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Mindfulness and Job Control as Moderators of the Relationship between Demands and Innovative Work Behaviours

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A B S T R A C T

Innovation enables organizations to respond successfully to rapid changes in a business environment. This innovation capability largely relies on employees. Although workers are required to be innovative, their jobs frequently contain higher demands that might make it difficult for them to innovate at work. The Job Demands-Control model active hypothesis suggests that highly demanding jobs that allow individuals enough discretion enhance innovative performance. Improving an important attentional resource such as mindfulness at work might also play a similar role, although there is a need for more research at this level. The main aim of this study is to examine the relative contribution of job control and increases in mindfulness as moderators in the job demands-innovation work behaviours relationship. The results obtained with 221 workers indicated that in previous situations characterized by high job demands (T1), workers who increase their capacity for mindfulness are more innovative in the future (T2).

Mindfulness y autonomía en el puesto de trabajo como moderadores de la relación entre las demandas y los comportamientos innovadores

Palabras clave:
Desempeño innovador
Demandas del puesto
Autonomía en el puesto
Mindfulness
Análisis del cambio

R E S U M E N

La innovación permite que las organizaciones respondan eficazmente a cambios rápidos en su entorno empresarial, residiendo en gran medida tal capacidad innovadora en sus trabajadores y trabajadoras. Mientras que estos deben ser innovadores, sus puestos con frecuencia suponen demandas elevadas que pueden hacerles difícil innovar en su trabajo. La hipótesis activa del modelo demandas-control sugiere que puestos muy exigentes pero con suficiente autonomía mejoran el desempeño innovador. La mejora de un importante recurso atencional en el trabajo como el mindfulness podría desempeñar un papel similar, precisándose más investigación a este nivel. El objetivo principal de este estudio es examinar la contribución relativa de la autonomía y el incremento en mindfulness como moderadores de la relación de las exigencias del puesto con el desempeño innovador. Los resultados obtenidos con 221 trabajadores indicaron que en situaciones previas de gran demanda de trabajo (T1) aquellos trabajadores que aumentan su capacidad de mindfulness serán más innovadores en el futuro (T2).

Innovation is frequently related to organizations' competitiveness, survival, and success (Bocken et al., 2015). Innovation enables organizations to respond to rapid market changes by operating effectively in their broader business environment (Khan, 2018; Schaltegger et al., 2012), even moving forward in overcoming the crisis (Dediu et al., 2018). In fact, innovation is a common key feature of all types of organizations in our highly changing and globalized world. This 'innovation imperative' (Steel et al., 2012, p. 4), which puts innovation at the heart of organizational and national success, growth, and survival, takes place not only at organizational level, but also at individual level. The innovation capability of organizations largely relies on individuals working in any organizational position.

Although workers are required to be innovative, due to their design and nature, today's jobs frequently contain a variety of high demands, such as increased workloads and working at high speed (Dediu et al., 2018; Elsbach, & Hargadon, 2006). These conditions could negatively impact employees' performance and well-being, and they might make it difficult for them to be innovative. The Job Demands-Control (JD-C) model (Karasek, 1979) posits that in situations characterized by high demands, job control counterbalances their potential detrimental effects. This so-called active hypothesis implies that highly demanding jobs that allow workers enough discretion enhance individuals' innovative performance (Hammond et al., 2011).

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The motivational process that seems to underlie this moderating effect of job control in the relationship between job demands and innovative work behaviours (IWB) has captured researchers' interest (see for a revision Bos-Nehles et al., 2017). However, the potential role of some attentional processes represented by mindfulness has been under-researched using the underlying logic of JD-C. The sustained attention at work that mindfulness implies could guide a selective search for creative ideas in an individual's memory (Smeekens, & Kane, 2016), thus increasing the introduction of new ways of doing one's job. In addition, mindfulness may lead workers to rebound or "re-perceive" (Lomas et al., 2017) their jobs in terms of demands, fostering a more benign appraisal of demands as challenges rather than hindrances, which would result in higher innovative performance. Whereas mindfulness is intended to be a dynamic process (Langer, & Moldoveanu, 2000), the scarce research at this level is mostly transactional. Little is known about whether changes in mindfulness might work as a catalyser of past demands, and whether more mindful workers would exhibit higher levels of IWB in response to previous high job demands. Another important question is the relative relevance of mindfulness compared to the moderating effect of job control proposed by the JD-C active hypothesis. In this context, the main aim of this study is to investigate, in light of the JD-C model, the relative contribution of both job control and increases in mindfulness, considered as two alternative resources, as moderators of the effect of previous job demands on IWB (control as a job resource, mindfulness as a personal resource). To our knowledge, this is the first study to analyse this question.

Demands and Control as Antecedents of IWB

Innovation enables organizations to cope with uncertain conditions and operate effectively in their broader business environment (Khan, 2018; Schaltegger, et al., 2012), thus moving forward in overcoming crises (Dediu et al., 2018). Hence, innovation plays a pivotal role in organizations, and employees are needed who actively contribute to organizational innovation (Messmann et al., 2017) through their innovation behaviours.

IWB has been defined as "… the intentional introduction and application within a job of ideas, processes, products, and procedures that are new to that job and which are designed to benefit it …" (West & Farr, 1999, p. 9). As Woods et al. (2018) noted, there is some consensus (e.g., Anderson et al., 2014; Janssen, 2000) that IWB is composed of three distinct forms of behaviour representing the three main stages of the innovation process: idea generation (closely related to creativity, it implies the production of new ideas), idea promotion (i.e., finding support and help to carry out the newly generated ideas), and idea realization (i.e., the implementation of these new ideas). Thus, innovative performance in the workplace means the accomplishment of work tasks or duties through a set of behaviours that involve workers' generation, promotion, and implementation of new and improved ways of doing things.

IWB, which are broader than creativity and yet related to it (Shin et al., 2017), are at the heart of organizational success and effectiveness. Moreover, innovative performance has also been linked to employee satisfaction and well-being, lower rates of absenteeism, and even improvements in quality of life (Dediu et al., 2018). It is not surprising that the question of how to increase IWB has been the focus of a large amount of research, showing that these behaviours are fostered by personal and contextual factors, such as openness to experience, and HRM practices, such as training and development (for a revision see Bos-Nehles et al., 2017; Da Costa et al., 2015; Hammond et al., 2011). Of all the potential IWB predictors, the most important ones seem to be some job design characteristics, such as job control or job autonomy (Anderson et al., 2014; Audenaert et al., 2017; Battistelli et al., 2013; Da Costa et al., 2014; De Spiegelaere et al., 2012; Dediu et al., 2018; Martín et al., 2017; Martín et al., 2007).

In this context, it must be noted that IWB are not only a highly valuable and necessary performance outcome in organizational settings, but also a paradoxical one (Thayer et al., 2018). Although workers are required to be innovative at work, due to this 'innovation imperative', these requirements may create new demands (Messmann et al., 2017). In addition, their jobs inherently involve high and diverse workload demands in terms of time and quality pressures (Dediu et al., 2018; Elsbach & Hargadon, 2006) or emotional and cognitive requirements (i.e., intense concentration), as well as less control and autonomy, mostly at lower organizational levels (Kossek, & Lautsch, 2018). These job demands may not only negatively impact workers' well-being and performance outcomes, but they can also make it difficult for them to be innovative at work, especially if they are not provided with enough job control.

Whereas job demands (i.e., job overload) refer to "…all aspects of the job that require sustained physical or mental effort…", job control is defined as "… the range of decision-making freedom – discretion – available to the worker facing those demands" (Karasek, 1979, p. 3), and considered as a job resource "… may be functional in achieving work goals, reducing job demands and their associated costs" (Demerouti et al., 2001, p. 501). Beyond the direct and additive harmful effect of job demands and the positive one of job control on a variety of outcomes for individuals, demands and control can also have combined or interactive effects. In other words, if workers are provided with enough control or decision latitude to determine how to carry out their job requirements, the potential detrimental effects of high job demands can be offset. The well-established Karasek's (1979) Job Demands-Control model (JD-C) was the first to set up and test these proposals, which were extended and widely researched in a more recent theoretical and empirical proposal, the Job Demands-Resources model (Bakker & Demerouti, 2017; Demerouti et al., 2001).

According to the JD-C (Karasek, 1979), job demands will significantly effect IWB, but the direction of this relationship seems far from conclusive. Previous studies have shown curvilinear (Baer & Oldham, 2006), non-significant (i.e., Martín et al., 2007), negative (i.e., Dediu et al., 2018), and positive (i.e., Martín et al., 2017) relationships between job demands and IWB. Due to this conflicting evidence, our first hypothesis about the effects of job demands on IWB will be non-directional. Ren and Zhang (2015) argued that these inconsistent results could be due to the primary focus of research on the levels of pressure, neglecting the nature and type of stressors. Whereas hindrance stressors might include demands such as organizational politics and concerns about job security, challenge stressors, or demands such as time urgency or high workload, could be considered by workers as opportunities for growth, learning, and achievement (Ren & Zhang, 2015). However, this perception of job demands in terms of challenges that could lead to more IWB might depend on the amount of job control provided to workers.

This so-called "active hypothesis" derived from the JD-C model suggests that highly demanding jobs that allow individuals enough discretion would lead them to perform their jobs in a more innovative way (Hammond et al., 2011), through a changed motivation level, because control strengthens the positive relationship between job demands and IWB (De Spiegelaere et al., 2012). In this direction, Martín et al. (2007) found that in situations characterized by higher demands, workers who had high control were more innovative in their jobs. More recently, Dediu et al. (2018) obtained a similar effect in their study: a small but significant and positive relationship existed between job demands, such as working at high speed, and job autonomy in the prediction of idea implementation. In this context, our first set of hypotheses state:

*H*1: Job demands will predict IWB.

*H*2: Job control will positively predict IWB.

*H*3: Interaction between job demands and job control will

predict IWB, such that control will moderate the relationship between job demands and IWB. When facing high demands those workers with high job control will perform more innovative behaviours than workers with low control.

The Role of Mindfulness in the Promotion of IWB in Response to Demands at Work

Workers are expected and impelled to develop IWB in different conditions, including in high demand and low control situations. Therefore, IWB is a high-risk, uncertain activity that can be cognitively taxing (Montani et al., 2018). Thus, workers' IWB could imply a need for and an investment of resources beyond merely motivational ones, for example, attentional resources such as mindfulness. Several studies (e.g., Lee & Zelman, 2019; Shuai et al., 2020; Weinstein et al., 2009) have shown the important role that mindfulness can play in difficult situations characterized by high demands of different kinds, moderating their effects on a varied range of results at individual level, such as depression, anxiety, and recovery from stress. However, little is still known with regard to the potential moderator role that mindfulness could play in the relationship between job demands and its related outcomes. Just a recent trend has integrated mindfulness within JD-R models (Bakker & Demerouti, 2017; Demerouti et al., 2001) as a personal resource. Grover et al. (2017) found that mindfulness at work moderated the influence of emotional demands on workers' stress, supporting the idea that mindfulness is a personal resource. Moreover, resources are considered functional in reducing job demands (Demerouti et al., 2001).

Brown and Ryan (2003) defined mindfulness as a "quality of consciousness that is characterized by clarity and vividness of current experience and functioning and thus stands in contrast to the mindless, less "awake" states of habitual or automatic functioning that may be chronic for many individuals" (p. 823). In the Industrial and Organizational Psychology literature, the interest in mindfulness is recent, with growing but scarce theoretical development and empirical research in the workplace (Good et al., 2016; Saraç, 2020), especially from a longitudinal point of view. Recent meta-analyses (Lomas et al., 2017; Mesmer-Magnus et al., 2017) indicated that mindfulness is associated with several personal and professional outcomes relevant to workplace performance and behaviours, such as working harder and performing better, and several work-related constructs, such as work engagement.

Leroy et al. (2013) noted that mindfulness might make workers more attentive, focused, and immersed in their tasks, leading them to discover new ways and procedures for performing their work activity. Moreover, they suggested that mindfulness could exert an additional indirect influence, modifying workers' perceptions of job demands such as overload. More mindful people may be more likely to focus their attention at work and situate their mind in the present moment (Dane & Brummel, 2014). This sustained and focused attention may provide the necessary resources for all the steps in a complex processing plan (Schweizer & Moosbrugger, 2004), as in problem solving, guiding a selective search in an individual's memory for information relevant to the solution, and even inhibiting non-creative but accessible ideas (Smeekens, & Kane, 2016). Recently, consistent with an ongoing body of organizational research focused on attention (Dane & Brummel, 2014), some recent studies (Mendonça et al., 2018) have supported a positive association between creativity at work and mindfulness. Montani et al. (2018) showed that mindfulness has an indirect influence on IWB by modifying the influence of negative affect experiences in the workplace on this behaviour. In this regard, Bostock et al. (2018) conducted an extensive mindfulness intervention in the workplace with 238 healthy employees from two large companies in the United Kingdom. They found that the increase in workers' mindfulness capability (that is, positive changes in mindfulness) was associated with improvements in daily positive affect, global well-being, anxiety and depressive symptoms, and job strain at work, conceptualized as a combination of perceptions of high demands and low job control.

As mentioned above, the direct effect of job demands on IWB is controversial. Therefore, more empirical efforts are needed to clarify these relationships and, especially, their potential moderators. The sustained attention at work that mindfulness represents may lead workers to rebound or "re-perceive" (Lomas et al., 2017) their job demands, fostering a more benign appraisal of potential stressful conditions. Mindfulness could allow the use of more approach strategies instead of avoidance strategies in coping with job demands, which can be viewed as challenges rather than hindrances (Weinstein et al., 2009). Thus, active problem-focused coping styles (Ren & Zhang, 2015) would be used, with more innovation in doing their jobs. In fact, IWB can be viewed as a problem-focused coping strategy. In order to cope with high job demands, more mindful workers would carry out their tasks in new and improved ways, similar to what the JD-C model active hypothesis suggests about job control. In other words, mindfulness could represent an important alternative resource in coping with job demands, from the new ways of doing that IWB implies to other job resources as job control. Furthermore, although mindfulness is a dynamic process, research has not taken into account whether increases in mindfulness might work as a catalyser of past demands, leading more mindful workers to exhibit higher levels of IWB in response to prior higher demands. We hypothesize that prior high demands will lead to further innovative behaviours if mindfulness increase in this period. In this context, our second set of hypotheses state:

*H*4: The increase in mindfulness will positively predict IWB.

*H*5: The increase in mindfulness will moderate the relationship between job demands and IWB. In situations characterized by higher prior demands more mindful workers will exhibit higher levels of IWB.

Method

Participants and Procedure

In T1, 333 workers were sampled from 17 Spanish organizations in a wide range of organizations as hospitals, care centres for elderly, care centres for people with disabilities, primary and middle schools, heath devices manufacturing cereal cooperatives, and ham dryers. Questionnaires were completed by participants in their workplaces from January to July 2014. Anonymity was guaranteed, participation was voluntary, and written consent was obtained. Later, 221 of these workers completed the questionnaire in T2 (response rate was 66.4%) 6 months after T1. In order to identify participants who responded to the questionnaire twice, while guaranteeing anonymity, all of them were asked to provide a code that only they knew. Regarding sex, 34% of the participants in T2 were men (n = 75), and 66% were women (n = 146). Workers' ages ranged from 22 to 63 years (M_{t1} = 41.69, SD_{t1} = 10.41; M_{t2} = 42.04, SD_{t2} = 10.53). Participants' job tenure varied from less than 1 year to 38 years (M_{t1} = 7.88, SD_{t1} = 7.9; M_{t2} = 8.43, SD_{t2} = 7.82).

Measures

Job demands and job control. Both variables were operationalised using Karasek's (1985) Job Content Questionnaire (JCQ). Responses were rated on a 5-point Likert-type scale from *never* (1) to *always* (5). More specifically, job demands were measured with 3 items that capture demands from the JCQ psychological job demands subscale, related to individuals' perceptions of their workload. A sample item is "It is a hectic job". A principal components analysis (PCA) was run to test the validity

of this scale in the current sample. The findings confirmed the 3 items loaded highly on one first factor, with the Kaiser-Meyer-Olkin test of sampling adequacy (KMO) equal to .66 ($p < 0.1$) which is adequate (Field, 2012). Furthermore, Cronbach's α for this scale in our study was .74 in T1. Job control was assessed as a composite measure from two related JCQ subscales, skill discretion and decision authority, using 8 items related to a worker's freedom to decide how to accomplish job demands or how to perform tasks (e.g., "I can decide how I do my work"). To check the validity of such scale in our sample, a PCA was performed, finding good results (Field, 2012). These 8 items loaded highly in one first factor (KMO = .72, $p < 0.01$). Cronbach's alpha for this scale in this study was .71 in T1.

Mindfulness. We assessed mindfulness using the State-MAAS scale, adapted from the original MAAS scale (Brown, 2016; Brown & Ryan, 2003), which captures mindfulness as a receptive state of mind in which attention, informed by a sensitive awareness of what is occurring in the present, simply observes what is taking place. The State-MAAS scale consisted of 5 items rated on a 6-point Likert scale from *almost never* (1) to *almost always* (6). A sample item is "I do jobs or tasks automatically, without being aware of what I am doing". This scale has demonstrated reliability, as well as convergent validity with trait mindfulness as assessed by the 15-item MAAS (Brown & Ryan, 2003; Tanay & Bernstein, 2013). In both the shorter and longer versions, MAAS' items reflect mindlessness. Thus, as is common in research using MAAS, items were reverse-coded to form a mindfulness score, with higher scores indicating higher levels of mindfulness. To test the validity of this scale, two PCA were run, one for T1 and the other one for T2, finding good results (Field, 2012). The five items were loading on just one factor both in T1 (KMO = .82, $p < .01$) and in T2 (KMO = .82, $p < 0.1$). Cronbach's alpha for the State-MAAS in this study were .78 in T1 and .79 in T2.

Innovative behaviour at work. IWB was assessed using Janssen's (2000, 2003) nine-item measure which captures self-rated innovative performance by own worker. Of these 9 items, three refer to idea generation (e.g., "Creating new ideas for difficult issues"), three to idea promotion (e.g., "Mobilizing support for innovative ideas"), and the remaining three to idea realization (e.g., "Transforming innovative ideas into useful applications"). Responses were rated on a 7-point scale ranging from *never* (1) to *always* (7). Intercorrelations among the three IWB components were found to be above .79 (Janssen, 2003). Therefore, consistent with the previous literature review, idea generation, idea promotion, and idea realization were combined to create an overall IWB scale. The results obtained from the PCA confirmed these 9 items were loading highly on one factor. In terms of goodness of fit KMO was also quite high (KMO = .90, $p < .01$). Furthermore, Cronbach's alpha in this study for IWB in T2 was .95.

Control variables. Participants reported gender (1= female, 0 = male) and job tenure (in years). We included these factors, frequently taken into account as control variables in innovation studies, because male workers with more job tenure have been found to be more innovative in their jobs (Audenaert et al. 2017; Battistelli et al, 2013; Hammond et al., 2011; Martín et al., 2007).

Data Analysis

In order to test our two sets of hypotheses, model 2 (multiple additive moderation) from the SPSS PROCESS macro by Hayes (2013) was used. Model 2 makes it possible to estimate the effects of several moderators separately in the same model, so that results obtained indicate the relative relevance of each moderator in the relationships under investigation. Following Hayes' (2013) recommendations, the investigation of moderation was performed even when predictors did not show significant associations with DV in previous regressions. Analyses were mean-centred, using IWB in T2 as criterion, job demands (in T1) as predictor, and job control (in T1) as moderator because we considered that control is a more stable resource. In order to analyse the moderation role of increase in mindfulness, we entered mindfulness in T2 controlling for T1 (Hayes & Rockwood, 2017).

Results

Preliminary Analysis

Table 1 depicts the results of descriptive and correlational analyses. Cronbach's alphas (on the diagonal) are above .70. The results showed a positive and significant relationship between job demands and IWB at time 2, ($r = .18$, $p < .05$) reflecting a low level relationship. Job control showed a moderate-level positive relation with IWB in time 2 ($r = .37$, $p < .05$). It means that IWB in T2 showed a stronger relation with previous job control than previous levels of demands. Moreover, job demands and job control are positively related ($r = .19$, $p < .05$), showing low correlation among them, so that the most demanding jobs seem to involve slightly more autonomy. In addition, mindfulness measures at T1 and T2 showed a moderate significant correlation ($r = .55$, $p < .01$). Considering the nature of mindfulness, test-retest reliability of MAAS scale is a relevant estimate of transient errors (Salgado, 2015), defined by Schmidt et al. (2003) as "longitudinal variations in responses to measures that are produced by random variations in respondents' psychological states across time" (p. 206). In our sample, the effect size of this correlation means that mindfulness shows a high level of within-variance as a result of individual psychological state changes between T1 and T2, and not only as a result of lack of questionnaire's reliability.

Table 1. Means, Standard Deviations, Cronbach's alpha, and Zero-order Pearson's Correlations among the Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Gender	-	-	-						
2. Job tenure	7.88	7.90	.03	-					
3. JD T1	3.60	0.80	.04	.04	.74				
4. JC T1	3.54	0.54	.11	-.10	.19**	.71			
5. MD T1	4.76	0.85	-.09	.10	-.04	.08	.78		
6. MD T2	4.74	0.86	-.16*	.08	-.05	.07	.55**	.79	
7. IWBT2	4.25	1.22	.01	.01	.18*	.37**	.12	.12	.95

Note. $N = 221$.
*$p < .05$, **$p < .01$.

Testing the Multiple Additive Moderation Model

The model was statistically significant ($R^2 = 18\%$, $F = 5.92$, $p < .001$). As Table 2 shows, after controlling for gender, job tenure, and mindfulness in T1, job control in T1 positively predicted IWB in T2 ($\beta = .74$, $SE = .10$, $t = 1.51$, 95% CI [0.42, 1.01], $p < .01$). Job demands in T1 and the increase in mindfulness did not have a significant influence on IWB in T2. Regarding the relative contribution of the two moderators, job control and the increase in mindfulness, the effect of job demands in T1 on IWB in T2 was not moderated by job control in T1, but it was moderated by the increase in mindfulness ($\beta = .26$, $SE = .11$, $t = 2.38$, 95% CI [0.04, 0.46], $p < .05$), accounting for 2.2% of the variance in IWB in T2, $F(1, 212) = 5.68$, $p < .05$. These results support *H2* and *H5*.

Figure 1 presents the plot of the relationship between IWB and mindfulness at two levels of job demands (1*SD* below mean and 1*SD* above mean). Workers with positive changes in mindfulness presented higher levels of IWB when their work in T1 was more demanding. However, for those who experienced a decrease in mindfulness, higher job demands resulted in lower innovation levels.

Discussion

The current study used the underlying logic of the JD-C model to investigate the relative contribution o both prior job control and increases in mindfulness as moderators of the effect of previous job demands on IWB. The results provided support for the lagged moderating effect of increases in mindfulness, but not for the moderating effect of job control. This variable, however, had a key direct role in positively fostering IWB. Regarding our first set of hypotheses, the results did not support a significant direct effect of job demands on IWB (*H*1) or a joint effect of job demands and job control (*H*3). We confirmed a positive direct relationship of job control to IWB (*H*2), as in previous research (Anderson et al., 2014; Audenaert et al., 2017; Battistelli et al., 2013; Da Costa et al., 2014; De Spiegelaere et al., 2012; Dediu et al., 2018; Martín et al., 2017; Martín et al., 2007).

Table 2. Multiple Additive Moderation Model on IWB (T2) Results

Variable	*B*	*SE*	*t*	95% *LL*CI	*SE* *UL*CI
Gender	.01	.16	0.07	-0.31	0.34
Job tenure (T1)	.01	.01	0.49	-0.02	0.01
Mindfulness (T1)	.09	.11	0.82	-0.12	0.30
Job demands (T1)	.15	.15	4.98	-0.04	0.35
Job control (T1)	.74**	.10	1.51	0.42	1.01
Mindfulness (T2)	.05	.11	0.43	-0.16	0.26
Job demands (T1) * Job control (T1)	.01	.18	-0.03	-0.36	0.36
Job demands (T1) * Mindfulness (T2)	.26*	.11	2.38	0.04	0.46

Note. $N = 221$. LLCI = lower limit of 95% confidence interval; ULCI= upper limit of 95% confidence interval. *B* are the unstandardized regression coefficients. $^{*}p < .05$, $^{**}p < .01$.

This lack of a significant effect of past job demands is consistent with results obtained in previous cross-sectional research (i.e., Janssen, 2000; Martín et al., 2007; Ren & Zang, 2015). In addition to it, we did not find support for JD-C active hypothesis. In other words, job autonomy did not strengthen a positive relationship between job demands and IWB in highly demanding jobs that allow individuals enough discretion about how they work (Hammond et al., 2011). Dediu et al. (2018) pointed out that this effect has been elusive in the existing research. Moreover, these authors suggested that it is more frequently obtained (i.e., Martín et al, 2007) when the measure of job demands encompasses hindrance demands, such as role ambiguity, instead of challenge demands. In sum, job control is a key antecedent of IWB. It is more crucial in direct terms than level and nature of prior job demands, but boundary conditions cannot be identified in our study.

Regarding our second set of hypotheses, our findings are consistent with those obtained by Montani et al. (2018). Our results did not support *H*4, related to the direct positive effect of mindfulness on IWB. We found that an increase in mindfulness moderated the effect of job demands on IWB, so that as mindfulness increased, the effect of job demands on IWB also increased in a positive way (*H*5). In other words, an increase in mindfulness would play a similar role as the one expected from job control in JD-C Model active hypothesis. In agreement with Dane and Brummel (2014), Leroy et al. (2013), and Lomas et al. (2017), positive changes in sustained attention at work that mindfulness represents may lead workers to rebound or "re-perceive" their jobs in terms of demands, making them more attentive, focused, and immersed in their tasks. Therefore, mindfulness would lead them to be more innovative in their jobs in response to prior situations of high job demands, actively coping with them. In summary, our findings show that if job control and mindfulness increase are examined separately but simultaneously in the same model as moderators of job demands in IWB prediction, the relative relevance of attentional processes that enhance behavioural self-regulation as improvements in mindfulness – in a similar way to thriving (Wallace et al., 2016) – are significantly higher than merely motivational processes underlying job control.

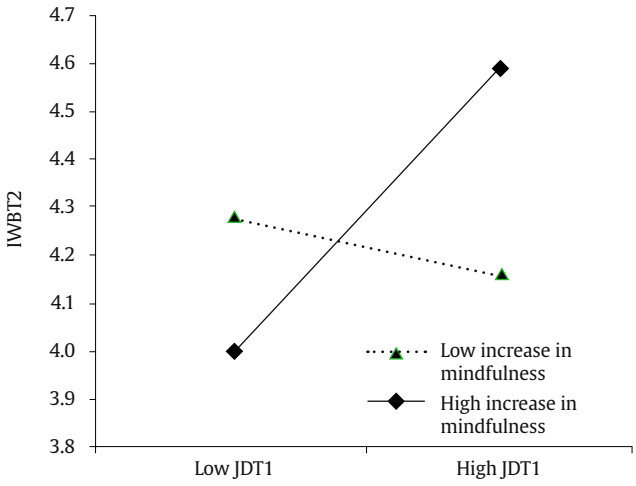

Figure 1. The Moderation Effect of Increase in Mindfulness on the Relationship between Job Demands (T1) and IWB (T2) at two Levels of Job Demands: low (-1*SD*) and high (1*SD*).

Limitations and Implications

This study has some limitations. As noted above, empirical research at this level usually conceptualizes and measures IWB as a single dimension consisting of three different forms of behaviour – idea generation, idea promotion, and idea realization – referring to the three different stages of the IWB process. However, in line with Wood et al.'s (2018) arguments, this conceptualization of IWB might not properly capture its complex multi-dimensional properties, and the three different forms of IWB may be related to distinct antecedent factors and personality traits. Future research should clarify whether increases in mindfulness affect each form of IWB differently. All the measures used in this study were self-reported at individual level; therefore, the strength of the observed relationships might be artificially inflated by common method variance. To avoid this, future research should use other types of assessments and informants.

Despite these limitations, the current study contributes to the limited longitudinal empirical research on the role of mindfulness in fostering IWB. To our knowledge, it is the first study to examine the effect of increases in mindfulness on IWB. Positive changes in mindfulness might make workers re-perceive the demands of their jobs. Workers may view these demands as more challenging, and they may be more innovative in responding to them, and this effect seems to be lagged. These results also provide a set of practical implications. In our highly globalized, dynamic, flexible, and demanding world of work, where workers are required to be innovators and there is a need for conditions where innovation can flourish successfully and sustainably across time, our findings contribute to efforts devoted to how IWB can be fostered.

First, if organizations provide their workers with enough decision latitude at any moment in time, they will be more innovative in a more constant and sustained way. Although it may be difficult to increase job control, even through job redesign strategies such as job enrichment due to the nature of work (for example, production lines), mindfulness interventions are "parsimonious in benefitting the spectrum of individual workplace functioning" (Good et al., 2016, p. 134). Although interventions to enhance individuals' mindfulness are

increasingly more common in diverse contexts, including work (Hyland et al., 2015) and can lead to a wide array of key performance outcomes, most of these interventions are mainly concerned with strain reduction. Mindfulness workplace interventions could also provide workers with an important personal resource that enables them to see potential stressful conditions as challenges rather than hindrances, leading them to be more innovative at work. As a personal resource, positive changes in this personal disposition led workers who increased their mindful capability and worked under past situations of high demands to display higher levels of IWB, but job control did not. In this regard, Grover et al., (2017) suggested that, as a personal resource, mindfulness could even supplant the need for control in coping actively with high job demands. In sum, they concluded that mindfulness seemed to make workers more aware of their own psychological reactions to their work environment and, therefore, more capable of monitoring them. Moreover, positive changes in mindfulness can improve behavioural self-regulation, favouring "the choice of actions that are more authentic and concordant with people's deeply held values, needs and interests" (Montani et al., 2018, p. 126).

Conflict of Interest

The authors of this article declare no conflict of interest.

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