

# Managers' compassionate goals, innovation, and firm performance: an examination of mediating processes, and boundary conditions in small- and medium-sized enterprises

Francesco Montani<sup>1,\*</sup> , Raffaele Staglianò<sup>2</sup> ,  
Valentina Sommovigo<sup>1</sup>, Ilaria Setti<sup>3</sup> and  
Gabriele Giorgi<sup>4</sup>

<sup>1</sup>Department of Management, University of Bologna – Rimini Campus, Via Angherà 22, 47900, Rimini, Italy. francesco.montani@unibo.it, valentina.sommovigo@unibo.it

<sup>2</sup>Department of Economics, Università degli Studi di Messina, Piazza Pugliatti, 1, 98122, Messina, Italy. rstagliano@unime.it

<sup>3</sup>Department of Brain and Behavioural Sciences, Unit of Applied Psychology, University of Pavia, Piazza Botta 11, 27100, Pavia, Italy. ilaria.setti@unipv.it

<sup>4</sup>Department of Psychology, Università Europea di Roma, Via degli Aldobrandeschi, 190, 00163, Rome, Italy. prof.gabriele.giorgi@gmail.com

**This study aims to examine the relationships of managers' compassionate goals with innovation and performance in small- and medium-sized enterprises (SMEs). By integrating social exchange theory with social information processing theory, we hypothesize a serial mediation model in which organizational cooperation and firm innovation sequentially mediate a positive relationship between managers' compassionate goals and firm performance. However, we predict that this positive indirect effect would occur only when managers have low self-image goals and there is a high innovation-supportive work environment. Based on survey data from a sample of 116 SMEs in France, our results provide support for our predictions. This study contributes to the literature by disclosing the mechanisms and boundary conditions of the relationship of managers' compassionate goals with SMEs' innovation and performance. Theoretical and managerial implications of this study are discussed.**

## 1. Introduction

Ever-changing market conditions due to frequent external perturbations require today's managers to balance collaborators' needs for support with the company's drive for high performance (Mortnensen and Gardner, 2022). Managers can resolve the apparent trade-off between the needs for high performance and care for employee well-being by ensuring they are enabling their collaborators to achieve sustainably high performance (Mortnensen and Gardner, 2022). To this end, managers with an orientation toward *compassionate goals* – that is, the goals to support others and contribute to their well-being (Crocker and Canevello, 2015) – have the potential to enable their collaborators to develop and implement solutions that contribute to the firm's competitive advantage by providing them with the support they need (Worline and Dutton, 2017). In SMEs, managerial features are considered the most influential factor in determining a firm's innovativeness (Lubatkin et al., 2006), and this latter is recognized as a key source of SMEs' performance (Rosenbusch et al., 2011). These premises suggest that in SMEs, managers led by compassionate goals might play a crucial role in driving firm innovation – that is, the number of new products, services, and processes introduced by a firm in the workplace or marketplace in a given period (Smith et al., 2005) – and, thereby, performance – that is, the effectiveness of a firm in achieving its goals (Kotter and Heskett, 1992).

However, little is still known about whether and how managers' compassionate goals can promote the development and application of innovations that contribute to firm performance. This gap prevents scholars and practitioners from determining to what extent the adoption of this goal orientation is an effective way for managers to increase the innovation potential of their firms, thereby boosting the overall performance of SMEs. Indeed, on the one hand, thanks to their reduced formalized and bureaucratic structure, SMEs may be better able than larger firms to adapt to changing environments and improve quickly (Camisón-Zornoza et al., 2004). However, on the other hand, due to their smallness and limited resources, SMEs may have access to fewer resources (e.g., financial and technological assets) necessary to innovate (Camisón-Zornoza et al., 2004; Love and Roper, 2015). As a result, innovation in SMEs is strongly dependent on the initiatives of their employees and on the collaborative social ties among them, over which managers' interpersonal goals exert considerable influence (Brunswick and Vanhaverbeke, 2015). Therefore, modeling the

impact of managers' compassionate goals can help understand how important relational organizational behaviors (e.g., cooperation) that underly successful firm innovation and performance can be fueled.

This study aims to empirically examine *whether, how, and under which conditions* managers' compassionate goals facilitate innovation and, ultimately, SMEs' performance. We specifically predict a relationship between managers' compassionate goals and firm performance that is sequentially mediated by organizational cooperation and firm innovation, and that is jointly moderated by managers' self-image goals – that is, the goals to construct or defend desired self-images to gain something for the self (Crocker and Canevello, 2015) – and organizational support for innovation – that is, the degree to which an organization supports employees' attempts to introduce innovative ways of doing things in the workplace (West, 1990). We suggest that the beneficial effects of managers' compassionate goals on organizational cooperation will be undermined when managers have high self-image goals and that the beneficial effect of organizational cooperation on firm innovation will be enhanced in the presence of high levels of organizational support for innovation. Then, we propose that the benefits of managers' compassionate goals for firm performance *via* organizational collaboration and firm innovation are maximized when managers' self-image goals are low and organizational support for innovation is high. To support our predictions, we combine social exchange theory (SET; Colquitt et al., 2013) with social information processing theory (SIPT; Salancik and Pfeffer, 1989) as SET allows explaining the mechanisms underlying the beneficial effects of managers' compassionate goals, while SIPT clarifies the conditions under which these effects might happen.

By testing this moderated mediation model, our study significantly contributes to research and practice. First, prior research examining managerial antecedents of innovation and/or performance in SMEs has focused on the effects of manager demographics (e.g., Zahoor and Al-Tabbaa, 2020), psychological characteristics (e.g., Ahn et al., 2017), skills (e.g., Kadam et al., 2019), leadership behaviors (e.g., Basker et al., 2020), and social networks (e.g., Nofiani et al., 2021). However, we have little understanding of the effects of managers' interpersonal goals on firm innovation and performance. Therefore, by analyzing the role of other-oriented goals in conditioning firm innovation and, ultimately, performance, we answer calls for more research (Zahoor and Al-Tabbaa, 2020) on the role of managers' goals. Second, by analyzing the role

of organizational cooperation, this study sheds light on the mechanisms that are responsible for transmitting the benefits of managers' compassionate goals to innovation and, ultimately, performance, in addition to providing new insights into the factors that facilitate cooperative activities at work. Third, by examining the moderating role of self-image goals, this study clarifies the outcomes of compassionate goals (Crocker, 2011): when managers have compassionate goals primarily to benefit themselves, they may damage cooperation, hindering firm innovation and performance. Fourth, by analyzing the enhancing effect of organizational support for innovation, our study deepens our understanding of the organizational conditions that can strengthen the positive link between organizational cooperation and firm innovation. In doing so, our research offers practical insights into the managerial practices needed to enhance innovation in SMEs. Finally, since goals are malleable (Crocker and Canevello, 2015), our study could offer an alternative point of intervention to help managers catalyze innovation within their SMEs.

## 2. Theory and hypotheses

### 2.1. *The relationship between managers' compassionate goals and organizational cooperation*

SET is grounded in the notion of reciprocity norms (Cropanzano and Mitchell, 2005), which form interactions between partners founded on the expectation of receiving relational benefits. Individuals are rational actors whose behaviors are guided by self-interest (Cropanzano and Mitchell, 2005). However, recent advancements in SET acknowledge that people can also have interdependent interests. Thus, some transactions are pursued with the understanding that what benefits everyone also advantages the self (Stafford, 2015). In this regard, although most scholars have taken for granted the assumption that managers are self-interested, others found that managers, including those in SMEs, are not self-centered but are responsive to norms of reciprocity (Fong et al., 2010). Thus, managers in SMEs can simultaneously have self- and other-oriented motives (Zheng et al., 2020), incorporating prosocial goals within their business strategies (Jenkins, 2009). Consistent with this theoretical perspective, we contend that managers' compassionate goals will enhance organizational cooperation, which refers to the degree to which

organizational members coordinate their work actions and collaborate to accomplish communal goals (Tjosvold et al., 2004).

When people have high compassionate goals, they have interdependent interests, since they genuinely care about others' well-being in addition to their own (Crocker et al., 2009), believing that helping others may be jointly beneficial (Canevello and Crocker, 2011). As suggested by SET, managers with compassionate goals are more likely to invest energy and time in building supportive relationships with their subordinates, even if they cannot derive immediate personal gains from these relationships. Indeed, earlier studies found that individuals with compassionate goals construe their work relationships in win-win terms (Crocker and Niiya, 2007). These nonzero-sum views of work relationships, together with beliefs in cooperation (Erickson et al., 2018), would lead managers with compassionate goals to seek solutions that meet their needs in collaboration with others. Precisely, compassionate goals promote a cooperative mindset in which managers feel collaborative with others, reducing the risk of potential conflicts by fostering the belief that relationship problems can be overcome (Crocker and Canevello, 2015). This mindset boosts social closeness, which leads managers to feel connected with others and then want to be compassionate toward them out of concern for others' well-being (Crocker and Canevello, 2015). This may enable managers with compassionate goals to want to be more responsive to their collaborators (Crocker and Niiya, 2007). Collaborators would then become more responsive in return. For instance, one of the few studies with a focus on SMEs indicated that a manager's goal to be compassionate reinforces organizational members' felt compassion, which increases their affective commitment to the firm (Ko and Choi, 2020). Then, a positive responsiveness spiral could be activated, resulting in more cooperative relationships over time (Crocker, 2011). This argument is in line with SET, which states that since employees seek a balance in their exchange relationships, they are willing to reciprocate a manager's goal to be compassionate by engaging in positive work behaviors, including cooperative behaviors. As a result, managers with compassionate goals are likely to build a supportive environment for others and themselves, with virtuous cycles of cooperation that they intend to give to and receive from others. Then, consistent with SET, we hypothesize:

**Hypothesis 1** Managers' compassionate goals will be positively related to organizational cooperation.

## 2.2. The serial mediating roles of organizational cooperation and firm innovation

Previous research has extensively analyzed the organizational factors that determine innovation in SMEs (Love and Roper, 2015). These antecedents include firm size (Camisón-Zornoza et al., 2004); availability of technically qualified staff; technological capability (Modi and Rawani, 2020); strategic planning (Davis and Bendickson, 2021); the presence of an innovation-centric culture (Martínez-Costa et al., 2019); and the adoption of market orientation (Modi and Rawani, 2020), internal financing (Riding et al., 2012), and effective innovation management practices (Heij et al., 2020). Beyond these factors, innovation in SMEs is based on the close cooperation of employees (Sahut and Peris-Ortiz, 2014). Thus, SMEs are likely to capitalize on collaborative innovation efforts (Davis and Bendickson, 2021), relying on cooperation for their survival (Sahut and Peris-Ortiz, 2014). Nevertheless, most research has focused on how collaborations with external partners (e.g., other companies; Guimarães et al., 2021) in R&D activities and innovation projects have a positive impact on firm innovation, neglecting the role of *intra-firm* organizational cooperation. So far, very few studies analyzed the relationship between *intra-firm* organizational cooperation and firm innovation in SMEs, showing a positive relationship between these two (Ar and Baki, 2011).

Organizational cooperation facilitates the sharing of ideas, knowledge, and resources. As such, it can effectively boost the success of innovative projects (Melander, 2017), enhance creativity, and trigger a firm's innovation (Aguilar-Zambrano and Trujillo, 2017). Drawing on SET, *via* positive responsiveness dynamics, managers with compassionate goals could create a collaborative team setting that provides members with resources for developing new perspectives to analyze problems, leading them to identify innovative solutions (De Dreu et al., 2008).

Indeed, since managers with compassionate goals seek collective benefits, they are likely to be openly receptive to opposing opinions (De Dreu et al., 2008), and engage in flexible thought processes (Polman and Emich, 2011). The increased organizational cooperation that results from such a manager's goal to be compassionate facilitates the integration of diverse perspectives to address problems in innovative ways (De Dreu et al., 2008). This may lead to a more comprehensive understanding of the issue's complexity and to considering a broader

array of actions to generate innovative solutions (Plambeck and Weber, 2009). Moreover, cooperation can decrease employees' fears of voicing their opinions, facilitating the risk-taking activities required to develop novel solutions (Chen and Tjosvold, 2012). Hence, we propose:

**Hypothesis 2** Organizational cooperation will be positively related to firm innovation.

SMEs benefit from employees' innovation more than large firms due to their limited size and greater flexibility (Rosenbusch et al., 2011). Thus, innovative firms can promptly and effectively react to changes in their environment by acquiring new capacities (e.g., through new practices), which allows them to develop other innovations and remain profitable (Makanyeza and Dzvuke, 2015). Furthermore, by meeting ever-changing customer needs and serving attractive niches with new products and services, SMEs can defend their competitive position and achieve a long-term competitive advantage over their competitors through increased revenues (Rosenbusch et al., 2011; Lee and Hallak, 2018). The introduction of innovative products and services also sets entry barriers for potential imitators and creates added value for existing consumers, resulting in customer loyalty and retention (Rosenbusch et al., 2011; Lee and Hallak, 2018). Additionally, implementing innovative ideas creates new demand, attracts new customer segments, and increases market share (Khairuddin et al., 2019), thereby boosting the performance of the firm (Rosenbusch et al., 2011). Accordingly, numerous studies have shown that innovation is a critical driver of performance in SMEs (e.g., Exposito and Sanchis-Llopis, 2018). Hence, we propose:

**Hypothesis 3** Firm innovation will be positively related to firm performance.

Taken together, Hypotheses 1–3 suggest that managers' compassionate goals enhance firm innovation through the chain mediating role of organizational cooperation and firm innovation. As such, managers' compassionate goals function as a driving force that activates cooperative relationships. Cooperation, in turn, represents a positive, collective reaction of employees to a manager's compassionate goals that is expected to improve firm innovation and, ultimately, firm performance. Thus, we hypothesize:

**Hypothesis 4** Organizational cooperation and firm innovation will sequentially mediate the relationship between managers' compassionate goals and firm performance.

### 2.3. The undermining effect of managers' self-image goals

To date, little is known about how managers' interpersonal goals can be conducive to organizational cooperation in SMEs. Yet, Zheng et al.'s (2020) study suggested that managers may simultaneously have self- and other-regarding motives and that the relative strength of the two types of motives matters in influencing innovation efforts: managers only engage in beneficial behaviors toward the firm if their other-regarding motives are stronger than their self-serving motives. Similarly, individuals can pursue compassionate and self-image goals concurrently (Canevello and Crocker, 2010). However, these goals have different, and often opposite, relational outcomes (Crocker and Canevello, 2012), which makes the intentions underpinning supportive actions crucially relevant. Indeed, collaborators may strive to understand whether managers want to be supportive mainly out of self-image concerns or out of sincere concern for their well-being (Crocker and Canevello, 2015). In this regard, research has revealed that support that is given strategically with a self-image goal and addressed to obtain something for oneself may not be perceived as genuinely supportive by the recipient (Crocker et al., 2010).

Thus, when managers have compassionate goals and want to be supportive, but are also high on self-image goals, collaborators may not perceive the intentions underlying their supportive attempts as genuinely caring. Indeed, drawing on SIPT, a manager's self-image goals may signal to collaborators that the manager cares more about gaining something for himself/herself than about their well-being (Crocker and Canevello, 2015). In this case, consistent with SET, when evaluating their exchange relation with the manager, the collaborators will not feel supported. Consequently, they will be less likely to reciprocate and reduce their cooperative efforts. Hence, we propose:

**Hypothesis 5** Managers' self-image goals will moderate the positive relationship between managers' compassionate goals and organizational cooperation such that this relationship will be weaker when managers' self-image goals are higher.

### 2.4. The enhancing effect of organizational support for innovation

Previous research focusing on SMEs has suggested that one of the main concerns employees have during the new product development process is the lack of support or limited investment in innovation

(de Vrande et al., 2009). Precisely, studies showed that when the top management encourages employees to take initiative and explore new ways of doing things, firm innovation significantly improves (Ramdani et al., 2022). In this respect, organizational support for innovation refers to the extent to which an organization practically supports employees' attempts to introduce novel and improved ways of doing things in the workplace (West, 1990). The degree to which a company supports its employees to explore innovative approaches plays a vital role in motivating employees' innovative work behaviors (Montani et al., 2021) and shaping the degree of the actual innovation in that company (Williams et al., 2013). Specifically, research mostly conducted in large companies suggests that the success or failure of a firm depends considerably upon the context in which that firm functions such that a highly supportive atmosphere may represent a critical condition, as it enables organizational members to align themselves to implement novel ideas (Somech and Drach-Zahavy, 2013). Indeed, previous research has indicated that support for innovation may prompt employees to be receptive to diverse viewpoints, to put forward novel ideas, and to increase the awareness of the common goal (i.e., to be innovative as a team; Chen et al., 2019). This boosts creative thinking (Somech and Drach-Zahavy, 2013). Furthermore, as the process of generating and testing ideas entails errors, employees are more likely to take risks when they feel that the firm supports their attempts, to avoid likely punishments should their actions fail (Chen and Tjosvold, 2012).

Drawing on SIPT, we argue that organizational support for innovation functions as a salient environmental cue about the kind of innovation-related attitudes the firm expects in the workplace, influencing team members' likelihood of adopting the innovative behaviors that underlie firm innovation. Organizational support for innovation transmits the signal that the firm values innovation by providing employees with various cues, such as investments in new products (Salancik and Pfeffer, 1989). As such, organizational support for innovation conveys that employees' efforts to engage in innovation are appropriate, as these behaviors are supported with opportunities to generate new value. Employees may believe that the firm expects them to use the knowledge and skills that are integrated through their cooperative efforts to achieve innovative outcomes. As a result, collaborative efforts will be addressed toward innovative activities. Conversely, when there is little support for innovation, employees may perceive innovative actions as undesirable

behaviors that the firm sanctions. Thus, they might be reluctant to invest their cooperative efforts in developing innovative ideas. Accordingly, we propose:

**Hypothesis 6** Organizational support for innovation will moderate the positive relationship between organizational cooperation and firm innovation such that this relationship will be stronger when organizational support for innovation is higher.

### 2.5. Overall moderated mediation model

Our joint moderated mediation framework (see Figure 1) suggests that, because managers' self-image goals are expected to attenuate the positive link between managers' compassionate goals and organizational cooperation, and organizational support for innovation is expected to enhance the relationship between organizational cooperation and firm innovation, the whole indirect path from managers' compassionate goals to firm performance via the serial mediation of organizational cooperation and firm innovation should be conditional to the joint moderating effect of managers' self-image goals and organizational support for innovation. As our SET and SITP arguments previously suggested, high levels of organizational support for innovation might be of little or no help in promoting organizational innovation unless managers' self-image goals are low. Likewise, increasing cooperative efforts might not be enough to repay a manager's goal to be genuinely compassionate unless the firm emanates clear signals that innovation is a valued and supported endeavor. This line of reasoning suggests that the positive indirect effect of compassionate goals on firm performance via organizational cooperation and firm innovation should be stronger when managers' self-image goals are low and organizational support for innovation is high. Thus, we propose:

**Hypothesis 7** Managers' self-image goals and organizational support for innovation will moderate

the link between managers' compassionate goals and firm performance via organizational cooperation and firm innovation such that this indirect link will be stronger when managers' self-image goals are lower and organizational support for innovation is higher.

## 3. Method

### 3.1. Participants and procedure

Participants in our study were top managers of SMEs located in France. In our study, we consider that top managers are responsible for adopting key policies in a firm. The firms were selected via the Bureau Van Dijk DIANE database, which is a reference tool for macro- and microeconomic analysis of French firms and has been used by prior research to retrieve the data necessary to examine performance-related outcomes of French SMEs (e.g., Bannour and Mtar, 2019). Consistent with the European Union's definition of SMEs,<sup>1</sup> as well with prior research on European SMEs (e.g., Courrent et al., 2018), the target population in our study was selected based on the following criteria: firms with fewer than 250 employees, firms with annual sales lower than 50 million euros, firms that were independent (i.e., firms where the principal shareholder is an individual or a family) and pursued profit-oriented business activities.

The control, independent (i.e., managers' compassionate goals), mediating (i.e., organizational cooperation and firm innovation), and moderating (i.e., managers' self-image goals and organizational support for innovation) variables were measured via online survey questionnaires that were administered to the top managers of the participating firms between September 2015 and January 2016. The dependent variable (i.e., firm performance) was assessed with archival data obtained from the DIANE database one year after the survey data collection. This time lag allows the independent and mediating variables to be temporally separated from

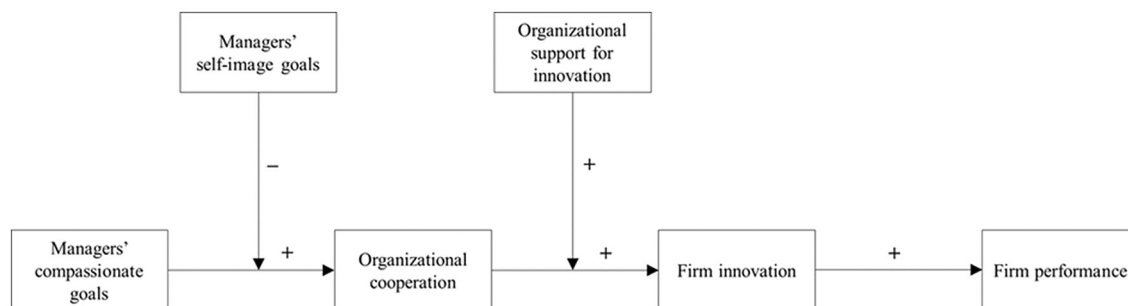


Figure 1. Conceptual model.

the outcome, thereby reducing the threat of common method bias (Podsakoff et al., 2012). The invitation email, which contained a hyperlink to the online survey questionnaire, explained that this study was intended to survey top managers about their perceptions of benevolent approaches that could contribute to firm performance and innovation. A total of 208 questionnaires were returned, of which 77 contained incomplete information, resulting in 131 usable surveys (response rate = 62.98%). In all, 16 surveys were further excluded because archival accounting data on firm performance were not available. Consequently, the final sample consisted of 115 SMEs.

Most of the surveyed managers operated in the manufacturing (15%), scientific and technical activities (13%), construction (10%), and information and communication (7%) sectors. The firms in which they operated had an average size of 45.63 members (SD = 74.66), and an average age of 39.01 years (SD = 81.44). Among the 115 managers, 83% were men, and 83% had a bachelor's degree or higher. Moreover, their average age was 48.71 years (SD = 9.08), and their average organizational tenure was 14.35 years (SD = 8.44).

## 3.2. Measures

### 3.2.1. Managers' compassionate and self-image goals

Managers' compassionate and self-image goals were assessed with Crocker and Niiya's (2007) seven-item (e.g., 'be supportive of others';  $\alpha = .64$ ) and six-item (e.g., 'avoid appearing ignorant, incompetent, or unintelligent';  $\alpha = .79$ ) scales, respectively. All items began with the phrase, 'In the past year, in the workplace, how much did you want to or try to...'. Responses were rated on a five-point scale (1 = *not at all*, 5 = *completely*). Previous investigations on interpersonal goals have used these measures extensively, finding good internal consistency and moderate test-retest reliability (e.g., Montani et al., 2021).

### 3.2.2. Organizational cooperation

Organizational cooperation was measured with Tjosvold et al.'s (2004) five-item scale, which assesses organizational members' emphasis on mutual goals, shared rewards, and common tasks (e.g., 'our members "sink or swim" together';  $\alpha = .77$ ). Responses were given on a five-point scale (1 = *strongly agree*, 5 = *strongly disagree*). This scale has been extensively utilized by earlier studies, showing good reliability (e.g., Chen and Tjosvold, 2012).

### 3.2.3. Organizational support for innovation

Fischer et al.'s (2014) five-item scale was adopted to measure organizational support for innovation (e.g.,

'assistance in developing new ideas is generally readily available';  $\alpha = .74$ ). Managers indicated to what extent their firm engaged in innovation-supportive practices on a five-point scale (1 = *totally disagree*, 5 = *totally agree*). This scale has been widely used by previous studies on innovation, showing good internal consistency (e.g., Montani et al., 2021).

### 3.2.4. Firm innovation

To measure firm innovation, we followed Smith et al.'s (2005) approach – adopted by subsequent studies (e.g., Qian et al., 2013) – by asking managers to indicate the number of new products, services, or processes their firm had introduced in the workplace or marketplace *in the most recent year*. Since our survey data were collected between September 2015 and January 2016, the values reported by participants referred to the innovations implemented over the year 2015. In a meta-analysis of innovation studies, Damanpour (1991) found that this quantitative count is a robust and reliable measure of innovation in a wide range of research settings.

### 3.2.5. Firm performance

Firm performance was measured using the data on the Return on Assets (ROA) of the surveyed firms for the year following the survey (2017). ROA represents a wide accounting-based measure of firm performance that is particularly sensitive to employee collective extra efforts, including collaboration (Sully de Luque et al., 2008) and is one of the most widely used firm performance indicators (La Rocca et al., 2019). Archival measures of ROA were obtained from the ORBIS database.

### 3.2.6. Control variables

A total of seven control variables were included. First, manager age, gender (female = 0; male = 1), education (ranging from primary school to post-graduate), and organizational tenure were controlled for because they have been found to exert confounding effects on firm performance (Reynolds, 2000). Second, following previous authors (Zheng et al., 2020), we controlled for firms' size and age, and the industrial sector (manufacturing-intensive vs. knowledge-intensive industries<sup>2</sup>) to rule out organizational heterogeneity.

## 4. Results

### 4.1. Confirmatory factor analysis and assessment of common method bias

We conducted a confirmatory factor analysis (CFA) in Mplus 7.4 (Muthén and Muthén, 1998–2015) to examine the discriminant validity of the substantive latent

variables of the study, namely managers' compassionate goals, managers' self-image goals, organizational cooperation, and organizational support for innovation. To preserve an optimal indicator-to-sample-size ratio, we adopted the parceling technique (Little, 2013). Following the procedure recommended by Little (2013), we created three parcels to indicate the corresponding latent variables by combining items with higher factor loadings with those with lower factor loadings. The hypothesized four-factor model showed a good fit to the data ( $\chi^2(48) = 56.46$ , CFI = .97, RMSEA = .04, SRMR = .06) and outperformed any alternative model ( $P < .01$ ; see Table 1). Accordingly, the CFA results provide evidence for the distinctiveness of these variables. Table 2 provides the descriptive statistics and correlations for the study variables.

However, since managers' compassionate and self-image goals, organizational cooperation, and organizational support for innovation were measured at the same time by the same source, common method variance within time points could occur. Accordingly, we used the unmeasured latent method factor technique (Podsakoff et al., 2012) to examine this issue with CFA. The results revealed that the fit of the hypothesized model with the inclusion of the unmeasured latent method factor was not significantly different from the original four-factor model ( $\Delta\chi^2(11) = 7.18$ , *ns*). Moreover, the unmeasured latent method factor accounted for 21.55% of the total variance, lower than the median amount of method variance (25%) observed in self-report research (Podsakoff et al., 2012). Accordingly, these results suggest that common method variance is unlikely to be a major concern in this study.

#### 4.2. Hypothesis testing

To test our hypotheses, we run a series of (moderated) multiple regression analyses using Hayes' (2013)

Process macro for SPSS and used a bootstrapping approach with 10,000 resamples, featuring replacement of the original data to calculate 95% bias-corrected confidence intervals (CI) for the estimates of the hypothesized (moderated) indirect effects (Hayes, 2013).

To test Hypotheses 1–3, we examined the existence of positive direct relationships between managers' compassionate goals and organizational cooperation (Hypothesis 1), between organizational cooperation and firm innovation (Hypothesis 2), and firm innovation and firm performance (Hypothesis 3). Managers' compassionate goals were directly and positively related to organizational cooperation ( $\beta = .44$ ,  $P < .01$ , Model 1; see Table 3). Moreover, organizational cooperation was positively related to firm innovation ( $\beta = .23$ ,  $P < .05$ , Model 3), and firm innovation was positively associated with firm performance ( $\beta = .20$ ,  $P < .05$ , Model 5). Thus, Hypotheses 1–3 were supported.

Hypothesis 4 predicted the sequential mediating role of organizational cooperation and firm innovation in the relationship between managers' compassionate goals and firm performance. Based on 10,000 bootstrap replications, the results showed that the indirect effect of managers' compassionate goals on firm performance *via* organizational cooperation and firm innovation was significant (estimate = .02, 95% CI = .01, .06), thus supporting Hypothesis 4. Moreover, none of the additional direct paths among the variables (i.e., managers' compassionate goals  $\rightarrow$  firm innovation, managers' compassionate goals  $\rightarrow$  firm performance, and organizational cooperation  $\rightarrow$  firm performance) was significant (see Table 4), suggesting a full, sequential mediating effect of organizational cooperation and firm innovation.

We then evaluated the interaction effect of managers' compassionate goals and managers'

**Table 1.** Confirmatory factor analysis results: fit indices

Model	$\chi^2$	df	$\Delta\chi^2$	$\Delta$ df	CFI	RMSEA	SRMR
Hypothesized four-factor model	56.46*	48	–	–	.97	.04	.06
Three-factor models							
Combining MCG and MSG	143.89*	51	87.43*	3	.70	.13	.10
Combining organizational cooperation and OSI	108.54*	51	52.08*	3	.81	.10	.09
Two-factor model (combining MCG and MSG, and organizational cooperation and OSI)	195.77*	53	139.31*	5	.53	.15	.12
One-factor model	210.36*	54	153.90*	6	.49	.16	.12

*N* = 115.

CFI, comparative fit index; MCG, managers' compassionate goals; MSG, managers' self-image goals; OSI, organizational support for innovation; RMSEA, root mean square error of approximation; SRMR, standardized root means square residual.

\* $P < .01$ .



Table 2. Descriptive statistics and correlations

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Industry sector	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2. Organization size	45.63	74.66	.15	—	—	—	—	—	—	—	—	—	—	—	—
3. Organization age	39.01	81.44	-.21*	-.03	—	—	—	—	—	—	—	—	—	—	—
4. Manager gender	—	—	-.04	.01	-.05	—	—	—	—	—	—	—	—	—	—
5. Manager age	48.71	9.08	-.19*	-.00	.12	.09	—	—	—	—	—	—	—	—	—
6. Manager education	—	—	.15	.10	.01	-.05	-.05	—	—	—	—	—	—	—	—
7. Manager tenure	14.35	8.44	-.08	-.02	.26**	.05	.35**	-.19*	—	—	—	—	—	—	—
8. Managers' com-passionate goals	4.42	0.48	.05	.00	.15	.01	.12	.08	.14	(.64)	—	—	—	—	—
9. Organizational cooperation	3.96	0.60	-.06	.03	-.04	.15	.19*	.02	.09	.44**	(.77)	—	—	—	—
10. Managers' self-image goals	3.44	0.84	.12	.17	.06	-.17	-.21**	.03	-.04	-.02	-.08	(.79)	—	—	—
11. Organizational support for innovation	3.51	0.71	.11	-.01	-.09	.09	.01	.16	-.03	.21*	.26**	-.16	(.74)	—	—
12. Organizational innovation	3.38	3.67	.09	.12	-.06	.14	-.16	-.03	-.13	.07	.21*	-.14	.47**	—	—
13. Firm performance	3.84	10.75	.03	-.03	-.07	.05	-.06	-.11	-.05	.14	.21*	-.03	.11	.25**	—

N = 115. Internal consistency coefficients (Cronbach's alphas) appear along the diagonal, in parentheses.

\*P < .05,

\*\*P < .01.

**Table 3.** Hierarchical moderated multiple regression analyses with organizational cooperation and firm innovation as mediators

Variables	Organizational cooperation		Organizational innovation		Firm performance
	M1	M2	M3	M4	M5
Industry sector	-.09	-.04	.07	.02	.02
Organization size	.04	.00	.11	.11	-.05
Organization age	-.14	-.12	.03	.07	-.04
Manager gender	.12	.11	.13	.11	-.00
Manager age	.13	.15	-.16	-.19*	-.05
Manager education	.01	.03	-.08	-.13	-.13
Manager tenure	.02	.00	-.12	-.12	-.05
Managers' compassionate goals (ECG)	.44**	.44**	.00	-.05	.08
Organizational cooperation	-	-	.23*	.16	.15
Firm innovation	-	-	-	-	.20*
Managers' self-image goals (ESG)	-	.04	-	-	
Organizational support for innovation (OSI)	-	-	-	.47**	
MCG × MSG	-	-.22**	-	-	
Organizational cooperation × OSI	-	-	-	.21*	
R <sup>2</sup>	.25	.29	.13	.36	.12
F	4.46**	4.32**	1.74	5.18**	1.39

N = 115. Estimates are standardized coefficients. For industry sector: 0 = Manufacturing-intensive industries, 1 = knowledge-intensive industries. For manager gender: 1 = female, 2 = male.

\*P < .05,

\*\*P < .01.

**Table 4.** Conditional indirect effects of managers' compassionate goals on firm performance via organizational cooperation and firm innovation at different values and combinations of managers' self-image goals and organizational support for innovation

First-stage moderator	Second-stage moderator	Organizational performance	
		Estimate	95% confidence interval
High MSG	High OSI	.22	(-.01, 1.21)
High MSG	Low OSI	-.10	(-.67, -.02)
Low MSG	High OSI	.60	(.03, 1.73)
Low MSG	Low OSI	-.28	(-1.09, -.09)

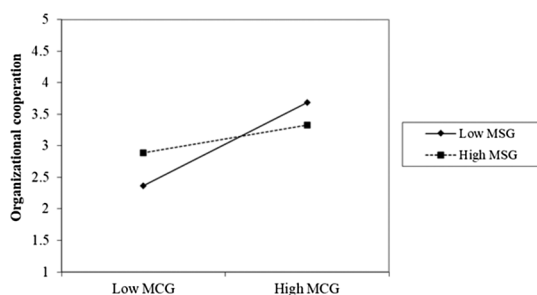
N = 115. Confidence intervals are based on 10,000 bootstrapping samples.

MSG, managers' self-image goals; OSI, organizational support for innovation.

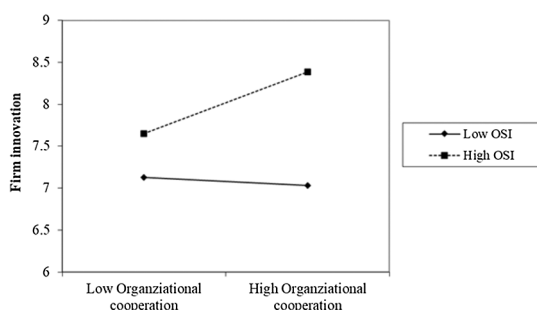
self-image goals on organizational cooperation (Hypothesis 5), and the interaction effect of organizational cooperation and organizational support for innovation on firm innovation (Hypothesis 5). We centered the variables before computing the interaction term. In Table 3 (see Model 2), the managers' compassionate goals × managers' self-image goals interaction term demonstrated a statistically significant effect on organizational cooperation ( $\beta = -.22, P < .01$ ; see Figure 2). A simple slope test indicated that the positive relationship between

managers' compassionate goals and organizational cooperation was stronger at low levels of self-image goals ( $B = .80, P < .01$ ) – that is, 1 SD below the mean – than at high levels ( $B = .32, P < .05$ ) – that is, 1 SD above the mean. Therefore, Hypothesis 5 was supported.

In Model 4 of Table 3, the interaction term between organizational cooperation and organizational support for innovation significantly predicted firm innovation ( $\beta = .21, P < .01$ ; see Figure 3). A simple slope test suggested that organizational cooperation



**Figure 2.** Organizational cooperation as a function of managers' compassionate goals (MCG) at  $\pm 1$  standard deviation (SD) of managers' self-image goals (MSG). At low MSG (1 SD below the mean),  $B = .80$ ,  $P < .01$ ; at high MSG (1 SD above the mean),  $B = .32$ ,  $P < .05$ .



**Figure 3.** Firm innovation as a function of organizational cooperation at  $\pm 1$  standard deviation (SD) of organizational support for innovation (OSI). At low OSI (1 SD below the mean),  $B = -.18$ ,  $ns$ ; at high OSI (1 SD above the mean),  $B = 2.31$ ,  $P < .01$ .

had a statistically significant, positive relationship with firm innovation at high levels of organizational support for innovation ( $B = 2.31$ ,  $P < .01$ ), but a non-significant, negative relationship with firm innovation at low levels of organizational support for innovation ( $B = -.18$ ,  $ns$ ). Thus, the results supported Hypothesis 6.

Finally, we conducted bootstrapping analyses (resampling 10,000 times) to test the conditional indirect effects, as predicted by Hypothesis 7. Results showed that managers' compassionate goals had a positive indirect effect on firm performance *via* organizational cooperation and firm innovation only when managers' self-image goals were low and organizational support for innovation was high ( $B = .60$ , 95% CI = .03, 1.73; see Table 4). This indirect effect was non-significant at high levels of managers' self-image goals and organizational support for innovation ( $B = .22$ , 95% CI =  $-.01$ , 1.21), and significantly negative when organizational support innovation was low and managers' self-image goals were either high ( $B = -.10$ , 95% CI =  $-.67$ ,  $-.02$ ) or low ( $B = -.28$ , 95% CI =  $-1.09$ ,  $-.09$ ). These results support Hypothesis 7.

## 5. Discussion

This is the first empirical study to test *whether, how, and under which conditions* managers' compassionate goals may facilitate the innovation and performance of SMEs. The findings demonstrated that the link between managers' compassionate goals and firm performance was sequentially mediated by organizational cooperation and firm innovation, but only when managers had low self-image goals and when, simultaneously, the levels of organizational support for innovation were high. Overall, the results demonstrate that a manager's goal to be compassionate toward their collaborators may draw remarkable benefits in terms of improved organizational cooperation and, when there are high levels of organizational support for innovation, increased firm innovation and, ultimately, firm performance.

### 5.1. Theoretical contributions

This research makes several key contributions to the literature. First, while the two studies examining the role of compassionate goals in the workplace were conducted on employees in large companies (see Crocker and Niiya, 2007; Montani et al., 2021), this is, as far as we know, the first study to analyze this topic from the perspective of top-level managers within SMEs. According to the study by Crocker and Niiya (2007), our research indicates that individuals' compassionate and self-image goals are related to important work-related behaviors. Our findings also support the undermining effect of self-image goals (Crocker, 2011), which contrasts with Montani et al. (2021). The authors showed that employees from collectivistic countries (i.e., Brazil) were more likely than those from individualistic countries (i.e., Canada) to engage in innovative work behaviors when driven by self-image goals. Since our study participants were from an individualistic country (France), the cultural dimension of individualism might thus have shaped the effect of managers' compassionate and self-image goals on the innovation and, ultimately, the performance of the firms surveyed. Taken together, the findings from these investigations highlight the value of considering cultural dimensions to understand the impact of interpersonal goals on work and organizational outcomes.

Second, as far as we know, this is the second study to analyze the role of managers' goals on innovation and performance (see Zhang and Wang, 2020 for innovation; Van den Heuvel, 2006 for performance) in SMEs by answering calls for more

research on this topic in the SME context (Zahoor and Al-Tabbaa, 2020). Investigating the managerial-level antecedents of innovation in SMEs is of utmost importance, as, due to their nature and size, SMEs are particularly well-positioned to overcome disadvantages resulting from resource constraints by innovating themselves (Taneja et al., 2016). Thus, this study contributes to previous research by confirming the role of managers in facilitating innovation and performance in SMEs and showing that their other-oriented goals may set the foundation for successful firm innovation and, ultimately, performance.

Third, to our knowledge, this is the first study to reveal a positive association between managers' compassionate goals and organizational cooperation in SMEs. In doing so, this study provides empirical evidence for the understudied assumption that the effects of managers' goals extend to firm outcomes in the context of SMEs (see Zhang and Wang, 2020 for an exception). Moreover, this is the first research to indicate that a manager's goal to be compassionate can facilitate collaborative activities at work, thereby enriching the small body of research on the antecedents of organizational cooperation in SMEs.

Fourth, this study deepens our understanding of the boundary conditions associated with the beneficial effects of managers' compassionate goals. Indeed, our results showed that two conditions must be satisfied for organizational cooperation to transmit the benefits of managers' compassionate goals to innovation and, ultimately, performance: managers with compassionate goals must have low self-image goals, and, simultaneously, the level of organizational support for innovation must be high. On the one hand, this study helps clarify the consequences of compassionate goals (Crocker, 2011) by revealing that when managers have compassionate goals primarily to benefit themselves, they may undermine organizational cooperation and ultimately hamper innovation to boost firm performance. In doing so, our study offers new insights into the combined effects of managers' interpersonal goals in SMEs, providing further evidence that the relative strength of self- and other-oriented motives matters in affecting innovation efforts (Zheng et al., 2020). On the other hand, this study indicates that organizational support for innovation represents an essential condition to translate organizational collaborative efforts into enhanced firm innovation and, ultimately, firm performance. Although the key role of support for innovation in shaping a firm's innovation and employees' innovative behavior has been widely confirmed by previous studies in large companies (e.g., Williams et al., 2013; Montani et al., 2021), this is the first

research in the SME context to analyze its enhancing effect in a model with managers' compassionate goals as antecedents. Accordingly, our results advance the literature on innovation in SMEs.

## 5.2. Practical implications

By disclosing the (conditional) benefits of compassion for firm outcomes, this research provides new insights for practitioners. First, key organizational decision-makers could be coached and trained on compassion to be good managers (Sapienza, 2005). To this end, managers could be provided with a set of tools to foster compassionate goals. These tools might include value self-affirmation exercises (Shade and Crocker, 2011), compassion meditation (e.g., concentrating on what the individual cares about beyond his/her interest; Erickson et al., 2017), and loving-kindness meditation (i.e., a form of meditation focused on cultivating warm feelings for others; Davidson and McEwen, 2012).

Second, the finding that organizational cooperation may promote a firm's innovation, but only at high levels of organizational support for innovation suggests that SMEs should consider promoting collaborative activities and fostering organizational support for innovation. To this aim, managerial efforts could focus on implementing strategies to enhance communication and information sharing, collective coping skills within the team (Montani et al., 2020) and socialization practices to stimulate bonding among team members. Likewise, managers could be coached on being more supportive of innovative practices (King et al., 2007). Managers could also consider introducing novel systems and structures that promote an open organizational atmosphere through training or organizational development initiatives.

## 5.3. Limitations and future research recommendations

The contributions of this research must be interpreted considering its limitations. First, our study relied on cross-sectional and self-report data to measure independent, mediating, and moderating variables, which may raise issues of common method variance. However, following the recommendations from methodologists (Podsakoff et al., 2012), we controlled for common method bias and found that it was unlikely to be a major concern in our study. Moreover, we collected objective data on firm performance (i.e., archival information on the firm's ROA) for the year following the survey data collection, thereby reducing the limitations associated with the cross-sectional and self-report nature of the survey data.

Notwithstanding, managers' declared intentions to be compassionate may not reflect how they actually behave with their collaborators and may be biased by social desirability concerns, self-deception, or inaccurate recall. However, research indicated that social desirability does not account for the effects of interpersonal goals (Crocker and Canevello, 2012), and that self-reports are consistent with informant ratings of interpersonal goals, at least in roommate dyads (Crocker and Canevello, 2008; Canevello and Crocker, 2010) and clinical samples (Erickson et al., 2018). Nevertheless, future research should integrate managers' self-ratings of interpersonal goals with collaborators' assessment of managers' compassionate behavior to understand whether the consistency between manager's and collaborators' perceptions might influence different firm outcomes. For instance, future studies could investigate whether managers' compassionate goal achievement (i.e., actually being perceived as compassionate by collaborators) can strengthen the positive impact of compassionate goal setting (i.e., manager compassionate goals) on intra-firm cooperation and firm outcomes. Likewise, we theoretically assumed that a manager's compassionate goals would foster collaborators' cooperative behaviors by activating positive responsiveness dynamics. However, we did not assess the manager-collaborator social exchange mechanisms that could be responsible for transmitting the benefits of managers' compassionate goals to collaborators' cooperation. Hence, additional research is needed to understand whether manager-collaborator responsiveness dynamics can explain the positive impact of compassionate goals on intra-firm cooperation and, ultimately, firm innovation and performance.

Second, innovation was measured only based on the number of innovations a firm had introduced in the last year. Thus, future work should focus on other measures for innovation, and collect data from multiple sources. Future studies should adopt multisource ratings of innovation because, although managers represent reliable sources of innovation activities in SMEs (Ahn et al., 2017), employees have direct experience of and then more information about organizational cooperation and about the extent to which they are involved in innovation-related behaviors, such as the implementation of novel ideas (Montani et al., 2021).

Third, a multilevel approach would be strongly recommended in the future to adequately examine whether and how organizational-level factors (i.e., organizational support for innovation) influence both individual-level and organizational-level innovation depending on managers' and employees' interpersonal goals. Future studies could also integrate a top-down approach – examining the effects of managers'

interpersonal goals on organizational and individual outputs – with a bottom-up approach – analyzing how interpersonal goals of employees at lower hierarchical levels affect organizational processes and outcomes at higher levels. Future research should also investigate the effects of middle-level managers' interpersonal goals on innovation outcomes because the behaviors of top-level and middle-level managers have been found to differentially influence subordinates' innovative behaviors (Šimanasienė et al., 2021). Finally, our research was limited to French SMEs. Since firm size (Camisón-Zornoza et al., 2004) and the country's cultural configuration (Montani et al., 2021) play a key role in shaping innovation outcomes, replication studies should be conducted in samples from larger firms or SMEs located in other nations to increase the generalizability of these findings. We hope that these findings will encourage future attempts to clarify the role of compassionate goals on firm outcomes in SMEs.

## Acknowledgement

Open Access Funding provided by Università degli Studi di Bologna within the CRUI-CARE Agreement.

## Conflict of interest

The authors declare that they have no conflict of interest.

## Ethics statement

The study was conducted in agreement with the ethical norms established by the French National Center for Scientific Research.

## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## References

- Aguilar-Zambrano, J.J. and Trujillo, M.J. (2017) Factors influencing interaction of creative teams in generation of ideas of new products: an approach from collaborative scripts. <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8125391>

- Ahn, J.M., Minshall, T., and Mortara, L. (2017) Understanding the human side of openness: the fit between open innovation modes and CEO characteristics. *R&D Management*, **47**, 5, 727–740. <https://doi.org/10.1111/radm.12264>.
- Ar, I.M. and Baki, B. (2011) Antecedents and performance impacts of product versus process innovation: empirical evidence from SMEs located in Turkish science and technology parks. *European Journal of Innovation Management*, **14**, 2, 172–206. <https://doi.org/10.1108/14601061111124885>.
- Bannour, S. and Mtar, K. (2019) To what extent do quality procedures determine the performance of French SMEs? *International Journal of Quality & Reliability Management*, **36**, 1, 58–76. <https://doi.org/10.1108/IJQRM-01-2018-0002>.
- Basker, I.N., Sverdrup, T.E., Schei, V., and Sandvik, A.M. (2020) Embracing the duality of consideration and initiating structure: CEO leadership behaviors and small firm performance. *Leadership & Organization Development Journal*, **41**, 3, 449–462. <https://doi.org/10.1108/LODJ-04-2019-0170>.
- Brunswick, S. and Vanhaverbeke, W. (2015) Open innovation in small and medium-sized enterprises (SMEs): external knowledge sourcing strategies and internal organizational facilitators. *Journal of Small Business Management*, **53**, 4, 1241–1263. <https://doi.org/10.1111/jsbm.12120>.
- Camisón-Zornoza, C., Lapiedra-Alcamí, R., Segarra-Ciprés, M., and Boronat-Navarro, M. (2004) A meta-analysis of innovation and organizational size. *Organization Studies*, **25**, 3, 331–361. <https://doi.org/10.1177/0170840604040039>.
- Canevello, A. and Crocker, J. (2010) Creating good relationships: responsiveness, relationship quality, and interpersonal goals. *Journal of Personality and Social Psychology*, **99**, 1, 78–106. <https://doi.org/10.1037/a0018186>.
- Canevello, A. and Crocker, J. (2011) Interpersonal goals, others' regard for the self, and self-esteem: the paradoxical consequences of self-image and compassionate goals. *European Journal of Social Psychology*, **41**, 4, 422–434. <https://doi.org/10.1002/ejsp.808>.
- Chen, X., Liu, J., Zhang, H., and Kwan, H.K. (2019) Cognitive diversity and innovative work behaviour: the mediating roles of task reflexivity and relationship conflict and the moderating role of perceived support. *Journal of Occupational and Organizational Psychology*, **92**, 3, 671–694. <https://doi.org/10.1111/joop.12259>.
- Chen, G. and Tjosvold, D. (2012) Shared rewards and goal interdependence for psychological safety among departments in China. *Asia Pacific Journal of Management*, **29**, 2, 433–452. <https://doi.org/10.1080/13602381.2020.1787691>.
- Colquitt, J.A., Scott, B.A., Rodell, J.B., Long, D.M., Zapata, C.P., Conlon, D.E., and Wesson, M.J. (2013) Justice at the millennium, a decade later: a meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, **98**, 2, 199–236. <https://doi.org/10.1037/a0031757>.
- Courrent, J.M., Chassé, S., and Omri, W. (2018) Do entrepreneurial SMEs perform better because they are more responsible? *Journal of Business Ethics*, **153**, 2, 317–336. <https://doi.org/10.1007/s10551-016-3367-4>.
- Crocker, J. (2011) Presidential address: self-image and compassionate goals and construction of the social self: implications for social and personality psychology. *Personality and Social Psychology Review*, **15**, 4, 394–407. <https://doi.org/10.1177/1088868311418746>.
- Crocker, J. and Canevello, A. (2008) Creating and undermining social support in communal relationships: the role of compassionate and self-image goals. *Journal of Personality and Social Psychology*, **95**, 3, 555–575. <https://doi.org/10.1037/0022-3514.95.3.555>.
- Crocker, J. and Canevello, A. (2015) Relationships and the self: egosystem and ecosystem. In: Mikulincer, M., Shaver, P.R., Simpson, J.A., and Dovidio, J.F. (eds), *APA Handbook of Personality and Social Psychology: Interpersonal Relations*. Washington, DC: American Psychological Association. pp. 93–116.
- Crocker, J., and Canevello, A. (2012) Consequences of self-image and compassionate goals. In: Devine, P., and Plant, A. (eds), *Advances in Experimental Social Psychology*. San Diego, CA: Academic Press. Vol. **45**, pp. 229–277.
- Crocker, J. and Niiya, Y. (2007) *Self-image and Compassionate Goals at Work*. Ann Arbor, MI: University of Michigan.
- Crocker, J., Canevello, A., Breines, J.G., and Flynn, H. (2010) Interpersonal goals and change in anxiety and dysphoria in first-semester college students. *Journal of Personality and Social Psychology*, **98**, 6, 1009–1024. <https://doi.org/10.1037/a0019400>.
- Crocker, J., Olivier, M.A., and Nuer, N. (2009) Self-image goals and compassionate goals: costs and benefits. *Self and Identity*, **8**, 3, 251–269. <https://doi.org/10.1080/15298860802505160>.
- Cropanzano, R. and Mitchell, M.S. (2005) Social exchange theory: an interdisciplinary review. *Journal of Management*, **31**, 6, 874–900. <https://doi.org/10.1177/0149206305279602>.
- Daft, R.L. and Macintosh, N.B. (1981) A tentative exploration into the amount and equivocality of information processing in organizational work units. *Administrative Science Quarterly*, **26**, 2, 207–224. <https://doi.org/10.2307/2392469>.
- Damanpour, F. (1991) Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, **34**, 3, 555–590. <https://doi.org/10.5465/256406>.
- Davidson, R.J. and McEwen, B.S. (2012) Social influences on neuroplasticity: stress and interventions to promote well-being. *Nature Neuroscience*, **15**, 5, 689–695. <https://doi.org/10.1038/nn.3093>.
- Davis, P.E. and Bendickson, J.S. (2021) Strategic antecedents of innovation: variance between small and large firms. *Journal of Small Business Management*, **59**, 1, 47–72. <https://doi.org/10.1111/jsbm.12478>.

- De Dreu, C.K.W., Baas, M., and Nijstad, B.A. (2008) Hedonic tone and activation level in the mood–creativity link: toward a dual pathway to creativity model. *Journal of Personality and Social Psychology*, **94**, 5, 739–756. <https://doi.org/10.1037/0022-3514.94.5.739>.
- Erickson, T.M., Granillo, M.T., Crocker, J., Abelson, J.L., Reas, H.E., and Quach, C.M. (2018) Compassionate and self-image goals as interpersonal maintenance factors in clinical depression and anxiety. *Journal of Clinical Psychology*, **74**, 4, 608–625. <https://doi.org/10.1002/jclp.22524>.
- Erickson, T.M., Mayer, S.E., Lopez-Duran, N.L., Scarsella, G.M., McGuire, A.P., Crocker, J., and Abelson, J.L. (2017) Mediators of compassionate goal intervention effects on human neuroendocrine responses to the Trier Social Stress Test. *Stress*, **20**, 6, 533–540. <https://doi.org/10.1080/10253890.2017.1368489>.
- European Commission (EU). (2003) Commission recommendation of 6 May 2003, concerning the definition of micro, small and medium-sized enterprises (notified under document number C (2003) 1422). *Official Journal of the European Union, L*, **124**, 36–41. <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:en:PDF>.
- Exposito, A. and Sanchis-Llopis, J.A. (2018) Innovation and business performance for Spanish SMEs: new evidence from a multi-dimensional approach. *International Small Business Journal*, **36**, 8, 911–931. <https://doi.org/10.1177/0266242618782596>.
- Fausang, M.S., Jeppe Jeppesen, H., Jønsson, T.S., Lewandowski, J., and Bligh, M.C. (2013) Moderators of shared leadership: work function and team autonomy. *Team Performance Management*, **19**, 244–262. <https://doi.org/10.1108/TPM-11-2012-0038>.
- Fischer, R., Ferreira, M.C., Assmar, E.M.L., Baris, G., Berberoglu, G., Dalyan, F., Wong, C.C., Hassan, A., Hanke, K., and Boer, D. (2014) Organizational practices across cultures: an exploration in six cultural contexts. *International Journal of Cross Cultural Management*, **14**, 1, 105–125. <https://doi.org/10.1177/1470595813510644>.
- Fong, E.A., Misangyi, V.F., and Tosi, H.L. (2010) The effect of CEO pays deviations on CEO withdrawal, firm size, and firm profits. *Strategic Management Journal*, **31**, 6, 629–651. <https://doi.org/10.1002/smj.827>.
- Guimarães, L.G.D.A., Blanchet, P., and Cimon, Y. (2021) Collaboration among small and medium-sized enterprises as part of internationalization: a systematic review. *Administrative Sciences*, **11**, 4, 153. <https://doi.org/10.3390/admsci11040153>.
- Hayes, A.F. (2013) *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York, NY: Guilford Press.
- Heij, C.V., Volberda, H.W., Van den Bosch, F.A., and Hollen, R.M. (2020) How to leverage the impact of R&D on product innovation? The moderating effect of management innovation. *R&D Management*, **50**, 2, 277–294. <https://doi.org/10.1111/radm.12396>.
- Jenkins, H. (2009) A ‘business opportunity’ model of corporate social responsibility for small-and medium-sized enterprises. *Business Ethics: A European Review*, **18**, 1, 21–36. <https://doi.org/10.1111/j.1467-8608.2009.01546.x>.
- Kadam, R., Rao, S., Abdul, W.K., and Jabeen, S.S. (2019) Impact of cultural intelligence on SME performance: the mediating effect of entrepreneurial orientation. *Journal of Organizational Effectiveness: People and Performance*, **6**, 3, 161–185. <https://doi.org/10.1108/JOEPP-12-2018-0101>.
- Khairuddin, S., Qureshi, Z.H., Wahid, R.A., Tehseen, S., Pathan, Z.H., and Khan, M.R.K. (2019) A conceptual study on contingent impact of external integration on innovation SME business success relationship. *International Journal of Financial Research*, **10**, 5, 370–380. <https://doi.org/10.5430/ijfr.v10n5p370>.
- King, E.B., De Chermont, K., West, M., Dawson, J.F., and Hebl, M.R. (2007) How innovation can alleviate negative consequences of demanding work contexts: The influence of climate for innovation on organizational outcomes. *Journal of Occupational and Organizational Psychology*, **80**, 631–645.
- Ko, S. and Choi, Y. (2020) The effects of compassion experienced by SME employees on affective commitment: double-mediation of authenticity and positive emotion. *Management Science Letters*, **10**, 6, 1351–1358. <https://doi.org/10.5267/j.msl.2019.11.022>.
- Kotter, J.P. and Heskett, J.L. (1992) *Corporate Culture and Performance*. New York, NY: The Free Press.
- La Rocca, M., Staglianò, R., La Rocca, T., Cariola, A., and Skatova, E. (2019) Cash holdings and sme performance in Europe: the role of firm-specific and macroeconomic moderators. *Small Business Economics*, **53**, 4, 1051–1078. <https://doi.org/10.1007/s11187-018-0100-y>.
- Lee, C. and Hallak, R. (2018) Investigating the moderating role of education on a structural model of restaurant performance using multi-group PLS-SEM analysis. *Journal of Business Research*, **88**, 298–305. <https://doi.org/10.1016/j.jbusres.2017.12.004>.
- Little, T.D. (2013) *Longitudinal Structural Equation Modeling*. New York, NY: Guilford Press.
- Love, J.H. and Roper, S. (2015) SME innovation, exporting and growth: a review of existing evidence. *International Small Business Journal*, **33**, 1, 28–48. <https://doi.org/10.1177/0266242614550190>.
- Lubatkin, M.H., Simsek, Z., Ling, Y., and Veiga, J.F. (2006) Ambidexterity and performance in small-to medium-sized firms: the pivotal role of top management team behavioral integration. *Journal of Management*, **32**, 5, 646–672. <https://doi.org/10.1177/0149206306290712>.
- Martínez-Costa, M., Jiménez-Jiménez, D., and Dine Rabeh, H.A. (2019) The effect of organisational learning on interorganisational collaborations in innovation: an empirical study in SMEs. *Knowledge Management Research & Practice*, **17**, 2, 137–150. <https://doi.org/10.1080/14778238.2018.1538601>.

- Makanyeza, C. and Dzvukeye, G. (2015) The influence of innovation on the performance of small and medium enterprises in Zimbabwe. *Journal of African Business*, **16**, 2, 198–214. <https://doi.org/10.1080/15228916.2015.1061406>.
- Melander, L. (2017) Achieving sustainable development by collaborating in green product innovation. *Business Strategy and the Environment*, **26**, 8, 1095–1109. <https://doi.org/10.1002/bse.1970>.
- Modi, P. and Rawani, A.M. (2020) Drivers of innovation practices in SMEs: a literature review. *International Journal of e-Entrepreneurship and Innovation (IJEEI)*, **10**, 1, 28–40. <https://doi.org/10.4018/978-1-7998-9155-0.ch001>.
- Montani, F., Sommovigo, V., Setti, I., Giorgi, G., and Argentero, P. (2020) The moderating effect of exposure to robbery on the relationship between post-traumatic stress and job satisfaction. *Industrial Health*, **58**, 4, 335–344. <https://doi.org/10.2486/indhealth.2019-0096>.
- Montani, F., Torres, C., Ferreira, M.C., Mendonça, H., Silva, A.J., Courcy, F., and Dagenais-Desmarais, V. (2021) Self-image goals, compassionate goals and innovative work behavior: the role of organizational support for innovation across countries. *Journal of Business Research*, **137**, 588–600. <https://doi.org/10.1016/j.jbusres.2021.08.072>.
- Mortensen, M. and Gardner, H. K. (2022). Leaders don't have to choose between compassion and performance. <https://hbr.org/2022/02/leaders-dont-have-to-choose-between-compassion-and-performance>
- Muthén, L.K. and Muthén, B.O. (2015) *Mplus User's Guide*. Los Angeles, CA: Muthén & Muthén.
- Nofiani, D., Indarti, N., Lukito-Budi, A.S., and Manik, H.F.G.G. (2021) The dynamics between balanced and combined ambidextrous strategies: a paradoxical affair about the effect of entrepreneurial orientation on SMEs' performance. *Journal of Entrepreneurship in Emerging Economies*, **13**, 5, 1262–1286. <https://doi.org/10.1108/JEEE-09-2020-0331>.
- Plambeck, N. and Weber, K. (2009) CEO ambivalence and responses to strategic issues. *Organization Science*, **20**, 6, 993–1010. <https://doi.org/10.1287/orsc.1090.0471>.
- Podsakoff, P.M., MacKenzie, S.B., and Podsakoff, N.P. (2012) Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, **63**, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>.
- Polman, E. and Emich, K.J. (2011) Decisions for others are more creative than decisions for the self. *Personality and Social Psychology Bulletin*, **37**, 4, 492–501. <https://doi.org/10.1177/0146167211398362>.
- Qian, C., Cao, Q., and Takeuchi, R. (2013) Top management team functional diversity and organizational innovation in China: the moderating effects of environment. *Strategic Management Journal*, **34**, 1, 110–120. <https://doi.org/10.1002/smj.1993>.
- Ramdani, B., Raja, S., and Kayumova, M. (2022) Digital innovation in SMEs: a systematic review, synthesis and research agenda. *Information Technology and Development*, **28**, 56–80. <https://doi.org/10.1080/02681102.2021.1893148>.
- Reynolds, P. (2000) National panel study of U.S. business start-ups: background and methodology. In: Katz, J. (ed.), *Advances in Entrepreneurship, Firm Emergence, and Growth*. Stanford, CA: JAI Press. pp. 153–227.
- Riding, A., Orser, B.J., Spence, M., and Belanger, B. (2012) Financing new venture exporters. *Small Business Economics*, **38**, 2, 147–163. <https://doi.org/10.1007/s11187-009-9259-6>.
- Rosenbusch, N., Brinckmann, J., and Bausch, A. (2011) Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, **26**, 441–457. <https://doi.org/10.1016/j.jbusvent.2009.12.002>.
- Sahut, J.M. and Peris-Ortiz, M. (2014) Small business, innovation, and entrepreneurship. *Small Business Economics*, **42**, 4, 663–668. <https://doi.org/10.1007/s11187-013-9521-9>.
- Salancik, G.R. and Pfeffer, J. (1989) Who gets power and how they hold on to it: a strategic-contingency model of power. In: Leavitt, H.J., Pondy, L.R., and Boje, D.M. (eds), *Readings in Managerial Psychology*. Chicago, IL: University of Chicago Press. pp. 346–366.
- Sapienza, A.M. (2005) From the inside: scientists' own experience of good (and bad) management. *R&D Management*, **35**, 5, 473–482.
- Shade, C. and Crocker, J. (2011) *Values Affirmation Boosts Self-Esteem by Increasing Compassionate Goals*. Columbus, OH: Ohio State University.
- Šimanauskienė, V., Giedraitytė, V., and Navickienė, O. (2021) The role of military leadership in shaping innovative personnel behaviour: the case of the Lithuanian armed forces. *Sustainability*, **13**, 16, 9283. <https://doi.org/10.3390/su13169283>.
- Smith, K.G., Collins, C.J., and Clark, K.D. (2005) Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal*, **48**, 2, 346–357. <https://doi.org/10.5465/amj.2005.16928421>.
- Somech, A. and Drach-Zahavy, A. (2013) Translating team creativity to innovation implementation: the role of team composition and climate for innovation. *Journal of Management*, **39**, 3, 684–708. [doi:10.1177/0149206310394](https://doi.org/10.1177/0149206310394).
- Stafford, L. (2015) Social exchange theories: calculating the rewards and costs of personal relationships. In: Braithwaite, D.O. and Schrodt, P. (eds), *Engaging Theories in Interpersonal Communication*. Los Angeles, CA: Sage Publication. pp. 403–415.
- Sully de Luque, M.S., Washburn, N.T., Waldman, D.A., and House, R.J. (2008) Unrequited profit: how stakeholder and economic values relate to subordinates' perceptions of leadership and firm performance. *Administrative Science Quarterly*, **53**, 626–654. [doi:10.2189/asqu.53.4.626](https://doi.org/10.2189/asqu.53.4.626).
- Taneja, S., Pryor, M.G., and Hayek, M. (2016) Leaping innovation barriers to small business longevity. *Journal of Business Strategy*, **37**, 3, 44–51.
- Tjosvold, D., Tang, M.M.L., and West, M. (2004) Reflexivity for team innovation in China. *Group and*



- Organization Management*, **29**, 5, 540–559. <https://doi.org/10.1177/1059601103254911>.
- Van den Heuvel, J. (2006) *Governance and Boards in Small and Medium-Sized Family Businesses*. Hasselt: Universiteit Hasselt.
- de Vrande, V., De Jong, J.P., Vanhaverbeke, W., and De Rochemont, M. (2009) Open innovation in SMEs: trends, motives and management challenges. *Technovation*, **29**, 7, 423–437. <https://doi.org/10.1016/j.technovation.2008.10.001>.
- West, M.A. (1990) The social psychology of innovation in groups. In: West, M.A. and Farr, J.L. (eds), *Innovation and Creativity at Work: Psychological and Organizational Strategies*. Chichester: John Wiley. pp. 309–333.
- Williams, C.C., Verdú, F.M., Belso-Martínez, J.A., Choi, B.K., Moon, H.K., and Ko, W. (2013) An organization's ethical climate, innovation, and performance. *Management Decision*, **51**, 6, 1250–1275.
- Worline, M. and Dutton, J.E. (2017) *Awakening Compassion at Work: The Quiet Power that Elevates People and Organizations*. San Francisco, CA: Berrett-Koehler Publishers.
- Zahoor, N. and Al-Tabbaa, O. (2020) Inter-organizational collaboration and SMEs' innovation: a systematic review and future research directions. *Scandinavian Journal of Management*, **36**, 2, 101109. <https://doi.org/10.1016/j.scaman.2020.101109>.
- Zhang, C. and Wang, H. (2020) CEO learning goal orientation and firm innovation: the mechanism and boundary conditions. *Journal of Small Business Management*, **58**, 5, 948–974. <https://doi.org/10.1111/jsbm.12537>.
- Zheng, W., Shen, R., Zhong, W., and Lu, J. (2020) CEO values, firm long-term orientation, and firm innovation: evidence from Chinese manufacturing firms. *Management and Organization Review*, **16**, 1, 69–106. <https://doi.org/10.1017/mor>.

## Notes

- <sup>1</sup> We follow the EU definition of SMEs, namely 'enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million' (European Commission, 2003, p. 39).
- <sup>2</sup> Our choice to categorize SMEs' industrial sectors into knowledge-intensive and manufacturing-intensive industries is based on prior organizational research suggesting that the types of work tasks characteristic of these two sectors engender distinct demands for innovation and, thereby, are expected to differentially influence firm's innovativeness (Daft and Macintosh, 1981). Indeed, while manufacturing workers tend to work on familiar tasks that can be specified in advance and handled *via* specific procedures, knowledge workers tend to work on less analyzable, more complex, and more uncertain tasks that require

higher problem solving and active use of knowledge to find new solutions (Daft and Macintosh, 1981; Fausing et al., 2013). Therefore, demands for and investment in innovative activities might be higher in knowledge than in manufacturing-intensive firms. Consistent with this rationale, the results of logistic regression analysis showed that the sector was positively and significantly related to our sample managers' qualitative rating of firm innovativeness ( $B = .95$ ,  $P < .05$ ) – a dichotomous variable that distinguishes firms rated as innovative (0) and non-innovative (1).

**Francesco Montani** is an Assistant Professor of Organization and Human Resource Management at the University of Bologna (Italy). He earned his PhD in organizational psychology at the University of Verona, Italy. His current research interests embrace employee innovation, mindfulness, and compassion in organizational contexts, and psychological health at work. His work has appeared in *Journal of Management Studies*, *Journal of Organizational Behavior*, *Human Relations*, *Journal of Occupational and Organizational Psychology*, and *Journal of Business Research*.

**Raffaele Staglianò** is an Full Professor in Finance at University of Messina (Italy). Previously, he was an Assistant Professor in Finance at Montpellier Business School (France). He holds a PhD in business administration (University of Toulouse 1 Capitole, France). He teaches courses on financial analysis, corporate finance, and entrepreneurial finance. Raffaele's main research interest is in the field of Corporate Finance with a focus on corporate policies, corporate governance, and entrepreneurial finance. He has published in *Journal of Business Ethics*, *Small Business Economics*, *Journal of Cleaner Production*, *Economic Modeling*, *Finance Research Letters*.

**Valentina Sommovigo** (PhD), work and organizational psychologist, is a Research Fellow in Organization and Human Resource Management at the University of Bologna (Italy). She is specialized in research on workplace aggression and occupational well-being. She completed her PhD in Psychology, Neuroscience and Medical Statistics from University of Pavia and University of Limerick.

**Iliaria Setti** (PhD) is an Associate Professor in Work and Organizational Psychology at University of Pavia (Italy). She studies topics related to occupational well-being, in particular she is an expert in psycho-social risks among helping professions (healthcare and emergency workers), with specific reference to burnout, post-traumatic symptoms, and violence at work.

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**Gabriele Giorgi** (PhD) is an Associate Professor in Work and Organizational Psychology at European University of Rome. His research interests embrace occupational well-being, work-related stress, workplace

bullying, and appraisals of economic crisis. He has published in *Journal of Business Ethics*, *Journal of Business and Psychology*, *Journal of Managerial Psychology*, and *International Journal of Stress Management*.