables. In the path analyses, correlations between the two categories of job demands, as well as between the three basic psychological needs were specified as they are theoretically expected to be related.

Results

Control variables

Zero-order correlations among the study and background variables were obtained to examine whether the hypothesized model should be controlled by the various background variables (i.e. age, gender, education, perceived health and entrepreneurial experience). Perceived health was significantly correlated with both exogenous and endogenous study variables, while previous entrepreneurial experience were significantly related to some of the endogenous study variables. Thus, these background variables were added to the path analyses. Table I presents correlations as well as descriptive statistics for the study- and control variables.

Normality

Table I shows that each study variable was normally distributed. In addition, a test of multivariate normality was conducted by calculating the Mardia’s coefficient using the DeCarlo (1997) macro. Mardia’s normalized (i.e. standardized) coefficient of kurtosis of 5.159 was above the recommended cutoff of 13.01 suggested by Bentler and Wu (2002). Thus, in the following path analyses, the Satorra-Bentler scaled χ^2 and robust standard errors adjustment to the maximum likelihood estimator is reported.

Path analyses

The hypothesized model showed poor fit to the data: χ^2 (df = 15) = 61.40, $p < 0.001$, CFI = 0.79, SRMR = 0.086, and RMSEA = 0.140, 90% CI (0.105, 0.178). Research on the JD-R model has shown direct relations from job characteristics to work outcomes (Bakker and Demerouti, 2007). Furthermore, literature point to direct relations between satisfaction of the basic psychological needs and employee well-being (see Deci *et al.*, 2017). Thus, direct links that could be supported by previous studies were added in a stepwise approach to see whether they could increase model fit (see Table II). Five separately considered paths significantly improved the model fit of the hypothesized model. As these paths were consistent with prior empirical findings stemming from both the JD-R model and the SDT literature, the five significant paths were included in the model (model 8) to more adequately represent the data. When these relations were added simultaneously, four paths remained significant and the model provided satisfactory fit to the data: χ^2 (df = 10) = 10.67, $p = 0.384$, CFI = 1.00, SRMR = 0.040 and RMSEA = 0.021, 90% CI (0.000, 0.090), and significantly improved the fit of the model: S-B $\chi^2_{diff} = 47.82$ ($\Delta df = 5$), $p < 0.001$. Thus, this model was preferred over the hypothesized model.

	1	2	3	4	5	6	7	8	9
1. Entrepreneurial experience									
2. Perceived health	0.05								
3. Job challenges	0.15	-0.19*							
4. Job hindrances	-0.02	-0.30***	0.32***						
5. Autonomy satisfaction	0.05	0.18*	0.10	-0.18*					
6. Competence satisfaction	0.22**	0.11	0.19*	-0.24**	0.35***				
7. Relatedness satisfaction	0.10	0.15	-0.04	-0.23**	0.38***	0.19*			
8. Autonomous motivation	0.21**	0.06	0.41***	0.02	0.51***	0.41***	0.31***		
9. Vitality	0.23**	0.28***	0.23**	-0.17*	0.46***	0.46***	0.39***	0.49***	
Mean	1.45	4.17	5.69	4.02	5.55	5.74	5.12	5.98	5.27
SD	0.50	0.92	0.78	1.35	0.95	0.93	1.35	0.87	1.11
Skew	0.19	-1.10	-0.20	0.07	-1.00	-1.02	-0.49	-0.82	-0.78
Kurtosis	-1.99	0.94	-0.68	-0.59	1.44	1.05	-0.64	0.26	0.37

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table I. Descriptive statistics and zero-order correlations

Table II.
Model fit statistics of
hypothesized and
alternative models

Model	Path(s) added	S-B χ^2	df	S-B χ^2_{diff}	Δdf	SRMR	CFI	RMSEA (90% CI)	<i>c</i>
Hypothesized model	–	61.40***	15	–	–	0.086	0.79	0.140 (0.105, 0.178)	1.0724
Alternative model 1	Hindrances → Motivation	53.54***	14	8.25**	1	0.079	0.82	0.134 (0.097, 0.173)	1.0791
Alternative model 2	Challenges → Motivation	38.34***	14	31.62***	1	0.069	0.89	0.105 (0.066, 0.146)	1.0951
Alternative model 3	Hindrances → Vitality	57.94***	14	3.43	1	0.084	0.80	0.141 (0.105, 0.180)	1.0759
Alternative model 4	Challenges → Vitality	60.94***	14	0.82	1	0.085	0.79	0.146 (0.110, 0.185)	1.0647
Alternative model 5	Autonomy → Vitality	51.87***	14	7.80**	1	0.074	0.83	0.130 (0.093, 0.169)	1.0292
Alternative model 6	Competence → Vitality	51.78***	14	8.49**	1	0.077	0.83	0.131 (0.094, 0.170)	1.0544
Alternative model 7	Relatedness → Vitality	49.39***	14	11.29***	1	0.076	0.84	0.127 (0.090, 0.166)	1.0653
Alternative model 8	Paths model 1, 2, 5, 6, 7	10.67	10	47.82***	5	0.040	1.00	0.021 (0.000, 0.090)	1.0357

Notes: S-B χ^2 = Satorra-Bentler scaled χ^2 ; df = degrees of freedom; S-B χ^2_{diff} = nested scaled χ^2 difference requiring adjustment to χ^2 change test (Satorra, 2000); SRMR, standardized root mean square residual; CFI, comparative fit index; RMSEA, root mean square error of approximation; 90% CI, 90% confidence interval for RMSEA; *c*, scaling correction factor. ** $p < 0.01$; *** $p < 0.001$

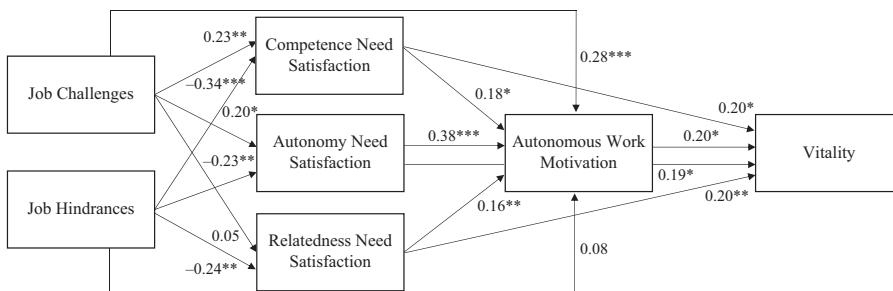
The final model contained a positive relation from job challenges to the needs for autonomy ($\beta = 0.20, p = 0.010$) and competence ($\beta = 0.23, p = 0.003$), but not to the need for relatedness ($\beta = 0.05, p = 0.556$). In addition, job challenges related directly to autonomous work motivation ($\beta = 0.28, p < 0.001$). Job hindrances related negatively to all of the basic psychological needs (autonomy; $\beta = -0.23, p = 0.002$, competence; $\beta = -0.34, p < 0.001$, relatedness; $\beta = -0.24, p = 0.001$), but were not directly related to autonomous work motivation ($\beta = 0.08, p = 0.227$). Satisfaction of the basic psychological needs related positively to autonomous motivation (autonomy; $\beta = 0.38, p < 0.001$, competence; $\beta = 0.18, p = 0.022$, relatedness; $\beta = 0.16, p = 0.009$). All of the basic psychological needs related positively to vitality (autonomy; $\beta = 0.19, p = 0.050$, competence; $\beta = 0.20, p = 0.018$, relatedness; $\beta = 0.20, p = 0.004$). Finally, autonomous work motivation was positively related to vitality ($\beta = 0.20, p = 0.017$). The standardized path coefficients and their respective significance levels are summarized in Figure 1.

Discussion

Theoretical implications

The findings of the current study contribute to the literature examining the distinct implications of job challenge demands and job hindrance demands within the JD-R model by accounting for the psychological and motivational mechanisms proposed by SDT to explain employee well-being. First, the findings support a distinction between two categories of job demands within the JD-R model in previous research, namely job challenges and job hindrances (Van Den Broeck, De Cuyper, De Witte and Vansteenkiste, 2010; Van Den Broeck *et al.*, 2009). Job hindrances are related to the energetic process, while job challenges relating to positive work outcomes partly through a motivational process. In sum, these findings point to the energy-depleting characteristics of job hindrances, while job challenges have something in common with job resources in promoting development and goal achievement.

As an extension, the findings of the current study emphasize the roles of basic psychological needs and autonomous work motivation in explaining how and why these two categories of job demands within the JD-R model relate differently to worker well-being. It appears important to consider these psychological and motivational mechanisms when examining these context-outcome relations as they empirically account for the underlying process theorized by the JD-R framework. In particular, job challenges are, at least partially, linked to well-being through the motivational process by being positively related to the basic psychological needs for autonomy and competence, and thereby to autonomous work motivation. This finding is in line with the study by Olafsen and



Notes: Control variables omitted from this figure for clarity and parsimony. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed)

Figure 1. Results of the final path analyses (model 9) with standardized parameters and p -values

Halvari (2017), which showed a positive relation between workload and competence need satisfaction. On the other hand, job hindrances are linked to ill-being through the energetic process by being negatively related to satisfaction of the three basic psychological needs for autonomy, competence and relatedness, and, in turn, to autonomous work motivation.

Some studies have pointed to job challenges as both being energy-depleting and having a motivational potential (Crawford *et al.*, 2010; LePine *et al.*, 2005). Indeed, a positive correlation between the two categories of job demands is evident in Table I. Hence, future research could examine job challenges in relation to both need frustration and need satisfaction, as well as to negative work outcomes to see how these job challenges are related to the energetic process. In addition, it would be of relevance to know under which circumstances job challenges are motivating and when they are energy-depleting as it is plausible that the implications of this category of job demands depend on various other social-contextual factors as well as personal characteristics. The JD-R model acknowledges that job resources as well as personal resources (e.g. self-efficacy, optimism) attenuate the health impairing impact of job demands on well-being (Van Den Broeck *et al.*, 2013).

In addition to the positive relations to autonomy- and competence need satisfaction, job challenges had a strong direct relation to autonomous work motivation. This finding may be explained by job challenges not only being related to the employees' feeling of autonomy and competence, but also directly signaling the work as important and valuable. Moreover, cognitive demands are likely to be related to heuristic tasks that might have more of an intrinsically motivating potential. On the other hand, given that job challenges consisted of perceived workload, it might also be the case that autonomously motivated workers spend more time on their work because they find their work tasks to be of value and interesting. Due to the cross-sectional design of the study, such a reversed path cannot be excluded. Hence, future studies would benefit from longitudinal designs or experiments to establish the directionality in these relations.

Practical implications

The results also offer some practical implications related to the work environment of entrepreneurs. These could be transferable to workers in general given similar studies of other occupations and the universality of the basic psychological needs. In line with the theoretical implications related to job challenges, it is important to consider the notion that energy-draining challenges are not only negative but might also have some positive implications. Being busy and working on tasks that demand concentration actually seem to improve entrepreneurial well-being through the described motivational process. These motivational variables are not only related to well-being, as seen in the present study, but have also been linked to performance (Olafsen and Halvari, 2017). Keeping busy and engaged is thus likely to be beneficial, not only for oneself, but also for the company. As such, the strain of a high workload and cognitively demanding tasks should not necessarily be feared. However, if a high workload means that an excessive amount of time will be spent working, this could create other problems such as work-home interference, which as a job hindrance may negatively impact the workers' well-being. Finally, it has been shown that job resources moderate negative relations between job demands and worker well-being. For example, social support could be important for entrepreneurs, as they often work alone or in small teams. Coworking spaces could provide a supportive environment mitigating the negative implications of job hindrances.

Limitations and future research directions

Several limitations should be taken into consideration when interpreting the results and addressing directions for future research. First, self-reports were to a large extent necessary to obtain information about the workers' perception to address the study hypotheses,

and while design remedies were implemented and *post hoc* statistical tests did not show any indication of common method bias, future studies may be better served by collecting, for instance, longitudinal data coupled with some objective outcome variables. Second, despite the hypothesized directionality being in line with theory and previous research, the correlational nature of the data precludes conclusions about causality. Third, the sample was a relatively small convenience sample of a specific work population. Thus, the results of the present study cannot necessarily be generalized to the entire entrepreneurial population of workers, or work populations in general.

In addition to addressing the methodological limitations of the current study, future research could study the two types of job demands in a model where need frustration and ill-being outcomes are also included. This would contribute to a fuller model of the implications of social-contextual characteristics at work for various work outcomes. Finally, to get a better understanding of whether job challenges both contain positive and negative motivational processes, job resources and personal characteristics could be used to possibly identify when such job characteristics share consequences similar to those of job resources and when they are more likely to resemble job hindrances.

Conclusion

By drawing on SDT, the current study contributes to the literature on the JD-R model that distinguishes between job challenges and job hindrances as two distinct types of job demands with different implications for work outcomes. The results of the study showed that job challenges contributed to satisfaction of certain basic psychological needs and autonomous work motivation, while job hindrances were negatively related to satisfaction of basic psychological needs and, in turn, to autonomous work motivation. Thus, by using the psychological and motivational mechanisms within SDT, support was found for how and why a distinction between these two types of job demands should be made in relation to worker well-being.

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Further reading

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