



Individual and contextual determinants of innovative work behaviour: Proactive goal generation matters

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This study examines the extent to which proactive goal generation is a self-regulatory mechanism that explains how individual and contextual factors influence employee innovative work behaviour. Specifically, it is proposed that learning goal orientation (LGO), psychological climate for innovation, and task variety positively and indirectly influence innovative behaviour via proactive goal generation activities, namely envisioning and planning. Additionally, LGO is expected to positively moderate the planning–innovation link. Based on data collected at two points in time on a sample of 107 employees from 12 small Italian enterprises, we found that envisioning and planning mediated the positive impact of LGO, psychological climate for innovation, and task variety on innovative behaviour. Furthermore, the relationship between planning and innovative behaviour was stronger when LGO was higher. Theoretical and managerial implications of these findings are discussed.

Practitioner points

- Individual engagement in proactive goal-regulatory activities is an important driver of workplace innovative behaviour. It is hence worthwhile for managers to provide employees with practical tools and guidelines to develop their proactive goal-setting and goal-planning skills.
- Learning goal orientation, psychological climate for innovation, and task variety indirectly shape innovative work behaviour by affecting envisioning and planning processes. In order to increase employees' motivation to engage in proactive goal generation tasks, managers should thus promote the development of a change-oriented work environment, ensure an adequate amount of variety in the execution of work activities, and retain and develop a learning-oriented workforce.
- Learning goal orientation is a boundary condition associated with planning's effects on innovative behaviour. Managers should hence emphasize skill development and the use of flexible approaches in the execution of plans and tasks.

Because of today's uncertainty, instability and turbulence regarding the economic environment, employee innovativeness has become crucial for organizational success and competitiveness (West, 2002). As a result, scholars have devoted much attention to investigating the antecedents of individual innovative work behaviour (Anderson, De Dreu, & Nijstad, 2004; Hammond, Neff, Farr, Schwall, & Zhao, 2011). Among these,

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goal generation processes have been theoretically identified as a critical driver of employee innovation (Oldham & Baer, 2012). However, relatively little attention has been devoted to the effects of goal generation on individual innovative behaviour. Indeed, the few studies that have been carried out in this area have been limited to testing the impact of goal setting on creativity (Shalley, 1991, 1995). In doing so, such studies have neglected important goal-regulatory processes (i.e., planning) that are necessary for the initiation of goal-directed behaviours (Brandstätter, Heimbeck, Malzacher, & Frese, 2003).

Building on a goal-regulation perspective (Gollwitzer, 1990), this study addresses these issues by assessing whether (1) individual innovativeness can be enhanced by proactive goal generation, which is a self-regulatory mechanism involving two distinct goal-directed processes: Envisioning (i.e., setting future change-oriented goals) and planning (i.e., defining a roadmap for action to achieve the desired outcomes; Parker, Bindl, & Strauss, 2010); (2) three specific factors – learning goal orientation (LGO), innovative climate, and task variety – can simultaneously influence individual involvement in envisioning tasks, thus indirectly contributing to subsequent planning and innovative behaviour; and (3) LGO can increase the effects of planning on innovative work behaviour.

Overall, our study makes the following contributions. First, to the best of our knowledge, this is the first study to examine the relationships of proactive envisioning and planning to individual engagement in innovative courses of action. By doing so, our inquiry furthers current understanding of the extent to which goal generation processes motivate employee innovative behaviour in the workplace. Second, scholars have rarely looked at the antecedents of proactive goal-directed regulatory practices in the organizational context. This study breaks new ground by examining LGO, psychological climate for innovation, and task variety as key drivers of proactive goal generation. Third, by exploring moderators (i.e., LGO) of the planning–innovative behaviour relationship, we clarify the conditions under which planning is more likely to benefit innovation in organizational contexts (Hunter, Cassidy, & Ligon, 2012; Mintzberg, 1991; Mumford, Bedell-Avers, & Hunter, 2008).

Proactive goal generation processes and innovative work behaviour

This study assesses employee goal-regulatory processes in relation to innovative work behaviour, which is referred to as the intentional generation, promotion, and implementation of new and relevant ideas (Janssen, 2000; West, 1990). Our specific focus on innovation reflects the prominence that this work-related endeavour has for firms' competitive advantage in the global market (Kanter, 1988). Consequently, we do not consider formal goal-setting and goal-planning activities, but rather we examine two sets of goal-directed endeavours that are more salient for change-oriented behaviours: proactive envisioning, which implies contemplating and setting change-oriented goals (e.g., improving service to customers or increasing efficiency at work); and proactive planning, which entails the development of action plans to pursue the envisioned outcomes (Bindl & Parker, 2010; Parker *et al.*, 2010). Taken together, envisioning and planning represent the distinctive cognitive elements of proactive goal generation (Parker *et al.*, 2010).

Goal-regulation theory (Gollwitzer, 1990) provides the theoretical basis for the relationship between envisioning, planning, and innovative work behaviour. Goal-regulation theory suggests that through their self-directed involvement in goal generation

processes, individuals can both turn their wishes into binding goals and commit themselves to the initiation and the execution of goal-directed behaviour (Gollwitzer, 1990; Gollwitzer & Schaal, 2001). Importantly, the model of action phases – a corollary of the goal-regulation approach (Gollwitzer, 1990) – proposes that there are two regulatory phases to successful behavioural enactment: A *pre-decisional phase*, where people deliberate about future desired states; and a *pre-actional phase*, where they prepare themselves to initiate goal-directed endeavours by creating specific plans for actions. As envisioning and planning reflect, respectively, the pattern of actions implied by the pre-decisional and the pre-actional phase (Parker *et al.*, 2010), they are expected to positively contribute to individual innovative work behaviour.

To clarify this point, it is worth remarking that innovation requires substantial investment of time and effort in the generation of new solutions and ideas, without any guarantee that these will be turned into innovative products, services, or procedures (Li & Atuahene-Gima, 2001; Van de Ven, 1986). Thus, people may be prevented from devoting their energy to such a time-consuming and high-risk endeavour. Yet, proactive goal generation activities may enable individuals to make an efficient use of their time and energy, as well as to handle the uncertainty associated with innovation, thus boosting their innovative behaviour.

Specifically, through proactive envisioning, individuals are more likely to maintain their personal resources and to exploit them in order to produce and apply new ideas. Indeed, goal setting, through its directive function, causes people to focus their attention towards goal-relevant activities and away from those for which no goals are established (Locke & Bryan, 1969; Locke & Latham, 1990, 2002). This suggests that employees who have defined change-oriented goals may direct their attention more efficiently, by selecting only those aspects within the environment that would facilitate goal-directed actions. As a result, they will have more time and energy available to seek out new perspectives, information, and knowledge relevant to change, which would facilitate subsequent innovativeness (Mumford, Mobley, Uhlman, Reiter-Palmon, & Doares, 1991; Zhang & Bartol, 2010). Consistent with our arguments, the few studies that have examined goal setting within the domain of innovation have indicated that creativity goals had a significant positive effect on the quality of novel solutions (Shalley, 1991, 1995).

Furthermore, through proactive planning, employees can anticipate and preventively act on the opportunities, as well as the obstacles, associated with the innovation process, thus increasing the odds of successfully realizing their ideas. In fact, planning prepares people to identify and exploit relevant opportunities for achieving desired goals, thereby supporting effective goal pursuit (Gollwitzer, 1996; Gollwitzer & Sheeran, 2006). Thus, people who develop a change-oriented plan may be better able to detect and act on relevant opportunities to effect changes at work, which will facilitate innovation implementation. In addition, planning equips individuals with a ready-made answer to unforeseen problems (Mumford, Schultz, & Van Doorn, 2001). Hence, by developing a plan to accomplish change-oriented outcomes, employees may also be better prepared to deal with potential barriers to innovation, thus reducing the risk that their innovative attempts fail.

Finally, according to the model of action phases, the development of action plans tends to occur after goal selection (Brandstätter *et al.*, 2003; Gollwitzer, 1990) and is responsible for translating goals into behaviours (Gollwitzer, 1993). This suggests that planning is likely to be positively affected by envisioning, as well as to mediate its relationship with innovative behaviour. Prior empirical evidence supports this tenet,

indicating that goal setting affects goal-directed behaviour by stimulating the formation of strategies or plans (Earley & Perry, 1987; Earley, Wojnaroski, & Prest, 1987; Van Hooft, Born, Taris, van der Flier, & Blonk, 2005). Consistent with goal-regulation theory, people who have envisioned change-oriented goals might hence be more involved in developing corresponding goal-directed plans as part of their goal-striving efforts (Wood, Whelan, Sojo, & Wong, 2013). Specifically, envisioning, by activating search and information-processing activities (Goodman, Wood, & Chen, 2011), would facilitate employees' access to task-relevant knowledge, which is essential to effective plan development (Earley *et al.*, 1987).

All these lines of argument suggest that proactive envisioning and planning may play a critical role in channelling employee efforts towards the effective development and implementation of new and useful ideas in the workplace. Therefore, the following hypotheses are proposed:

Hypothesis 1: Proactive envisioning will be positively related to innovative work behaviour.

Hypothesis 2: Proactive planning will be positively related to innovative work behaviour.

Hypothesis 3: Proactive envisioning will be positively related to proactive planning.

Hypothesis 4: The relationship between proactive envisioning and innovative work behaviour will be mediated by proactive planning.

Individual and contextual antecedents of innovative work behaviour

According to the model of action phases, the pre-decisional phase (i.e., envisioning) is strongly affected by the feasibility (i.e., the expectancy of achievement) and desirability (i.e., the perceived value) of the goals in question (Gollwitzer & Bayer, 1999). The higher the perceived feasibility and desirability, the more likely it is that people will select a specific goal (i.e., proactive envisioning; Gollwitzer, 1990). In accordance with the model of action phases, and building on prior empirical evidence, we propose that three factors may possess the necessary motivational features to enhance employee commitment to proactive envisioning: (1) LGO, which reflects a personal disposition; (2) psychological climate for innovation, which depicts a perceived aspect of the social environment; and (3) task variety, which represents a perceived job characteristic.

Below, we explain how LGO, climate for innovation, and task variety can prove particularly relevant to enhance the perceived feasibility and desirability of change-oriented outcomes and develop corresponding hypotheses directly linking these variables to proactive envisioning. However, it is important to note that, like other scholars who have worked in the area of proactive motivation (Frese, Teng, & Wijnen, 1999; Morrison & Phelps, 1999), we did not empirically assess feasibility and desirability expectations in this study, as our objective was to understand the type of personal and contextual factors that might favour envisioning activities in general. Hence, we focused on identifying specific contextual and individual variables that would predict an employee's overall tendency to involve in envisioning tasks, and we used the intervening judgments (feasibility and desirability considerations) as theoretical justifications for relating these factors to our phenomenon of interest.

Learning goal orientation

Learning goal orientation depicts one's emphasis on understanding or mastering new aspects (Dweck, 1986). Individual differences other than LGO have been shown to be positive predictors of conscious goal choice and selection (similar to envisioning), such as self-efficacy, self-esteem, and locus of control (for a review, see Heslin & Wang, 2013; Judge & Ilies, 2003). However, owing to their properties, these factors might be less suitable than LGO to the context of change-oriented goals. Specifically, people with a strong level of self-efficacy, self-esteem, or internal locus of control generally tend to develop positive feasibility beliefs regarding future goals, as they are more confident in their ability to pursue their goals (due to high self-efficacy, Locke & Latham, 2002), believe they have a greater chance to accomplish them (due to high self-esteem, Pilegge & Holtz, 1997), and view their goal-directed performance as a function of their skills (due to their internal locus of control, Von Bergen, 1995). Nonetheless, these individual characteristics do not specifically account for the desirability of change-oriented outcomes. In contrast, as will be explained below, theory and research on goal orientation suggest that a high LGO would be relevant to both the feasibility and desirability of change-oriented goals.

To explain the role of LGO in spurring employee motivation to engage in envisioning activities, it is worth remarking that, as suggested by goal orientation theory (Dweck, 1986), learning goal-oriented individuals have a preference for challenging and risky situations, where they can develop and improve their skills and ability (Ames & Archer, 1988; Elliott & Dweck, 1988). Thus, change-oriented goals, which tend to be naturally associated with challenging and uncertain ventures (Frese & Fay, 2001; Parker *et al.*, 2010), should be of particular value to employees with a strong LGO. They would indeed regard such goals as an opportunity for personal growth, thereby developing positive desirability expectations.

Likewise, because of their preference for challenging tasks, learning goal-oriented people tends to deal with the difficulties associated with these tasks by investing additional effort to develop and master new skills (Dweck, 1999). When evaluating the feasibility of change-oriented goals, hence, people with a strong LGO will be confident and they can achieve these outcomes, as they would interpret the difficulties associated with these outcomes as an opportunity for identifying and applying the strategies needed to solve the problems, rather than as a signal that the goal is not achievable. Consequently, they will develop positive feasibility expectations regarding change-oriented outcomes. Therefore, we hypothesize:

Hypothesis 5: LGO will be positively related to proactive envisioning.

Psychological climate for innovation

Climate for innovation reflects norms and practices that value, encourage, and reward the development of change-oriented innovative initiatives in the workplace (Scott & Bruce, 1994). Our focus here is on individual-level cognitive interpretations of the organizational environment, which are labelled 'psychological climate' (James, James, & Ashe, 1990). Indeed, as advocates of psychological climate theory assert, people respond primarily to the situation they perceive (Endler & Magnusson, 1976), and, even if the organizational environment is 'external' to the individual, 'the source of motivation due to the situation still springs from within because of the individual's perception of the situation' (Barrick, Mount, & Li, 2013, p. 139). Importantly, people use signals and information they receive from a given situation to formulate their expectancies and instrumentalities concerning a given activity (James, Hartman, Stebbins, & Jones, 1977; Portoghese *et al.*, 2012), which

have been widely documented to exert a significant impact on subsequent goal regulation (Gollwitzer, 1990; Locke & Latham, 2002; Vroom, 1964).

Psychological climate theory would hence suggest that, when perceiving a firm's norms that favour and encourage change-oriented endeavours rather than traditional ways of doing things, employees will be more likely to attribute meaning and value to constructive change (James & James, 1989; Yuan & Woodman, 2010). As a result, they will be more willing to invest their efforts in setting challenging proactivity goals. Likewise, people may recognize that their personal attempts to bring about changes and improvements will receive support, assistance, and resources from other members (Scott & Bruce, 1994). Consequently, they will have higher expectations of successfully pursuing change-oriented outcomes, which will increase their motivation to achieve them. We therefore set the following hypotheses:

Hypothesis 6: Psychological climate for innovation will be positively related to proactive envisioning.

Task variety

Task variety indicates the extent to which a job requires employees to perform a broad array of tasks (Morgeson & Humphrey, 2006). Despite the relatively scarce attention that has been devoted to its role in affecting goal-regulation processes, theoretically, there is reason to believe that task variety would be essential to enhance both the perceived feasibility and desirability of change-oriented goals, thereby stimulating proactive envisioning. First, indeed, a key motivational function of task variety is that of enhancing the experience of meaningfulness of the work (Agarwal & Ramaswami, 1993; Grant, 2007), which can improve the perceived valence of bringing about changes and improvements to work processes (Parker *et al.*, 2010). Accordingly, the more employees are offered the possibility of working on a wide array of tasks, the higher the importance they may ascribe to change-oriented goals. This would stimulate their involvement in deliberating about different objectives to improve aspects of their work.

Second, task variety, by increasing the breadth of activities employees are involved in, serves the function of providing regular and continuous opportunities for mastering day-to-day tasks (Axtell & Parker, 2003). This suggests that when the breadth of job tasks is high, employees can further develop greater confidence in their ability to meet a wide range of outcomes beyond basic technical goals (thus including change-oriented goals). Accordingly, task variety would play a key role in enhancing positive feasibility expectations for change-oriented goals. Empirical research supports this tenet, suggesting that employees who work on an extensive array of tasks tend to feel confident that they are able to execute a broader and more proactive role, beyond traditional technical requirements (Parker, 1998).

Owing to the above-mentioned properties, task variety is expected to more adequately account for the desirability and feasibility of change-oriented goals than other work characteristics that have been traditionally associated with increased work motivation, namely task identity, task significance, and feedback (Hackman & Oldham, 1976). Indeed, feedback, by providing people with the opportunity to identify areas of improvement within their work role (Zhou, 2003), emphasizes the value of changing current situation (i.e., desirability of change-oriented goals). Likewise, task significance and task identity allow employees to feel that their job is meaningful and worthwhile (Hackman & Lawler, 1971; Hackman & Oldham, 1976), thereby stimulating them to recognize the importance

of bringing about changes in one of more aspects of their work, when needed. However, these work characteristics do not necessarily guarantee that people who recognize the importance of achieving change-oriented goals will also feel confident in their abilities to potentially master the challenges and obstacles associated with the pursuit of these change-oriented outcomes.

In contrast, a work characteristic that is conceptually and functionally similar to task variety – job control – has been shown to be indirectly and positively associated with proactive envisioning (Bindl & Parker, 2010). Indeed, like task variety, job control provides employees with the opportunity for mastering work experiences and prompts them to attach positive valence to taking charge of goals beyond the immediate set of technical tasks (Parker, Williams, & Turner, 2006). Taken together, hence, these arguments support the proposition that task variety would prove particularly adequate to stimulate positive feasibility and desirability expectations about change-oriented goals, thus representing a key determinant of proactive envisioning.

Hypothesis 7: Task variety will be positively related to proactive envisioning.

Finally, because envisioning is expected to be directly associated with both planning and innovative behaviour, it is reasonable to suggest that it will further mediate the impact of LGO, psychological climate for innovation, and task variety on the two variables. The following hypotheses are therefore advanced:

Hypothesis 8: The relationships of LGO (a), psychological climate for innovation (b), and task variety (c) to planning will be mediated by proactive envisioning.

Hypothesis 9: The relationships of LGO (a), psychological climate for innovation (b), and task variety (c) to innovative work behaviour will be mediated by proactive envisioning.

The moderating role of LGO

As anticipated earlier, we expect a positive moderating role of LGO in the relationship between proactive planning and innovative behaviour. Studying moderators of this specific relationship is both theoretically and practically meaningful, in light of the current debate concerning the benefits of planning for workplace innovation (cf. Hunter *et al.*, 2012). Indeed, whereas some scholars suggest that planning is beneficial to innovativeness – for the reasons that we also have outlined above (Hunter *et al.*, 2012; Mumford, Hunter, & Bedell-Avers, 2008) – others contend that, due to its inherent constraints, it can reduce flexibility in the execution of tasks, thus undermining innovative thinking and subsequent innovativeness (Eisenhardt & Tabrizi, 1995; Ettlie, 2008).

While the impact of planning on innovation-related behaviours has been disregarded in the empirical literature, there is some evidence indirectly supporting the latter perspective. For example, experimental research on goal regulation has shown that people who were committed to a plan for completing a goal were less likely to seize alternative opportunities to fulfil it because all of their attention was focused on the target cue, which in turn contributed to reducing flexibility in goal pursuit (Jaudas & Gollwitzer, 2004; Masicampo & Baumeister, 2012; Parks-Stamm, Gollwitzer, & Oettingen, 2007). These premises would indicate that, as some authors have also suggested (Hayes-Roth & Hayes-Roth, 1979; Hunter *et al.*, 2012), planning may be of greater benefit to innovative

behaviour if people follow pre-defined goal-directed pathways in a flexible rather than rigid manner. Specifically, when confronted with unexpected obstacles and barriers, which inherently arise throughout change-oriented processes (Janssen, 2004; Parker *et al.*, 2010), flexibility in goal pursuit would facilitate the search for alternative possibilities and routes to proactive goal attainment, thereby stimulating innovative behaviour.

In this regard, we contend that employees with a high LGO may be more capable of embracing a flexible approach to planning processes. Indeed, due to their preference for challenging and complex tasks, learning goal-oriented people are motivated to deal with problems by putting substantial effort in problem-solving activities in order to seize and apply the solutions required to overcome the difficulties encountered (Dweck, 1999; Hirst, Van Knippenberg, & Zhou, 2009). As a consequence, they tend to focus their attention on the elaboration of new knowledge and the development of deep processing strategies, which enhance their effectiveness in difficult and unfamiliar tasks (Elliot & McGregor, 2001; Winters & Latham, 1996). Additionally, individuals with a strong LGO seek challenges that would provide them with the opportunity to learn new skills (Dweck, 1986). As a result, when facing impending problems and obstacles, they show a stronger motivation to engage in learning processes, which facilitates the development of expertise and the generation of effective strategies to succeed (Gong, Huang, & Farh, 2009). Consistent with these arguments, research has showed that a high LGO is associated with better use of obstacles as learning cues that stimulate the adoption of varied strategies (Dweck, 1986; Godshalk & Sosik, 2003).

This line of reasoning suggests that high learning goal-oriented employees would further regard unforeseen obstacles to change as a challenging venture and a relevant opportunity to skill development. Accordingly, when encountering such hindrances, their strong LGO will boost their involvement in learning processes and in problem-solving tasks, thereby facilitating the identification and use of potential new strategies to ensure successful goal pursuit. As a result, high LGO employees will be better equipped to adjust their pre-defined plans by processing novel information and seizing alternative possibilities to accomplish change-oriented outcomes. Taken together, these arguments suggest that planning will be more likely to benefit innovative behaviour when employees possess a strong LGO.¹

Hypothesis 10: LGO will moderate the positive relationship between proactive planning and innovative work behaviour, such that the relationship will be stronger when LGO is higher.

Our hypotheses are summarized in the model described in Figure 1.

¹ Note that we do not expect LGO to interact with envisioning, task variety, or innovative climate to predict innovative behaviour. Indeed, unlike planning, all these variables are unlikely, *per se*, to restrict flexibility in the pursuit of change-oriented goals. Specifically, envisioning uniquely involves imagining future desired states associated with changing aspects of the one's work or of the broader environment (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012), but does not imply any specific constraints about how change-oriented outcomes should be achieved. As such, envisioning is expected to allow, rather than suppress, flexible goal pursuit task variety that is commonly assumed to be antithetical to job routinization, which is a well-known source of inflexibility (Gersick & Hackman, 1990). Accordingly, task variety should not represent an obstacle to the flexible execution of tasks (i.e., proactive goal pursuit). Finally, innovative climate reflects a strong organizational orientation towards change (Patterson *et al.*, 2005), and is therefore unlikely to stifle flexibility.

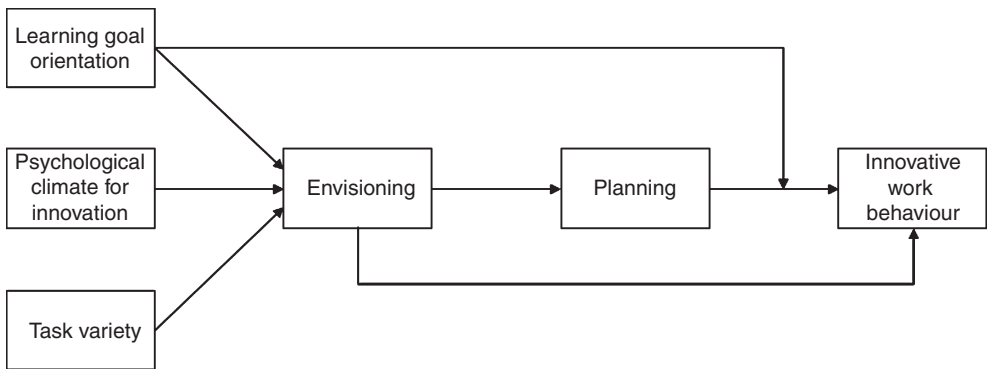


Figure 1. Conceptual model.

Method

Participants and procedure

This study was conducted in 14 small entrepreneurial firms of Central Italy, from different industry sectors (manufacturing, energy and utilities, health care, construction, and technology).² The survey was part of a broader human resource management project that was designed to enhance employees' innovative behaviour at work. Specifically, the research represented a preliminary phase of the project and would have been followed by an intervention that involved (1) the introduction of training programs aimed at facilitating the acquisition and development of goal-setting and project-planning skills among the personnel of each firm; and (2) employees' involvement in project-work activities, which included the formulation of a range of objectives associated with the improvement of current work processes (e.g., internal communication, decision-making, and relationship quality), as well as the definition and application of innovative strategies to accomplish the expected outcomes.

The research was presented to employees through formal meetings arranged by the owners of each enterprise. Participants were specifically invited to complete a survey at two points in time, with a time lag of 6 months. This allowed us to separate the independent variables from both the mediators and the dependent variable. To match questionnaires across the study period while preserving anonymity, respondents were asked to generate a unique code at the end of the questionnaire, which included the following: The first three letters of their mother's first name, the first three letters of their mother's maiden surname, and the last two numbers of their phone number.

At time 1, the study sample included 210 employees working in the 14 small enterprises that participated in the study. Each firm comprised on average 8.31 employees ($SD = 4.00$). Two of these enterprises, involving 3 and 23 employees, did not participate in the second study. Additionally, 75 employees from the remaining firms were absent when the second survey was distributed, which yielded a sample of 108 participants at time 2. One incomplete response was further removed from the sample, thus resulting in a final sample of 107 employees (response rate = 50.95%). With respect to the sample

² Consistent with the parameters fixed by the European Commission (2000), we define small enterprises as firms with <50 employees.

characteristics, the majority of participants were men (73.1%); 42.6% were aged between 36 and 45 years, 23.1% were over 45 years, and 34.3% were younger than 35. Additionally, 71.3% had an undergraduate degree or higher. Finally, 52.8% of the sample's respondents had a firm tenure of <8 years, 13.9% had a tenure between 8 and 14 years, and 33.3% had a tenure higher than 14 years.

Measures

Learning goal orientation

We used the 5-item subscale from the Goal Orientation Scale developed by VandeWalle (1997). A sample item is 'I enjoy challenging and difficult tasks where I'll learn new skills'. Responses ranged from 1 ('completely disagree') to 5 ('completely agree').

Psychological climate for innovation

We assessed the psychological climate for innovation with the Innovation and Flexibility scale from Patterson *et al.*'s (2005) Organizational Climate Questionnaire. Using a 5-point scale ranging from 'definitively false' to 'definitively true', participants were asked to rate items, such as 'This company is quick to respond when changes need to be made'. Although climate for innovation was conceptualized here as individual-level variable, prior research has suggested that individual perceptions of climate can be empirically aggregated at the organizational level (Schneider, 1990). It was hence meaningful to examine the level of within-organization agreement for the individual scores of innovative climate, using the $r_{wg(j)}$ index (James, Demaree, & Wolf, 1984), the ICC(1) (Bryk & Raudenbush, 1982), and the ICC(2) (James, 1982). The ICC (1) (.04) and ICC(2) (.28) were fairly below the recommended benchmarks (.12 for ICC [1], James, 1982; .47 for ICC[2], Schneider, White, & Paul, 1998). Likewise, the mean $r_{wg(j)}$ values (.32) were below .70, indicating a low agreement among members within the organization (Bliese, 2000). This suggested that data aggregation was not justifiable at the organizational level. Accordingly, innovative climate was empirically assessed as an individual-level construct.

Task variety

This task characteristic was measured with the 4-item subscale from Morgeson and Humphrey's (2006) Work Design Questionnaire. A sample item is 'The job involves doing a number of different things'. All responses were rated on a scale from 1 ('strongly disagree') to 5 ('strongly agree').

Proactive envisioning and planning

The two 3-item subscales from Bindl *et al.*'s (2012) proactive goal-regulation scale were used to measure proactive envisioning and proactive planning. Employees were asked to indicate how much time and effort they had spent, over the last 4 months, on both of these activities. Example items include 'Thinking about ways to improve services to customers' (envisioning) and 'Going through different scenarios in your head about how to best bring about a work change' (planning). Items were rated on a scale ranging from 1 ('not at all') to 5 ('a great deal').

Innovative work behaviour

Innovative work behaviour was assessed with Janssen's (2000) 9-item scale. A sample item is 'Generating original solutions for problems'. A relevant measurement issue is the use of self-reported measures of innovative work behaviour. Generally, self-report ratings of individual behaviour may lead to misleading interpretations of results due to common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Accordingly, observer scores of employee behaviour, such as supervisor ratings, are highly recommended. Nonetheless, in the case of innovative work behaviour, this might not necessarily apply because employees have more information about the backgrounds of their work activities (Janssen, 2000), as well as about the extent to which they have developed or proposed their ideas to others in the organization (Shalley, Gilson, & Blum, 2009). Additionally, supervisors may fail to capture some of their subordinates' ideas, by noticing only those acts intended to impress them (Organ & Konovsky, 1989). Research has also shown that self-report ratings of innovation-related behaviours are consistent with supervisor scores of innovative performance (Axtell *et al.*, 2000; Janssen, 2000) as well as with firm-level outcomes, such as performance (Gong, Zhou, & Chang, 2013) and innovation (Gumusluoglu & Ilsev, 2009; Baron & Tang, 2011). Accordingly, it is reasonable to suggest that the use of self-report rating of innovative work behaviour is appropriate. Despite this, it was deemed necessary to apply additional statistical techniques to address potential issues associated with the common method bias (see Results section).

Control variables

We controlled for a number of demographic characteristics, which can potentially affect the results of our study: gender, age, organizational tenure, and type of organization. First, we controlled for gender, which has been shown to be associated with workplace innovation (DiTomaso & Farris, 1992; Janssen, 2000). Second, we controlled for age and organizational tenure, as they reflect individual knowledge and expertise, both of which influence innovative processes (Bantel & Jackson, 1989; Ng & Feldman, 2013; Zahra, 2005). Finally, we generated two dummy variables (i.e., organization 1 and organization 2) that distinguished between knowledge-intensive industries and labour-intensive industries, in order to assess whether the different organizational expectations for innovation that may exist between the two sectors would have an impact on employee engagement in innovation-related tasks. Research has indeed demonstrated that knowledge-intensive firms are more involved and tend to invest more in innovative activities, compared to less knowledge-intensive organizations (Doloreux & Melançon, 2008).

Analytical strategy

Despite that all of our study variables were conceptualized at the individual level of analysis, data in our sample had a nested structure, as employees were grouped within firms. Accordingly, our hypotheses were tested using hierarchical linear modelling (HLM) with the maximum likelihood estimation method of HLM version 6.08 (Raudenbush, Bryk, Cheong, & Congdon, 2004). As suggested by Hofmann and Gavin (1998), the independent variables were centred to the mean of the whole sample (i.e., grand-mean centring), which allowed us to control for both within-group and between-group variances of the dependent variable when examining individual-level relationships.

Additionally, to assess the mediated relationships, we followed the approach recommended by Shrout and Bolger (2002). According to these authors, the following four conditions need to be met for demonstrating a mediating effect: (1) the independent variable is significantly related to the mediator; (2) when both the mediator and independent variable are entered simultaneously into a regression equation, the mediator is significantly related to the dependent variable; (3) the product of the indirect paths (i.e., from the independent variable to the mediator and from the mediator to the dependent variable) is significant³; and (4) the independent variable is unrelated to the dependent variable in the presence of the mediator. As recommended by Preacher, Zyphur, and Zhang (2010), the Monte Carlo method was further used to calculate confidence intervals for the hypothesized indirect effects, in order to determine their significance.

Results

Confirmatory factor analysis and assessment of common method variance

Prior to HLM analyses, a confirmatory factor analysis (CFA) was carried out with Mplus version 6.1 (Muthén & Muthén, 1998–2010) in order to assess the distinctiveness of the variables used in this study: LGO, psychological climate for innovation, task variety, proactive envisioning, proactive planning, and innovative work behaviour. The CFA results indicated that our hypothesized 6-factor model (whereby LGO, psychological climate for innovation, task variety, proactive envisioning, proactive planning, and innovative work behaviour were treated as separate factors) yielded a better fit to the data, $\chi^2(390) = 541.58$; CFI = .91; RMSEA = .06; SRMR = .07, than alternative, more parsimonious models (Table 1). This supported the discriminant validity of our measures.

Although the separation of predicting variables from the criterion helped allege the problems associated with the use of self-report data, the fact that proactive goal generation processes and innovative work behaviour were measured at the same time could still originate common method bias problems. Consistent with Podsakoff *et al.*'s (2003) statistical recommendations, we therefore used the unmeasured latent method factor approach in order to control for the effects of common method variance. Accordingly, a common method factor was added to the hypothesized 3-factor model including envisioning, planning, and innovative work behaviour, to assess the potential increase in model fit that would be obtained from accounting for the unmeasured method factor. The model provided a better fit to the data than the same model without the method factor, as indicated by the fit indexes: $\chi^2(87) = 93.61$, CFI = .98; RMSEA = .05; SRMR = .04; $\Delta\chi^2(15) = 33.49$, $p < .01$. However, the method factor accounted for 25% of total variance, which is slightly below the average portion of variance (26%) reported in self-report studies (Podsakoff *et al.*, 2003; Williams, Cote, & Buckley, 1989). This result suggests that common method bias alone is unlikely to be a serious threat in our study.

Hypothesis testing

Table 2 reports the means, standard deviations, and correlations among the study variables. Table 3 summarizes the results of our HLM analyses. We first ran a null model to

³ Shrout and Bolger (2002) contended that a significant direct relationship between the independent and the dependent variable is not a necessary prerequisite to ascertain mediating effects, unless this relationship is experimentally manipulated or the two variables are temporally proximal. Because our independent and dependent variables were measured at different points in time, Shrout and Bolger's (2002) approach was particularly suitable to test mediation in our study.

Table 1. Fit Indices for confirmatory factor analyses

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR
Hypothesized 6-factor model	541.58*	390	—	—	.91	.06	.07
Five-factor models							
Combining envisioning and planning	572.76*	395	31.18*	5	.89	.07	.07
Combining envisioning and innovative work behaviour	643.19*	395	101.61*	5	.85	.08	.08
Combining planning and innovative work behaviour	602.50*	395	60.92*	5	.88	.07	.08
Combining envisioning and LGO	671.54*	395	129.96*	5	.83	.08	.08
Combining planning and LGO	619.26*	395	77.68*	5	.87	.07	.08
Combining innovative work behaviour and LGO	656.77*	395	115.19*	5	.84	.08	.08
Four-factor models							
Combining envisioning, planning, and innovative work behaviour	671.24*	399	129.66*	9	.84	.08	.08
Combining envisioning, planning, and LGO	675.41*	399	133.83*	9	.83	.08	.08
Combining envisioning, innovative work behaviour, and LGO	756.31*	399	214.73*	9	.79	.09	.09
Combining planning, work behaviour, and LGO	703.66*	399	162.08*	9	.82	.09	.08
Combining envisioning and planning, and innovative work behaviour, and LGO	682.66*	399	141.08*	9	.83	.08	.08
Combining envisioning and innovative work behaviour, planning, and LGO	704.98*	399	163.40*	9	.82	.09	.08
Combining planning and innovative work behaviour, envisioning, and LGO	731.84*	399	190.26*	9	.88	.09	.08
Three-factor model (combining envisioning, planning, innovative work behaviour, and LGO)	773.30*	402	231.72*	12	.78	.09	.09
Two-factor model (combining envisioning, planning, innovative work behaviour and LGO, and psychological climate for innovation and task variety)	984.33*	404	442.75*	14	.65	.12	.11
One-factor model (combining all variables)	1151.62*	405	610.04*	15	.55	.13	.12

Note. $N = 107$. CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual; LGO, learning goal orientation.

* $p < .01$.

ensure that a significant between-organizations variance in individual innovative work behaviour existed. Results indicated significant between-organizations variability in individual innovative work behaviour ($\chi^2 = 26.85$, $df = 11$, $p < .01$, $ICC[1] = .11$, revealing that 11% of variance in innovative work behaviour resided between organizations), which justified HLM as suitable analytic technique.

Hypotheses 1–4 predicted that both envisioning and planning would be positively and directly associated with employee innovative behaviour and that envisioning

Table 2. Descriptive statistics and correlations

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Organization 1	—	—	—										
2. Organization 2	—	—	-.07	—									
3. Age	—	—	.10	.12	—								
4. Gender	—	—	-.01	.03	-.02	—							
5. Organizational tenure	—	—	.10	.17	.34**	.01	—						
6. Learning goal orientation	4.30	0.69	.04	.08	.22*	.24*	.16	(.81)					
7. Psychological climate for innovation	3.35	0.84	-.00	.04	.13	.06	.11	.22*	(.83)				
8. Task variety	4.30	0.75	-.15	.00	.06	.07	.08	.20*	.27**	(.88)			
9. Envisioning (T2)	3.80	0.87	-.00	-.02	.13	.12	-.07	.30**	.29**	.22**	(.84)		
10. Planning (T2)	3.62	0.80	.09	.04	.07	.16	.14	.51**	.36**	.28**	.65**	(.79)	
11. Innovative work behaviour (T2)	3.13	0.83	.07	-.01	.11	.22*	.08	.47**	.34**	.22**	.57**	.65**	(.92)

Note. $N = 107$. Internal consistency coefficients (Cronbach's alphas) appear along the diagonal in parentheses.

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

Table 3. Results of hierarchical linear modelling

Variables	Envisioning (T2)		Planning (T2)				Innovative work behaviour (T2)			
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Control variables										
Organization 1	.09	.34	.29	.38	.25	.21	.20	.33	.11	.33
Organization 2	-.11	.37	-.01	.40	.06	.23	-.11	.35	-.12	.35
Age	.08	.08	-.09	.06	-.11*	.05	-.03	.06	.01	.05
Gender	.08	.08	-.03	.15	.01	.11	.21	.13	.22	.12
Organizational tenure	-.17	.09	.05	.08	.13*	.06	.15*	.07	.12	.07
Independent variables										
LGO	.28*	.11	.52**	.09	.37**	.08	.29**	.09	.14	.09
PCI	.22*	.09	.27**	.08	.13	.06	.08	.07	.01	.07
Task variety	.22*	.09	.18*	.08	.05	.07	.03	.08	.00	.07
Envisioning (T2)	—	—	—	—	.50**	.06	.45**	.07	.27**	.08
Planning (T2)	—	—	—	—	—	—	—	—	.37**	.10
Planning × LGO	—	—	—	—	—	—	—	—	—	—
Envisioning × LGO	—	—	—	—	—	—	—	—	.27**	.09
Total R ²	.21	—	.37	—	.59	—	.45	—	.50	—
									.54	—
									-.14	.12
									.36**	.11
									-.14	.12
									.54	—

Note. N = 107. Total R² values were obtained following Snijders and Bosker (1999). Estimates are unstandardized coefficients. Summary of indirect effects: Envisioning → planning → innovative work behaviour (indirect effect = .18; 95% CI = 0.08, 0.30); LGO → envisioning → planning (indirect effect = .14; 95% CI = 0.03, 0.26); psychological climate for innovation → envisioning → planning (indirect effect = .11; 95% CI = 0.02, 0.21); task variety → envisioning → planning (indirect effect = .11; 95% CI = 0.02, 0.21); LGO → envisioning → innovative work behaviour (indirect effect = .13; 95% CI = 0.03, 0.24); psychological climate for innovation → envisioning → innovative work behaviour (indirect effect = .10; 95% CI = 0.02, 0.19); task variety → envisioning → innovative work behaviour (indirect effect = .10; 95% CI = 0.02, 0.19).

LGO, Learning goal orientation; PCI, psychological climate for innovation.

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

would also be indirectly related to innovative behaviour through the mediating role of planning. First, as can be seen from Table 3 (Model 5), envisioning ($\gamma = .27, p < .01$) and planning ($\gamma = .37, p < .01$) had a positive impact on innovative behaviour, supporting hypotheses 1 and 2. Additionally, envisioning was positively linked to planning ($\gamma = .50, p < .06$; Table 3, Model 3), confirming Hypothesis 3. We therefore conducted parametric bootstrapping to estimate the indirect relationship between envisioning and innovative behaviour via planning (Preacher *et al.*, 2010). Based on 20,000 Monte Carlo replications, the results confirmed the significance of the indirect effect (see Table 3 notes), thus lending support to Hypothesis 4.

Hypotheses 5–7 stated that LGO, psychological climate for innovation, and task variety would positively predict proactive envisioning, while hypotheses 8a–c predicted indirect effects of LGO, psychological climate for innovation, and task variety on planning through envisioning. First, as shown in Table 3 (Model 1), proactive envisioning was significantly and positively predicted by LGO ($\gamma = .28, p < .05$), psychological climate for innovation ($\gamma = .22, p < .05$), and task variety ($\gamma = .22, p < .05$), supporting hypotheses 5–7. Second, as already shown (Table 3, Model 3), when both independent variables and the mediator were included in the equations, planning was significantly related to envisioning.

Results further demonstrated that all of the hypothesized indirect effects were statistically significant (see Table 3 notes). Thus, the first three conditions to estimate mediation effects were met (Shrout & Bolger, 2002). Finally, we found that the effects of psychological climate for innovation and task variety on planning were not statistically significant in the presence of proactive envisioning, while the impact of LGO remained significant (Table 3, Model 5). Accordingly, proactive envisioning completely mediated the influence of psychological climate for innovation and task variety on planning, and partially mediated the effects of LGO. Therefore, hypothesis 8a was partially supported, while hypotheses 8b and 8c were fully supported.

Next, we examined whether the indirect effects of LGO, psychological climate for innovation, and task variety on innovative work behaviour through envisioning were statistically significant (hypotheses 9a–c). As already indicated, the independent variables positively influenced the mediator (envisioning; Table 3, Model 1). Moreover, envisioning was positively associated with the innovative work behaviour when independent variables were included into the equations ($\gamma = .45, p < .01$; Table 3, Model 4). Additionally, the results of the parametric bootstrap test indicated that all the hypothesized indirect effects were significant (see Table 3 notes). Hence, all the conditions to examine the mediation hypotheses were met. Lastly, we found that when the mediator was present (Table 3, Model 4), innovative behaviour was unrelated to psychological climate for innovation and task variety, but it was significantly and positively predicted by LGO ($\gamma = .29, p < .01$). Taken together, these results suggest that proactive envisioning completely mediated the impact of psychological climate for innovation and task variety on innovative behaviour and partially mediated the effects of LGO. Therefore, hypothesis 9a was partially supported, whereas hypotheses 9b and 9c were fully supported.

Finally, hypothesis 10 predicted that LGO would moderate the planning–innovative behaviour relationship. Consistent with Cohen and Cohen (1983), this hypothesis was tested by entering the interaction term of proactive planning and LGO into the HLM regression equations after the main effects of planning and LGO were also included. As

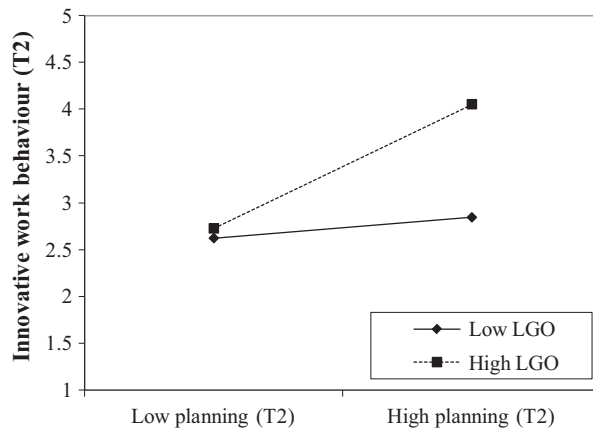


Figure 2. Interaction between proactive planning and learning goal orientation (LGO) in predicting innovative work behaviour.

reported in Table 3 (Model 6), the planning $\times$ LGO interaction term was statistically significant ($\gamma = .27, p < .01$), lending preliminary support to hypothesis 10.⁴ To interpret the nature of this interaction, we conducted a simple slope test and produced a graphical representation of the relationship between proactive planning and innovative work behaviour at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of LGO (Aiken & West, 1991). As shown in Figure 2, planning was more strongly positively related to innovative behaviour when LGO was high rather than low. The results from a simple slope test supported these observations indicating that, in the case of high LGO, planning was positively and significantly associated with innovative work behaviour ($\gamma = .57, p < .01$), whereas in the case of low LGO, the relationship was no longer significant ($\gamma = .19, ns$). Accordingly, hypothesis 10 was supported.

Discussion

The present study sought to explain the link between individual (LGO) and contextual characteristics (psychological climate for innovation and task variety) and employee innovative behaviour by establishing proactive goal generation processes (envisioning and planning) as intervening mechanisms. Additionally, we identified LGO as a boundary condition associated with the effectiveness of planning. The results from HLM analyses generally supported our theoretical model.

Theoretical and managerial implications

Prior literature has indicated that people who engage in strategic goal-regulatory activities (i.e., goal setting and goal planning) are more likely to initiate effective goal-directed

⁴ Additionally, because the relationship between envisioning and planning was relatively high, it was meaningful to assess whether an interaction effect existed between envisioning and LGO in predicting innovative work behaviour. We therefore replicated the interaction analysis by controlling for the interaction effect of envisioning and LGO. This allowed us to evaluate whether LGO uniquely moderated the planning-innovative behaviour link, rather than envisioning-innovative behaviour relationship. As shown in Model 7 in Table 3, the hypothesized interaction effect remained significant ($\gamma = .36, p < .01$) when the envisioning $\times$ LGO interaction term was included. Conversely, LGO did not significantly interact with envisioning in predicting innovative work behaviour.

actions (Oettingen & Gollwitzer, 2001; Smith & Locke, 1990). However, up to now, it was not clear whether such regulatory efforts could also benefit individual innovativeness in the workplace. Our study sheds new light on this issue, by demonstrating that employees' involvement in change-oriented envisioning and planning activities was highly conducive to innovative behaviour at work.

This result is both theoretically and practically relevant. Indeed, from a theoretical standpoint, our study is among the first to empirically support the effects of proactive goal-directed self-regulatory processes on individual innovativeness in the organizational context. As such, it not only lends further support to the effectiveness of goal generation endeavours in stimulating subsequent performance (Bandura, 1989; Gollwitzer, 1990, 1996), but it also moves a step further by showing that employees who invest their efforts in setting challenging change-oriented goals and in developing corresponding goal-directed strategies have increased odds of enacting effective innovative courses of action. From a practical perspective, our findings suggest that the management of small firms can rely on their personnel's engagement in goal-regulatory activities as a valuable means of supporting workplace innovative behaviour. This also implies that, by delegating such responsibilities to their followers, managers and entrepreneurs can more efficiently allocate and manage their internal resources, thus ensuring greater support for innovative activities. As a result, individual innovation may have a greater chance of increasing the firm's performance and competitiveness. Therefore, it might be valuable for small firms to invest in specific training programs aimed at developing goal-setting and goal-planning skills among their members. This would facilitate the execution of goal-directed regulatory tasks, thereby stimulating employees' engagement in the development of challenging goals and high-quality action plans (Raabe, Frese, & Beehr, 2007).

Additionally, to our knowledge, only the study conducted by Bindl and Parker (2010) assessed motivational antecedents of proactive envisioning (i.e., job control, role breadth self-efficacy, and positive affect). We add to this field of research by showing that a personal disposition (LGO) and two contextual characteristics (psychological climate for innovation and task variety) jointly shaped change-oriented goal setting, thereby indirectly affecting proactive strategy development subsequent innovativeness. As such, our finding is theoretically meaningful for at least three reasons. First, it sheds new light on those factors that play a critical role in enhancing the valence of change-oriented goals and in facilitating successful goal pursuit, thus encouraging employee commitment to envisioning and planning tasks. Second, by showing that all the effects of individual and contextual factors on innovative work behaviour were significantly mediated by envisioning and planning processes, we extend the literature on the motivational mechanisms that can explain the impact of personal and contextual characteristics on innovation processes in the workplace. Third, while the impact of LGO on goal setting has already been demonstrated in the literature (VandeWalle, Brown, Cron, & Slocum, 1999), empirical evidence for the effects of perceived climate and task characteristics on such goal-regulatory activities has been relatively scarce. This study provides new insights by demonstrating that, among distal situational factors, task variety and innovative climate are essential to nurture proactive goal generation.

Interestingly, LGO also directly fostered innovative behaviour, beyond influencing it through envisioning and planning processes. This result is consistent with prior research on workplace innovation, which has stressed a positive relationship between LGO and innovative behaviours (Janssen & Van Yperen, 2004; Lu, Lin, & Leung, 2012). Indeed, people pursuing learning goals may regard innovation as a challenging task through which

they can gather new knowledge and, consequently, increase their skills and abilities. Therefore, such individuals would be more likely to invest their efforts in seeking to develop and implement creative ideas (Janssen & Van Yperen, 2004). Likewise, the positive direct relationship between LGO and planning is in line with past studies, which have showed that individuals with a high LGO are more likely to commit themselves to developing plans in order to achieve their goals (Sujan, Weitz, & Kumar, 1994; VandeWalle *et al.*, 1999).

Importantly, the positive link between LGO and innovative behaviour is consistent with prior research showing that people who are attracted by difficult and challenging tasks, such as intrinsically motivated people, are more likely to develop new ideas (Prabhu, Sutton, & Sauser, 2008). Despite this, it is worth noting that LGO is conceptually distinct from intrinsic motivation. Individuals may indeed enjoy working on a given task (i.e., high intrinsic motivation), yet they may not have a strong orientation to master this task and to develop new skills (i.e., low LGO; Shalley *et al.*, 2009). By drawing more attention on joy and interest than on competence development, intrinsic motivation is more likely to facilitate the production of ideas that are highly original but not necessarily useful (Grant & Berry, 2011). As a consequence, the odds of new ideas being put into practice should diminish. Thus, while the novelty of the outcome is important in the early stages of innovation (i.e., idea generation), other motivators are subsequently necessary to energize the individual towards translating creative ideas into useful applications in order to make changes effective (Amabile, 1996). In this regard, high LGO individuals are expected to invest more effort than intrinsically motivated individuals in seeking to put ideas into practice, because by doing so, they would perceive greater chances of successfully mastering the innovative tasks. Accordingly, while both intrinsic motivation and LGO are essential to creative idea generation, the latter may potentially have greater motivational power to boost individual engagement in both early and late stages of an innovative activity. Because the focus of our study was on overall innovative behaviour rather than creativity, the inclusion of LGO in our research helped to advance current knowledge of how this individual characteristic can stimulate employee involvement not only in the creation, but also in the promotion and application of new and useful ideas.

From a managerial perspective, a number of relevant inferences can be drawn from these findings. Specifically, in order for entrepreneurs and managers to increase employees' motivation to enact proactive goal-regulation tactics, they should be aware of the importance of promoting a work environment that is open to change and that actively encourages personal attempts to search and implement new ways of doing things. Moreover, considering the critical role of LGO in fostering proactive goal generation and innovative behaviour, firms should retain and nurture employees with a high LGO. The importance of implementing these practices is further emphasized by the last relevant result of our study, namely the moderating influence of LGO in the proactive planning–innovative behaviour relationship. By revealing that this relationship was positive and significant only under conditions of high LGO, we empirically supported the argument that planning is more likely to be translated into effective innovative ideas when individuals are ready to flexibly pursue pre-defined action plans by capitalizing on alternative opportunities to achieve change-oriented goals.

Limitations and future research directions

Despite these theoretical and managerial contributions, our research is not without limitations. First, we exclusively relied on self-report questionnaires to measure our study

variables, thus increasing the likelihood that the hypothesized results would be inflated by common method bias (Podsakoff *et al.*, 2003). We sought to alleviate this problem through the temporal separation between the predictor and criterion. Additionally, consistent with Podsakoff *et al.*'s (2003) statistical recommendations, we assessed whether our results could be inflated by common method bias and showed the probability of common method bias occurring is reduced. Notwithstanding this, however, future studies should more adequately counteract the potential problems associated with the use of common sources by introducing more objective measures. To this end, it may be valuable to obtain management assessments of employee innovative performance, as well as expert evaluations of the quantity and quality of innovative ideas suggested by the organizational members.

Linked to this is another important issue that has not been adequately taken into account in the present study. That is, due to our exclusive focus on the individual level of analysis, we are unaware of whether goal-directed regulatory activities effectively contribute to enhancing firm-level innovation, either directly or indirectly through employee innovative behaviour. This hence points to the importance of integrating measures of individual innovativeness with objective indicators of organizational innovative performance, such as the number of patents registered by the firm or the number of new products or services introduced in the market in a given year.

Moreover, the present study relied on a relatively small sample from the multitude of small enterprises, thus making the generalizability of our results fairly difficult. Accordingly, it would be particularly meaningful to test our model in larger samples from both small and medium- to large-sized organizations. In this regard, it would be worth assessing whether any differences in goal generation processes exist between small and large firms, and whether such differences affect the goal generation–innovative behaviour relationship.⁵

Finally, to the extent that real work teams can be readily identifiable in large organizational contexts, future research might examine the degree to which proactive envisioning and planning can act at the team-level to uniquely contribute to employee innovative efforts, thereby paralleling individual-level regulatory processes. Prior research provides indirect evidence for this proposition, having shown that motivational processes at the individual and team levels are functionally similar, as they relate to each other and to goal-directed behaviour similarly at the individual and team levels (Chen, Kanfer, DeShon, Mathieu, & Kozlowski, 2009).

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⁵ We thank an anonymous reviewer for this suggestion.

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