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RESEARCH ARTICLE

Examining the relationship between work conditions and entrepreneurial behavior of employees: does employee well-being matter?

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Abstract

Do perceptions of work conditions prompt employees to adopt entrepreneurial behaviors? Does well-being play a role in this relationship? This paper proposes an integrated model of the associations between perceptions of work conditions (job resources and job demands) and the dimensions of entrepreneurial behaviors (innovative behavior, proactive behavior, and risk-taking behavior). Following the job demands-resources model, we also explore whether employees' well-being (work engagement and emotional exhaustion) mediates the association between work conditions and employees' behavior. Survey data of 257 R&D employees from the chemical sector in Spain were analyzed. The research concludes that different work conditions correlate with the dimensions of entrepreneurial behavior of employees (EBE) in different ways. Job demands are associated with innovative work behavior. Feelings of engagement are related to the dimensions of EBE and play a mediating role between job resources and EBE. Moreover, feelings of exhaustion and risk-taking behavior are connected.

Keywords: Emotional exhaustion; entrepreneurial behavior; job demands; job resources; work engagement

Introduction

The literature on intrapreneurship (e.g., Neessen, Caniëls, Vos, & de Jong, 2019) has highlighted the bottom-up nature of the construct and the importance of the entrepreneurial behavior of employees (EBE) to conform to an organizational strategic orientation, capable of facing changing environmental conditions. In this context, EBE is defined as the extent to which employees carry out tasks at work in a proactive manner by taking risks and seizing opportunities to innovate (de Jong, Parker, Wennekers, & Wu, 2015; Rigtering & Weitzel, 2013). Given the importance of analyzing how managerial action can shape employees' entrepreneurial behavior (e.g., Rigtering & Weitzel, 2013), a stream of research has focused on the work conditions that could favor EBE (e.g., de Jong et al., 2015; Kuratko, Hornsby, & Covin, 2014; Rigtering & Weitzel, 2013). However, the link between work conditions and EBE deserves further analysis. First, the conclusions from Rigtering and Weitzel (2013) and de Jong et al. (2015) suggest a different association when the dimensions of EBE (innovative work behavior, proactive behavior, and risk-taking behavior) are taken separately. Although some scholars have analyzed work-enhancing conditions for particular dimensions of EBE, such as innovative work behavior (e.g., De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014; Hammond, Neff, Farr, Schwall, & Zhao, 2011), a holistic overview of the role of work conditions that consider all dimensions of EBE is yet to be framed.

Second, as Neessen et al. (2019) indicate, previous studies have mostly focused on job resources, understood as those work conditions that make it easier for employees to meet their basic needs for autonomy, feel competent, and maintain relationships with others, as well as complete their tasks in a successful way (Bakker & Demerouti, 2008). However, according to the job demands-resources (JD-R) model (Bakker & Demerouti, 2017; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), work conditions can be summarized in two categories: job resources (e.g., job autonomy and managerial support), and job demands (work conditions that require a sustained effort on the part of the employee, such as work overload). Hence, a broad analysis of work conditions in relation to EBE should also comprise job demands, which, to date, has been neglected in the literature.

Third, Mustafa, Martin, and Hughes (2016) acknowledge that organizational factors do not directly explain EBE, and suggest that individual feelings and motivations about the job, such as job satisfaction, may contribute to understanding the paths from those organizational factors to EBE. In this vein, according to the JD-R, employees' well-being may mediate the association between organizational factors and employees' behavior. Therefore, it is relevant to focus on the indirect association between work conditions (both job resources and job demands) and EBE when well-being is considered a mediator variable.

Finally, the analysis of EBE and its antecedents is particularly relevant in the case of R&D employees in innovative sectors, where customer needs and technological solutions evolve dynamically, and anticipating developments and adapting to change are vital for success (Schweitzer, Palmié, & Gassmann, 2018). Specifically, employees that work in R&D departments are comfortable in environments that are open to change and support creativity (Saether, 2019).

In this context, this study adopts a behavioral approach to intrapreneurship and contributes to the study of the determinants of the three dimensions of EBE by considering a holistic model of relationships that other authors have taken individually. Although the JD-R model has only recently been applied to the study of EBE (e.g., Gawke, Gorgievski, & Bakker, 2018; Kattenbach & Fietze, 2018), researchers have used it to explain the relationship between intrapreneurship and well-being (Gardiner & Debrulle, 2021). According to the JD-R model, working conditions generate feelings of well-being/discomfort at work that can explain employees' behavior (Bakker & Demerouti, 2017). In an entrepreneurial context, the JD-R model provides an informative framework for understanding the extent to which the perception of working conditions (job demands and resources) drives employees to adopt entrepreneurial behaviors and the mediating role of well-being in this relationship. From the viewpoint of the JD-R model, our aim is to study how perceptions of job resources (managerial support and job autonomy) and job demands (work overload) can shape the specific dimensions of EBE via their association with R&D employees' well-being. Although the concept of well-being at work has been conceptualized differently in different disciplines (Kowalski & Loretto, 2017), it can be broadly defined as the evaluations that employees make of their work experiences (Plomp, Tims, Akkermans, Khapova, Jansen, & Bakker, 2016). Most studies on the relationship between entrepreneurship and well-being focus on positive emotions. Inspired by the JD-R model, this research considers both the positive and negative aspects of well-being at work. On one hand, we consider work engagement as a form of well-being that reflects a positive state of mind. On the other hand, we focus on emotional exhaustion as the central dimension of burnout, which is more directly related to work conditions (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

In the following sections, we develop our research hypotheses, explain the empirical study conducted on a sample of employees in R&D departments in the Spanish chemical sector, and end with a discussion about the implications of the study's findings.

The entrepreneurial behavior of employees

Entrepreneurial behavior can be defined as 'a set of activities and practices by which individuals at multiple levels, autonomously generate and use innovative resource combinations to identify and

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pursue opportunities' (Mair, 2005: 51). Employees who display entrepreneurial behavior are innovation drivers (Grant & Ashford, 2008; Shir, Nikolaev, & Wincent, 2019) who allow organizations to renew themselves and be more competitive in the market. This type of behavior is under-researched in the literature (Blanka, 2019; de Jong et al., 2015), which has led to terminological and conceptual confusion with the appearance of terms such as intrapreneurial behavior (e.g., de Jong et al., 2015) or entrepreneurial orientation (e.g., Razavi & Ab Aziz, 2017). Later works have also tried to clarify the concept (Blanka, 2019; Neessen et al., 2019). Accordingly, this construct is usually explained as employee activities characterized by three dimensions: innovative work behavior, proactive behavior, and risk-taking behavior (de Jong et al., 2015; Rigtering & Weitzel, 2013; Valsania, Moriano, & Molero, 2016).

Innovative work behavior can be conceptualized as the willingness to create new and useful ideas, processes, products, or procedures that differ from established practices (Shirokova, Osiyevskyy, & Bogatyreva, 2016). According to de Jong et al. (2015), individuals with an innovative work behavior recognize problems easily and generate ideas, then share their ideas model with the organization and build prototypes or models for further adoption.

Proactive behavior is related to pursuing opportunities, initiative, and future-oriented action that involves change and improvement of the situation or oneself and attempts to lead rather than follow (de Jong et al., 2015). According to Razavi and Ab Aziz (2017), proactive individuals do not let their surrounding situations affect their pursuit of goals.

Risk-taking behavior is associated with the tolerance of failure and employees' preference to take actions that can not only produce positive consequences but also losses if the employee is not successful (Valsania, Moriano, & Molero, 2016). Specifically, the risks that entrepreneurial employees may take could be associated with reputation damage, resistance from peers, or their own job losses (de Jong et al., 2015).

In sum, innovative, proactive, and risk-taking behaviors are seen as essential dimensions of employees' entrepreneurial behavior, and represent a range of behaviors that entrepreneurial workers may engage in when recognizing opportunities, generating ideas, and searching for resources to exploit those opportunities (de Jong et al., 2015; Rigtering & Weitzel, 2013). Following Pinchot (1985), employees with entrepreneurial behavior are those who go beyond formal job descriptions even if this behavior may get them into trouble. Those employees display extra-role behaviors that include activities (Zahra, 1991) revealing innovative, proactive, and risk-taking behaviors, which occur either inside or outside the current strategy (Calisto, 2014; Covin, Rigtering, Hughes, Kraus, Cheng, & Bouncken, 2020).

Based on this conceptualization of EBE, we build on studies that have considered that each dimension may have a diverse impact when considered separately (de Jong et al., 2015; Rigtering & Weitzel, 2013), thereby suggesting that each dimension of EBE represents a unique aspect of an employee's behavior toward entrepreneurship inside the firm.

Work conditions as antecedents of the entrepreneurial behavior of employees

To investigate how work conditions relate to EBE and employees' well-being, we follow the JD-R model, which classifies work conditions into job resources and job demands, and considers them to be catalysts of work behaviors (Bakker & Demerouti, 2017). Job resources are defined as 'physical, psychological, social, or organizational aspects of the job that may do any of the following: be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, stimulate personal growth and development' (Demerouti et al., 2001: 501). Job demands are conceptualized as 'those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort' (Schaufeli & Bakker, 2004: 296); they refer work environment features such as a large amount of work and limited time (Hessels, Rietveld, & van der Zwan, 2017).

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Job resources and the entrepreneurial behavior of employees

Previous studies on job design have demonstrated a positive influence of certain job resources on the EBE (e.g., Chouchane, Fernet, Austin, & Zouaoui, 2021; Dediu, Leka, & Jain, 2018; de Jong et al., 2015). For example, Hammond et al. (2011), in their meta-analysis of individual-level innovation at work, found job autonomy and managerial support as drivers of innovative work behaviors. Both types of job resources are among the main organizational antecedents of EBE in the literature (e.g., Hornsby, Kuratko, Shepherd, & Bott, 2009; Neessen et al., 2019).

Job autonomy refers to 'the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out' (Hackman & Oldham, 1980: 162). Drawing from JD-R theory, autonomy is conceived as a job resource that stimulates and supports experimentation and development at work. In this line, there is evidence of job autonomy as a predictor of innovative work behavior (e.g., De Spiegelaere et al., 2014; Ramamoorthy, Flood, Slattery, & Sardessai, 2005). Such autonomy provides employees with the control and freedom to make decisions about how to carry out tasks and to implement ideas freely (Hackman & Oldham, 1980; Ramamoorthy et al., 2005), which allows employees to feel secure and be open to criticism, and stimulates them to seek, generate, and implement new and beneficial work-related ideas (De Spiegelaere et al., 2014).

Managerial support refers to employees' perceptions about how their managers value their contributions and whether they are concerned about employees' well-being (Neves & Eisenberger, 2014). Managerial support exists when employees perceive continuing reciprocal trust, respect, and socio-emotional exchange with their immediate managers (Agarwal, 2014). Drawing on the leader-member exchange theory, previous studies (e.g., Agarwal, 2014) have shown high-quality relationships between employees and supervisors as an important antecedent of innovative work behavior, since employees feel that they have the support needed to develop their ideas. Thus, the above arguments lead us to the following assumption:

Hypothesis 1a: Job resources (job autonomy and managerial support) are positively related to innovative work behavior.

Research has also shown that job autonomy is a relevant contextual antecedent of proactive behavior (e.g., Crant, 2000; Grant & Ashford, 2008). Autonomy provides employees with the option to choose how to do their jobs as well as opportunities to acquire new skills and master new responsibilities (Parker, 2000). Consequently, employees may be inclined to take initiative, as they are likely to feel confident and capable (De Spiegelaere et al., 2014). Thus, autonomy stimulates challenging and enriching jobs in which employees have sufficient resources to engage in proactive behaviors at work (Parker, 2000).

Crant (2000) also suggests that other contextual factors, such as managerial support, have a direct effect on proactive behaviors. Highly supportive management could be perceived by employees as a signal of the provision of resources by managers (Kuratko, Hornsby, & Covin, 2014) and may provide employees with a positive sense of identity or value, making them feel more confident and easing problem-solving (Wood, 2008). This, in turn, may stimulate employees to take initiative, undertake change, and pursue envisaged opportunities. Based on the above arguments, we propose the following:

Hypothesis 1b: Job resources (job autonomy and managerial support) are positively related to proactive behavior.

Finally, as Baskaran (2017) suggests, the amount of control afforded by one's job is a predictor of risk-taking behavior. The availability of freedom and decision-making latitude among employees improves intrapreneurs' conditions to engage more freely in sharing and trying out their ideas,

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even at the risk of failure (Baskaran, 2017; Dediu, Leka, & Jain, 2018; Ramamoorthy et al., 2005). Moreover, employees feel confident to take risky actions as part of their entrepreneurial endeavors when they feel empowered as a result of work discretion (ul Haq, Jingdong, Usman, & Khalid, 2018).

Managerial support is also related to both employees' willingness to take risks and their tolerance to failure when it occurs (Hornsby et al., 2009). Neves and Eisenberger (2014) demonstrated that perceived organizational support is associated with the failure-related trust that the organization will act in good faith in the event that employees' actions end in failure, which may reduce employees' fear of taking risks. In those cases, employees should not worry about their job security when they take risks and make mistakes (ul Haq et al., 2018). Moreover, the quality relationship between leader and employees motivates employees to take risks in generating, promoting, and implementing new ideas (Alnaimi & Rjoub, 2021). In sum, we expect that managerial support and freedom to make decisions on their jobs will lead employees to take risks in their work as a part of entrepreneurial behavior. Thus, we propose Hypothesis 1c:

Hypothesis 1c: Job resources (job autonomy and managerial support) are positively related to risk-taking behavior.

Job demands and the entrepreneurial behavior of employees

In the present study, we capture *job demands* using the concept of work overload, since it has been demonstrated as a major job demand and is one of the most interestingly examined (Schaufeli & Bakker, 2004). This refers to the employees' perception that expectations of work go beyond the resources and time available (Cousins, Mackay, Clarke, Kelly, Kelly, & McCaig, 2004). Further, work overload is especially relevant for sectors characterized by dynamic work environments (Carballo-Penela, Varela, & Bande, 2019), like those of R&D departments in innovation-oriented sectors. Past research findings (e.g., Binnewies, Sonnentag, & Mojza, 2009) suggest that we should infer a positive link between job demands and EBE.

When experiencing work overload, an elevated state of arousal appears in employees (Bunce & West, 1994), which, according to the person-environment fit theory (Caplan, 1983), leads workers to employ innovative actions as a problem-focused coping tactic (Bunce & West, 1994). Similarly, Hornsby et al. (2009) defend that time pressure supposes a stimulus driving employees to look for new and imaginative means of facing organizational issues.

Moreover, according to the challenge-hindrance framework, which distinguishes between challenge and hindrance demands (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010), workload can be perceived as a challenge for employees, and stimulates their competences, capacities, and future gains (Olafsen, Deci, & Halvari, 2018) as well as their thoroughness and curiosity (Cavanaugh, Boswell, Roehling, & Boudreau, 2000), which, as a last resort, may help to develop innovative work activities. Hence, our study's next hypothesis reads:

Hypothesis 2a: Job demands (work overload) are positively related to innovative work behavior.

Time pressure, specifically as a work situation that calls for a change (Ohly & Fritz, 2010), has been found to be positively associated with proactive behavior in numerous types of jobs (e.g., Binnewies, Sonnentag, & Mojza, 2009) since it can function as a useful way to neutralize such situations. Relying again on the person-environment fit theory and the challenges-hindrances framework, it makes sense that the augmented arousal and perception of challenge derived from work overload makes employees behave as a leader instead of a follower, and undertake changes and initiate future-oriented actions. Based on the above theoretical and empirical research, we propose the following:

Hypothesis 2b: Job demands (work overload) are positively related to proactive behavior.

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Since, following the challenge-hindrance framework, work overload can be understood as challenges, and individual risk-taking embraces challenging the status quo, a background of challenge seems to be a common element shared by both work overload and risk-taking behavior. In a study conducted with a sample of university students, Dachner, Miguel, and Patena (2017) found that intellectual risk-taking (the risk of making mistakes or appearing less competent than classmates) is a consequence of perceiving high demands in their 'work' context. In a more general view, some authors (e.g., Dachner, Miguel, & Patena, 2017) suggest that complex demands call for employees who take risks. This reasoning leads to the following hypothesis:

Hypothesis 2c: Job demands (work overload) are positively related to risk-taking behavior.

The mediating role of employee well-being

Uncertainty, time pressure, and the lack of references to provide guidelines are inherent to entrepreneurial action. In such environments, emotional states influence entrepreneurial behaviors and decisions (Baron, 2008). From the entrepreneurial literature, well-being has been studied as a psychological resource for entrepreneurial activity (Wiklund, Nikolaev, Shir, Foo, & Bradley, 2019). Highly activated emotions are associated with more entrepreneurial action and promote creativity and innovation behaviors (Baron & Tang, 2011), but also lack of well-being (negative emotions) can drive entrepreneurial actions (Foo, 2011). However, the related stream of research in entrepreneurial behavior has mainly focused on positive emotions. Based on the JD-R model, we analyze both the positive and negative aspects of well-being at work. This model provides a framework for understanding the emotions (positive and negative) that job demands and resources generate in employees, and how these emotional states are antecedents of their entrepreneurial behaviors.

The JD-R model suggests that employee well-being at work is explained by two different pathways, namely, the motivational and health-impairment processes. The motivational pathway explains that when employees have adequate resources at work, they have motivational reactions to their jobs, which are defined by vigor, dedication, and absorption (i.e., work engagement; Schaufeli & Bakker, 2004). Previous studies have also demonstrated that work engagement fosters specific positive behaviors, such as proactivity (Crant, 2000; Parker, 2000; Salanova & Schaufeli, 2008). It is, therefore, interesting to explore how, following the motivational process of JD-R, engagement may mediate into the association between employees' perceptions of job resources and the EBE dimensions discussed in the previous section.

The health-impairment process is caused by job demands. At excessive levels, such demands could entail physical and/or mental costs and could lead to symptoms such as emotional exhaustion, resulting in negative health consequences (Bakker & Demerouti, 2017). Moreover, previous research has shown an association between burnout in general, or emotional exhaustion in particular, and counterproductive work behavior and certain variables related to EBE (e.g., Shin, Hur, & Oh, 2015). Hence, it is relevant to explore how feeling emotionally exhausted could mediate and alter the link between the perception of job demands and EBE.

In the following sections, we argue that work engagement and emotional exhaustion, as the criteria of both the motivational and the health impairment process, could be mediator variables that explain the link between employees' work conditions and entrepreneurial behavior.

Work engagement as a mediator of EBE

Work engagement is described as a beneficial, fulfilling state of mind at work that is characterized by high levels of energy and hard work (vigor), involvement and enthusiasm at work (dedication), and full immersion in one's work in which there is a loss of time awareness (absorption) (Bakker & Demerouti, 2008). Rather than a momentary state of mind, it refers to a persistent affective-motivational state.

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Work engagement has been studied as a mediating variable in the relation between work conditions and employee behaviors (De Spiegelaere et al., 2014). As previous studies suggest (e.g., Bakker & Demerouti, 2008; Hackman & Oldham, 1980), job autonomy increases employee well-being through a motivational process that activates energy, enthusiasm, and concentration at work. Specifically, the adoption of innovative behaviors requires employees to invest substantial efforts in generating and implementing new ideas and methods (Agarwal, 2014).

Similarly, in high-quality relationships based on trust, employees receive job resources, such as information, tangible resources, and social and emotional support, which trigger a motivational process that leads to high work engagement (Bakker & Demerouti, 2008). Consequently, this motivational state could allow employees to support the demanding efforts of innovative work behavior and to engage in trying out their ideas (Agarwal, 2014). Thus, we propose the following hypothesis:

Hypothesis 3a: Work engagement positively mediates the relation between job resources (job autonomy and management support) and innovative work behavior.

Research has also found that the availability of job resources initiates a motivational process via work engagement, which leads to beneficial behaviors such as proactivity (e.g., De Spiegelaere et al., 2014; Salanova & Schaufeli, 2008). These resources instigate either an intrinsic motivational process, as they encourage employees' development, or an extrinsic motivational process, as they promote goal achievement (Bakker & Demerouti, 2008). As Salanova and Schaufeli (2008) note, work engagement stimulates employees to adopt self-starting and change-focused behaviors. Regarding job autonomy, previous studies have demonstrated that employees with work discretion achieve a higher degree of significance and work engagement in their tasks (e.g., Bakker & Bal, 2010), which in turn boosts employee proactivity (e.g., Grant & Ashford, 2008; Salanova & Schaufeli, 2008). In a similar vein, managerial support is associated with high levels of work engagement, and employees who perceive high-quality relationships with managers feel more secure, motivated, and supported to engage in unexpected behaviors such as proactive behaviors (Crant, 2000; Spreitzer, Lam, & Fritz, 2010). In this line, we expect that:

Hypothesis 3b: Work engagement positively mediates the relation between job resources (job autonomy and management support) and proactive behavior.

As previously explained, job autonomy provides employees with a sense of control over their work and is likely to increase their work engagement (e.g., Bakker & Demerouti, 2008; De Spiegelaere, Van Gyes, & Van Hootegem, 2016), and will probably provide them with organizational and psychological resources to engage in optimal risk-taking behavior. Similarly, employees who have trusting, high-quality relationships with their supervisors will experience psychological security, which is important for enhancing work engagement, and a motivational state that fosters taking interpersonal risks (Spreitzer, Lam, & Fritz, 2010). These arguments lead us to the following hypothesis:

Hypothesis 3c: Work engagement positively mediates the relation between job resources (job autonomy and management support) and risk-taking behavior.

Emotional exhaustion as a mediator of EBE

Emotional exhaustion is understood as feelings of being overextended and drained by the emotional demands of duties in the workplace (Maslach, Schaufeli, & Leiter, 2001). It is one of the dimensions of burnout syndrome, which evokes traditional stress reactions (i.e., fatigue and

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psychosomatic complaints) that have been associated with job stressors, such as workload or role problems (e.g., Demerouti et al., 2001).

Past research in the JD-R model has demonstrated the link between job demands and burnout, including emotional exhaustion, or stress reactions (e.g., Hessels, Rietveld, & van der Zwan, 2017). According to Hockey, Maule, Clough, and Bdzola (2000), when perceiving job demands, employees mobilize a sympathetic activation (autonomic and endocrine) and/or increase subjective effort. The long-term effect of such a situation leads to some patterns of degradation, such as narrowing attention or high subjective fatigue. Even challenging demands can activate this process and result in emotional exhaustion (Schaufeli & Bakker, 2004). When this health-impairment process is activated, negative consequences in employees' behavior, health, and attitudes arise (e.g., Schaufeli & Bakker, 2004). Owing to 'the basic tenet of fatigue', employees develop an intolerance to effort (Schaufeli & Bakker, 2004), so they do not display energy resources or feel motivated to perform normally.

Conservation of resources theory (Hobfoll, 2001) provides a theoretical explanation for the link between job demands, emotional exhaustion, and innovative work behavior. It asserts that people are motivated to keep their personal resources, and when those are at risk as a consequence of experiencing job demands and emotional exhaustion, employees try to compensate by investing less energy in their work. Consequently, creativity or innovativeness, which contains multiple processes and requires high-energy levels (Shin, Hur, & Oh, 2015), is inhibited. Empirical studies show this link between emotional exhaustion and low creativity (e.g., Murnieks, Arthurs, Cardon, Farah, Stornelli, & Haynie, 2020; Shin, Hur, & Oh, 2015). Therefore, we hypothesize an indirect negative or inconsistent mediation (MacKinnon, Coxe, & Baraldi, 2012), given that job demands would have both a direct and indirect impact on innovative work behavior with different signs:

Hypothesis 4a: Emotional exhaustion negatively mediates the relation between job demands (work overload) and innovative work behavior.

Parker, Bindl, and Strauss (2010) introduce an 'energy' pathway to argue the mediating process between work conditions and proactive behavior. The depletion of energy and the psychological withdrawal driven by high job demands and feelings of emotional exhaustion lead to high resistance toward future efforts and perseverance and hinder employees' self-initiated actions (Murnieks et al., 2020). Since proactive behavior is noncompulsory and might not generate benefits for employees, they are less likely to be willing to display it. In this line, Shin, Hur, and Oh (2015) state that employees suffering from emotional exhaustion are less likely to be interested in voluntary and proactive actions beyond the obligations they are responsible for. Previous empirical studies from different sectors and occupations (e.g., Schmitt, Den Hartog, & Belschak, 2015) have demonstrated the negative association between exhaustion and proactive behavior. Thus, as also proposed above, we state an inconsistent mediation case:

Hypothesis 4b: Emotional exhaustion negatively mediates the relation between job demands (work overload) and proactive behavior.

Chronic exposure to emotional exhaustion and the cognitive impairments associated with it leads to a decreased sense of care, which hinders decision-making (Maslach, Schaufeli, & Leiter, 2001). According to Michailidis and Banks (2016), a diminished sense of care may make emotionally exhausted employees more inclined to risk-taking since they might not value the outcomes of their actions. The dual-process theory provides a useful framework to understand such links. It states that individuals make decisions by falling back on automatic and mindless processes (such as risk-taking behavior) instead of better using deliberative and rational mechanisms, given that stressful conditions hamper this last type of process (Kahneman & Frederick, 2002).

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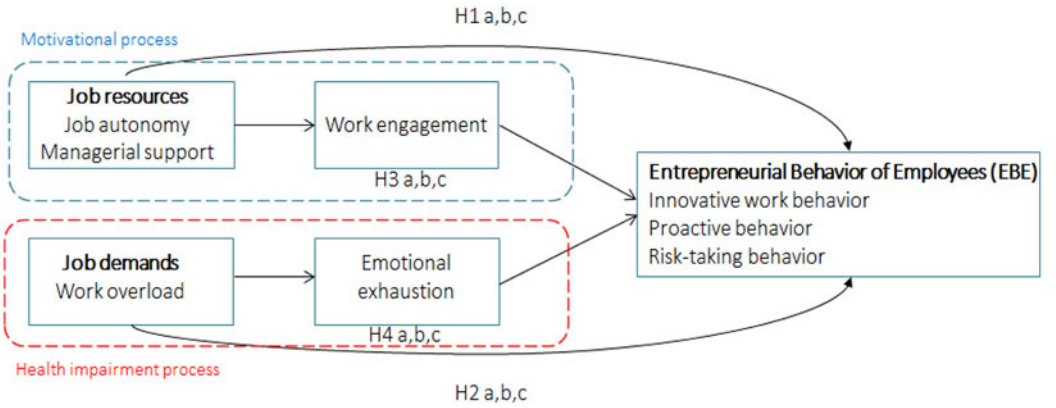

Figure 1. Research model.

Some empirical evidence, although scarce, supports such ideas. For instance, Hockey et al. (2000) investigate the association between fatigue and risk in decision-making, finding that the more fatigued participants were, the higher their inclinations toward risky alternatives. Therefore, our final hypothesis is as follows:

Hypothesis 4c: Emotional exhaustion positively mediates the relation between job demands (work overload) and risk-taking behavior.

Figure 1 graphically represents the proposed research model.

Methodology

Sample

Our unit of analysis was a sample of R&D employees from organizations belonging to the chemical manufacturing sector in Spain (CNAE 20). According to the CNAE (Spanish nomenclature of economic activities), this sector covers the manufacture of basic chemical products (i.e., bulk petrochemicals), agrochemicals, specialty/final chemicals (which include paints, coatings, inks, and cleaning chemicals), customer products like soap and cosmetics, and manufacturing of fibers. It is considered to be an innovation-oriented sector in terms of the percentage of innovative firms and R&D investments, according to the Spanish National Institute of Statistics (INE), and with great influence in economic growth as a whole (e.g., Das & Icart, 2015). The chemical sector represents 6.3% of total industrial income in Spain and 4.3% of all industrial employment (INE, 2021). According to a report on data in the sector in 2019 (Feique, 2021), it is a large exporter in the Spanish economy, with 42.3% of sales outside Spain. Another important feature of the sector is its transversal nature, since it intervenes in practically all manufacturing industries' value chains: 98% of production activities require chemistry at some point in the manufacturing process. Regarding innovation, expenditure on R&D in the sector represented 26% of total industry expenditure and employed 22.5% of the research staff working in industrial companies. Moreover, Obeso, Luengo, and Areitio (2014) concluded that people are the most relevant resource to promote innovation activities in this sector, thus the EBE could be especially relevant.

This study is part of a larger study on innovation in the chemical sector. The data collection first required contacting a sample of Spanish organizations in the sector, which were selected from those listed in the Iberian Balance sheet Analysis System (SABI) database (an information

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service that contains comprehensive information on firms in Spain) under CNAE 20. Following previous contributions (e.g., Llach, Casadesus, & Marimon, 2011), in order to ensure a minimum structure in terms of innovation, we selected the organizations in the chemical sector that have at least 50 employees, according to information in the SABI (Iberian Balance Analysis System) database. From the sector's population of 337 organizations with at least 50 employees, a sample of 80 organizations agreed to participate in the study, which represents 23.74%, and gave a sample error of ±9.58% at the 5% significance level. We contacted the innovation managers in the 80 firms by telephone in order to explain the study and identify the target employees. Managers were asked which areas in the organization they thought their core employees for innovation were working in. A large majority of organizations (82%) responded that their core employees were working in R&D areas and, consequently, this study focuses on employees in those areas.

Employees in R&D departments are professionals with scientific and technological backgrounds, are responsible for creating and sharing ideas and translating them into new products and processes, and for whom creativity and innovation are explicit expectations in their work (Henard & McFadyen, 2006; Saether, 2019). Given the sector dynamism, these professionals must be able to adapt to any scientific or technical novelty and behave creatively under circumstances that require personal initiative and searching for opportunities. The generation of new knowledge in the sector occurs at a dizzying speed, so these professionals should be prepared for continuous learning. In addition, according to Pearson and McCauley (1991) R&D employees are intrinsically motivated by the challenging nature of the work.

The field work was conducted in the second half of 2017. The innovation manager in each organization provided the number of employees in their R&D departments, and their collaboration was requested to help send R&D employees a message that explained the study with the link to an online questionnaire. To increase the response rate, a follow-up telephone call was conducted (Dillman, Smyth, & Christian, 2009). Finally, our data comprise a sample of 257 employees in the R&D departments belonging to 80 organizations in the chemical sector. In total, 86.25% of the organizations are medium sized (<250 employees), and 13.75% are large organizations; this is representative of the chemical sector in Spain, which is characterized by small and medium organizations (Collado & Sánchez, 2012). We obtained replies from between three and four informants per department, the average number of employees in the organizations' R&D departments in the sample being 11. Data showed that 53% of the employees in the sample are women, have an average age of 40 years (SD = 8.7), 85% have permanent contracts, 26% hold supervisory positions, and, on average, they have been working in the organizations for 10 years (SD = 8.8). Overall, the data were consistent with the descriptions of the chemical industry workforce in Spain provided in public reports, which show that 90% have fixed-term contracts, have an average age of 44 years, and that women represent about 40% of R&D positions (Feique, 2017; INE, 2020).

Measures

The measurement of the variables was taken from validated scales in the literature (see Table 1 for the specific items), using a 5-point Likert scale.

Dependent variables. *Innovative work behavior* is measured using the scale by Rigtering and Weitzel (2013). Employees were asked to indicate how often they engage in the generation, exploitation, championing, and implementation of ideas. To measure *proactive behavior*, following Rigtering and Weitzel (2013), we asked employees to evaluate their degree of agreement with the seven aspects concerning an active approach toward work. In the case of *risk-taking behavior*, employees rated their agreement with the three items introduced by de Jong et al. (2015).

Independent variables. We measure *job autonomy* according to the scale of job control developed by Wood (2008), with five items that capture employees' perception of the degree of influence they have over specific aspects of their jobs. To assess *managerial support*, employees rated

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Table 1. Measurement

	Items	Loadings	C.r., AVE
Innovative work behavior	• Paying attention to issues that are not part of his/her daily work[a] • Wondering how things can be improved • Searching for new working methods, techniques, or instruments • Generating original solutions to problems • Finding new approaches to execute tasks • Making important organizational members enthusiastic about innovative ideas • Attempting to convince people to support an innovative idea • Systematically introducing innovative ideas into work practices • Contributing to the implementation of new ideas • Making an effort to develop new things[a]	.622 .668 .779 .737 .820 .826 .864 .728	C.r. = .92 AVE = .58
Proactive behavior	• I actively tackle problems • Whenever something goes wrong, I immediately search for a solution • Whenever there is a chance to get actively involved, I take it • I take the initiative immediately even when others don't[a] • I quickly jump at opportunities to attain my goals • I usually do more than I am asked to do[a] • I am particularly good at coming up with ideas[a]	.720 .741 .745 .670	C.r. = .81 AVE = .52
Risk-taking behavior	• I take risks in my job • When large interests are at stake, I go for the big win even when things could go seriously wrong • First I act and then I ask for approval, even if I know that it would annoy other people[a]	.500 .854	C.r. = .64 AVE = .49
Managerial support	• The managers can be relied upon to keep to their promises • The managers are sincere in attempting to understand employees' views • The managers deal with employees honestly • The managers understand that employees have to meet responsibilities outside work • The managers encourage people to develop their skills • The managers treat employees fairly	.752 .844 .879 .569 .667 .822	C.r. = .89 AVE = .58
Job autonomy	• I have an influence over the tasks I do in my job • I have an influence over the pace at which I work • I have an influence over how I do my work • I have an influence over the order in which I carry out tasks • I have an influence over the time I start or finish my working day[a]	.702 .766 .786 .554	C.r. = .80 AVE = .50
Work overload	• I am pressured to work long hours • I have unachievable deadlines • I have to work very fast • I have to work very intensively[a] • I have to neglect some tasks because I have too much to do • Different groups at work demand things from me that are hard to combine[a]	.669 .855 .640 .600 .760	C.r. = .83 AVE = .51

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	• I am unable to take sufficient breaks[a] • I have unrealistic time schedules		
Work engagement	• In my work, I feel bursting with energy • In my job, I feel strong and vigorous • I am enthusiastic about my job • My job inspires me • When I get up in the morning, I feel like going to work • I feel happy when I am working intensely • I am proud of the work that I do • I am immersed in my work • I get carried away when I am working	.699 .725 .855 .830 .675 .572 .666 .672 .607	C.r. = .90 AVE = .50
Emotional exhaustion	• I feel emotionally drained from my work • I feel used up at the end of the work day • I feel fatigued when I get up in the morning and have to face another day on the job • Working with people puts too much stress on me • I feel burned out from my work	.748 .738 .800 .681 .644	C.r. = .85 AVE = .52

[a]Item dropped in the CFA; standardized factors loadings.

their agreement on six items proposed by Wood (2008) concerning the characteristics of managers in the workplace. To measure *work overload*, we used the scale developed by Cousins et al. (2004). Employees were asked to rate their level of agreement on some issues concerning the intensity and pressures they face at work.

Mediators. To measure work *engagement*, the short scale of nine items (Utrecht Work Engagement Scale-9) of Schaufeli and Bakker (2003) was employed to ask employees how often they felt vigorous, dedicated, and absorbed at work. Employees reported how often they felt emotionally *exhausted* using five items that reflect the stress dimension of burnout.

Control variables. In line with previous studies (e.g., de Jong et al., 2015; Rigtering & Weitzel, 2013), we controlled for demographic differences between employees. Following recommendations about incorporating controls related to the dependent variables, we included gender and whether the employee had a supervisory position by using two dummy variables (male and supervisor being equal to 1).

Analysis of the measurement models

Following Bagozzi and Yi (2012), we assessed the reliability and validity of the measurement models using confirmatory factor analysis (CFA). Due to sample size restrictions, we relied on prior practices to estimate a set of sub-models of related constructs in lieu of a whole model. First, a CFA is estimated with innovative work behavior, proactive behavior, and risk-taking behavior as three correlated factors. In accordance with the Lagrange multiplier test, some items were deleted in order to fit the model to the data (deleted items are marked with an asterisk in Table 1). The fit indices of the final model (χ^2 S-B = 84.8881, df = 71, p = .124; BBNNFI = .984; CFI = .988; RMSEA = .028) reached the recommended values, confirming the existence of the three dimensions of EBE.

Second, a CFA was estimated to examine the measurement model of managerial support, job autonomy, and work overload. After eliminating some items (see Table 1), the values of the fit indices were also appropriate (χ^2 S-B = 113.3719, df = 86, p = .025; BBNNFI = .970; CFI = .976; RMSEA = .036), confirming the existence of three correlated factors. Third, the fit of the CFA for work engagement and emotional exhaustion confirms the existence of two separate factors (χ^2 S-B = 166.3796, df = 71, p = .00; BBNNFI = .910; CFI = .930; RMSEA = .07).

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The values of composite reliability (C.r.) in Table 1 show construct reliability. Regarding convergent validity, as recommended by Hair, Anderson, Black, Babin, and Black (2010), all the standardized loadings of the items on their hypothesized factors were statistically significant and greater than .5. Moreover, the average variance extracted (AVE) reaches or is close to .5. Although for risk-taking behavior, the values do not reach the minimum recommended values (.7 for composite reliability, and .5 for AVE), we can rely on the scale since the values are close to the threshold and the other tests for convergent and discriminant validity are good. We tested the discriminant validity using two procedures. First, a pairwise test was conducted. The procedure collapsed each pair of constructs into a single factor model and compared them with a two-factor model. The scaled χ^2 difference test for all pairs of factors showed that the difference in χ^2 was statistically significant at the 5% level, which evidenced that each of the eight constructs differed from each other. Second, according to the values in Tables 1 and 2, the AVE for each construct is higher than the square of the correlation between the construct and each of the others.

Common method and non-response bias tests

In accordance with Podsakoff, MacKenzie, and Podsakoff (2012), we followed some procedures to mitigate the threat of common method bias (CMB) in the design of the survey. First, we used an online questionnaire and provided a cover letter assuring anonymity, and that there were no right or wrong answers, which reduced the possibility of bias due to self-presentation. Second, we labeled and separated the questions measuring the dependent, mediator, and independent variables to avoid the potential influence of closeness. Then, we employed different response scales with a different anchor for different variables (e.g., agree/disagree, none/total, never/always). In addition, two statistical procedures were followed to address CMB (Podsakoff, MacKenzie, & Podsakoff, 2012). First, Harman's one-factor test clearly extracted eight factors, the same as the number of variables in our model, which explained 64% of the variance. The first factor accounted for only 12% of the variance, thereby verifying that no single factor accounting for most of the variance was present. Second, following other researchers (e.g., Craighead, Ketchen, Dunn, & Hult, 2011), we used CFA to compute the χ^2 difference test between a multifactor model and a one-factor model. Due to size restrictions, we estimated a set of models (one for each combination of one dependent, the two mediators, and one independent construct). In all estimations, the multifactor model fit significantly better than the one-factor model (the lowest difference was $\chi^2 = 229.6$, p-value = .000). Moreover, due to the inclusion of several predictors and the mediator variables, it was unlikely that the associations were derived from the cognitive maps of the respondents (e.g., Chang, Van Witteloostuijn, & Eden, 2010). Thus, the CMB did not seem to be a threat in our study.

To address the issue of non-response bias, we used a time-series extrapolation test (Armstrong & Overton, 1977), where the early respondents (20% of the sample) were compared with the rest. The findings from a t-test evidenced that the variables in the model were not significantly different between the two groups ($p > .05$ in all variables).

Having analyzed the measurement models, the composite measure of each construct, calculated as the mean value of the retained indicators in Table 1, was used to reduce the complexity of the models and accommodate the model to the sample size restrictions (Bagozzi & Yi, 2012). Table 2 exhibits the descriptive statistics.

Analytical procedure

We used EQS statistical software (Bentler, 2006) to carry out a path analysis using robust maximum likelihood as the estimation method. Separate models for each dimension of EBE are examined. As the employees in our sample are nested in organizations, the dependency between observations was taken into account to estimate the models so as to provide results robust to

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Table 2. Descriptive statistics and correlations ($N = 257$)

	Mean	S.D	1	2	3	4	5	6	7	8	9	10
1. Innovative work behavior	3.29	.68	1									
2. Proactive behavior	3.93	.55	.554**	1								
3. Risk-taking behavior	2.98	.80	.335**	.226**	1							
4. Managerial support	3.53	.76	.156*	.307**	.057	1						
5. Job autonomy	3.88	.61	.151*	.164**	.061	.063	1					
6. Work overload	2.60	.74	.119	−.003	.116	−.325**	−.233**	1				
7. Work engagement	3.60	.63	.417**	.446**	.154*	.473**	.217**	−.188**	1			
8. Emotional exhaustion	2.47	.71	−.001	−.110	.119	−.341**	−.040	.419**	−.429**	1		
9. Gender	.47		.206**	.109	.062	.003	.019	.144*	.053	.023	1	
10. Being a supervisor	.26		.176**	.207**	.132*	.012	.084	.167**	.097	.091	.156*	1

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

complex samples. Specifically, to adjust standard errors and goodness-of-fit model, we instructed EQS to implement Satorra's (1992) correction for clustering. Following MacKinnon, Coxe, and Baraldi (2012), a significant association between the independent variables and mediators, as well as between the mediators and the dependent variables should be observed to conclude mediation.

Results

Table 3 summarizes the findings from each path analysis. Although it was not hypothesized in our model, a negative association between managerial support and emotional exhaustion ($\beta = -.231$, $p < .01$) was observed and had to be introduced to fit the models.

Only two direct associations are observed. Regarding Hypotheses 1, Hypothesis 1b is partially supported, since managerial support, but not job autonomy, exhibits a positive direct relationship with proactive behavior ($\beta = .166$, $p < .01$). As for Hypothesis 2, a positive direct association is found between perceptions of work overload and innovative work behavior ($\beta = .148$, $p < .05$), which supports Hypothesis 2a.

The decomposition of effects provided by EQS makes it possible to check the indirect associations. Hypotheses 3a, b, and c are supported in the case of job autonomy: there is a significant indirect association between job autonomy and innovative work behavior ($\beta = .102$, $p < .01$), proactive behavior ($\beta = .082$, $p < .01$), and risk-taking behavior ($\beta = .042$, $p < .05$) via employees' work engagement. In the case of managerial support, only Hypotheses 3a and 3b are confirmed since it is associated with innovative work behavior ($\beta = .155$, $p < .01$) and proactive behavior ($\beta = .139$, $p < .01$) via work engagement, but it failed to be significant in the case of risk-taking behavior.

As for the mediation of emotional exhaustion, only Hypothesis 4c is confirmed due to the association between work overload and emotional exhaustion ($\beta = .342$, $p < .01$), together with the association between emotional exhaustion and risk-taking behavior ($\beta = .172$, $p < .05$), which leads to a positive indirect link between work overload and risk-taking behavior ($\beta = .059$, $p < .05$). Therefore, the two inconsistent mediations proposed (Hypotheses 4a and 4b) are not supported.

Regarding the control variables, only two associations are statistically significant. Men exhibit greater innovative work behavior than women ($\beta = .137$, $p < .01$), and those employees that hold supervisory positions behave more proactively than those who do not hold such positions ($\beta = .144$, $p < .05$).

Discussion and conclusion

The purpose of this research is to shed light on how work conditions, indicated by perceptions of job resources and job demands, are associated with employees' entrepreneurial behavior and the extent to which this association depends on the way these work conditions shape perceptions of work engagement and emotional exhaustion. The contributions of the findings are discussed below.

Contributions to the literature

Different antecedents for different EBE dimensions

Our research contributes to the stream of literature that studies work context and well-being as antecedents of EBE (e.g., de Jong et al., 2015; Neessen et al., 2019; Rigtering & Weitzel, 2013), and reveals that each dimension of EBE can be enhanced by different antecedents.

Innovative work behavior is positively associated, though indirectly, with perceptions of job autonomy and managerial support, and directly with perceptions of work overload, as suggested in previous research (e.g., Agarwal, 2014; De Spiegelaere, Van Gyes, & Van Hootegem, 2016;

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Table 3. Findings on the relationships between the three EBE variables and the independent and mediator variables

Estimated relationships	Innovative work behavior	Proactive behavior	Risk-taking behavior
	Standardized structural coefficients		
Direct effects			
Job autonomy (Hypotheses 1a, b, c,)	.087	.095	.047
Managerial support (Hypotheses 1a, b, c)	.019	.166**	.030
Work overload (Hypotheses 2a, b, c)	.148*	.106	.080
Work engagement	.437**	.349**	.180*
Emotional exhaustion	.123	.031	.172*
Being a supervisor	.083	.144*	.076
Gender	.137**	.024	.025
Indirect effects			
Job autonomy → work engagement (Hypotheses 3a, b, c)	.102**	.082**	.042*
Managerial support → work engagement (Hypotheses 3a, b, c)	.155**	.139**	.036
Work overload → emotional exhaustion (Hypotheses 4a, b, c)	.042	.011	.059*
Total effect			
Job autonomy → work engagement	.189**	.177*	.088
Managerial support → work engagement	.174	.305**	.066
Work overload → emotional exhaustion	.190**	.116	.139
Model fit	χ^2 S-B = 8.54; *df* = 10; *p* = .57; BBNNFI = 1; CFI = 1; RMSEA = .00	χ^2 S-B = 8.51; *df* = 10; *p* = .57; BBNNFI = 1; CFI = 1; RMSEA = .00	χ^2 S-B = 8.75; *df* = 10; *p* = .55; BBNNFI = 1; CFI = 1; RMSEA = .00

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

Hammond et al., 2011; Hornsby et al., 2009). Our results reveal that job autonomy does not appear to directly foster entrepreneurial behaviors of employees. De Spiegelaere, Van Gyes, and Van Hootegem (2016) argue that the relationship between job autonomy and innovation behaviors depends on the type of job autonomy, specifically, these authors point out that only work method autonomy and locational autonomy (autonomy in deciding where to perform the job) contribute to enhance innovative work behavior. Scholars such as De Spiegelaere et al. (2014) also concluded that job autonomy and managerial support have an indirect effect on innovative work behavior through work engagement. This is consistent with the motivational pathway of the JD-R model (e.g., Bakker & Demerouti, 2017) and the Job Characteristic Model (Hackman & Oldham, 1980). These findings suggest that organizations should not ignore the psychological mechanisms underlying employees' perceptions of work conditions in order to stimulate innovative behaviors in employees.

The association of these antecedents with *proactive behavior* is slightly different: work overload does not seem to be relevant to this behavior. Moreover, managerial support has a direct association, in addition to an indirect association, via the motivational process, showing its remarkable role in promoting proactive behavior, as found by Crant (2000).

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However, managerial support is not relevant in explaining *risk-taking behavior*, which is only indirectly connected with job autonomy and work overload via its relationship with employee well-being. Hence, a motivational process is also observed in the case of risk-taking behavior because job autonomy appears to be related to work engagement, which in turn is connected with risk-taking. However, the health impairment process that links work overload with emotional exhaustion is not associated with a negative reaction on employees' behavior, but instead related to risk-taking propensity, as we discuss later. In spite of these indirect associations, the total effects of work conditions on risk-taking are not significant, which is consistent with previous contributions that found little evidence for the relation between work conditions and risk-taking behavior (e.g., de Jong et al., 2015; Rigtering & Weitzel, 2013).

Accordingly, our findings suggest the need to analyze EBE at the level of dimensions, instead of considering it as a higher-order construct. Both conceptualizations of EBE have been used in the study of its organizational antecedents (Neessen et al., 2019). However, de Jong et al. (2015) found different impacts depending on the operationalization employed. Their study revealed that job autonomy was directly related to overall entrepreneurial behavior, as well as to its innovation and proactivity dimensions, but the association with risk-taking behavior was insignificant.

Job demand contribution to EBE

Our research fills the gap regarding the relative scarcity of studies that analyze the contribution of perceptions of job demands to EBE (Neessen et al., 2019). Our findings support that the perception of work overload helps employees to display greater innovative work behavior, thus supporting ideas from the challenge-hindrance framework. In line with this framework, our findings suggest that work overload can foster employees' capacities and competences (Olafsen, Deci, & Halvari, 2018), as well as their thoroughness and curiosity (Cavanaugh et al., 2000), promoting thus innovativeness. In contrast, according to our analyses, proactive behavior is not associated with work overload, and risk-taking behavior is only indirectly linked via emotional exhaustion. Perhaps the profile of the employees (from R&D departments) examined herein is more prone to developing innovativeness at work when feeling pressure in terms of workload. As Huhtala and Parzefall (2007) note, the challenges surrounding R&D jobs contribute to employees' level of stimulation at work, and they may respond to job demands with novel ideas and solutions. For innovation-oriented employees, as Tome and van der Vaart (2020) remark, it has become common to work under high pressure, so they have developed the ability to perform better under this circumstance (which means, in this context, that they are better at innovating). The proactivity and risk-taking behavior of this kind of employee is, perhaps, more directly linked to aspects of personality (Major, Turner, & Fletcher, 2006). Considering that the R&D employees are expected to arrive at innovative solutions (Saether, 2019) as their role-prescribed task activities, we can expect our findings to be relevant not only for R&D employees, but also for other job positions where EBE is an in-role behavior.

Well-being as a psychological resource of EBE

Our study contributes to the JD-R model by examining the generalizability of the motivational process and the health impairment process in an intrapreneurial context. This research furthers understanding of employee well-being as a psychological resource for intrapreneurial behavior, considering both the positive (work engagement) and negative emotions (exhaustion). New insights into the role of individual feelings about the job in EBE are derived from the research, which highlights the prominent role of work engagement in understanding the EBE. Thus, researchers can consider work engagement as an antecedent of EBE, together with variables such as job satisfaction or organizational identification addressed in previous studies (e.g., Mustafa, Martin, & Hughes, 2016).

Our research also contributes by adding to the scarce results on the relationship between negative emotions and entrepreneurial behaviors (Wiklund et al., 2019). The analysis of employees'

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emotional exhaustion is especially interesting. Despite feeling emotionally exhausted, employees' levels of innovativeness and proactivity remain unaffected. In contrast, high levels of emotional exhaustion are associated with increased risk-taking behavior, in line with dual-process theory (Kahneman & Frederick, 2002), which suggests that decision-making under circumstances of fatigue or stress can lead to less care and more mechanical decisions and behaviors. Previous studies (e.g., Nikolaev, Shir, & Wiklund, 2020) highlight that lack of well-being can encourage entrepreneurial behavior. Specifically, Nikolaev, Shir, and Wiklund (2020) suggest that people with negative dispositional affect are more likely to pursue a risky career. The kind of employees in our sample may explain these results, as most employees have a permanent work contract, which may reduce their reluctance to take risks. Moreover, some authors suggest that the risk-taking behavior of employees is hard to promote with organizational policies or management exchange (e.g., Rigtering & Weitzel, 2013). This is consistent with our findings: it seems that risk-taking behavior is more associated with personal states of stress (here, emotional exhaustion) than with demanding work characteristics since work overload did not exhibit a direct link with risk-taking behavior, but instead was connected via emotional exhaustion.

Managerial contributions

Our research suggests some managerial interventions to foster employees' engagement in entrepreneurial behaviors. In order to facilitate innovative and proactive work behaviors, managers can design the work context in such a way that employees could feel in control of how they do their jobs, as well as promoting fair and helpful interpersonal relationships with employees (particularly essential to foster proactive behaviors). This kind of work context is likely to fuel a motivational process in employees that leads them to generate and implement new ideas as well as take the initiative to search for opportunities. Moreover, as work overload may be perceived as a sort of challenge, for entrepreneurial behavior, it seems to be more important to provide enough resources capable of generating a motivational process in employees than to implement interventions to reduce work overload. In addition, managers should consider the importance of favoring the work engagement of employees in order to enhance entrepreneurial behavior. Finally, managers may provide their employees with alternative resources, as job security, to allow them to feel secure when taking risks. This prevents managers from relying on their employees' emotional exhaustion as a catalyst for risk-taking behaviors.

Limitations and future lines of research

Several factors should be considered to interpret the findings. First, the characteristics of the sample in the survey, where 80% of employees in the R&D department have permanent employment contracts and 26% hold supervisory positions, may condition our findings. Moreover, although we focused on R&D employees as those who have greater relationships with the development of new products, materials, and processes, and may be those with greater orientations toward entrepreneurial behaviors, we acknowledge that any employee may develop this type of behavior. Although the R&D department seems to be appropriate for developing an entrepreneurial behavior, the generalization of the current study's results may require future studies to replicate them in different contexts using alternative samples of employees. Second, this study has been limited to the analysis of some job resources addressed by the literature on antecedents of EBE. Our conclusions suggest that future research should address other work conditions that can also be considered as resources and potential antecedents, such as social support from colleagues or job security. Likewise, we focused on emotional exhaustion but future research could analyze whether the conclusions change if other dimensions of burnout are examined. Third, as risk-taking behavior seems to be less difficult to facilitate via interventions on the work context, more research would be needed on the antecedents of this kind of behavior. Fourth, we acknowledge that

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other variables could interact and modify the relationships examined. To account for this, and in line with recent suggestions from Bakker and de Vries (2021), it would be of special interest to study the interaction between job demands and resources and key personal resources, such as emotional intelligence (Bakker & de Vries, 2021) or state mindfulness (Huang, Xie, Cheung, Zhou, & Ying, 2021), and how they shape feelings of engagement and exhaustion. Through this same lens, job crafting (Tims, Bakker, & Derks, 2012) constitutes a key behavior to be taken into account within the JD-R model, since employees might transform their levels of job demands and resources to align them with their inclinations and capabilities and make their own tasks more satisfying and meaningful (Bipp, Kleingeld, & Ebert, 2019; Sharma & Nambudiri, 2020). This boosts well-being and more innovative, risky, and proactive behaviors among employees (e.g., Kwon & Kim, 2020). As for the variables of organizational origin, entrepreneurial leadership has been shown as a powerful tool to mobilize organizational members to constantly innovate, take risks, and address changes (Lin & Yi, 2021). Future research could explore the joint effect of this variable together with, for instance, job autonomy and managerial support to provide wider insights into their association with EBE, contributing to expanding JD-R model knowledge under different organizational contexts and conditions. Finally, some scholars (e.g., Gawke, Gorgievski, & Bakker, 2018) suggest the possibility that entrepreneurial behavior is a catalyst to obtaining more resources and then recursive relationships may be observed. Our cross-sectional data do not allow for inference of causality, and prevent a deeper analysis of the consequences of employees' entrepreneurial behavior as well as the dynamic nature of the relationships; this is an avenue for future research through longitudinal studies coupled with qualitative data.

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Data availability. The data that support the findings of this study are available on reasonable request from the corresponding author. The data are not publicly available due to privacy issues.

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