

The role of weekly high-activated positive mood, context, and personality in innovative work behavior: A multilevel and interactional model

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Summary

This article proposed and tested a multilevel and interactional model of individual innovation in which weekly moods represent a core construct between context, personality, and innovative work behavior. Adopting the circumplex model of affect, innovative work behavior is proposed as resulting from weekly positive and high-activated mood. Furthermore, drawing on the Big Five model of personality and cognitive appraisal theory, openness to experience and support for innovation are proposed as individual and contextual variables, respectively, which interplay in this process. Openness to experience interacts with support for innovation leading to high-activated positive mood. Furthermore, openness interacts with these feelings leading to greater levels of innovative work behavior. Overall, the model entails a moderated mediation process where weekly high-activated positive mood represents a crucial variable for transforming contextual and individual resources into innovative outcomes. These propositions were tested and supported using a diary methodology and multilevel structural equation modeling, on the basis of 893 observations of innovative work behavior and moods nested in 10 weekly waves of data. This information was collected from 92 individuals of diverse occupations employed in 73 distinct companies. Theoretical and practical implications are discussed. Copyright © 2013 John Wiley & Sons, Ltd.

Keywords: innovative work behavior; job-related moods; circumplex model of affect; openness to experience; support for innovation

Nowadays, organizations ineluctably face higher complexity in their environments, portrayed by dynamic markets and challenging demands from customers and stakeholders (Crossan & Apaydin, 2010). Therefore, organizations cannot rely only on standard rules and procedures to ensure their success (Janssen, 2000); in addition, actions oriented to adapting to unexpected work situations or taking advantage of new opportunities in the work environment are central for achieving effectiveness (Kanter, 1988; West & Farr, 1990). In this scenario, innovative work behavior, which refers to a complex set of actions orientated to *generating*, *promoting*, and *realizing* novel ideas in the workplace (Janssen, 2000; Kanter, 1988; Scott & Bruce, 1994), has been widely claimed to be beneficial for organizational functioning (Yuan & Woodman, 2010). For instance, innovative work behavior has been shown to be relevant to developing new products, services, and work procedures; individual and organizational effectiveness; adequate fit between job demands and employee resources; interpersonal communication; and job satisfaction (Janssen, 2000; Janssen, van de Vliert, & West, 2004).

Given the relevance of innovative work behavior, research has attempted to determine how to foster it, supporting positive associations of both contextual and individual factors (e.g., work climate, leadership, personality, and values) with innovative behavior (for comprehensive theoretical and empirical reviews, see Anderson, De Dreu, & Nijstad, 2004; Hammond, Neff, Farr, Schwall, & Zhao, 2011). Over the last few years, affect experienced at work has become

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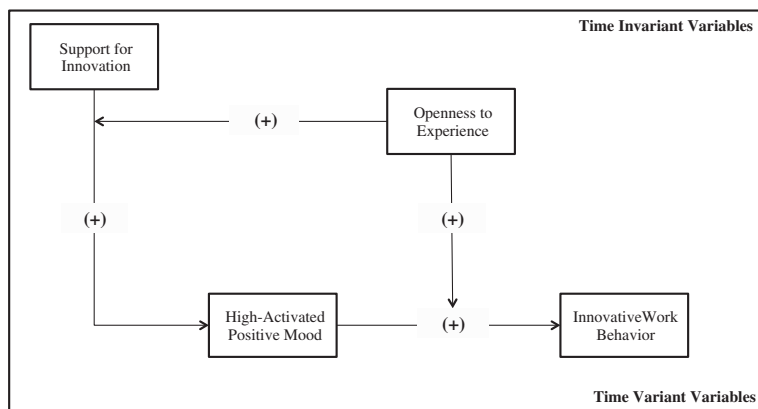


Figure 1. Theoretical model proposed

a prominent topic of study in this field, showing that engaging with innovative-related endeavors is substantially associated with job-related moods (Hennessey & Amabile, 2010). Yet findings from this research are far from complete as studies have been mainly concerned with how affect relates to creativity at work (the generation of novel ideas), paying very little attention to the extent that moods could drive innovative work behavior as a whole complex set of behaviors that entails not only creating but also promoting and implementing novel ideas (Rank & Frese, 2008). Furthermore, studies have mainly explored how differences in valence of affect (positive vs. negative feelings) explain innovative-related outcomes, disregarding how differences in activation of feelings (energy expenditure) could also account for work behavior (Seo, Barrett, & Sirkwoo, 2008). Finally, there is little research in this literature about how individual and contextual antecedents of innovation interplay in the relationship between moods and innovative work behavior.

With the aim of expanding on previous research, in this article, we adopted the valence and arousal circumplex model of affect (Russell, 1980, 2003) to describe and test a multilevel and interactional model where weekly high-activated positive mood represents a key element in fostering innovative work behavior (Figure 1). Weekly moods are defined as generalized and long-lasting affective states that are representative of the way that individuals feel over their last work week,¹ which has been shown to be valuable in understanding work-related cognition and behavior, such as job satisfaction and commitment, turnover intentions, creativity, and task performance (George & Zhou, 2002, 2007; Madjar, Oldham, & Pratt, 2002; Tsai, Chen, & Liu, 2007; Vandenberghe, Panaccio, Bentein, Mignonac, & Roussel, 2011). Drawing on bandwidth–fidelity theory (Cronbach & Gleser, 1965), conceptualizing moods in a weekly time frame is argued to be as meaningful for understanding the relationship between affective states and variables that are not too transitory, such as innovative work behavior.² Recent studies have shown that generation of novel ideas may vary within and between days (Amabile, Barsade, Mueller, & Staw, 2005; Binnewies & Woernlein, 2011); yet, to the best of our knowledge, little is still known about the time fluctuation associated with adopting novel ideas. We emphasize that promoting and realizing novel ideas entails collaborative work with others (Kanter, 1988); thus, they are highly dependent on activities that are likely to be separated by several days or weeks (e.g., planning, coordination, or implementation meetings). So conceptualization of both moods and innovative work behavior in a weekly time frame is, we believe, appropriate.

We specifically propose that when weekly mood is *positive*, it broadens and builds flexible thinking (Fredrickson, 2001), and when *activated*, it provides motivation intensity (Seo, Barrett, & Bartunek, 2004) and change-oriented

¹This should not be confused with trait affect, which denotes individual differences in the tendency of individuals to experience either positive or negative moods in general in their lives (Watson, 2000).

²We thank an anonymous reviewer who suggested this point.

action tendencies (Parker, Bindl, & Strauss, 2010). Furthermore, weekly high-activated positive mood is proposed as a mediator variable between context and innovative behavior, such that work contexts characterized by climates of support for innovation leads to positive feelings high in activation, which in turn are positively related to innovative work behavior. Finally, drawing on Big Five model of personality (McCrae, 1987; McCrae & Costa, 1991) and cognitive appraisal theory (Lazarus & Folkman, 1984), openness to experience is described as an individual disposition that enhances the mediation process between support for innovation, weekly high-activated positive mood, and innovative work behavior. This involves a conditional indirect process (Preacher, Rucker, & Hayes, 2007) where weekly high-activated positive mood explains *how* both individual and contextual resources influence innovative behavior.

Overall, through integrating previous research (personality and work climate) with new advances in research on affect (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012; To, Fisher, Ashkanasy, & Rowe, 2011; Warr, 2007), this investigation contributes to improving knowledge about how innovation can be managed in organizations. Responding to the call for clarifying whether affective valence, activation or both are mainly responsible for work behavior (Seo et al., 2008; Warr, 2007), in this study, we make the explicit distinction between high- and low-activated positive moods in relation to innovative work behavior. Furthermore, to the best of our knowledge, this is the first study where a complex interactional model, described by contextual and individual variables, is tested in predicting moods and innovative work behavior.

Innovative work behavior as a function of valence and activation of moods

Affect and its correlates have become a central issue in organizational behavior studies (Totterdell & Niven, 2012). Emotions and moods have been observed to be substantially related to, for example, creativity (e.g., Amabile et al., 2005; George & Zhou, 2007), proactivity (Bindl et al., 2012; Fritz & Sonnentag, 2009), organizational citizenship, and counterproductive behavior (e.g., Dalal, Lam, Weiss, Welch, & Hulin, 2009; Ilies, Scott, & Judge, 2006). Traditionally, most of this research has concentrated on how differences in valence of affect (positive vs. negative feelings) explain these outcomes (Seo et al., 2008). For example, research on creativity has shown that affect has positive implications for the generation of ideas (Hennessey & Amabile, 2010), supporting the notion that positive feelings facilitate wide-ranging cognitive functioning and divergent thinking (Forgas & George, 2001; Fredrickson, 2001). Over recent years, however, drawing on the valence and arousal circumplex model of affect (Russell, 1980, 2003), activation of feelings has also been suggested as relevant to understanding motivation, action tendencies, and behavior in the workplace (Parker et al., 2010; Seo et al., 2004).

Activation refers to “readiness for action or energy expenditure” (Russell, 2003, p. 156). Thus, feelings charged with activation entail attentional interest, motivational intensity, responsiveness, and engagement with the environment (Frijda, 1986; Thayer, 1996). In contrast, low-activated feelings yield inactivity, passiveness, apathy, and reflection rather than active behavior (De Dreu, Baas, & Nijstad, 2008; Frijda, 1986; Verhaeghen, Joorman, & Khan, 2005), which is linked to the experience of recovery and detachment from terminally blocked outcomes in interacting with the environment, such as when it is not possible to achieve intended goals (Gable & Harmon-Jones, 2010). Drawing on this, Seo, Bartunek, and Barrett (2010) observed that individuals who participated in a simulated stock investment task spent more time and effort in stock investing when experiencing high activation, regardless of their motivational judgments about expectancy and valence. Bindl et al. (2012) found that proactive engagement (self-initiated and change-oriented behavior) was primarily associated with the experience of positive high-activated moods. In contrast, low-activated positive moods have been observed to be primarily related to routine compliance and proficient task performance at work (Warr, Bindl, Parker & Inceoglu, 2013). Moreover, accounting for affective activation has permitted researchers to have a more detailed picture about how moods relate to creativity. Feelings high in activation, either positive or negative, have been observed as relevant for persistence in achieving creative results when facing complex tasks (To et al., 2011), through improving the fluency and novelty of ideas (De Dreu et al., 2008). However, these psychological processes have not been tested in relation to innovative work behavior.

Although often used interchangeably, innovative work behavior is not the same as creativity at work. Innovative work behavior denotes a *complex and molar set of actions* orientated to generate, promote, and realize novel ideas (Janssen, 2000; Scott & Bruce, 1994). Specifically, the *generation* of novel ideas involves thinking of, and creating, new approaches and solutions to work-related issues; *promotion* involves suggesting and seeking sponsorship for novel ideas from relevant others (e.g., colleagues, supervisors, and managers); and *realization* entails working on the application of novel ideas (Janssen, 2000; Kanter, 1988). Therefore, creativity is predominantly a cognitive process of developing novel thoughts, but innovative work behavior also denotes a behavioral process by which novel ideas are suggested and adopted (Axtell et al., 2000; Bindl et al., 2012; Rank & Frese, 2008). So innovative work behavior represents a complex construct that includes creativity but is not limited to it (Janssen, 2000), which is oriented *toward enacting* changes in the workplace.

Similar to other change-oriented constructs, innovative work behavior demands a willingness to challenge the status quo in work environments (Anderson et al., 2004; Janssen et al., 2004; Yuan & Woodman, 2010) and to push for the adoption of novel ideas (Kanter, 1988; Van de Ven, 1986; West & Farr, 1990). Given this, experiencing positive and energized affect while working can have important implications for encouraging people to be innovative. For example, Kiefer (2002) observed that experiencing joy was positively associated with active support for change, and Atwater and Carmeli (2009) found that feelings of energy positively related to creativity.

Drawing on the aforementioned findings, we propose that weekly *positive* and *high-activated* mood has considerable potential for driving innovative behavior. Whereas the positive valence of affect facilitates flexible cognition (Forgas, 1995; Fredrickson, 2001) unfolding creative thoughts (Amabile et al., 2005), high activation boosts motivation and action tendencies oriented to the promotion of novel ideas and their implementation (Parker et al., 2010; Seo et al., 2004). With regard to using weekly time frame for moods, although feelings may vary within days or between a couple of days (Totterdell & Niven, 2012), weekly measures of moods have been supported as representative of this shorter affective experiences. Parkinson, Briner, Reynolds, and Totterdell (1995) observed a high degree of correspondence between mood ratings for a whole previous week and average daily ratings of moods. Similarly, Beal and Ghandour (2011) observed that daily observations of affective states do not dramatically differ from the remaining days of the week. Consistent with this, several studies in organizational behavior research have shown that weekly moods substantially relate to work attitudes and behavior, such as job satisfaction, organizational commitment, task performance, creativity, and organizational citizenship behavior (George & Zhou, 2002, 2007; Madjar et al., 2002; Tsai et al., 2007; Vandenberghe et al., 2011).

Hypothesis 1: Weekly high-activated positive mood will be positively related to innovative work behavior.

Support for innovation, high-activated positive mood, and innovative work behavior

Innovation at work necessarily involves interacting with others, because it is embedded in a social process where people build alliances, enhancing the likelihood of novel ideas being adopted (Kanter, 1988; Van de Ven, 1986; West & Farr, 1990). Accordingly, encouraging innovative endeavors have been described as being dependent on supportive work climates (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Such environments are perceived as being oriented “toward creativity and innovative change” (Scott & Bruce, 1994, p. 583) and supportive of organizational members “in their functioning independently and in pursuit of new ideas” (Siegel & Kaemmerer, 1978, p. 559). The positive association between perceptions of support for innovation and innovative behavior has been strongly supported in research (Hulsheger, Anderson, & Salgado, 2009). But the extent to which intermediate variables, such as affective states, explain this relationship has been investigated less.

We propose that high-activated positive mood is a central factor in understanding how support for innovation influences innovative actions at work. Specifically, support for innovation is described as a distal antecedent of innovative work behavior, such that this first relates to high-activated positive mood, which leads in turn to innovative endeavors. The mediating function of affective experience between environment and individual behavior has

been widely acknowledged in theory and research (Seo et al., 2008), emphasizing that affective experience offers individuals' relevant information to behave in a certain way in a given environment (Martin & Stoner, 1996; Schwarz & Clore, 1983, 2003). Furthermore, a number of climate models propose that perceptions of the work environment impact on individual behaviors through their effect on affective states (Kopelman, Brief, & Guzzo, 1990; Ostroff & Bowen, 2000), and two meta-analytic reviews of climate research at the individual level support such a mediating mechanism (Carr, Schmidt, Ford, & DeShon, 2003; Parker et al., 2003). Correspondingly, theory on innovation has highlighted the encouragement effect (e.g., making individuals feel enthusiastic, active, and inspired) of support for innovation to stimulate the generation and implementation of novel ideas (Amabile et al., 1996; Anderson & West, 1998; West, 1990). Support for innovation may spark positive feelings high in activation because innovative work offers opportunities to enhance intrinsic motivation (Amabile et al., 1996) and build valued psychological resources, such as mastery, autonomous thinking, and social collaboration (Deci & Ryan, 2000), all of which have been observed to be positively related to enthusiasm, excitement, joy, and inspiration while working (Warr, 2007). In turn, as discussed in the previous section, high-activated positive mood can lead to innovative work behavior through facilitating flexible cognition and behavioral readiness to work on change-oriented endeavors.

Hypothesis 2: Weekly high-activated positive mood will mediate the relationship between support for innovation and innovative work behavior, such that high support for innovation will be positively related to high-activated positive mood, which in turn will be positively related to innovative behavior.

Openness to experience as a boundary condition

Whether the meditational process between support for innovation, high-activated positive mood, and innovative work behavior unfolds with similar strength for every individual represents an additional issue. Drawing on the Big Five model of Personality (Costa & McCrae, 1992; McCrae & Costa, 1987) and cognitive appraisal theory (Lazarus & Folkman, 1984), we theorize that openness to experience may enhance the strength of the mediation function described by these constructs. Specifically, higher openness will increase the influence of support for innovation on high-activated positive mood, while heightening the association of the latter with innovative work behavior.

As part of the Big Five model of personality (Costa & McCrae, 1992), openness to experience has been proposed as an important predictor of innovative performance because it entails tendencies to actively seek out diverse experiences involving a variety of thoughts, ideas, and perspectives (Costa & McCrae, 1992; McCrae, 1987; McCrae & Costa, 1997). Specifically, in intrapersonal terms, people open to experience are described as broad-minded, imaginative, curious, and responsive to unconventional perspectives. Furthermore, openness has interpersonal implications through the facilitation of positive attitudes and social behavior (McCrae, 1996). Thus, open individuals are less prone to prejudice and authoritarian submission, as it is easier for them to understand and adapt perspectives from others while having a strong sense of self-confidence in their own ideas.

The first issue is determining whether openness influences the extent to which support for innovation relates to high-activated positive mood. According to cognitive appraisal theory (Lazarus & Folkman, 1984), the elicitation of specific feelings is explained by the encounter between goals involved in contextual conditions and the relevance of these goals to individuals. So when there is fit between goals present in the environment (e.g., work settings) and individuals' values, beliefs, and commitments, the context is appraised as benign for well-being triggering positive feelings (e.g., joy, enthusiasm, and happiness). Lazarus (1994) highlighted that similar to emotion, long-lasting affective states "are brought about the way one appraises ongoing relationships with the environment" (p. 84); however, appraisal processes embedded in affective states are linked to beliefs that have major implications for one's life (e.g., occupational roles) rather than specific and contingent events. Accordingly, long-lasting affective experiences, such as moods, have been described as elicited by relatively stable features of meaningful environments (Davidson, 1994; Parkinson, Totterdell, Briner, & Reynolds, 1996).

We therefore propose that the strength of the relationship between stable cognitive representations entailed in perceptions of support for innovation and high-activated positive mood depends on the extent that individuals are open to experience. In other words, mood will be influenced by whether organization and individuals believe that innovation is valuable and are committed to it. As support for innovation refers to work contexts denoting the expectation and encouragement of novel ideas, it should elicit greater high-activated positive mood for people high in openness to experience, because innovative actions are valuable for them. In contrast, as novelty seeking is not particularly important to individuals low in openness to experience, perceiving their work environment as supportive for innovation should have lower contributions to their high-activated positive mood.

Hypothesis 3: The relationship between support for innovation and weekly high-activated positive mood will be moderated by openness to experience, such that this relationship will be stronger for people high in openness to experience than those low in openness to experience.

The second issue is determining if openness to experience influences the strength of the association between high-activated positive mood and innovative work behavior. In relation to affect, openness has been described as amplifying affective experiences and its correlates (e.g., further cognition and behavior). Coan (1974) highlighted that openness denotes, in addition to aesthetic interest, enhanced emotional sensitivity; whereas Tellegen and Atkinson (1974) described openness as involving motivation with affective components. These proposals are contained in the Big Five model of personality that describe openness as a trait with an *experiential* function to the affective life (McCrae & Costa, 1991, 1997). In contrast to the *temperamental* implications of extroversion and neuroticism, which directly lead to affective states and behavior (DeNeve & Cooper, 1998), openness to experience primarily *enlarges* the experience of affect, both positive and negative, and its correlates. High openness denotes emotionality, passion, and impulsiveness, whereas low openness implies isolation of feelings and shallow affective experiences (McCrae & Costa, 1997). Supporting this, studies on subjective well-being have shown that openness is associated with experiencing positive feelings high in activation (e.g., happiness, enthusiasm, and inspiration; Gutierrez, Jimenez, Hernandez, & Puente, 2005; Quevedo & Abella, 2011; Steel, Schmidt, & Shultz, 2008), while also linked to disinhibiting impulses (McCrae & Costa, 1997) and the impulsiveness sub-dimension of neuroticism (Mussel, Winter, Gelleri, & Schuler, 2011), which often bring negative feelings high in activation (e.g., anxiety, tension, and agitation).

In congruent reasoning about openness within the work domain, George and Zhou (2001) theorized that a greater attunement to affective experiences of individuals high in openness explains greater creativity performance. Similarly, Baer and Oldham (2006) argued that high levels of openness to experience might offer greater psychological activation leading to innovative endeavors. However, to the best of our knowledge, the aforementioned processes have not been empirically tested using direct measures of affect or psychological activation.

Thus, we propose that cognitive flexibility and readiness offered by weekly high-activated positive moods can be heightened when openness to experience is high, leading to greater innovative work behavior. So high openness provides access to a variety of ideas and perspectives, which when interacting with flexible thinking produced by positive feelings leads to broadened cognition processes and creativity. Furthermore, people high in openness should experience activation of positive feelings with greater intensity and therefore will be more willing to face resistance to change and challenge the status quo. Conversely, given that people low in openness are characterized by hesitant attitudes toward novelty, rigid cognitive organization, and preference for familiar ideas and relationships (McCrae, 1987, 1996; McCrae & Costa, 1997), the meeting between high-activated positive feelings and low openness to experience should not offer a substantial increase in their innovative performance.

Hypothesis 4: The positive relationship between weekly high-activated positive mood and innovative work behavior will be moderated by openness to experience, such that this relationship will be stronger for people high in openness to experience than those low in openness to experience.

Taken together, Hypotheses 3 and 4 involves a moderated mediation process (Baron & Kenny, 1986; MacKinnon, 2008; MacKinnon & Fairchild, 2009; Muller, Judd, & Yzerbyt, 2005), where the strength of the mediation described between support for innovation, high-activated positive mood, and innovative work behavior is moderated by openness to experience:

Hypothesis 5: The mediation mechanism between support for innovation, weekly high-activated positive mood, and innovative work behavior is moderated by openness to experience, such that this mediation is stronger for individuals high in openness to experience than those low in openness to experience.

Method

Procedure, data, and sample

Given the time-variant dynamic of affect and work behavior (Totterdell & Niven, 2012), we conducted a diary study to test all the hypotheses. A diary method is based on repeated measures collected hourly, daily, or weekly over a specific interval of time (Bolger, Davis, & Rafaeli, 2003), which offers greater accuracy in capturing within-person variance when constructs of interest have short or mid life span (e.g., thoughts, feelings, and behavior).

Participants of this study were professionals employed in 73 different companies in Chile, who attended a part-time MBA program ($N=49$) or a part-time master's degree program of management ($N=45$) offered by one of the major universities in this country. Data were collected weekly through paper-based questionnaires when participants attended their activities at the university. In the first week, they answered a questionnaire about demographics, trait affect, perceptions of organizational support for innovation and openness to experience. Starting from the second week, participants were asked once a week over 10 weeks about their job-related moods and innovative work behavior during the preceding week in their workplaces. The final sample size of the study comprised 92 participants after the exclusion of two people because of missing data, obtaining 893 observations of innovative work behavior. Participants were 52 percent male, the average age was 33 years ($SD=6.21$), and the average work tenure was 3.87 years ($SD=3.81$). Occupations of participants were distributed as follows: business/management professional (33.7 percent), civil engineer (27.2 percent), social worker, sociologist, or psychologist (33.7 percent), and others (designer, architect, and teacher; 5.4 percent). At the time of the study, 34.8 percent of participants worked as team/group members with no supervisory roles, 41.3 percent were supervisors or team leaders, and 23.9 percent worked as executive managers. Finally, participants were members of organizations within the services (80.4 percent), manufacturing (14.1 percent), and other (5.5 percent) economic sectors.

An important issue in the procedure of this study is the use of self-reported measures of innovative work behavior. According to general theory and research on behavioral measurement, this kind of rating might lead to misleading interpretations due to, for instance, common method, implicit theories, and self-service biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). So, for example, supervisor ratings are highly recommended. But this does not necessarily apply to innovative behavior, because employees are more sensitive of the extent to which they developed and suggested novel ideas to others at work (Janssen, 2000; Shalley, Gilson, & Blum, 2009), and actually, supervisors in some cases can overlook ideas developed by their subordinates, offering risks of construct deficiency and deflation in hypothesis testing (Conway & Lance, 2010; Griffin, Neal, & Parker, 2007; Kammeyer-Mueller, Steel, & Rubenstein, 2010). Moreover, research has supported that ratings of idea realization are highly consistent between employee ratings, supervisor ratings, and objective measures of innovation (Axtell et al., 2000; Janssen, 2000; Scott & Bruce, 1994). Therefore, we propose that use of self-reports of innovative work behavior are valuable, but potential issues associated with common method bias should be considered in order to make sure that results observed are meaningful.

In a recent meta-analysis (Ng & Feldman, 2012), the association between positive affect and self-reports of innovative-related outcomes was observed to be little affected by common method threats. However, it is not possible to discard some degree of common method issues. In order to deal with this, a two-step strategy was designed following the proposals of Podsakoff et al. (2003). First, when testing the measurement model between moods and innovative behavior (detailed later), we performed Harman's single factor test by using confirmatory factor analysis (Podsakoff et al., 2003). This offers a general assessment to determine whether common method issues substantively affects data. Furthermore, as a post hoc strategy, positive and negative trait affectivity factors were included in all regression analyses, in order to control for possible systematic trait influences. Second, when testing the hypotheses, the parameter estimated between high-activated positive mood and innovative work behavior (measures collected with the same method at the same points of time) was contrasted to the typical amount of common method variance observed in organizational behavior research. To the best of our knowledge, there are no specific values estimated for method variance associated with innovative-related outcomes or moods. Nevertheless, important work about these issues has been conducted in relation to job satisfaction and work performance (Bagozzi & Yi, 1990; Cote & Buckley, 1987; Doty & Glick, 1998; Lance, Dawson, Birkelbach, & Hoffman, 2010; Williams, Cote, & Buckley, 1989). The value of method variance typically observed between job satisfaction and work performance is between 23 and 25 percent (Bagozzi & Yi, 1990; Cote & Buckley, 1987, 1988; Williams et al., 1989). This has led to arguments that common method variance should be acknowledged as an issue, but it does not seem to be so harmful as to invalidate results (Conway & Lance, 2010; Lance et al., 2010; Richardson, Simmering, & Sturman, 2009). So assuming that job satisfaction has a substantial degree of overlap with high-activated positive mood (Warr, 2007), while innovative work behavior is a form of work performance, an approximate of 24 percent of method variance was expected in the relationship between these constructs.

*Measures*³

Innovative work behavior

This was measured with six items of the innovative work behavior scale of Janssen (2000, 2004) referring to the generation of novel ideas, idea promotion, and idea realization (two items for each dimension). These items were slightly modified in order to capture behavior performed in short periods. Example items are "during the last week in your work, to what extent have you . . . created new ideas for difficult issues, . . . mobilized support for innovative ideas, . . . transformed innovative ideas into useful applications" ($\alpha = .91$; 1 = *never*, 2 = *very few times*, 3 = *sometimes*, 4 = *many times*, 5 = *almost always*).

Job-related moods

This was measured using 12 items of the job-related affect indicator developed by Warr (1990; Warr et al., 2013), which provides information about four moods described by the circumplex model labeled as high-activated positive mood, low-activated positive mood, high-activated negative mood, and low-activated negative mood (Bindl et al., 2012). Negative moods were measured so as to include as control variables as recent studies have observed creativity to be associated with negative feelings (e.g., De Dreu et al., 2008; George & Zhou, 2007; To et al., 2011). High-activated positive mood was measured with "enthusiastic," "inspired," and "excited" ($\alpha = .93$); low-activated positive mood with "relaxed," "laid-back," and "at ease" ($\alpha = .91$); high-activated negative mood with "anxious," "tense," and "worried" ($\alpha = .90$); and low-activated negative mood with "depressed," "dejected," and "hopeless" ($\alpha = .94$). To emphasize the reference of these measures to the job-domain (Warr, 2007), participants were asked to indicate their feelings experienced *in the workplace* over the last week (1 = *never/almost never* to 5 = *always/almost always*).

³Two members of the research team translated and back-translated independently between English and Spanish all the measures described (Brislin, 1970).

Openness to experience

This was measured with four items of the International Personality Item Pool (Donnellan, Oswald, Baird, & Lucas, 2006; Goldberg et al., 2006). Participants were asked to rate how each of the next statements described themselves: “get excited by new ideas,” “enjoy thinking about things,” “believe in the importance of art,” and “enjoy hearing new ideas” ($\alpha = .75$; 1 = *very inaccurate* to 5 = *very accurate*).

Support for innovation

Perceptions of organizational support for innovation were measured using five items of the scale developed by Scott and Bruce (1994). Example items are “in my organization people are allowed to try to solve the same problems in different ways,” “my organization can be described as flexible and continually adapting to change,” and “assistance in developing new ideas is readily available in my organization” ($\alpha = .86$; 1 = *strongly disagree* to 5 = *strongly agree*).

Control variables

Consistent with previous research on change-oriented work behavior (Bindl et al., 2012; Fritz & Sonnentag, 2009), we used gender, age, and organizational tenure of the participants as control variables in order to account for possible confounding effects. For example, employees with higher organizational tenure might feel more confident in implementing novel ideas, given their greater organizational experience. Furthermore, as indicated in the previous section, positive and negative trait affectivity were also included as covariates in order to control for common method variance issues (Podsakoff et al., 2003), while accounting for possible influences of individual affective dispositions on innovative work behavior. Trait affect was measured using markers from the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Five items were used for positive activation (enthusiastic, excited, strong, interested, and determined; $\alpha = .83$) and five items for negative activation (irritable, jittery, hostile, upset, and nervous; $\alpha = .85$). This scale was framed as “indicate to what extent you feel the following feelings *in general*” (1 = *very slightly or not at all* to 5 = *extremely*) with the aim of capturing the affective tendency of participants in reference to their general life, so not limiting these affective measures to the job domain (Warr, 2007). Finally, to control for potential time serial dependence (auto-correlation) and monotonic time trend of innovative behavior over waves of data, -1 lagged factor of innovative behavior and the linear time index variable were included in all analyses.

Analytical strategy

Confirmatory factor analyses were conducted for estimating the robustness of the measurement model of innovative work behavior and weekly moods measures based on the procedure described by Bolger et al. (2003). According to this, a pooled dataset where each observed variable was centered around means of every participant ($N = 92$) was utilized. Using MPLUS (Muthén & Muthén, 1998–2010), results of the four-factor factorial structure defined by innovative behavior, high-activated positive mood, low-activated positive mood, high-activated negative mood and low-activated negative mood showed limited goodness-of-fit ($\chi^2 = 304.76$, $df = 125$, $p = .00$; $RMSEA = 0.12$; $SRMR = 0.06$; $CFI = 0.91$; $TLI = 0.89$). Post hoc analyses suggested that these results were associated with high error covariance between the items “. . . mobilized support for innovative ideas” and “. . . acquired approval for innovative ideas,” and between “. . . introduced innovative ideas into the work environment in a systematic way” and “. . . transformed innovative ideas in useful applications.” Because both pairs of items refers to the same sub-dimensions of innovative behavior (promoting and realizing ideas, respectively), high error covariance was likely (Byrne, 2012). So the next analytical step was allowing the error correlations between these measures, observing an increased and acceptable goodness-of-fit ($\chi^2 = 228.23$, $df = 123$, $p = .00$; $RMSEA = 0.09$; $SRMR = 0.05$; $CFI = 0.95$; $TLI = 0.93$), which supported the validity of the measurement model for moods and innovative work behavior. Then Harman’s test (Podsakoff et al., 2003) was conducted by loading all the items of moods and innovative behavior in a single factor, observing very limited goodness-of-fit ($\chi^2 = 1158.04$, $df = 135$, $p = .00$; $RMSEA = 0.29$; $SRMR = 0.22$;

$CFI=0.47$; $TLI=0.40$). These results indicated that common method variance would not represent a major threat when estimating the relation between weekly moods and behavior.

Testing of hypotheses was performed using multilevel structural equation modeling (Preacher, Zyphur, & Zhang, 2010). We described a two-level model where weekly moods and innovative work behavior (time-variant variables) were defined at level 1, whereas support for innovation, openness to experience, trait affect and demographic variables (time-invariant) were defined at level 2. Analyses of the within and between variance components from the null models (Hox, 2010) indicated that innovative work behavior varied 61.8 percent over time. Similar results were observed for high-activated positive mood (52.2 percent), high-activated negative mood (52.1 percent), low-activated negative mood (56.5 percent) and low-activated positive mood (50.2 percent). These findings support that both innovative behavior and job-related moods have substantial fluctuation over weeks, corroborating also the nested structure of the data and justifying the use of a multilevel approach.

Hypotheses 1, 3 and 4 were tested using random intercept and slope models. In these, level 1 predictors were person-mean-centered, whereas level 2 predictors were grand-mean-centered in order to interpret each effect in their respective level (Hox, 2010). In hypotheses 2 and 5, high-activated positive mood was not centered. This was necessary because random slope multilevel mediation entail variance of level 1 mediator at both levels.

Hypothesis 1 involves the direct within-subjects relationship between weekly high-activated positive mood and innovative work behavior. Hypotheses 2 and 3 entail relationships between variables only with between-subjects variance at level 2 of analyses (support for innovation and openness to experience) and variables having both within- and between-subjects at level 1 (high-activated positive mood and innovative work behavior). However, these hypothesized relationships (i.e., direct effects, mediation, and mediated moderation processes) can be tested only at between-subjects level controlling for within variance of mood and behavior, because support for innovation and openness to experience are only able to exert effects at this level given their lack of within-subjects variance. This implies that variables operationalized as time invariant (observed variables) are tested in relation to the means around the 10 waves of data on mood and behavior over time (latent variables; Muthén & Muthén, 1998–2010). This does not imply that level 2 predictors have no effect on level 1 variables; they do, but only because within measures of mood and behavior belong to individuals either high or low in openness to experience, and working in environments either high or low in support for innovation (e.g., Preacher et al., 2010). So, in substantive terms, Hypotheses 2 and 3 test the extent to which people tend to feel positive mood high in activation and behave innovatively in relation to work environments characterized by some degree of stable support for innovation and in relation to stable individual differences in openness to experience. Finally, Hypotheses 4 and 5 denote a “cross-level moderation” and a “multi-level moderated mediation,” respectively. This unfolds at both within and between levels of analyses, given that the effect of openness to experience is on the random slope between high-activated positive mood and innovative work behavior. In the statistical models, this random slope is modeled as a latent variable between subjects based on the within variance of mood and behavior observed over time (Preacher, personal communication, January 27, 2013).

Results

Means, standard deviations, correlations, and reliabilities of the variables are summarized in Table 1.

Hypothesis 1 stated that innovative work behavior would be positively related to weekly high-activated positive mood. Model 2 (Table 2) shows that, after controlling for negative mood (high and low in activation) and time-invariant variables, high-activated positive mood was directly and significantly associated with innovative work behavior ($b=0.27$, $SE=0.05$, $p<.01$). Taking into account the possible method effects in this relationship, 24 percent of the parameter observed according to the discussion provided in the Procedure, Data, and Sample section,⁴ only a very small amount of this estimation ($b=0.06$) can be attributed to common method variance. Thus, Hypothesis 1 was supported.

⁴Estimation based on the method proposed by Cote and Buckley (1988).

Table 1. Means, standard deviations, and correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	0.52	0.50	—											
2. Age	33.09	6.21	-.31**	—										
3. Work tenure	3.87	3.81	-.21*	.49**	—									
4. Innovative work behavior	3.08	0.84	-.04	.21**	.20*	(.91)								
5. High-activated positive mood	3.31	0.61	-.06	.18*	.13	.56**	(.93)							
6. Low-activated positive mood	2.78	0.59	.01	.03	.13	.29**	.35**	(.91)						
7. High-activated negative mood	2.77	0.63	-.06	-.03	.01	-.11	-.10**	-.46**	(.90)					
8. Low-activated negative mood	2.13	0.68	-.08*	-.06	.01	-.24*	-.52**	-.13**	.41**	(.94)				
9. Positive affectivity	3.98	0.60	-.10	.28**	.19	.36**	.45**	.16**	-.07*	-.24**	(.83)			
10. Negative affectivity	2.39	0.80	.09	-.07	.12	-.04	-.13**	.02	.23**	.28**	-.04	(.85)		
11. Openness to experience	4.15	0.62	-.10	.16	.13	.22**	.20**	.16**	-.10**	-.03	.27**	.11**	(.75)	
12. Support for innovation	3.29	0.86	-.21*	.14	.06	.07	.22**	-.02	.01	-.22**	.22**	-.15**	.09*	(.86)

Scores of time-invariant factors of demographics are based on data collected in the first questionnaire of the study, whereas scores of time-variant factors were computed after centering longitudinal observations around person's mean. Reliabilities are in parentheses.
 * $p < .05$; ** $p < .01$.

Table 2. Estimates of the direct and interactive effects on innovative work behavior.

Estimate	Model 1	Model 2	Model 3
Intercept	3.07 (.07)**	3.07 (.07)**	3.07 (.07)**
<i>Level 1 variables</i>			
Time index	.02 (.01)*	.02 (.01)*	.02 (.01)*
Lagged innovative behavior ($t - 1$)	-.07 (.04)	-.06 (.03)	-.06 (.03)
High-activated positive mood		.27 (.05)**	.27 (.05)**
Low-activated positive mood		.06 (.05)	.06 (.05)
High-activated negative mood		.02 (.04)	.03 (.04)
Low-activated negative mood		-.02 (.04)	-.03 (.04)
Residual variance L-1	.25 (.04)**	.17 (.02)**	.17 (.02)**
R^2 level 1	.07	.37	.37
<i>Level 2 variables</i>			
Gender	.13 (.15)	.13 (.16)	.14 (.16)
Age	.06 (.07)	.06 (.06)	.06 (.06)
Work tenure	.11 (.06) [†]	.10 (.06) [†]	.10 (.05) [†]
Positive activation	.47 (.10)**	.44 (.12)**	.43 (.12)**
Negative activation	-.03 (.08)	-.05 (.08)	-.05 (.08)
Support for innovation		-.02 (.09)	-.04 (.09)
Openness to experience		.15 (.11)	.15 (.11)
<i>Interaction terms</i>			
High-activated positive mood \times Openness			.17 (.08)**
Openness \times Support			.12 (.16)
Residual variance L-2	.36 (.07)**	.36 (.07)**	.36 (.07)**
Slope variance mood-behavior		.10 (.03)**	.08 (.03)**
R^2 level 2	.20	.20	.20
R^2 high-activated positive mood \times Openness			.20
Deviance	1402.62	1212.41	1204.20

Unstandardized estimators reported. Standard errors are in parentheses. Residual variance from null model of innovative behavior L-1 = .27 (.03)**, L-2 = .45 (.07)**, and deviance = 1616.29.

[†] $p < .10$; * $p < .05$; ** $p < .01$.

Hypothesis 2 stated that weekly high-activated positive mood would mediate the relationship between support for innovation and innovative work behavior. The results in Table 3 show that the direct relationship between support for innovation and high-activated positive mood is not significant ($b = 0.11$, $SE = 0.07$, $p > .05$). This indicates that a minimum condition to estimate mediation processes is not observed (the path from the independent variable to the mediator; Iacobucci, Saldanha, & Deng, 2007); consequently, Hypothesis 2 was rejected.

Hypothesis 3 proposed that the relationship between support for innovation and weekly high-activated positive mood would be moderated by openness to experience, being stronger when openness is high. To test this, the multiplicative term between support and openness was computed and introduced in the regression equation as a predictor at level 2. Results (Table 3) show that this interaction term positively relates to high-activated positive mood ($b = 0.27$, $SE = 0.12$, $p < .05$). The latter result was plotted (Figure 2), showing that, as expected, the association between support for innovation and high-activated positive mood is stronger when openness to experience is high. Simple slope testing, based on the procedure described by Aiken and West (1991), corroborated this result, indicating that the relationship between support for innovation and high-activated positive mood is positive and significant when openness is high (1 SD above the mean, $b = 0.23$, $SE = 0.09$, $p < .01$), but negative and non-significant when openness is low (1 SD below the mean, $b = -0.10$, $SE = 0.10$, $p > .05$). Thus, Hypothesis 3 was confirmed.

Hypothesis 4 proposed that weekly high-activated positive mood would interact with high openness to experience to positively predict innovative work behavior. The residual variance for the slope between high-activated positive

Table 3. Estimates of the direct and interactive effects on high-activated positive mood.

Estimate	Model 4	Model 5	Model 6
Intercept	3.31 (.05)**	3.30 (.05)**	3.30 (.05)**
<i>Level 1 variables</i>			
Time index	.02 (.01) [†]	.02 (.01) [†]	.02 (.01) [†]
Lagged high-activated positive mood (<i>t</i> - 1)	.17 (.05)**	.17 (.05)**	.17 (.05)**
Residual variance L-1	.29 (.03)**	.29 (.03)**	.29 (.03)**
R ² level 1	.06	.06	.06
<i>Level 2 variables</i>			
Gender	.03 (.12)	.07 (.12)	.09 (.12)
Age	.04 (.06)	.03 (.05)	.02 (.05)
Work tenure	.04 (.07)	.04 (.06)	.02 (.06)
Positive activation	.56 (.11)**	.51 (.11)**	.49 (.11)**
Negative activation	-.08 (.08)	-.07 (.07)	-.07 (.07)
Openness to experience		.10 (.10)	.10 (.10)
Support for Innovation		.11 (.07)	.07 (.06)
<i>Interaction terms</i>			
Openness × Support			.27 (.12)*
Residual variance L-2	.23 (.04)**	.22 (.04)**	.20 (.04)**
R ² level 2		.35	.41
Deviance	1455.49	1451.61	1447.01

Unstandardized estimators reported. Standard errors are in parentheses. Residual variance from null model of high-activated positive mood L-1 = .31 (.03)**, L-2 = .34 (.06)**, and deviance = 1726.23. [†]*p* < .10; **p* < .05; ***p* < .01.

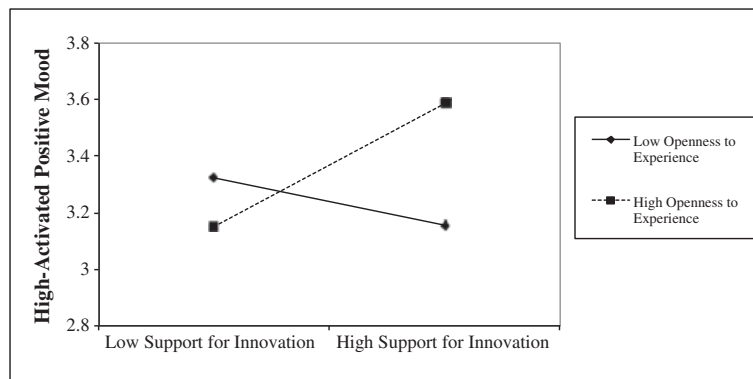


Figure 2. Interactive effect between support for innovation and openness to experience on high-activated positive mood (Hypothesis 4)

mood and innovative behavior (Model 2, Table 2) was positive and significant ($\sigma^2=0.10$, $SE=0.03$, $p < .01$), indicating that the strength of this relationship varies among individuals. Thus, the interaction term between high-activated positive mood and openness to experience was introduced into the model (Model 3, Table 2) and demonstrated a cross-level moderation between these variables over innovative work behavior ($b=0.17$, $SE=0.08$, $p < .01$). This interaction increases the explanatory level of the model ($\Delta-2LL(df)=8.21(2)$, $p < .05$) where openness explains 20 percent of the slope variance between high-activated positive mood and innovative behavior. These results were plotted (Figure 3) and showed that, as expected, the relationship between high-activated positive mood and innovative behavior was stronger for people high in openness to experience. These results were corroborated by simple slope testing, which indicated that the relationship between high-activated positive mood

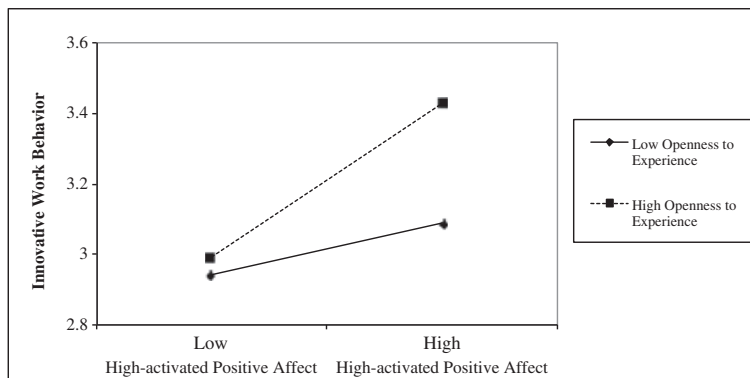


Figure 3. Interactive effect between high-activated positive mood and openness to experience on innovative work behavior (Hypothesis 2)

and innovative work behavior is positive and significant when openness is high (1 *SD* above the mean, $b = 0.42$, $SE = 0.08$, $p < .01$), whereas positive but not significant when openness is low (1 *SD* below the mean, $b = 0.14$, $SE = 0.06$, $p > .05$). Therefore, Hypothesis 4 was supported.

Finally, Hypothesis 5 proposed a moderated mediation model where openness to experience moderates the mediation between support for innovation, weekly high-activated positive and innovative work behavior. First, following Baron and Kenny (1986), we observed (Table 2, Model 3) that after controlling for the direct effects of support for innovation, openness to experience and control variables, the interaction effect between support for innovation and openness to experience on innovative work behavior was not supported ($b = 0.12$, $SE = 0.16$, $p > .05$). Although this did not completely support the framework described by Baron and Kenny (1986), as there is no effect to be mediated, alternative developments have proposed that this is not a necessary condition for mediation analyses (MacKinnon & Fairchild, 2009; Rucker, Preacher, Tormala, & Petty, 2011; Shrout & Bolger, 2002).

The aforementioned issue is particularly relevant when the process mediated is theoretically and temporarily distal (Shrout & Bolger, 2002), in which case the effect size between predictor and outcome often becomes smaller because it is transferred through additional variables in the causal process and affected by competing predictors or random factors (Shrout & Bolger, 2002). This situation, labeled as indirect-only mediation (Zhao, Lynch, & Chen, 2010), applies to the model described in this study given that we defined and operationalized support for innovation as a distal antecedent of innovative behavior. In this case, it is recommended to proceed with mediation analysis, disregarding the lack of support for the bivariate test between the distal predictor and the outcome (Rucker et al., 2011; Shrout & Bolger, 2002; Zhao et al., 2010), on the basis of a theory-driven approach and the evaluation of the magnitude of the indirect effect involved in the mediation process. The indirect effect refers to the product between estimators of the “path a” and “path b” of mediation (Rucker et al., 2011). This indicates the extent to which the outcome is expected to change per variation of one unit in the mediator, which is the expected change in the mediator per variation in one unit of the predictor. Observing a statistically significant indirect effect provides support for the mediation tested, while the value of this indirect effect indicates the magnitude of the mediation.

Integrating the procedures defined for testing multilevel mediation (Preacher et al., 2010) and conditional indirect effects (Preacher et al., 2007), we proceeded to test the proposed multilevel moderated mediation. Results displayed in Table 4 (Model 7, Figure 4) corroborate that the relationship between support for innovation and high-activated positive mood is moderated by openness to experience ($b = 0.28$, $SE = 0.12$, $p < .05$). Furthermore, the indirect effect of the interactive term between support for innovation and openness to experience on innovative work behavior, through high-activated positive mood, was positive and significant ($b = 0.17$, $SE = 0.08$, $p < .05$; 95% CI [0.05, 0.30]). Results also indicate that openness to experience moderates the relationship between high-activated positive mood and innovative work behavior ($b = 0.34$, $SE = 0.16$, $p < .05$). Therefore, Hypothesis 5 was supported.

Table 4. Estimates of the multilevel moderated mediation between support for innovation, openness to experience, high-activated positive mood, and innovative work behavior.

Estimate	Model 7 $X \rightarrow M \rightarrow Y$	
	Mood	Behavior
Intercept	-.02 (.05)**	3.07 (.06)
<i>Level 1 variables</i>		
Time index	.02 (.01) [†]	.02 (.01)*
Lagged innovative behavior ($t - 1$)		-.05 (.04)
Lagged high-activated positive mood ($t - 1$)	.17 (.05)**	
High-activated positive mood		.30 (.05)**
Residual variance L-1	.29 (.03)**	.18 (.02)**
R^2 level 1	.06	.33
<i>Level 2 variables</i>		
Gender		-.07 (.14)
Age		.03 (.06)
Tenure		.07 (.05)
Positive activation	.52 (.10)**	.08 (.12)
Negative activation		.00 (.07)
Openness to experience	.13 (.10)	.15 (.09)
Support for innovation	.07 (.06)	-.14 (.08)
High-activated positive mood		<i>b</i> .34 (.16)*
<i>Interaction terms</i>		
High-activated positive mood \times Openness		.23 (.08)**
Openness \times Support	<i>a</i> .28 (.12)*	<i>c</i> .01 (.05)
Indirect effect openness \times Support \rightarrow Behavior		.18 (.08)* 95% CI [0.05, 0.31]
Residual variance L-2	.21 (.04)**	.24 (.05)**
R^2 level 2	.38	.47
Deviance		2747.68

Unstandardized estimators reported. Standard errors are in parentheses. [†] $p < .10$; * $p < .05$; ** $p < .01$.

Discussion

In this study, we proposed and observed that weekly positive mood high in activation is a key element to achieving a finer grained understanding of the association between work context, individual dispositions and change-oriented behavior. Congruent with most research on affect and positive job-related outcomes (e.g., Amabile et al., 2005; Bindl et al., 2012; Ilies et al., 2006), the study results show that innovative behavior is strongly associated with positive feelings, providing additional evidence for the motivational function embedded in affective states at work (Totterdell & Niven, 2012).

Moreover, our findings indicate that not all positive affect is linked to innovative work behavior, because whereas weekly high-activated mood was strongly implicated in it, weekly low-activated positive mood was not (Table 2). This highlights that differences in the activation of feelings, which appear to be central for a more comprehensive approximation to the relationship between affect, motivation, and work behavior (Parker et al., 2010; Seo et al., 2010). Whereas high-activated positive mood involves creativity and readiness to behave innovatively, low-activated positive feelings most likely lead to proficient performance rather than change-oriented endeavors (Griffin et al., 2007; Warr et al., 2013). Consequently, this study supports the basic proposals of the valence and arousal circumplex model of affect (Russell, 1980, 2003), suggesting that considering activation of feelings can enrich our understanding of moods and its correlates at work (Bindl et al., 2012; Seo et al., 2008). Indeed, future studies would benefit from including and measuring moods differentiated by both valence and activation.

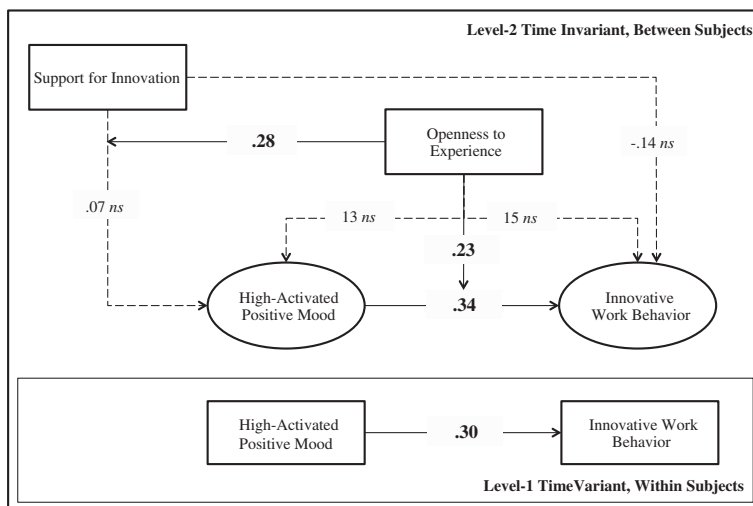


Figure 4. Results multilevel moderated mediation model (Hypothesis 5, Model 7 in Table 4). Path between openness to experience and the random slope between high-activated positive moods and innovative work behavior was depicted at level 2, because the random slope moderated represents a latent variable varying between subjects. Nevertheless, in substantive terms, this effect corresponds to a cross-level interaction

Although negative feelings were not part of the main focus of this study, our findings on negative mood have important implications for research on creativity and innovation. Specifically, the results did not show associations of either weekly high-activated or low-activated negative moods with innovative work behavior. Analyses also indicated that random slopes between innovative work behavior and both forms of negative moods did not vary significantly between individuals. Thus, the possibilities that innovative work behavior results from the direct influence of negative feelings or from interactions between them and third factors at the person level (e.g., support for innovation and openness to experience) were not supported. Given that creativity at work has been found to be related to high-activated negative feelings (dual tuning models; De Dreu et al., 2008; George & Zhou, 2007), the results of this study offer evidence for the proposal that creativity at work and innovative work behavior are not the same (Anderson et al., 2004).

We argue that differences in the role of affect in relation to creativity and innovative work behavior are explained because, although being related, both constructs differ in their social meaning. Whereas in most research creativity at work has been conceptualized in terms of intrapersonal processes of novel idea generation (Amabile, 1983; Tierney, Farmer, & Graen, 1999), innovative behavior is essentially a social behavior that also implicates championing and implementing novel ideas with others (Janssen, 2000; Kanter, 1988; Scott & Bruce, 1994). Thus, negative feelings high in activation can lead to creativity through persistence in finding out novel solutions when facing individual tasks (De Dreu et al., 2008; George & Zhou, 2007) or envisioning changes of the current situation at work (Verhaeghen et al., 2005). However, the same feelings could limit implementation efforts because these can signal that the work environment is not safe for proposing novel ideas (Edmondson, 1999) or due to a draining of psychological resources needed to engage in supportive and cooperative change-oriented endeavors (Hobfoll, 1989). This suggests that processes involved in the relationship between affect and creativity, and between affect and innovative work behavior are not identical, highlighting also the importance of being mindful of the social denotation of affect when studying work behavior (Niedenthal & Brauer, 2012; Parkinson, 1996; Van Kleef, 2009).

Moreover, this study supports the experiential function described for openness to experience (McCrae & Costa, 1991), through *strengthening* associations between psychological experiences and their correlates. Accordingly, results showed that openness represents a key moderator in the process of engaging innovative behavior. Openness to experience seems to be indispensable for the positive link between support for innovation and high-activated

positive mood. In contrast to one of our hypothesis, a direct effect of support for innovation on high-activated positive mood was not supported. However, when openness to experience is high, the relationship between support and high-activated positive mood is positive, but negative and non-significant when openness is low (Figure 2). Consistent with the cognitive appraisal theory (Lazarus, 1994; Lazarus & Folkman, 1984), this highlights that positive feelings high in activation are sparked when both work environments and individuals value innovation. On the other hand, when the context supports innovation but novelty is less relevant to one individual, his or her engagement to behave innovatively could be limited. Thus, paraphrasing the theory of Lazarus (1994), positive affective states high in activation emerge when open to experience individuals see their work environments as good (supportive of innovation), because the meanings on which they depend are reaffirmed.

Moreover, openness intensifies the association between high-activated positive mood and innovative work behavior. This synergetic effect can enhance innovative-related psychological resources because these feelings provide cognitive flexibility and readiness (Forgas, 1995; Fredrickson, 2001), whereas openness offers dispositions to change and greater access to different ideas (McCrae, 1987). In support of this (Figure 3), high openness substantially strengthens the positive association between weekly high-activated positive mood and innovative work behavior. In contrast, innovative behavior is in general lower when openness is low, and openness does not provide a substantial benefit to the association between weekly positive mood high in activation and innovative behavior.

Practical implications

Important practical implications are derived from this study. For instance, disconnected strategies for selecting and retaining “innovative” people (e.g., high in openness to experience) or communicating and practicing organizational support for innovation do not guarantee greater innovative performance. Engaging innovative behavior is associated with the meeting of both high organizational and individual interests to develop different or novel solutions and approaches. Thus, organizational practices oriented to achieving higher levels of innovation have to be based on effective strategies for identifying individuals with innovative potential and creating work environments that are perceived as encouraging innovation.

Moreover, managing, and promoting work environments that effectively facilitate the predominance of positive affect (Losada & Heaphy, 2004) emerge as a central practice to foster innovative work behavior. This indicates the value of developing styles of supervision/leadership that encourage collective participation and inspiration (e.g., transformational leadership; Mumford, Scott, Gaddis, & Strange, 2002) while providing proper support, feedback, and recognition to innovative endeavors (Baer & Oldham, 2006; Madjar et al., 2002). Similarly, job design/enrichment should enhance the conditions for developing work environments linked with high-activated positive mood and with innovative potential through higher degrees of autonomy, responsibility, and social connection (Axtell et al., 2000). The results of this study also indicate that innovation in the workplace is positively related to job-related well-being, because it is substantively associated with experiencing positive feelings while working (Warr, 2007).

Limitations, future research, and conclusion

Although this article offers important contributions to the understanding of the underpinnings of the association between moods and innovative work behavior, there are a number of limitations to be mentioned. This study relied on weekly measures of moods, providing a long-lasting approach on affect and innovative work behavior. However, complementary studies have supported that short-term affective states varying between days, or even within days (Watson, 2000), can also account for work relevant outcomes, such as creativity and organizational citizenship behavior (Amabile et al., 2005; Binnewies & Woernlein, 2011; Glomb, Bhawe, Miner, & Wall, 2011; Ilies et al., 2006). This transient variability has been associated with specific events unfolding in the workplace (Weiss & Cropanzano, 1996). So testing how innovative-relevant episodes lead to positive feelings high in activation would enrich the findings

presented here, such as being explicitly asked for novel ideas, being invited to take part in innovative-oriented projects or reflecting in team meetings. Furthermore, diverse models have described innovative work behavior as a multidimensional construct involving idea generation, idea promotion, and idea implementation (Axtell et al., 2000; Janssen, 2000; Scott & Bruce, 1994); yet this study used a general measure of innovative behavior. Future research, therefore, should test possible differential dynamics between moods and specific components of this form of behavior. Moreover, the goal of this study was to develop a model about basic psychological processes involved in innovative work behavior; nevertheless, broader contextual factors, such as cultural values, should be considered as possible additional influences in the model presented. This is particularly relevant considering that the study was conducted in a group of Chilean professionals, which represents a non-traditional sample in organizational behavior research.⁵ As a result, cross-cultural research would be valuable for improving our understanding about the connection between context, personality, affect, and innovative work behavior.

In terms of study design and methodology, this study described and tested a moderated mediation process between contextual and individual variables, which assumes a causality chain between support for innovation, openness to experience, weekly high-activated positive mood and innovative work behavior. Despite being based on a theory-driven approach, previous empirical findings and the use of sophisticated research design and data analyses, this study can only offer evidence but not absolute proof of causality. In substantive terms, behavior can also be an antecedent of moods because being creative could trigger feelings such as elation and joy (Amabile et al., 2005). Furthermore, as doing something new involves meaningfulness at work through autonomy, responsibility, and social connection (Deci & Ryan, 2000), people could embrace innovative behavior anticipating the experience of “feeling good” (Baumeister, Vohs, DeWall, & Zhang, 2007). Similarly, behaving innovatively can change perceptions of support for innovation. If actual innovative actions are welcomed and recognized by colleagues, supervisors, and managers, then perceptions of support can be heightened. In contrast, if innovative behavior is arbitrarily rejected or minimized by others, this can lead to negative perceptions of the extent that innovation is supported in the workplace. Future studies should explore these alternative models.

In conclusion, this study represents an explicit effort to understand the relationship between positive mood and innovative work behavior, offering a model where individual and contextual resources interplay in this relationship. We hope future developments in theory, research, and practice expand on the findings presented here to improve individual innovation, job-related well-being, and organizational effectiveness.

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⁵An anonymous reviewer suggested this point.

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