

Business Owner-Employees Contagion of Work-Related Affect and Employees' Innovative Behavior in Small Firms

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The aim of this study was to explore cross-level mechanisms stimulating employees' innovative behavior in small firms, specifically emotional contagion between small business owners and their employees. Using data from three European countries and applying a multilevel approach, we tested how small business owners' work-related affect—enthusiasm and comfort—relate to their employees' work-related affect and innovative work behavior. The sample consisted of 85 small business owners and 711 employees from firms operating in the Netherlands, Poland, and Spain. Controlling for country, the results of multilevel modeling showed that small business owners' work-related affect was positively related to their employees' work-related affect. The hypothesized contagion of work-related affect in small firms was, thus, supported. Employees' work-related affect, in turn, was positively associated with their innovative behavior. Employees' work-related affect mediated the relationship between small business owners' work-related affect and employees' innovative behavior. The results also showed cross-country differences in the strength of some of the relationships. The study is a step forward in understanding innovation in small firms, extending the insights gained from single-level investigations.

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INTRODUCTION

Innovation, defined as an invention that is effectively adopted in the market (Schumpeter, 1960; Verhees & Meulenbergh, 2004), is considered one of the crucial factors for the survival and success of firms (de Jong & den Hartog, 2010; Rosenbusch, Brinckmann, & Bausch, 2011). Investigating the topic of innovation is timely and vital, especially for small firms (European Commission, 2017). Small and medium-sized enterprises constitute more than 90 percent of European and 89.4 percent of the US businesses and provide the majority of private employment (Observatory of European SMEs, 2007; Small Business & Entrepreneurship Council, n.d.). However, for small businesses, the chance of failure is high (Storey et al., 2016). Therefore, a better understanding of factors that may protect a firm against failure and contribute to their successful functioning, such as innovation (Cefis & Marsili, 2006), is of high societal importance.

There is a long tradition of linking business innovation with the entrepreneurial activities of entrepreneurs/business owners (Hisrich, Shepherd, & Peters, 2005; McClelland, 1987; Schumpeter, 1960). However, mechanisms stimulating innovation in small firms are not well explored yet (Dunne, Aaron, McDowell, Urban, & Geho, 2016). Moreover, single-level investigations currently dominate the literature (Parzefall, Seeck, & Leppänen, 2008). Most of past research on innovation has focused either at the organizational level or at the individual level (see meta-analyses by Damanpour, 1991; Parzefall et al., 2008; Rosenbusch et al., 2011). Acknowledging that an organization is a complex social entity, explanations going beyond single-level and single-source analyses are called for (see Anderson, De Dreu, & Nijstad, 2004; Parzefall et al., 2008; Stephan, 2018). Insights that take into account multiple members of an organization and multilevel organizational structures are especially needed (Anderson et al., 2004; Parzefall et al., 2008; Stephan, 2018). Particularly, evidence linking attributes of small business managers/owners with innovation of their employees is lacking (Dunne et al., 2016; Mainemelis, Kark, & Epitropaki, 2015; Parzefall et al., 2008).

Filing this gap, we propose cross-level mechanisms through which small business owners' (SBOs') work-related affect fosters innovative behavior of their employees, which is the micro foundation of business innovation. Our conceptual model explains how SBOs can stimulate others towards innovative behavior. Referring to the emotional contagion theory (Barsade, 2002; Barsade, Coutifaris, & Pillemer, 2018), we postulate contagion of work-related affect between SBOs and their employees, which in turn will stimulate employees' innovative behavior. Our study contributes to the literature in several ways. First, we propose a conceptual model, answering recent calls for more complex explanations in organizational research (Dunne et al.,

2016; Mainemelis et al., 2015). Second, we investigate cross-level effects between SBOs and employees using a two-level study design, which adds new insights to previous findings from individual-level and single-source research (Parzefall et al., 2008). Third, using data from three countries, we are able to explore potential culture/country differences.

Below we explain our proposition in more detail, first providing an explanation of concepts and an overview of the model, then discussing the relationships between employees' affect and their innovative behavior, next explaining the mechanism of affective contagion in organizations, and finally discussing the relationships between SBOs' affect and employees' innovative behavior.

Overview of the Conceptual Model

Individual innovation refers to the generation or adoption of useful and novel ideas that are effectively introduced in the organization (Schumpeter, 1960; Verhees & Meulenberg, 2004). Such innovations range from "big" ideas representing a major departure from existing practices, to "small" ideas for coping with daily challenges at work and enhancing the capacities already present in the organization (Amabile, 1988; Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, & Boronat-Navarro, 2004; Weinberger, Wach, Stephan, & Wegge, 2018). In particular, the smaller-scale incremental innovations, manifesting themselves in everyday innovative behavior, are based on creative ideas, which vary on a daily basis, being influenced by both personal and situational factors (Weinberger et al., 2018). Innovative behavior includes not only exploring or generating new solutions and ideas (what is specific for creativity; Amabile, 1988), but also spreading them throughout the organization and implementing them (Scott & Bruce, 1994). As "organizational innovation pertains to all parts of the organization and to all aspects of its operation" (Damanpour, 1992), it includes all types of innovative behaviors that are adopted by the members of an organization. Employees' innovative behavior can nurture the functioning of the whole company (Gong, Huang, & Farh, 2009), thus having an impact on its business success (Hsu, Hou, & Fan, 2011).

Our explanation of the mechanisms stimulating innovative behavior takes into account that even being small, a firm has multiple members, namely SBOs and employees. Especially in small firms, SBOs are often simultaneously business owners and direct managers of their employees, constantly interacting with their subordinates to coordinate their actions (Baron, Hmieleski, & Henry, 2012; Shane, Locke, & Collins, 2003). Acknowledging this, in our study we focus on the relationship between SBOs' affect and their employees' affect and innovative behavior.

Affect refers to consciously accessible feelings—emotions and moods—that are relatively changeable (Fredrickson, 2001). They depend on events and situations, including the social context. As capturing these elusive experiences is not easy without distorting them, a common approach is to use retrospective evaluations of affect experienced over a specific period of time (e.g., the last few weeks; Warr, 1990, 2013). Past research on affect in the work context and in entrepreneurship has mainly investigated the valence (positive/negative) of affective experiences (for a review see Brief & Weiss, 2002; Stephan, 2018). However, reviews of these studies suggest that investigating the valence of affect is not enough to explain the consequences of affective experiences at work: “Neither the experiences themselves, nor their consequences, can be subsumed easily under a simple structure of positive or negative states” (Brief & Weiss, 2002, p. 297). Taking this into account, we build on the circumplex model of affect (Posner, Russell, & Peterson, 2005; Russell, 1980), according to which affective experiences are categorized along *two* axes: valence (pleasant–unpleasant) and arousal level (high–low). Each specific affect can be understood as a linear combination of these two dimensions. This model has obtained strong empirical support from neuropsychology (Posner et al., 2005) as well as from organizational psychology research. The circumplex model was applied to the work context (Warr, 1990, 2013) and research has confirmed this conceptualization of work-related affective well-being (e.g., Laguna, Mielniczuk, & Razmus, 2019; Mäkikangas, Feldt, & Kinnunen, 2007).

Because studies have shown that positive rather than negative affect is related to problem-solving, creativity, and innovation (Baas, De Dreu, & Nijstad, 2008; Rank & Frese, 2008), in this study we focused on positive work-related affect, discriminating between its two types that differ in terms of activation level, being enthusiasm (positive affect with high arousal) and comfort (positive affect with low arousal) (Laguna et al., 2017; Warr, 1990). Distinctiveness of these two dimensions was confirmed in previous studies, both in employees of different professions and in entrepreneurs/business owners (e.g., Laguna et al., 2017, 2019; Mäkikangas et al., 2007).

Below, we explicate the core ideas of our conceptual model explaining the mechanisms that stimulate the innovative behavior of employees in small firms (see Figure 1). Existing theories and research findings concerning the link between affect and innovative behavior (Baas, Roskes, Sligte, Nijstad, & De Dreu, 2013; Forgas, 2001), emphasize that employees’ positive affect experienced at work promotes their innovative behavior. We take this research one step further, and referring to the emotional contagion theory (Barsade, 2002; Barsade et al., 2018), we postulate a contagion effect of work-related affect between SBOs and their employees. Taking into account the hierarchical structure of organizations—SBO being one level (Level 2) and their

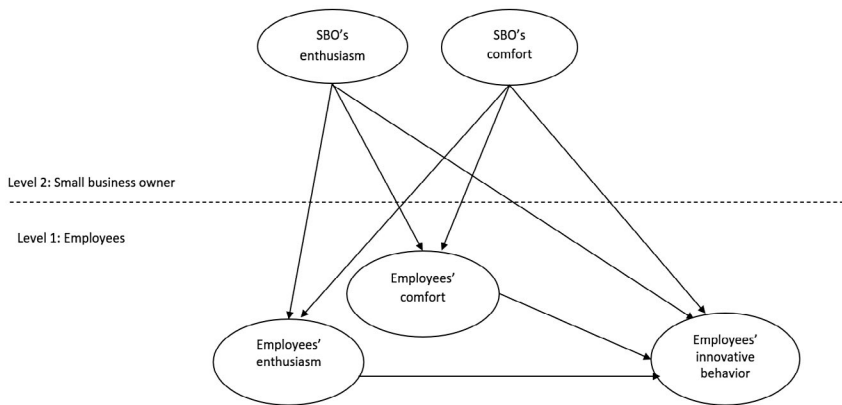


FIGURE 1. Conceptual model of multilevel relationships between small business owners' (SBOs') work-related affect (enthusiasm and comfort) and work-related affect (enthusiasm and comfort) and innovative behavior of their employees.

employees being another level (Level 1)—we applied a multilevel approach (Nezlek, 2012), proposing a two-level model (see Figure 1).

We propose that SBOs' work-related affect will spill over to the affect experienced at work by their employees. This, in turn, is expected to stimulate employees' innovative behavior during their everyday work. The relationships postulated in our model are supported by recent longitudinal research demonstrating that SBOs' comfort and enthusiasm towards work predict their own innovative behavior (Mielniczuk & Laguna, 2018).

Any organization is embedded in a social and cultural environment. Societal culture influences the organizational culture, especially that of small firms, which are less likely to have international divisions that could be influenced by other cultures (Rosenbusch et al., 2011). As cultural differences (Hofstede, 1980) have been considered important with respect to innovation (Rosenbusch et al., 2011), they may also influence the relationships postulated in our model. To test for the potential effect of culture, we carried out a cross-national study, collecting data from the Netherlands, Poland, and Spain, countries which differ on several relevant aspects. In terms of innovation level, the Netherlands is classified into the group of countries above or close to the European average, while Poland and Spain score below the European average level (Hollanders, Es-Sadki, & Kanerva, 2015). Since 2012, innovation performance in the Netherlands and Poland has been growing, while in Spain it has started to decrease (Hollanders et al., 2015). There are also cultural differences between these countries in individualism and power distance (Hofstede, 1980; House, Hanges, Javidan, Dorfman, & Gupta, 2004),

the cultural dimensions that have been considered important for innovation (Rosenbusch et al., 2011). These differences may have an effect on social interactions in small firms and on attitudes towards innovation (Hofstede, 1980; Rosenbusch et al., 2011). Thus, we control for potential culture/country effects in our analyses and test whether culture/country moderates any of relationships postulated in our model.

Employees' Work-Related Affect and Innovative Behavior

We postulate that employees' work-related affective experiences stimulate their innovative behavior, that is, creation and implementation of new ideas, when dealing with tasks at work. This expectation is based on theories of affect. According to the broaden-and-build theory, positive affect broadens thinking and problem-solving abilities (Fredrickson, 2001), and the feelings-as-information theory postulates that people use their feelings as a source of information when making judgments and, consequently, positive affect leads to more positive judgments (Schwarz, 2012). As a result, employees who experience positive affect at work are more likely to generate new ideas, as they are open to broader choices of behavioral options (Kahn & Isen, 1993). In addition, employees' actions aimed at convincing other organizational members to implement new ideas may be more effective when brought by people with positive rather than negative affect. People infer underlying intentions behind messages based on the way these are communicated and expect more benevolent intentions in case they are brought by people with positive affect (see Grant, Parker, & Collins, 2009).

Indeed, this was supported by previous empirical studies, which revealed that positive affect plays the role of an "activator" of behavior (Forgas, 2001) as well as enhances heuristic thinking (Ambady & Gray, 2002), creative thinking (Baas et al., 2008; Isen, 1987), and problem-solving (Zhou, 2013). Positive affect is also an important factor in shaping an individual's behavior in the work context (Laguna et al., 2016; Salanova, Llorens, & Schaufeli, 2011). In their review, Boehm and Lyubomirsky (2008) demonstrated that employees' positive affect leads to better performance, as well as to higher levels of curiosity, creativity, and a tendency to explore their environment more precisely. A meta-analysis revealed that positive affect was associated with higher creativity than neutral affect (Baas et al., 2008). Moreover, positive affect was also found to be a direct antecedent of employees' innovative behavior (Slåtten, 2011).

The rare studies distinguishing types of affect according to the level of activation showed that high-arousal affect was more strongly correlated with creativity and innovative behavior than low-arousal affect, although both play their role (Baas et al., 2008; Mielniczuk & Laguna, 2018). Especially for

negative affect, the activation component is essential (Baas et al., 2008); anger and frustration stimulate action in the face of external pressure and urgency, whereas sadness and depression typically do not. For positively valenced affect, this distinction between high and low activation may also be important; however, both forms of positive affect can be expected to stimulate creativity and innovation. Enthusiasm, as a high-arousal affect, may equip a person with vigor, allowing engagement into work tasks and energy for developing new ways of performing work duties and introducing them in an organization. This high-arousal positive affect equips a person with energy (Warr, 1990, 2013), which may be used for convincing other people to implementation of new solutions. In addition, feeling relaxed and calm may stimulate the generation and implementation of new ideas. A low-arousal emotions, such as serenity, has been linked to savoring and integration, setting new priorities and accruing new views of the self (Frederickson, 2013), and these thought and action tendencies may stimulate innovation. According to the “un-do” mechanism proposed by the broaden-and-build theory (Fredrickson, 2001), comfort may help to reduce negative affect and tensions, thereby providing room for concentration on new solutions, for building positive relationships with other people and gaining support for innovations’ implementation. Indeed, longitudinal research has revealed that both work-related enthusiasm and comfort predict subsequent innovative behavior of entrepreneurs (Mielniczuk & Laguna, 2018). Based on the above reasoning, we postulate that work-related enthusiasm and comfort are connected with employees’ innovative behavior.

Hypothesis 1: Employees’ work-related affect—enthusiasm (1a) and comfort (1b)—is related positively to their innovative behavior.

Emotional Contagion in Organizations: Cross-Level Relationships

As individuals in organizations are embedded in social relationships and “emotions are transmission mechanisms for leadership” (Kong, Cooper, & Sosik, 2019; p. 14), it is assumed that an employee’s behavior and affect can be related to the SBOs’ affect. The emotional contagion mechanism (Barsade, 2002; Barsade et al., 2018) explains the dynamics of social influence on people’s affective states, which spread through communication (Alshamsi, Pianesi, Lepri, Pentland, & Rahwan, 2015). This emotional induction can occur in two ways. The first one is through automatic reactions based on the network of mirror neurons, by which the individual is able to imitate and mimic the reactions of others (Boyatzis, Rochford, & Taylor, 2015). The

second one is more intentional and involves conscious effort (Barsade, 2002; Barsade et al., 2018). It relies on social comparison—individuals compare their own affect with the affective reactions of others and use other people's affect as a source of information about how they should feel in a given situation (Du, Fan, & Feng, 2011; Li, Zhang, & Yang, 2017). Research findings confirm that different kinds of positive affective reactions are contagious and spread among people (Fowler & Christakis, 2008; Pugh, 2001; Tsvetkova & Macy, 2014). This mechanism can be analyzed in two ways: as a short-term effect that occurs during interaction, when people imitate affects that are expressed by others in their presence (Barsade, 2002; Barsade et al., 2018), and as a long-term mutual process of emotional convergence between people who spend time together and become emotionally similar over time (Anderson, Keltner, & John, 2003).

Sharing of affective experiences is also observed in the work context (Barsade et al., 2018; Wróbel, 2010), and emotional contagion influences attitudinal, cognitive, and behavioral outcomes in organizations (Barsade et al., 2018). Social power is important in this context, and emotions of the less powerful partner can be significantly better predicted by the more powerful partner's emotions than by those of the less powerful partner, whose affect tends to change more strongly in order to achieve convergence (Anderson et al., 2003). Moreover, in an organizational context, leaders are more important than their subordinates in determining the quality of leader-member exchange relationships (Graen & Uhl-Bien, 1995; Gupta & Singh, 2014; Peterson, Walumbwa, Byron, & Myrowitz, 2009).

Recently, the emotional contagion theory has been applied to explain leader-follower relationships (Bono & Ilies, 2006; Li et al., 2017), underlining the trickle-down effect in organizations (Zhen et al., 2015). This is a top-down process where the affect, attitude, and behavior of one person in an organization is transferred to another person who works at a lower position (Wo, Ambrose, & Schminke, 2015). Empirical research revealed that when leaders experienced positive affect, this experience influenced their subordinates' affect: the subordinates presented more positive and less negative affect as well (Sy, Côté, & Saavedra, 2005; Volmer, 2012). Rare multilevel studies revealed that leaders' emotion regulation strategies were linked with subordinates' emotions at work (Kafetsios, Nezlek, & Vassilakou, 2012; Madrid, Niven, & Vasquez, 2019). Therefore, we expected that SBOs' affect would have contagious effects on their employees' affect. Such effects may be observed for work-related enthusiasm and comfort.

Hypothesis 2: SBOs' work-related affect—enthusiasm and comfort—is related to their employees' work-related affect—enthusiasm and comfort.

Leaders who are proficient in governing their employees' affect tend to be effective in managing their organizations (e.g., Cropanzano, Dasborough, & Weiss, 2017; George, 2000; Kong et al., 2019). Enthusiasm and comfort at work expressed by SBOs may evoke employees' reciprocal affects and positive evaluative judgments of their social environment, thus facilitating employees' attitudinal and behavioral outcomes, including their innovative behavior (Kong et al., 2019). Indeed, a growing body of research has highlighted that emotional contagion not only impacts group members' affect, but also influences their subsequent performance and that this is one of the critical mechanisms by which managers/leaders influence their subordinates (see for a review Barsade et al., 2018). Therefore, rather than the direct relationships between SBOs' affect and innovative behavior of their employees, we propose the indirect relationship between these variables. Based on the reasoning presented in previous sections, this relationship may be mediated by employees' work-related affect. Such a cross-level mediation mechanism based on emotional contagion is postulated in our conceptual model (Figure 1) and reflected in the next hypothesis:

Hypothesis 3: Employees' work-related affect mediates the relationship between SBOs' affect and employees' innovative behavior.

METHOD

Procedure

We invited small companies with 10 to 50 employees to take part in the larger research project that this study is part of. In every company, one SBO and their employees were asked to participate. The four criteria for selecting SBOs were applied jointly: the SBOs had to be: (1) founders of businesses or successors taking them over from their parents, (2) business owners, and (3) managers of their companies that (4) had existed on the market for more than one year. The only criterion applied for the selection of employees was having a work agreement with the company taking part in our study.

We used formal and informal networks of small enterprises to recruit participants. Each participant (entrepreneur or employee) was asked to complete a set of measures: a paper-and-pencil version (in Poland and Spain) or an electronic version (in the Netherlands). In additional analyses, measurement invariance for the sampling method was tested and full scalar invariance was achieved. The participants responded in their native languages. Participation in the study was voluntary, and there was no reward other than company feedback for those companies who wished to receive it. All questionnaires

were completed anonymously, and in the case of paper-and-pencil versions they were returned in sealed envelopes to ensure confidentiality.

Participants

Eighty-five small firms took part in the study. For each of them, one SBO and an average of eight employees completed the questionnaires (from 5 to 13 employees in each firm, $M = 8.36$, $SD = 1.70$). There were 22 firms from the Netherlands, 37 from Poland, and 26 from Spain. Thus, the whole sample consisted of 85 SBOs, 65 of them were male. The mean age of the SBOs was 47.4 years ($SD = 10.45$, ranging from 29 to 76 years). They had an average of about 17 years of experience in management ($M = 17.11$, $SD = 8.95$), and their firms operated for an average of 22.53 years (from 1 to 128 years, $M = 14$, $SD = 28.64$) employing from 2 to 80 employees ($M = 25.5$, $SD = 17.4$). Most firms operated at the national level in the services sector (61.2%; e.g., accounting, architecture), followed by the production sector (25.9%; e.g., food production, toy manufacture) and the construction sector (11.8%; e.g., wood, stone construction). The comparisons between the three countries revealed no statistically significant differences in the SBOs' sex ($\chi^2_{(2)} = 2.94$, $p = .23$) or age ($F_{(2, 80)} = 1.339$, $p = .268$) or in the proportion of firms operating in different sectors ($\chi^2_{(8)} = 14.64$, $p = .067$). The only significant difference was in firm age ($F_{(2, 82)} = 19.29$, $df = 2$, $p = .001$, $\eta^2 = .32$)—companies from the Netherlands were older ($M = 51.77$, $SD = 45.16$) than companies from Poland ($M = 14.62$, $SD = 7.74$) or Spain ($M = 15.58$, $SD = 8.62$).

The sample of employees consisted of 711 participants (174 Dutch, 344 Polish, and 193 Spanish employees); aged 21 to 68 ($M = 39.48$, $SD = 10.66$); 302 of them were men. Most employees (503, 70.7%) had a full-time employment contract, 113 (15.9%) had a part-time contract, and 88 (12.4%) had other contracts. They had worked for an average of more than 14 years ($M = 14.36$, $SD = 10.89$), and for more than six years in the present company ($M = 6.35$, $SD = 6.22$). There were no statistically significant differences between employees from the three countries in age ($F_{(2, 695)} = 1.571$, $p = .209$) and sex ($\chi^2_{(2)} = 3.866$, $p = .145$). They differed only in the proportions of different types of work agreement ($\chi^2_{(6)} = 37.066$, $p < .001$)—more Spanish employees (164, 85%) than Polish (224, 65.1%) or Dutch ones (115, 66.1%) had a full-time work contract.

Measures

We used national versions of the scales, and if these were not available, English versions were translated using the back-translation method.

The two *work-related affect* dimensions—comfort and enthusiasm—were measured with Warr's (1990) job-related affective well-being measure, both in SBOs and in employees. The participants answered how their job made them feel over the past few weeks. Responses were given on a 6-point scale (1 = *never*, 6 = *all of the time*). Three items measured comfort (*calm, contented, relaxed*) and the other three measured enthusiasm (*cheerful, enthusiastic, optimistic*). Cronbach's α for the Comfort scale in the sample of SBOs was .76 in the Netherlands, .83 in Poland, and .61 in Spain; for the Enthusiasm scale it was .86, .88, and .82, respectively. The reliability of the Comfort scale in the sample of employees was .84 in the Netherlands, .76 in Poland, and .82 in Spain; for the Enthusiasm scale it was .76, .91, and .85, respectively.

To measure employees' *innovative behavior*, we used the Scott and Bruce (1994) Innovative Behavior Questionnaire. The participants were asked to assess how often they engaged in innovative activity at work, and they answered by rating six items (e.g., *I promote and champion ideas to others*) using a 5-point scale (1 = *never*, 5 = *very often*). Cronbach's α was .91 for the Dutch participants and .92 for the Polish and Spanish participants.

Data Analysis Strategy

First, we checked whether our measures had captured distinct constructs, testing for the common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012). For this purpose, we performed item-level confirmatory factor analyses (CFA) on data from SBOs' and employees separately. We tested a single-factor model, in which items of all scales measuring the study variables were treated as underlying dimensions of a single common latent factor and a correlated factors model, in which the items of each of the scales were treated as underlying dimensions of a specific latent factor. If the single-factor model fitted the data worse than the specific latent factors model, this would confirm the distinct nature of the constructs.

Next, we investigated measurement invariance of measures across countries using multigroup confirmatory factor analysis (MGCFA; Meredith, 1993; Steenkamp & Baumgartner, 1998). Due to sample size, it was only possible to do this in the sample of employees. To test the differences between increasingly restricted nested models, we calculated $\Delta\chi^2$ and ΔCFI (Chen, 2007). An absolute difference in CFI lower than .01 would indicate measurement invariance. Additional criteria are differences in model fit—a change by less than .015 in RMSEA and a change by less than .030 in SRMR.

Because our data have a multilevel structure, with employees at Level 1 and SBOs at Level 2, we applied hierarchical linear modeling (HLM; Nezlek, 2012) using HLM 7 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011) to test the hypotheses concerning the relationships between

the study variables in the employee sample (Level 1 controlled for grouping effect) as well as cross-level hypotheses (predictors from Level 2 and dependent variables from Level 1).

In subsequent equations, each of the dependent variables (y) was explained by the effects of an intercept, a predictor, and country, by the interaction between predictor and country, and by error terms at Level 2 (u) and at Level 1 (r). The general model is presented in Equation (1):

$$y = \gamma \text{INTERCEPT} + \gamma \text{PREDICTOR} + \gamma \text{COUNTRY} + \gamma \text{PREDICTOR} * \text{COUNTRY} + u + r \quad (1)$$

Testing specific hypotheses, we entered variables from Level 1, from Level 2, or from both levels into this equation. In accordance with the recommendations (Nezlek, 2012), in all multilevel analyses continuous predictors from Level 1 were entered as group-mean centered, and continuous predictors from Level 2 were first standardized and then entered as uncentered. Categorical predictors were entered as uncentered at both levels. Dependent variables in all analyses were uncentered. We report unstandardized gamma (γ) coefficients.

To test the mediation hypotheses, we applied multilevel mediation using PRODCLIN (MacKinnon, Fritz, Williams, & Lockwood, 2007). It allows to test indirect effects by computing 95% confidence interval (CI). When the CIs do not include zero, this attests to a significant mediation effect.

RESULTS

Preliminary Analyses

Common Method Variance. First, we examined a series of CFA measurement models to check for common method variance (Podsakoff et al., 2012). CFA in a sample of SBOs including the items measuring work-related comfort and enthusiasm, demonstrated that the model with two correlated factors ($\chi^2_{(8)} = 13.46, p < .001, CFI = .978, AIC = 51.46, RMSEA = .090, SRMR = .058$) showed a significantly better fit ($\Delta\chi^2_{(1)} = 42.20, p < .001$) than the single common factor model capturing positive affect ($\chi^2_{(9)} = 55.66, p < .001, CFI = .815, AIC = 91.66, RMSEA = .248, SRMR = .121$). Similarly, in a sample of employees, the model with three distinct, although correlated factors including the items measuring work-related comfort, enthusiasm, and innovative behavior fit the data better ($\chi^2_{(51)} = 302.57, p < .001, CFI = .954, AIC = 356.57, RMSEA = .083, SRMR = .038$) than the single common factor model ($\chi^2_{(54)} = 2257.77, p < .001, CFI = .593, AIC = 2305.77, RMSEA = .240, SRMR = .203$), and this difference in model fit was statistically significant ($\Delta\chi^2_{(3)} = 1955.20, p < .001, \Delta CFI = .361$). These results support

the distinctness of the variables measured in each sample. Moreover, in the analysis concerning only the items measuring work-related affect in a sample of employees, the model including two distinct correlated latent factors of enthusiasm and comfort fit the data better ($\chi^2_{(8)} = 34.82, p < .001, CFI = .988, AIC = 72.82, RMSEA = .069, SRMR = .028$) than a single factor model of positive affect ($\chi^2_{(9)} = 322.80, p < .001, CFI = .859, AIC = 358.80, RMSEA = .222, SRMR = .084$; difference in model fit indicators: $\Delta\chi^2_{(1)} = 287.98, p < .001, \Delta CFI = .129$). These results confirmed the distinctiveness of two latent dimensions of work-related affect.

Measurement Invariance. Next, we applied MGCFA to examine the measurement invariance of work-related affect and innovative behavior measures across the samples of employees from the three countries (Meredith, 1993; Steenkamp & Baumgartner, 1998). For the work-related affect measure, the configural unrestricted model including two latent factors of enthusiasm and comfort showed a good fit to the data (Table 1). Then, we imposed equality constraints on all factor loadings across countries. The constrained metric invariance model differed significantly from the configural model; CFI change ($\Delta CFI = .015$) was beyond the acceptable limit of .01, which indicates that full metric invariance was not achieved. In the next step, we checked for partial metric invariance, allowing one factor loading (item 6) to not be constrained as invariant in the sample of Dutch employees (Steenkamp & Baumgartner, 1998). The comparison of this model with the configural model ($\Delta RMSEA = .003, \Delta SRMR = .021, \Delta CFI = .003$) revealed partial metric invariance of the work-related affect measure, which allowed for a cross-group comparison of regression slopes (Chen, 2007).

MGCFA of the innovative behavior measure demonstrated that the single factor configural unrestricted model showed a good fit to the data (Table 1). All indicators of model fit differences between increasingly restricted nested models supported not only full metric invariance, but also full scalar invariance of this measure. These results indicated that scale metrics and item intercepts were similar across the samples (Meredith, 1993).

Descriptive Statistics and Variance Composition. Descriptive statistics and correlations between the study variables are reported in Table 2. As expected, all variables were positively correlated in the sample of SBOs and in the sample of employees. The correlation between employees' innovative behavior and enthusiasm was higher ($r = .38$) than with comfort ($r = .15$), and this difference between correlation coefficients was statistically significant ($p < .001$). What is interesting is that the mean level of work-related enthusiasm was higher in the sample of SBOs ($M = 4.25$) than in employees ($M = 3.99$), and this difference was statistically significant ($p < .001$), while in the case

TABLE 1
Measurement Invariance of Work-Related Affect and Innovative Behavior Measures Across Samples of Employees from Three Countries

<i>Model</i>	χ^2	df	p	RMSEA	SRMR	CFI	Model comparison	$\Delta\chi^2$	$\Delta RMSEA$	$\Delta SRMR$	ΔCFI
Work-related affect: comfort and enthusiasm (two latent correlated factors)											
M1. Configural invariance	95.70	24	.001	.065	.064	.968	–	–	–	–	–
M2. Full metric invariance	139.40	32	.001	.069	.080	.953	M2 vs M1	43.700	.004	.016	.015
M3. Partial metric invariance	112.210	31	.001	.079	.085	.864	M3 vs M1	16.51	.014	.021	.104
Innovative behavior (single latent factor)											
M1. Configural invariance	43.56	18	.001	.045	.028	.992	–	–	–	–	–
M2. Metric invariance	68.24	28	.001	.045	.049	.987	M2 vs M1	24.680	.000	.021	.005
M3. Scalar invariance	76.269	30	.001	.047	.062	.985	M3 vs M2	8.029	.002	.013	.002

Note: RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; CFI = Comparative Fit Index.

TABLE 2
Descriptive Statistics and Correlations Between Study Variables

Variable	Employees			SBOs and Firms							
	M	SD	<i>r</i>	2	3	4	5	6	7	M	SD
1. Work-related comfort	3.81	0.98	–	.52***	–.24*	–.13	.02	.02	.21*	3.88	1.00
2. Work-related enthusiasm	3.99	1.04	.60***	–	–.34**	–.13	.02	.02	.15	4.25	1.09
3. Innovative behavior	3.12	0.82	.15***	.38***	–	–	–	–	–	–	–
4. Age	39.48	10.65	–.01	–.03	.00	–	–.15	.06	.10	47.41	10.45
5. Sex (0 male, 1 female)	1.43	0.50	–.01	.04	–.01	–.10*	–	–.09	–.02	0.24	0.43
6. Firm size	–	–	–	–	–	–	–	–	.12	25.52	17.41
7. Firm age	–	–	–	–	–	–	–	–	–	22.53	28.64

*** $p < .001$ (two-tailed); correlations in sample of employees ($N = 711$) are presented below the diagonal; correlations in sample of small business owners (SBOs) and their firms characteristics ($N = 85$) are presented above the diagonal.

of mean level of work-related comfort there was no significant difference ($p = .183$).

To check if there is both group and individual level variance in employees' innovative behavior, we built the unconditional multilevel model (i.e. the model without any predictor; Raudenbush et al., 2011). It showed that there is variance in this variable at both levels (17.90 at the individual level and 6.93 at the firm level), which supports the choice of multilevel analysis as the data analysis strategy. The intraclass correlation coefficient (ICC) as a ratio of the Level-2 variance to the total variance for variables measured at employees' level was .28 for innovative behavior, .22 for comfort, and .23 for enthusiasm.

Control Variables. To rule out alternative explanations, we ran several preliminary analyses. We tested whether firms operating in different sectors differed in the level of innovative behavior. We found no statistically significant differences ($F_{(3, 669)} = 0.443, p = .722$), which corroborates the contention that the measure of innovative behavior used in our study captures a broad range of behaviors that can be adopted by employees of diverse firms operating in different sectors (Hsu et al., 2011).

Next, we built multilevel models with potential control variables as predictors of employees' innovative behavior. As new firms benefit more from innovation than mature ones (Rosenbusch et al., 2011), since they are usually more flexible and nimble than established firms, we considered firm age and firm size (Damanpour, 1992) in our analysis. We also tested the potential effects of demographic variables such as employees' and SBOs' sex and age, as some previous studies showed that these variables could be related to innovative behavior (e.g., Alsos, Ljunggren, & Hytti, 2013; Hollanders et al., 2015).

The results showed that none of the firm-level variables, being firm size—number of employees ($\gamma = 0.54, SE = 0.28, p = .057$) and firm age—years on the market ($\gamma = -0.24, SE = 0.27, p = .360$), are statistically significant in predicting innovative behavior of employees. Neither SBOs' age ($\gamma = -0.46, SE = 0.29, p = .122$) and sex ($\gamma = 0.59, SE = 0.69, p = .389$), nor employees' age ($\gamma = 0.02, SE = 0.02, p = .351$) and sex ($\gamma = -0.82, SE = 0.45, p = .056$) were significant predictors of innovative behavior of employees. Following the recommendation to leave only statistically significant predictors in the multilevel model (forward stepping; Nezlek, 2012), we did not take these variables into account in further analyses.

We observed a significant country effect ($\gamma = -0.93, SE = 0.39, p = .022$). Further analyses showed that this effect refers to the contrast between Spain and other countries—being from Spain (contrast-coded: Spain = 1, other countries = 0) was related to lower levels of employees' innovative behavior

($\gamma = -1.63$, $SE = 0.70$, $p = .023$).¹ Therefore, in all subsequent analyses we controlled for country effect, entering Spain as a contrast-coded variable at Level 2 into each equation.

Hypotheses Testing

To test Hypothesis 1, we applied multilevel modeling. The results (Table 3) showed that employees' innovative behavior was predicted by their enthusiasm ($\gamma = 0.39$, $p = .001$) as well as by their comfort experienced at work ($B = 0.24$, $p = .010$), which supports Hypotheses 1a and 1b. Country effect was statistically significant in both equations. Moreover, there was a statistically significant interaction between enthusiasm and country effect ($\gamma = -0.39$, $p = .007$), demonstrating that country/culture serves as moderator of this relationship. Further analyses revealed that the effect of employees' enthusiasm on their innovative behavior was stronger for employees from Spain ($\gamma = 0.77$, $SE = 0.10$, $p = .001$) compared to the other two countries ($\gamma = 0.39$, $SE = 0.10$, $p = .001$).

Hypothesis 2 refers to cross-level effects, that is, to the relationships between SBOs' work-related affect (predictors from Level 2) and employees' work-related affect (dependent variables from Level 1). The results (Table 3) revealed that SBOs' enthusiasm was a statistically significant predictor of employees' enthusiasm ($\gamma = 0.69$, $p = .002$) and comfort ($\gamma = 0.36$, $p = .027$). In both equations, there was neither a statistically significant country effect nor any interaction between predictor and country, thus national culture did not moderate these relationships. SBOs' comfort predicted both employees' work-related comfort ($\gamma = 0.72$, $p = .001$) and enthusiasm ($\gamma = 0.91$, $p = .001$). These results support Hypothesis 2. There was also a statistically significant interaction between SBOs' comfort and country effect in predicting employees' enthusiasm ($\gamma = -1.04$, $p = .007$), demonstrating a moderation effect of country/culture for this relationship. Further analyses revealed that SBOs' comfort had a greater effect on employees' enthusiasm in the case of participants from the Netherlands and Poland ($\gamma = 0.91$, $SE = 0.23$, $p = .001$) than in the case of those from Spain ($\gamma = -0.13$, $SE = 0.30$, $p = .668$).

Before testing the mediation hypothesis, we first looked at the direct relationships between SBOs' work-related affect (enthusiasm and comfort) and employees' innovative behavior. Multilevel analysis demonstrated (Table 3) that SBOs' enthusiasm achieved a borderline result in terms of statistical significance ($\gamma = 0.73$, $p = .050$) and we conservatively conclude that it is not a statistically significant predictor of employees' innovation at work. Similarly,

¹ These effects were non-significant for other countries (as contrast-coded): neither for the Netherlands ($\gamma = 0.90$, $SE = 0.63$, $p = .16$) nor for Poland ($\gamma = 0.68$, $SE = 0.65$, $p = .30$).

TABLE 3
Results of Multilevel Modelling

Predictor -> Dependent variable	Intercept			Predictor			Country			Predictor * Country		
	γ	SE	p	γ	SE	p	γ	SE	p	γ	SE	p
Level 1: Employees (Hypothesis 1)												
Work-related enthusiasm -> Innovative behavior	19.19	.37	.001	0.39	.10	.001	-1.65	.71	.022	0.39	.14	.007
Work-related comfort -> Innovative behavior	19.23	.37	.001	0.24	.09	.010	-1.70	.71	.018	0.07	.17	.687
Cross-level effects^a (Hypothesis 2)												
Work-related enthusiasm -> Work-related enthusiasm	12.10	.21	.001	0.69	.22	.002	-0.53	.40	.196	-0.44	.40	.267
Work-related comfort -> Work-related comfort	11.34	.19	.001	0.72	.19	.001	0.20	.37	.588	-0.66	.35	.066
Work-related enthusiasm -> Work-related comfort	11.42	.20	.001	0.36	.16	.027	0.08	.35	.822	-0.44	.32	.183
Work-related comfort -> Work-related enthusiasm	12.02	.20	.001	0.91	.23	.001	-0.55	.44	.219	-1.04	.38	.007
Cross-level direct effects^a												
Work-related enthusiasm -> Innovative behavior	19.10	.35	.001	0.73	.37	.050	-1.63	.76	.034	-1.04	.92	.261
Work-related comfort -> Innovative behavior	19.08	.38	.001	0.55	.40	.179	-1.75	.69	.014	-1.10	.69	.118

Note: γ = unstandardized gamma coefficient; SE = standard error; p = significance level; ^a dependent variable from Level 1 (employees) and predictors from Level 2 (small business owners).

comfort was not a statistically significant predictor ($\gamma = 0.55, p = .179$). Thus, no direct relationships between SBOs' work-related affect and employees' innovative behavior were detected.

The results of the multilevel mediation analysis supported Hypothesis 3. Employees' work-related enthusiasm mediates the relationship between SBOs' affect—enthusiasm (95% CI [220.50, 244.12]) and comfort (95% CI [208.51, 230.91])—and employees' innovative behavior. The same was demonstrated for employees' work-related comfort, which mediates the relationship between SBOs' affect—enthusiasm (95% CI [219.25, 242.28]) and comfort (95% CI [207.26, 229.07])—and employees' innovative behavior.

DISCUSSION

This study is a step forward in understanding innovation in small enterprises, adding a cross-level perspective to the insights gained from single-level investigations (see Parzefall et al., 2008; Stephan, 2018). As each organization is a complex social entity, this complexity was acknowledged by analyzing mechanisms operating between SBOs' and their employees' work-related affect. The two-level study design and data coming from different members of a firm allowed for extending existing evidence. This is urgent because multilevel and single-level relationships do not necessarily correspond (Kozlowski & Klein, 2000). Across levels, our study is the first empirical analysis of the idea that SBOs' work-related affect and innovativeness of their employees are related to each other via employees' positive affective experiences at work. Our results complement existing research, which has shown that leaders' interpersonal emotion regulation behaviors oriented to evoke positive affect among team members were positively related to shared positive affective tone, which in turn stimulated the implementation of novel ideas (Madrid et al., 2019). We add new cross-level evidence, demonstrating that indeed, both high- and low-arousal positive affect of small firms' leaders is related to positive affective experiences of their employees, and we extend evidence that these positive affective experiences at work are positively related to innovation of employees (Madrid & Patterson, 2020). Thus, we provide a more nuanced understanding of the role of high- and low-arousal affect. We also extend scarce multilevel evidence on innovation in organizations (Fischer, Frese, Mertins, & Hardt-Gawron, 2018) by explaining its psychological mechanisms.

The aim of this study was to explore the mechanisms stimulating the innovative behavior of employees in small firms, taking into account both the idea generation and the implementation phase as captured by the measure applied in this study. First, we hypothesized that employees' work-related affect would relate positively to their innovative behavior. This hypothesis was supported by the results of multilevel analyses, which indeed showed that

employees' innovative behavior was positively related to both their enthusiasm and comfort experienced at work. We also found that the correlation between employees' innovative behavior and enthusiasm was significantly higher than its correlation with comfort. These findings support theoretical premises coming from the broaden-and-build theory (Fredrickson, 2001) and feelings-as-information theory (Schwarz, 2012), which postulate that positive affect in general supports positive judgments and problem-solving. They also demonstrate that both high- and low-arousal affect play their role in stimulating innovation in small firms, as expected, showing a stronger effect for enthusiasm as high-arousal affect (Baas et al., 2008). Broadening empirical evidence concerning these relationships, we add to the evidence coming from entrepreneurs (Mielniczuk & Laguna, 2018) demonstrating that also in case of employees their work-related enthusiasm and comfort are important for their innovative behavior.

Second, based on the emotional contagion theory (Barsade, 2002; Barsade et al., 2018), we hypothesized that SBOs' work-related affect is related to their employees' work-related affect. Our results confirmed that, indeed, affective experiences in small firms are shared (as indicated by its shared variance on firm level), and SBOs' enthusiasm is positively related to their employees' work-related enthusiasm and comfort; similarly, SBOs' comfort is positively related to both employees' comfort and enthusiasm experienced at work. These results add to evidence demonstrating that leaders' emotions and emotion regulation strategies demonstrated at work relate to their subordinates' affect at work (Kafetsios et al., 2012; Kong et al., 2019). This may be part of an emotional convergence process between people (Anderson et al., 2003) who are working together in a small firm and resonate SBOs' affect demonstrated at work. Such process can occur either automatically, by a mimicry process, or more consciously, through social comparisons (Barsade, 2002; Barsade et al., 2018).

Third, supporting the hypothesis that employees' work-related affect mediates the relationship between SBOs' affect and employees' innovative behavior, we supported the notion that emotions are one of the mechanisms of leadership transmission (Kong et al., 2019). Our results not only demonstrated that there are relationships between SBOs' and employees' affect, but they also showed that employees' work-related enthusiasm and comfort mediate the relationships between SBOs' affect—enthusiasm and comfort—and employees' innovative behavior. This adds to the evidence highlighting the importance of affective contagion for organizational performance (Barsade et al., 2018), showing that through sharing positive affect, SBOs may stimulate the performance of their subordinates.

With samples from three European countries differing in terms of life conditions (Hollanders et al., 2015) and national culture (Hofstede, 1980; House

et al., 2004), we were able to provide some provocative results concerning the role of culture. First, we have controlled for country/culture effect in all analyses. Second, we have tested moderation effects of country/culture. Results of this study demonstrate that two of the relationships postulated in our model depended on the country/cultural context. Namely, the relationship between SBOs' comfort and employees' enthusiasm towards work was weaker in the Spanish sample, while the relationship between employees' enthusiasm and their innovative behavior was stronger in Spain than in the two other, more individualistic, countries (Hofstede, 1980). This suggests that emotional contagion may work better in more collectivist societies in which people belong to "in groups" that take care of them in exchange for loyalty (Hofstede, 1980). In such cultures, employees' enthusiasm at work may transfer more easily into innovative solutions, despite the observation that levels of innovative behavior were generally lower in the Spanish sample. We have to bear in mind, however, that these results may also be related to other differences in the samples' compositions. The sample from Spain did not differ from the two other samples as concerns age and sex of SBOs and employees, nor did it differ in the proportion of firms operating in different sectors. However, it did differ as concerns the type of work agreements. More Spanish employees had a full-time work contract than in the other two countries taking part in our study. It cannot be ruled out that at least to some degree, the observed effects may be the result of a higher proportion of non-standard work agreements in the Netherlands and Poland, as such work agreements have a positive impact on a firm's productivity (Kahn, 2000). Therefore, more cross-cultural research is needed to explore the cross-national differences in the role of affect in organizations (Rosenbusch et al., 2011) and to discover a role of contextual variables in innovation (Rooks, Sserwanga, & Frese, 2016).

We based our study on the circumplex model of affect (Warr, 2013), taking into account valence and arousal dimensions for describing affective experiences in the work context (Warr, 1990, 2013). Our results show a relatively coherent picture, demonstrating a similar role of positive high- and low-arousal affect. This converges with the broaden-and-build theory (Fredrickson, 2001), describing a role of affective experiences of positive valence. We do not want, however, to downplay the role of the arousal dimension and the distinction between high and low activation of affect. It may be fruitful to further investigate their role, offering a more nuanced picture in other contexts (Baas et al., 2008).

Despite the several strengths of this study, its limitations should also be noted. First, the study relies on self-report measures of all variables, which is a common and unavoidable practice in case of measuring affect, which concerns personal feelings that are difficult to capture using external sources. However, future studies can apply alternative measures to assess innovative

behavior. Although there is clear evidence that employees' self-reports concerning innovative behavior are significantly correlated with their supervisors' ratings (Janssen, 2001) and with an objective measure of invention disclosures (Scott & Bruce, 1994), such external ratings can be applied in future studies, too.

Second, the cross-sectional study design limits conclusions concerning causality. Building on the notion that innovative behavior can be seen as a performance indicator, and positive affect as an indicator of emotional well-being, research has shown that relationships between well-being and performance are indeed bi-directional, but evidence for the affect-performance link is typically found to be stronger than for the reversed relationship (e.g., Dijkhuizen, Gorgievski-Duijvesteijn, Van Veldhoven, & Schalk, 2017). Further research with a longitudinal or experimental design is needed to investigate the dynamic interplay between the investigated variables over time.

Third, this study explained variance in employees' affect, which we have linked to emotional contagion between SBOs and their employees. However, emotional contagion in small firms may operate more broadly. Co-worker affect and co-worker responses to SBOs' affect could either enhance or buffer SBOs' affect effects. Our study was not designed to investigate emotional contagion between team members. It also did not include other firm level variables that could influence both SBOs' and employees' affect, such as company culture. Future studies may investigate emotional contagion processes between team members in more detail to provide more insights into the role of affect in organizations.

Fourth, we controlled for country effect, because having data from three countries was not sufficient to build a three-level model with country as the additional higher level. Controlling for higher-level variables coded at a lower level of analysis is recommended when there are not enough observations at the higher level (Nezlek, 2012). Future studies are advised to include more countries and to investigate country/culture as an additional level of analysis, which would allow for investigating cross-national differences in more detail.

Fifth, we focused on small firms, and the analyzed mechanisms may be different in larger ones, with more formal and less frequent relationships between management and employees. It is worthwhile to investigate whether emotional contagion (Barsade, 2002) is less likely to occur in such firms. To contextualize our study, we investigated the effects of firm age and firm size, as well as employees' and entrepreneurs' age and sex. Future studies could investigate the effects of other control variables, including "historical, temporal, institutional, spatial, and social contexts" (Welter, 2011, p. 165).

This study brings important insights into the psychological mechanisms stimulating innovative behavior in small firms and offers some recommendations for practice. SBOs may achieve a competitive advantage over other

firms if they learn how to foster their employees' innovative behavior (de Jong & den Hartog, 2010). Our research shows ways in which this can be achieved—namely, by cultivating their own comfort and enthusiasm towards work. Thus, the development of SBOs' and employees' effective affect regulation strategies may be useful. Learning how to regulate work-related affect and how to build good social relationships at work may, therefore, be a goal for instructors, coaches, and counselors who work with owners and managers of small businesses.

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