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RIDING TWO HORSES AT ONCE: THE COMBINED ROLES OF MASTERY AND PERFORMANCE CLIMATES IN IMPLEMENTING CREATIVE IDEAS

Abstract

Not all creative ideas end up being implemented. Drawing on micro-innovation literature and achievement goal theory, we propose that the interplay of two types of work motivational climates (mastery and performance) moderates a curvilinear relationship between the frequency of idea-generation and idea-implementation behavior. Field studies in two non-Western countries (China, with a study of 117 employees nested within 21 groups, and Slovenia, with a study of 240 employees nested within 34 groups) revealed a three-way interaction of idea generation, performance climate, and mastery climate as joint predictors of idea implementation. Specifically, results of random coefficient modeling show that when combined, mastery and performance climates transform the relationship between the frequency of idea generation and idea implementation from an inverse U-shaped curvilinear relationship to a positive and more linear one. These findings suggest that ideas are most frequently implemented in organizational contexts characterized by both high-mastery and high-performance climates. Implications for research and practice are discussed.

Keywords: creativity, innovation, idea generation, idea implementation, mastery climate, performance climate

Riding Two Horses at Once: The Combined Roles of Mastery and Performance Climates in Implementing Creative Ideas

Opposition is the source of all growth. – Lao Tzu

Innovation is a crucial factor for organizational success in today's competitive and dynamic environment (Crossan & Apaydin, 2010). Research has demonstrated the importance of innovation for essential organizational outcomes, such as performance, sustainability, and growth over time (Damanpour & Evan, 1984; Freel & Robson, 2004). It is also well established in the literature that organizational innovation is influenced by the micro- or individual-level innovation process that consists of the generation of novel and useful ideas (i.e., creativity) (Amabile, 1983; Shalley, 1991) as well as their implementation (Amabile, 1988; Axtell, Holman, & Wall, 2006; Perry-Smith & Mannucci, in press; Scott & Bruce, 1994).

Nevertheless, not all creative ideas get implemented. While the link between idea generation and implementation behaviors is an important one, it is also fairly understudied – in fact, the vast majority of micro-innovation research in organizations focuses only on creativity (Anderson, Potočnik, & Zhou, 2014). However, ideas are useless unless used, and it is the implementation of creative ideas that holds business value (Levitt, 2002). Previous research (Baer, 2012; Škerlavaj, Černe, & Dysvik, 2014) has observed that not all creative behavior gets implemented; in fact, a too-much-of-a-good-thing effect related to creative idea generation behavior and implementation is in play. In other words, generating too novel and too many creative ideas may ultimately lead to fewer ideas actually being implemented.

Departing from the achievement goal theory (AGT) (Ames, 1992; Nicholls, 1989), this study seeks to examine whether the perceived motivational climate at work moderates the curvilinear relationship between creative idea generation and implementation. According to AGT, the perceived motivational climate is defined as employees' shared perceptions of

the existent criteria of success and failure emphasized through the policies, practices, and procedures of the work environment (Nerstad, Roberts, & Richardsen, 2013). Since idea work is a core business process (Carlsen, Gjersvik, & Clegg, 2012) in many of today's organizations, succeeding or failing in the realization of ideas is essential. We suggest that the perceived motivational climate may be relevant for understanding why idea implementation in certain circumstances may succeed or fail.

In line with AGT, such a climate shapes the meanings employees attach to success and failure, the performance information they take in, their action strategies and respective achievement behavior in the innovation process (cf., Ames & Ames 1984). This means that the climate focuses their attention on what it takes to be successful at work (Nerstad et al., 2013), which in turn may be crucial for their likelihood of creative idea implementation. Two dimensions, which desire, emphasize and reward different goals and behaviors characterize the perceived motivational climate in line with AGT: a mastery climate and a performance climate. In a mastery climate, the goal structure upholds and rewards behaviors such as effort, self-improvement, progress, skill development, and cooperation (Nicholls, 1984, 1989; Ames, 1992a; Ames, 1992b). In contrast, a performance climate emphasizes normative comparisons, goal attainment relative to that of others, desire to demonstrate individual abilities, and internal rivalry (Ames, 1984, 1992a; Ames & Ames, 1984; Dragoni, 2005).

Intuitively, it seems logical that a mastery climate is conducive to more effective innovative behaviors. However, there are theoretical and practical reasons to examine mastery and performance climates in combination. AGT proposes that a mastery climate and a performance climate can be simultaneously present and interact as predictors of individual outcomes (Ames, 1992a; Ames, 1992b; Ommundsen & Roberts, 1999). In addition and from a practical perspective, many areas in life, including work, sports, and education are governed by competition and normative evaluation (e.g., DeShon & Gillespie, 2005; Van Yperen et al.,

2011). Therefore, solely focusing on a mastery climate might conflict with practical organizational realities (e.g., Poortvliet & Darnon, 2010). Organizations are often more concerned with high performance and results than with the process (e.g., employee learning, mastery, growth) that facilitates and leads to it (e.g., DeShon & Gillespie, 2005; Poortvliet & Darnon, 2010). Our main intended theoretical contribution to AGT is therefore to increase our knowledge about how mastery and performance climates may *jointly* interact and thereby influence the relationship between idea generation and implementation.

The importance of management shaping perceptions of climate that stimulates work involvement and innovation has been widely emphasized in existing scholarship (e.g. Wang, Guidice, Tansky, & Wang, 2010; Zhou, Hong, & Liu, 2013). This study seeks to contribute to the practice of innovation management by explaining how idea generation leads to idea implementation and how organizational systems influence this relationship. An overwhelming belief of scholars and practitioners has focused on how to encourage employees to become and stay innovative in the workplace. However, a less prevailing belief—yet profoundly important reality—is that creative ideas need to be implemented in order to have a business value. We therefore contribute to the existing body of knowledge by extending the primary focus on creativity (e.g. Binyamin & Carmeli, 2010; Carmeli, Gelbard, & Reiter-Palmon, 2013) to the implementation of ideas situated in a multi-level pattern of motivational climates at work. As cross-level influences are likely to be present in the workplace setting since understanding the factors that can facilitate or stifle creative or innovative behavior are embedded in a complex social system (Shalley & Zhou, 2008), we employ a multilevel approach. We test the interplay among idea generation behavior, mastery climate, and performance climate in predicting idea implementation behavior on working professionals in China and in Slovenia.

The two samples serve as an attempt to replicate the results of the three-way interactions on two different samples from employees in two different countries. The respondents from the two samples are non-Western, which in itself responds to the fact that there is a paucity of research on creativity and innovation in non-Western contexts (Zhou & Su, 2010; Erez & Nouri, 2010).

Idea Generation and Implementation

Idea generation (frequently labelled as creativity) is defined as the invention of novel and useful ideas (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Therefore, the end product of this phenomenon are ideas. Idea generation is a necessary yet insufficient antecedent to innovation, which also includes the implementation of creative ideas (Amabile, 1988; Scott & Bruce, 1994). Inevitably, conceptual overlap exists in the two definitions, as innovation scholars frequently examine innovation as a term encompassing both idea generation and implementation, as well as idea championing or issue selling (Anderson et al., 2014; de Jong & den Hartog, 2010). To explain the nature of the relationship between idea generation and idea implementation, we draw on micro-innovation theory that has thus far provided important insights into the problem of balancing an exploration mindset with exploitation (cf. Miron-Spektor, Erez, & Naveh, 2011).

Idea generation and idea implementation are rather distinct activities (Baer, 2012; Somech & Drach-Zahavy, 2013) and are related to different behaviors; idea generation relates to the behavior of exploration, whereas idea implementation refers to the behavior of exploitation (Axtell et al., 2000). Thus, these two integral parts of the innovation process require different resources that may be mutually exclusive or difficult to combine. A strong focus on one of those activities may prevent the other from being executed successfully; staying in an exploratory mindset is less efficient for idea implementation, thus resulting in a "too-much-of-a-good-thing" effect (cf. Pierce & Aguinis, 2013). Time, energy, and attention

devoted to generating novel and potentially useful ideas could, in extreme cases, be so demanding that the frequency of implementing creative ideas is compromised. Spending more time on idea-generation behavior is generally very resource-demanding, and creative ideas are hence more complicated to deliver. When a moderate level of frequency of idea generation behavior exists, employees will be likely to devote sufficient time, energy, cognitive attention, and exploitative mindset to actually implementing their ideas (Škerlavaj et al., 2014).

The Interplay Among Idea Generation, Mastery Climate, and Performance Climate in Predicting Idea Implementation

In the following, we develop our hypothesis, where we propose that mastery and performance climates moderate the inverted U-shaped relationship between the frequency of idea generation and idea implementation behaviors.

According to AGT, the two types of motivational climates (mastery and performance) can be simultaneously present and may interact as predictors of individual outcomes (Ames, 1992a; Ames, 1992b; Ommundsen & Roberts, 1999). In a mastery climate, the goal structure upholds and rewards behaviors, such as effort, self-improvement, progress, skill development, and cooperation rather than normative comparisons (Ames, 1984, 1992a; Ames & Ames, 1984). The work process is viewed more as a process of learning or achieving mastery, where performance outcomes are compared with what the employee personally has accomplished in the past (cf. Ames, 1984). A mastery climate is typically associated with adaptive outcomes, such as intrinsic interest, well-being, persistence in the face of difficulty, positive affect, higher work performance, engagement, more creativity, and less knowledge hiding (e.g., Černe, Nerstad, Dysvik, & Škerlavaj, 2014; Lau & Nie, 2008; Nerstad et al., 2013; Ntoumanis & Biddle, 1999; Valentini & Rudisill, 2006).

In contrast, a performance climate promotes egoistic motivation, in which normative comparisons are essential because the performance climate's emphasis is on whether the employee is deemed successful (Ames & Ames, 1984; Nicholls, 1979). The probability of one employee's attaining a goal or receiving a reward is reduced by the presence of another, more capable employee, thereby creating negative interdependence among employees (cf. Ames, 1984; Černe et al., 2014). Therefore, a performance climate typically increases individuals' interests in comparing their own performance with that of others and reinforces their desire to demonstrate their competitive abilities (Ames & Ames, 1984; Dragoni, 2005; Payne, Youngcourt, & Beaubien, 2007; Roberts, Treasure, & Conroy, 2007). A performance climate has been associated with a range of maladaptive outcomes, such as turnover intentions, burnout, withdrawal/giving up in the face of difficulty, lower performance, and effort withdrawal (e.g., Lau & Nie, 2008; Nerstad et al., 2013; Ntoumanis & Biddle, 1999). And while mastery climate refers to self-comparison, which potentially takes place over time, performance climate highlights comparison with others, which is based on efforts and rewards and can occur in a single point in time (Buch, Nerstad, & Säfvenbom, 2015).

In organizational settings, one study in particular has investigated the moderating role of a concept similar to a mastery climate (i.e., team learning behavior) on performance outcomes. More specifically, Hirst et al. (2009a) found that the relationship between an individual's goal orientation and creativity was contingent on team learning behavior. For mastery-oriented individuals, and to a lesser extent for performance-oriented individuals, team learning behavior enhanced their creative tendencies. However, Beersma et al. (2003) have suggested that cooperative reward structures (one important aspect of a mastery climate), has a negative impact on a team's speed of performance. Thus, taking time to share knowledge, discuss, and cooperate on tasks can slow individuals/teams down, although their focus on accuracy would be salient (Beersma et al., 2003). In competitive reward structures

(sharing some similar characteristics with a performance climate; Nerstad et al., 2013), individuals enhanced their speed of performance, although it did not promote accuracy. Drawing on these findings in our emphasis on frequency of idea generation and implementation, it is important to recognize that a mastery climate has crucial virtues in promoting individuals to take their time to share information and discuss and work together on frequent idea generation. However, it is also important to recognize the liabilities of a mastery climate when it comes to the speed of performance with respect to implementing the ideas. Similarly, a performance climate would promote speed of performance (i.e., idea implementation) while representing a liability of the cooperative processes (i.e., found within the mastery climate) concerning frequent idea generation (cf. Beersma et al., 2003). An important and interesting question then arises: How does a combination of the two perceived motivational climates at work play out in jointly influencing the inverted-U shaped relationship between idea generation and implementation?

A common recommendation in the sport, educational, and organizational AGT literature is to develop a mastery climate to enjoy its overall beneficial outcomes (e.g., Ames, 1992b; DeShon & Gillespie, 2005; Nerstad, Roberts, & Richardsen, in press; Poortvliet & Darnon, 2010; Roberts, 2012). A mastery climate might be more important for the generation of creative ideas because it constitutes and cultivates a beneficial social-organizational work environment (Dul, Ceylan, & Jaspers, 2011; Van Yperen, Hamstra, & Van Der Klauw, 2011) that helps individuals develop competencies, approach challenges, work together, and exchange knowledge — increase knowledge-sharing motivation (Ames, 1992b; Černe et al., 2014; Carmeli et al., 2013; Dysvik & Kuvaas, 2012; Gagné, 2009). However, organizations also need tangible results from their creative processes. As DeShon and Gillespie (2005) have argued, organizational realities require a focus on end results (i.e., performance) and not just employee learning and continuous growth (i.e., mastery). Despite the potential adverse

consequences of a performance climate, previous research from the domain of education and sports (e.g., Ames & Archer, 1988; Ommundsen & Roberts, 1999) suggests that a high-performance climate may not negatively influence individual outcomes when accompanied by a high-mastery climate. Hence, because of its focus on mastery, development, and growth, a mastery climate may be able to tone down or balance the negative characteristics (e.g., control, normative comparison, tangible rewards) of a performance climate that could lead to maladaptive outcomes. In addition, given the already existing competitive element in most organizations, employees may find a climate conveying both a mastery and performance criteria of success appealing (cf. DeShon & Gillespie, 2005). This helps explain why a performance climate might not be so negative in the presence of a strong mastery climate. In other words, the value orientation inherent in a mastery climate might equip employees with the resources that they need to overcome the negative impacts of a performance climate. If the findings from other domains are also valid for the organizational settings, this would assist managers and organizations with handling the dilemma between employee learning and growth while simultaneously being concerned with end results. In the following, we elaborate on how mastery and performance climates could interplay with the frequency of idea generation in predicting idea implementation in an inverted-U-shaped manner. We offer four different scenarios for how these three predictors can interplay, which are presented in Figure 1 – a conceptual 2x2 matrix of different conditions leading up to idea implementation.

Insert Figure 1 about here

Scenario One

When individuals rarely engage in the generation of creative ideas, little or no creative substance is available for implementation, regardless of the levels of the mastery and

performance climates. Thus, we obviously expect the multiplicative combination of low levels of idea generation behavior, a performance climate, and a mastery climate to be associated with low levels of idea implementation behavior. Similarly, even as creative substance increases, in the conditions of both low mastery as well as performance climate, neither developmental nor goal-oriented contextual conditions are present that would drive idea generation towards implementation. We thus expect low levels of idea implementation.

Scenario Two

When employees more frequently generate ideas, in accordance with Škerlavaj et al. (2014), this implies a plateauing (inverted-U-shaped) effect on idea implementation. When the frequency of generated ideas increases under the condition of higher levels of a performance climate and lower levels of a mastery climate, they are expected to perform creative tasks and deliver results instantly. Underemphasizing development, learning, and cooperation may inhibit individuals from exploring or pursuing alternative approaches in the creative process of generating ideas and implementing them (cf. Bunderson & Sutcliffe, 2003). This may imply a lack of opportunity for employees to have or to take the time needed to polish ideas, receive feedback, learn, seek support from colleagues, and coordinate their ideas with others, as only effective and end-result focused behavior is rewarded (cf. DeShon & Gillespie, 2005). Thus, due to the criteria of success and failure that a performance climate establishes, employees become sensitive to external cues in order to maximize extrinsic rewards (cf. Hirst et al., 2009) and avoid sanctions or punishment (Ames, 1992b). As a result, individuals should perceive that they are unlikely to be rewarded for directing their energy toward personal growth and cooperation. Idea implementation is a social-political process (Van de Ven, 1986) dependent upon resources in the form of social interactions and connections. Therefore, social processes of creativity should become underutilized in conditions with low-mastery and high-performance climates. For the vast majority who

cannot generate ideas and perform instantly, such conditions ought to attenuate the link between frequent idea generation and idea implementation behaviors, shaping the curve of this relationship into an even more characteristically inverted-U one.

Scenario Three

In situations where individuals generate creative ideas to a greater extent and share a perception of a high mastery climate and a low-performance climate, we expect fewer generated ideas to be implemented. This means that the right hand side of the curve portraying the inverted-U shaped relationship would be even lower. In such a condition, employees are less likely to deliver, implement, produce, close, and perform effectively because the external pressure and focus on performing the task in the allotted time is less salient (cf. DeShon & Gillespie, 2005). Thus, a sole focus on growth (e.g., learning and development) "consumes time without assurance of results" and may consequently "reduce efficiency and detract from performance" (Edmondson, 1999, p. 354). In other words, when being overly focused on personal growth as opposed to the pragmatics of goal pursuit, employees may end up overlooking alternative solutions and favor novelty and elegance over practicality (Bunderson & Sutcliffe, 2003; Hirst, Van Knippenberg, & Zhou, 2009b). For employees, this can become detrimental because they easily become stuck in a process of developing their mastery and learning, thus making them lack the extra push that they need for action. In a way, this condition can be described as a form of "art for art's sake." Thus, a high-mastery climate and a low-performance climate may become detrimental for the frequency of idea generation — idea implementation behaviors relationship, further lowering the right hand side of the curve. This is because individuals are encouraged to prioritize mastery and learning behaviors to such an extent that it diminishes creativity implementation and may even become a "learning trap" (cf. Bunderson & Sutcliffe, 2003; Hirst et al., 2009b; Levinthal & March, 1993).

Scenario Four

Finally, under the condition of high levels of all three interacting constructs (idea generation behavior, a mastery climate, and a performance climate), the curvilinear relationship between the frequency of idea generation behavior and idea implementation behavior should become linear and reach its highest levels. To encourage idea implementation, organizations can benefit from a motivational climate that supports and fosters collaboration and positive interactions among employees but *simultaneously* enables the processes aimed at achieving goals by motivating employees to effectively perform tasks (cf. DeShon & Gillespie, 2005; Poortvliet & Darnon, 2010). This is in line with the theoretical arguments presented by Ames (1992) suggesting that the two climates might be additive, meaning that they may become complementary. Thus, inadequacies in one climate structure may be attenuated by the strengths of the other climate. With respect to idea generation and implementation, this means that securing employee growth (i.e., development and learning) and positive social values in addition to effectiveness (i.e., performing well in terms of end results) can enhance the link between the frequency of idea generation and implementation because a stronger motivation for both is triggered (cf. DeShon & Gillespie, 2005).

In the interplay of idea generation behavior and a high-mastery climate, a high-performance climate should not necessarily be detrimental to employees' idea implementation behavior since it encourages employees to bring creative ideas to fruition. For employees to keep their performance efforts - idea generation behavior - channeled toward the desired outcome - idea implementation behavior, a performance climate may play a crucial reinforcing role (cf. Van Yperen et al., 2011). The opportunity to gain growth and normative advantage at the same time motivates individuals to achieve the criteria of success (Cumming, Smoll, Smith, & Grossbard, 2007), which in this particular context is signaled to

be successful idea implementation. When the motivational climate elicits multiple criteria of success, it may help employees' better cope with the competitive elements inherent in their work situation, as it may give them a broader basis for experiencing success (Ommundsen & Roberts, 1999). For example, teams with high levels of mastery orientation have been found to have about the same level of work engagement regardless of the level of a competitive work environment, which has much in common with a performance climate (Jones, Davis & Thomas, in press). This finding may suggest that due to the mastery climate criteria, employees may have learned to view the competitive work environment as a learning opportunity and therefore their engagement levels stay the same. In addition, Hirst et al. (2009) only found a positive relationship between performance orientation and individual creativity when team learning behavior, an important aspect of a mastery climate, was high.

The co-presence of high levels of mastery and performance climates is likely to provide guidelines for how employees should invest their resources by means of frequent idea generation and idea implementation behaviors. Accordingly, the link from the frequency of idea generation leading to idea implementation behaviors should be contingent on the high levels of a mastery climate and the high levels of a performance climate. Thus, the coexistence of a high mastery and performance climate can create a well-adjusted ambidexterity (cf. Cao, Gedajlovic, & Zhang, 2009) which is needed to balance the frequency of idea generation and idea implementation behaviors. A mastery climate should be suitable for stimulating idea implementation from creative ideas and for balancing a performance climate's negative influence (cf. Ommundsen & Roberts, 1999; Papaioannou, Marsh, & Theodorakis, 2004). Therefore, we hypothesize:

> *Hypothesis: Perceived mastery and performance climates interact to positively moderate the inverted U-shaped curvilinear relationship between the frequency of individual idea generation and implementation behaviors. The curvilinear*

relationship becomes more positive and linear for employees who perceive high levels of both mastery and performance climates.

The theoretical model with Hypothesis is presented in Figure 2.

Insert Figure 2 about here

Methods

Sample and Procedures

We tested our hypothesis in two different samples, consisting of employees from China and Slovenia, respectively. These contexts are distinct from each other and from Western countries generally speaking. While our sampling was based on convenience, it provided us with the opportunity to test if individuals working in different national and cultural settings behave differently. Another benefit from including two samples is the opportunity to see if the hypothesized curvilinear three-way relationships can be replicated across samples in line with expert advice made by Kline (2004).

We collected field data from 240 employees and their 34 direct supervisors in two Slovenian companies in September and October 2011, as well as from 117 employees nested within 21 organizational groups (each with one supervisor) of 12 companies in China during the third and fourth quarters of 2012. The definition of the group (work unit) is the same in both cases; it just so happens that in China, these groups are scattered throughout more companies. A translation-back translation procedure was used to translate the questionnaire from English to Slovenian/Chinese and then back into English (Brislin, 1970). To reduce the potential influence of common method bias, we collected data using two separate online questionnaires: one for employees and another for supervisors, who evaluated employees' idea generation and implementation. As data regarding predictor and criterion variables (idea

generation and implementation) were only supervisor-based, we used additional approaches in line with expert advice (Podsakoff, MacKenzie, & Podsakoff, 2012). Data were collected in two waves, the second (when the supervisors rated idea generation) about three weeks after the first (when both employees and supervisors evaluated all of the other variables used in this study). The items used in this study were part of a large-scale questionnaire; therefore, it is unlikely that respondents were able to guess the study's purpose and change their answers to be consistent. Some items in the questionnaire were also reverse-coded.

Slovenian subsample. The first company is a steel production and manufacturing firm that provides original and complete solutions from concept to project completion with a constant emphasis on innovation and sustainable development. The second company is in the metal processing industry and exhibits more creativity and innovation than the average company within that industry. It deals with technologically advanced blacksmithing and is vested in producing innovative products from raw metal. The employees in this sample held a wide variety of jobs, such as marketing managers, sales managers, sales clerks, procurement clerks, production managers, R&D workers, and so on. We are aware that the importance and opportunities of exhibiting creative behaviors and implementing ideas differ greatly between different groups of employees within and between firms. For example, work tasks characterized by creativity and innovation are highly important to R&D professionals (Bakker, Boersma, & Oreel, 2006; Chen & Kaufmann, 2008; Scott & Bruce, 1994). Thus, higher levels of idea generation as well as implementation could be expected within the R&D work domains.

In the Slovenian companies, the average number of respondents per group was seven employees (average group size = 11.57 employees), and the number of direct reports from the group supervisor ranged from two to 18. The chosen 34 groups that participated in the study had a 60.5% response rate for supervisors' direct reports (the within-group response rates

ranged from 15% to 100%). About 68% of the participants were male, and about 37% were between 35 years old and 45 years old (*SD* = 7.02). A total of 36% of respondents reported less than seven years of work experience (*SD* = 7.89), and 35% reported less than three years of working with this particular supervisor (dyad tenure: *SD* = 4.97).

Chinese subsample. The 12 participating companies represented a wide array of industrial and business backgrounds, including fashion design, liquor distillery, power and energy, mobile media, software development, asset appraisals, and clothing sales. The employees in this sample also held a wide variety of jobs, such as development engineers, production managers, project managers, software engineers, interface design workers, finance managers, HR managers, and line managers. The average number of respondents per group in these Chinese companies was 5.7 employees (average group size = 17.34 employees), and the number of direct reports from group supervisors ranged from two to 11. The chosen 21 groups that participated in the study had a 32.87% response rate for supervisors' direct reports (the within-group response rates ranged from 10% to 100%). About 60% of the respondents were male, and about 45% were between the ages of 35 years old and 45 years old (*SD* = 7.84). In addition, 77% of the respondents reported less than seven years of work experience (*SD* = 6.45), and 57% reported less than three years of working with their particular supervisors (dyad tenure: *SD* = 3.15).

Measures

All items were measured with a 7-point Likert-type scale denoting either frequency (in the case of idea generation and idea implementation behavior) or agreement (in the case of mastery and performance motivational climates, and mastery and performance goal orientations) with the statements.

Idea generation behavior. Identical behaviors might be considered to be creative in one organizational context and disruptive in another (Agars, Kaufman, & Locke, 2008).

Therefore, perceptual measures were used because they permit the most relevant subjective assessments of domain-specific creativity from the actors involved in the social and work settings where the innovation process is executed. We used a scale that Zhou & George, 2001) developed—α = .89 (Slovenia)/.92 (China). To avoid overlap with idea implementation behavior in accordance with the warning from Montag et al. (2012), we used eight items that concerned only the generation of novel, useful ideas but not the implementation of these ideas: "How often does this employee … suggest new ways to achieve goals or objectives? … comes up with new and practical ideas to improve performance? … search out new technologies, processes, techniques, and/or product ideas? … suggest new ways to increase quality? … act as a good source of creative ideas? . . . exhibit creativity on the job when given the opportunity? … have new and innovative ideas? … come up with creative solutions to problems? … have a fresh approach to problems? . . . suggest new ways of performing work tasks?"

Idea implementation behavior. We measured the frequency of idea implementation behavior with two items developed by de Jong and den Hartog (2010) that concern only the implementation component of innovation, not idea generation or idea championing behaviors—α = .84 (Slovenia)/.87 (China). These items are the following (de Jong & den Hartog, 2010): "How often does this employee … systematically introduce innovative ideas into work practices? … contribute to the implementation of new ideas?"

Perceived motivational climate. The perceived motivational climate (a mastery climate and a performance climate) was measured by using a 14-item instrument that Nerstad et al. (2013) developed—α = .94 (Slovenia)/.83 (China) for mastery climate and α =.82 (Slovenia)/.76 (China) for performance climate. The scale asks employees how they perceive the definition of success in their work situations, and refers to their department/work group using a referent shift approach. It opens with the statement "In my department/work group"

and then allows the respondents to assess mastery (e.g., “Each individual’s learning and development is emphasized” and “One is encouraged to cooperate and exchange thoughts and ideas mutually.”) and performance (e.g., “There exists a competitive rivalry among the employees” and “Work accomplishments are measured based on comparisons with the accomplishments of co-workers.”) climate. Mastery and performance climate ratings from subordinates who belonged to the same groups were aggregated at the group level and averaged to obtain a single score for each group.

To validate the aggregation of individual-level measures of the mastery climate and the performance climate on the group level, we calculated the intraclass correlations (ICCs) and multi-item within-group agreement ($r_{wg(J)}$). In Slovenia, the average $r_{wg(6)}$ for the mastery climate was .83, ranging from .61 to .99, while ICC(1) was .14 and ICC(2) was .44 ($F = 1.92$, $p < .01$). The average $r_{wg(8)}$ for the performance climate was .82, ranging from .50 to .98, with ICC(1) at .12 and ICC(2) at .50 ($F = 1.8$, $p < .01$). In China, the average $r_{wg(6)}$ for the mastery climate was .86, ranging from .47 to .99, while ICC(1) was .15 and ICC(2) was .50 ($F = 2.0$, $p = .014$). The average $r_{wg(8)}$ for the performance climate was .75, ranging from .33 to .96, with ICC(1) at .09 and ICC(2) at .35 ($F = 1.54$, $p = .085$).

James (1982) found that ICC(1) generally ranges from 0 to .50, taking a median of .12. The values obtained on both Slovenian and Chinese samples are above this median and indicate that significant between-group variances exist in a perceived motivational climate. Given our research question and efforts to aggregate measures of employees’ perceptions of the motivational climate in a group, we created aggregate measures of a perceived mastery and performance climate, following the approach of previous studies (e.g., Černe et al., 2014). A perceived group climate reflects employees’ shared perceptions, and is thereby *de facto* a group-level construct measured using a referent shift (from referring to an individual to referring the group) approach. An aggregated measure for climate may therefore be the

best way to examine its role in the individual innovation process (cf. Biemann, Cole, & Voelpel, 2012).

Control variables. Employees' goal orientation (performance orientation and mastery orientation) was measured by using an adapted version (Nerstad et al., 2013) of the nine-item scale (excluding the performance avoidance items) that VandeWalle (1997) developed—α = .67 (Slovenia)/.68 (China) for performance orientation and .71 (Slovenia)/.86 (China) for mastery orientation. The questionnaire was adapted to be more in accordance with Nicholls' (1984, 1989) AGT, asking employees how they define success at work. The innovation process is closely tied to the social setting; however it also depends on individual factors (Baer, 2012). Various perspectives in AGT emphasize the relevance of dispositional goal orientation differently. Conceptualized as dispositional goal orientations, individuals are predisposed by their personal theories of achievement to act in a mastery- or performance-oriented manner (Roberts et al., 2007). In line with the person-centered AGT approach, dispositional goal orientation determines how the motivational climate is interpreted. The situated AGT approach, on the other hand, sees goal orientation as a function of either the situation or an interaction between the person and the situation (Maehr & Zusho, 2009). In this study, the theoretical foundation is based on the situated AGT perspective (e.g., Ames, 1992; Nicholls, 1989). Accordingly, to conduct a more conservative test of whether the motivational climate has an impact over and above that of employees' dispositional goal orientation, we controlled for dispositional goal orientation in all analyses.

We also controlled for age, gender, employee education, and expertise (work experience was used as a proxy). Studies have indicated that age affects individual innovation behavior, but does so differently across various domains (cf. Jones & Weinberg, 2011). Furthermore, employees' educational backgrounds can influence how creative and innovative they could be (cf. Fasko, 2001). Previous research has also identified considerable differences

in the creative or innovative achievement of men and women in many fields (cf. Baer & Kaufman, 2008). Expertise, in particular, is a valuable control variable because employees who have performed a particular task for a longer time may perceive its difficulty or creativeness differently (Amabile, 1998). The same is true for another variable for which we controlled — whether employees had any managerial duties. Lastly, we controlled for dyad tenure (how long an employee had been working under the supervision of a particular direct supervisor), because the length of the supervisor–subordinate relationship can impact perceptions of work (Fagenson-Eland, Marks, & Amendola, 1997). These control variables were self-reported.

Results

Tables 1 and 2 report the descriptive statistics of all variables analyzed in our study. We first examined the factor structure of the focal variables. The expected four-factor solution (idea generation behavior, idea implementation behavior, a performance climate, a mastery climate) fit indices were as follows: Slovenia - Chi-square [249] = 743.1, CFI = .89, SRMR = .102, RMSEA = .091; China - Chi-square [249] = 386.2, CFI = .90, SRMR = .085, RMSEA = .069). Altogether, the factor loadings ranged from .66 to .92 for idea-generation behavior items, .81 to .93 for idea-implementation behavior items, .51 to .84 for performance climate items, and .59 to .93 for mastery climate items.

Insert Table 1 about here

Insert Table 2 about here

The employees in our sample were grouped into work units each corresponding to a specific supervisor. Each supervisor provided ratings of the frequency of idea generation and implementation behaviors for multiple employees, which violates the independence

assumption. Therefore, we applied a multilevel analysis using hierarchical linear modeling (HLM) version 7.0 (Raudenbush & Bryk, 2002) with a restricted maximum likelihood estimation to test our hypothesis. This approach allowed us to model the non-independence in our dependent variable by partitioning its variance into a within-group and a between-group component. We present these results in Tables 3 and 4. The predictor variables were grand-mean-centered to reduce unnecessary multicollinearity between the linear terms and their quadratic counterparts, as well as the direct and interaction terms (Aiken & West, 1991).

We began with the intercept-only (null) model that predicted individual idea implementation behavior (Model 1). In the second step (Model 2), we entered eight control variables. In the third step (Model 3, we added direct predictors (idea generation, idea generation squared, mastery climate, performance climate). Idea generation was positively related to idea implementation behavior (Slovenia: $\gamma = .32$, $p < .01$; China: $\gamma = .53$, $p < .01$).

Insert Table 3 about here

Insert Table 4 about here

The quadratic term of idea generation behavior (i.e., idea generation behavior squared) was also found to be significant (Slovenia: $\gamma = -.15$, $p < .01$; China: $\gamma = -.29$, $p < .01$). Therefore, the negative quadratic term of idea generation was found to be in conjunction with a positive linear term. s In Figures 3 and 4, we present a plot of the linear (solely for the purpose of demonstrating the difference to the quadratic one) and quadratic regression models that demonstrates the relationship between idea generation and implementation behaviors. The plot shows that as the frequency of idea generation behavior increases, idea implementation behavior does, too. However, once creative-idea generation behavior reaches an inflection point, implementation behavior peaks and then declines as generation behavior

increases, as portrayed by a predominantly positive, concave downward curve (Aiken & West, 1991).

Insert Figure 3 about here

Insert Figure 4 about here

To test whether the curvilinear relationship between the frequency of idea generation and implementation behaviors is positive and linear for employees who perceive a high-performance climate, we followed the approach used in previous studies (e.g., Farh, Lee, & Farh, 2010; Tangirala & Ramanujam, 2008) and used the graphing method that Aiken and West (1991) outlined for interpreting interactions in the presence of curvilinear relationships. This approach is described by models 4, 5 and 6.

In Model 4, we inserted the linear interactions to the previous model (idea generation × mastery climate; idea generation × performance climate; mastery climate × performance climate). In both subsamples, the linear interaction terms were not found to be significant.

In the fifth step (Model 5), we added the curvilinear interactions (idea generation behavior^2 × performance climate and idea generation behavior^2 × mastery climate) to the previous model. These were again not found to be significant by traditional significance standards ($p < .05$).

Finally, in Model 6, we examined the three-way interaction effects of the mastery climate, the performance climate, and creative-idea generation behavior on idea implementation behavior, inserting both the linear (idea generation × mastery climate × performance climate) as well as the curvilinear (idea generation squared × mastery climate × performance climate) three-way interaction term. The results show that the curvilinear three-way interaction is significant ($\gamma = .29$, $SE = .14$, $p < .05$ in the Slovenian sample, $\gamma = .42$, SE

= .19, $p < .05$ in the Chinese sample). These interactions are shown in Figures 5 (Slovenia) and 6 (China), where we plotted the effects at one standard deviation above and below the mean of the moderating variables – the two motivational climates. From the figures, it is evident that for employees in groups with high mastery and performance climates, the relationship between creative-idea generation and implementation is more positive (Curve 1). It has a linear shaped curve in the Chinese sample and a curvilinear U-shaped curve in the Slovenian sample. In both cases, the high frequency of creative idea generation behavior is most often being implemented in groups characterized by both high mastery and performance motivational climates, thereby supporting Hypothesis 1. On the other hand, a high frequency of creative idea generation behavior is the least likely to be implemented in groups characterized by low mastery and performance climates in the case of Slovenia (Curve 4), and low mastery and high performance climates in the case of China (Curve 3).

Insert Figure 5 about here

Insert Figure 6 about here

Discussion

In this study, we set out to increase our knowledge about the *joint* roles of mastery and performance motivational climates as moderators on the relationship between idea generation and idea implementation behaviors. In support for our hypothesis, we found that the interplay between a performance climate and a mastery climate seems to determine whether the frequency of idea generation is likely to be associated with idea implementation behaviors. We found the most positive association between the frequency of creative-idea generation and idea implementation behaviors when employees' perceptions of *both* a

performance climate and a mastery climate were high, thereby supporting a three-way interaction between individual idea generation behavior, a performance climate, and a mastery climate. It is also interesting to note that while the results are by and large similar across teams, there are some differences between the two countries. Specifically, under the condition of both motivational climates being high, the relationship between idea generation behavior and idea implementation behavior has a U-shaped curve in the Slovenian samples and is linear within the Chinese samples.

Theoretical Contributions

We believe our study provides three distinct contributions to the scholarship of motivational climates at work, creativity and innovation management. First, we reinforce a crucial, yet often overlooked, proposition in understanding and managing employees' creative behaviors, i.e., creative ideas need to be implemented in order for them to entail business value. By focusing on idea implementation as a key outcome variable, our research complements and extends current literature that examines the relationship between managerial processes/practices and creativity (e.g., Carmeli, Gelbard, & Gefen, 2010; Carmeli et al., 2013) by highlighting the idea-implementation dimension. This is a valuable contribution to both creativity as well as innovation literatures as it examines the so-called 'innovation paradox'. Innovation requires both creating and implementing novel ideas. Paradoxically however, the same conditions favoring creation of novel-ideas often impede the idea-implementation process (Miron-Spektor, Erez, & Naveh, 2011).

Second, by focusing on perceived motivational climates at work (mastery and performance), we extend previous research that advocates for examining social and contextual influences on the process of idea generation (Dul et al., 2011) to also examine how these contextual factors influence idea implementation behavior. Our multi-level approach allowed for a more precise assessment of the contextual cross-level influence of the perceived

motivational climate at work on how creative ideas get transformed into implemented innovations. We contribute theoretically to the extant literature by conceptualizing and modeling the motivational climate as a compositional (cf., Kozlowski & Klein, 2000) group-level construct and a contextual factor in the micro-foundations of the innovation process at work. Empirically, we applied a rigorous multilevel examination of this contextual influence that accounts for dependence among lower-level units, their nesting, and cross-level influences (Mathieu & Chen, 2011).

The third contribution is a contribution to the achievement goal theory itself, while our results showed that mastery and performance climates interplay, suggesting that innovation processes benefit from emphasizing multiple criteria of success. Organizations in need of frequently implementing creative ideas would especially benefit from facilitating the mastery climate criteria in addition to the performance climate criteria. We extend the observation from the domain of education and sports to the domain of work that performance climate criteria do not necessarily undermine the beneficial (adaptive) responses of a mastery climate (cf. Ames & Archer, 1988; Ommundsen & Roberts, 1999). Highly innovative organizational realities are likely to already include a competitive element, which is also the case in elite sports (cf. DeShon & Gillespie, 2005). As demonstrated in our research, introducing mastery climate criteria seems to be suitable for stimulating idea implementation from creative ideas and for balancing the detrimental aspects that might result from a performance climate (cf. Ames & Archer, 1988).

Fourth, our two studies follow an important principle in academic research, that of replicability of results, which is even more salient in light of the fact that recent inquiry emphasizes the fact that studies in the fields of management and organizational psychology have demonstrated severe replication challenges (Open_Science_Collaboration, 2015). This principle was achieved by two distinct samples from two different contexts (China and

Slovenia). In this way, we were able to replicate a complex cross-level three-way interaction on two different samples. The result showed some differences in the patterns of the proposed relationships, and even that occurred on the non-focal part of the curvilinear relationship between idea generation and implementation (i. e., when the levels of idea generation are low). While we have not specifically focused on the cultural context and our knowledge of how innovation processes unfolds across different cultures remains limited (Erez, Van de Ven, & Lee, 2012; Zhou, Hirst, & Shipton, 2012), we can speculate that our findings may be explained by some national country characteristics. Furthermore, this is important as innovation activities are increasingly internationalized and contextualized on the global market.

Specifically, when both perceptions of mastery and performance climates were high, the relationship between idea generation behavior and idea implementation behavior turned into a U-shaped curve in the Slovenian samples, whereas the relationship was found to be linear in the Chinese samples (as depicted in Figures 5 and 6). In other words, for Slovenian respondents in high-high conditions, rarely generating creative ideas is associated with higher levels of implementation behavior. Another difference is that for the Chinese respondents in conditions of both low mastery and performance climates, the levels if idea implementation are larger in low idea-generation conditions than when they generate a lot of creative ideas. Putting it differently, this indicates that for the Chinese respondents, a weaker climate (a loose work context, if you will) results to better levels of implementations when creative-idea generation is low than when it is high. Fortunately, in both cases, these levels of idea implementation within conditions of low idea generation are not as high as when employees frequently generate creative ideas. Although indeed speculative, one possible explanation for these interesting differences may be related to the cultural dimension of uncertainty avoidance. While both national cultures of China and Slovenia are characterized by high

uncertainty avoidance, this dimension is significantly more prevalent in Slovenia. Schwartz (1992) lists Slovenia as a country where harmony is highly valued. Global Entrepreneurship Monitor (Kelley, Singer, & Herrington, 2012) reports a score of 49 with regard to early-stage product development (60 in China), indicating that Slovenians are prone to avoiding risks.

Practical Implications

The findings of our study hold several important implications for creativity and innovation management. First, our study emphasizes the need for managers to attend to both idea generation and idea implementation behaviors. Such consideration can support the overall business case of the company and help in delivering work involvement and bottom-line firm performance (cf. Paauwe, 2009). On the other hand, idea generation without idea implementation behavior may represent sunken costs for companies (Baer, 2012; Levitt, 2002). Accordingly, if managers set aside resources for idea generation, they also need to invest in the implementation of those ideas. Generating numerous creative ideas but failing to implement few, if any, of them can leave an organization worse off than simply not spending resources on generating creative ideas in the first place. Therefore, a systemic approach to idea implementation is required, with specific individuals assigned to these processes acting as bridges between different departments and allocators of resources for the implementation of ideas. Platforms for idea promotion, selection and finally implementation should be set up and managed in a transparent manner, where employees should be able to see how their proposed idea is moving along the innovation process, and potentially enable them to be involved in the process of their implementation.

Second, our findings indicate that organizations and their managers need to consider both types of motivational climates (mastery and performance climates). Although the mastery climate is championed in the literature (DeShon & Gillespie, 2005; Van Yperen et al., 2011), the interplay (i.e., high levels of both) of the two climates seems to function better

with respect to idea generation and implementation behaviors. A motivational climate that puts forth multiple criteria for success can help employees better cope with organizational realities because it offers them a broader basis for finding success in implemented innovations (cf. Ommundsen & Roberts, 1999).

In practical terms, competitive behavior is of rather high salience in many business contexts, requiring a focus on end results (DeShon & Gillespie, 2005; Heidemeier & Bittner, 2012). In order to cope with the negative aspects of a performance climate, we suggest the implementation of so-called balanced ambidexterity (Cao et al., 2009). In competitive work environments, managers are recommended to facilitate mastery cues. This can be accomplished by providing practices such as job autonomy, enabling task variation and rotation, supportive supervision, recognizing creative ideas, placing value on employee/team effort, skill development, cooperation, and learning (e.g., Ames, 1992b; Heidemeier & Bittner, 2012; Stornes, Bru, & Idsoe, 2008). Thus, the mastery criteria should be salient to employees in order to facilitate an adaptive motivation pattern (Ames & Archer, 1988). Based on our results, it seems that only when such cues are evident, performance criteria do not inhibit idea implementation behavior. In line with this, Heidemeier and Bittner (2012) found that competitive work environments only promote learning and creativity when employees adopt mastery goals. Such goals are promoted by a mastery climate (Ames, 1992; Ames & Archer, 1988).

Limitations and Future Research Directions

This study has a few limitations that need to be addressed by further research. First, although the data were collected from different sources and at different points in time, we cannot demonstrate causality or rule out the possibility of reverse causality (Shadish, Cook, & Campbell, 2002). In order to remedy this shortcoming, future studies that employ an experimental design are needed. Another potential limitation of our study is the reliance on

questionnaires that are susceptible to common method bias problems. In order to overcome this potential problem, we followed expert advice (Podsakoff et al., 2012) and applied several procedures, including collecting data from separate sources (i.e., employees and supervisors) and ensuring the respondents' anonymity. Future research projects should not only collect data that are longitudinal, but then also ensure that idea generation and idea implementation data are collected in the proper sequential order (i.e., measure idea generation at time 1 and idea implementation at time 2) in order to avoid potential time precedence issues and provide a more rigid test of the curvilinear relationship over time than our cross-sectional design permits. Second, the two present samples are quite diverse; not only with regards to a different national context, but also in terms of organization types, both between the two samples, and within the sample with Chinese respondents in particular, where we gathered data from groups in multiple companies. The (joint) effect of different motivational climates on the proposed relationships might not have to do only with the mastery and performance climate itself, but be contingent upon the organizational context. Therefore, future research should narrow in on those contextual factors above the climate itself, and also study additional influences on idea generation-to-idea implementation processes at and across the group, organizational, industry, and national levels. The scope and intensity of ideas presented in the two contexts could also influence the results, and future research could delve deeper into the difference between radical and incremental ideas that are first being generated by employees and then implemented. Nevertheless, despite these shortcomings, we believe that our two different samples provide a relatively robust test for our research model.

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Table 1: *Means, Standard Deviations, and Correlations — Slovenia*

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Idea generation	5.82	.79	(.89)											
2	Idea implementation	4.60	1.29	.32**	(.84)										
3	Mastery goal orientation	5.77	.89	.28**	.01	(.67)									
4	Performance goal orientation	4.85	1.31	-.01	.05	.25**	(.71)								
5	Age	2.33	1.17	-.54	-.09	-.08	-.20**	-							
6	Gender	1.69	.53	.08	.27**	.08	.17**	.04	-						
7	Education	3.25	1.06	-.04	-.09	.07	.21**	-.33**	-.12	-					
8	Expertise	5.26	5.25	-.10	-.24**	-.01	-.10	.28**	-.15*	-.04	-				
9	Dyad tenure	3.15	3.21	-.10	-.19**	-.00	-.06	.18**	-.24	.05	.64**	-			
10	Managerial duties	1.32	.69	-.00	-.01	.07	-.01	-.01	.01	.28**	.05	.00	-		
11	Mastery climate	5.02	1.59	.34**	.11	.29**	.01	.05	.07	.01	-.00	-.06	-.08	(.94)	
12	Performance climate	3.90	1.12	-.16**	.02	-.01	.05	-.10	.06	-.01	-.03	.05	.05	-.08	(.82)

Notes. n = 240. Coefficient alphas are on the diagonal in parentheses. For gender, 1 = "female," 2 = "male." Age is a binned variable reported in classes of 1 = up to 23; 2 = 24-34; 3 = 35-45; 4 = 46-55; 5 = 56 or more. Expertise and dyad tenure are reported in years. Education was reported in classes of highest finished level of education (1 = "Middle School", 2 = "High School", 3 = "Associate's Degree", 4 = "Bachelor's Degree", 5 = "Master's Degree; 6 = "Doctorate Degree"). For managerial duties, 1 = "no, 2 = "yes". * $p < 0.05$, ** $p < 0.01$

Table 2: *Means, Standard Deviations, and Correlations — China*

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Idea generation	4.37	1.24	(.92)											
2	Idea implementation	4.00	1.50	.48**	(.87)										
3	Mastery goal orientation	5.94	.66	.10	-.09	(.68)									
4	Performance goal orientation	5.68	1.12	.05	.06	.13	(.86)								
5	Age	1.96	.88	-.00	.12	.06	.08	-							
6	Gender	1.60	.49	.01	.05	-.05	-.16	.30**	-						
7	Education	3.38	.87	-.02	-.10	-.03	.21*	.13	.02	-					
8	Expertise	5.14	6.45	.09	.14	.16	.02	.68**	.12	-.03	-				
9	Dyad tenure	2.98	3.15	.08	.06	.02	.02	.59**	.18	-.03	.56**	-			
10	Managerial duties	1.56	.49	-.03	-.02	-.02	.03	.13	.11	-.14**	-.12	.17	-		
11	Mastery climate	5.91	.88	.02	.11	.11	.09	.05	.02	.15	.00	.07	.17	(.83)	
12	Performance climate	4.71	.98	-.12	.17	.17	.36**	.21*	-.04	.06	.04	.13	.25**	.20*	(.76)

Notes. n = 240. Coefficient alphas are on the diagonal in parentheses. Age is a binned variable reported in classes of 1 = up to 23; 2 = 24-34; 3 = 35-45; 4 = 46-55; 5 = 56 or more. Education was reported in classes of highest finished level of education (1 = "Middle School", 2 = "High School", 3 = "Associate's Degree", 4 = "Bachelor's Degree", 5 = "Master's Degree; 6 = "Doctorate Degree"). Expertise and dyad tenure are reported in years. For managerial duties, 1 = "no, 2 = "yes". For gender, 1 = "female," 2 = "male." * $p < 0.05$, ** $p < 0.01$

Table 3: *Multilevel Analysis Results for the Moderating Role of a Motivational Climate predicting Idea Implementation — Slovenian Sample*

		Model 1 Null model	Model 2 Control variables	Model 3 Direct effects	Model 4 Linear interactions	Model 5 Curvilinear interactions	Model 6 Three-way interactions
Level 1	Intercept	4.61** (.09)	4.87** (.70)	5.02** (.65)	5.02** (.72)	5.15** (.70)	5.24** (.67)
	Age		-.07 (.05)	-.06 (.04)	-.05 (.07)	-.05 (.07)	-.07 (.05)
	Gender		.59** (.15)	.52** (.12)	.51** (.15)	.49** (.15)	.55** (.13)
	Education		-.07 (.07)	-.07 (.07)	-.07 (.09)	-.09 (.09)	-.12 (.08)
	Expertise		-.04† (.02)	-.04† (.02)	-.04* (.02)	-.04* (.02)	-.04* (.02)
	Dyad tenure		.02 (.03)	.01 (.04)	.01 (.03)	.02 (.03)	.03 (.03)
	Managerial duties		.06 (.11)	.05 (.12)	.06 (.11)	.07 (.12)	.09 (.13)
	Mastery goal orientation		-.16 (.10)	-.14 (.10)	-.14 (.09)	-.16† (.09)	-.16† (.09)
	Performance goal orientation		.03 (.08)	.02 (.08)	.02 (.06)	.04 (.06)	.03 (.08)
Level 2	Idea generation			.32** (.10)	.30* (.13)	.33** (.13)	.26** (.10)
	Idea generation ^{2}			-.15** (.05)	-.14† (.07)	-.19* (.08)	-32* (.10)
	Mastery climate			.08 (.10)	.08 (.14)	.07 (.16)	.03 (.09)
	Performance climate			.30** (.09)	.28† (.15)	.13 (.17)	.12 (.11)
	Interaction effects						
	Idea generation x mastery climate				-.18 (.16)	.01 (.22)	.24 (.20)
	Idea generation ^{2} x mastery climate					.00 (.12)	.09 (.08)
	Idea generation x performance climate				.02 (.19)	.25 (.24)	.16 (.16)
	Idea generation ^{2} x performance climate					.28† (.16)	.41* (.19)
	Mastery climate x performance climate				-.01 (.21)	.01 (.21)	-.05 (.15)
	Idea generation x mastery climate x performance climate						-.35* (.15)
	Idea generation ^{2} x mastery climate x performance climate						**.29* (.14)**
	Pseudo R^2		.02	.20	.20	.20	.22
	Deviance	802.37	804.56	780.91	786.08	787.25	781.30

Notes. Entries are estimations of fixed effects with robust standard errors. *n* (level 1) = 240; *n* (level 2) = 34 in all models. **p < .01, *p < .05, †p < .10.

Table 4: *Multilevel Analysis Results for the Moderating Role of a Motivational Climate predicting Idea Implementation — Chinese Sample*

		Model 1 Null model	Model 2 Direct effects	Model 3 Direct effects	Model 4 Linear interactions	Model 5 Curvilinear interactions	Model 6 Three-way interactions
Level 1	Intercept	4.01** (.12)	4.54** (.52)	5.40** (1.22)	5.47** (1.36)	5.52** (1.23)	5.26** (1.16)
	Age		.23 (.18)	.21 (.18)	.19 (.21)	.23 (.19)	.24 (.19)
	Gender		-.12 (.24)	-.11 (.23)	-.12 (.26)	-.10 (.24)	-.12 (.24)
	Education		-.23 (.17)	-.22 (.17)	-.25† (.15)	-.22 (.17)	-.29 (.20)
	Expertise		.00 (.03)	.00 (.03)	.00 (.03)	-.00 (.03)	-.00 (.03)
	Dyad tenure		-.01 (.08)	-.01 (.08)	-.02 (.05)	-.01 (.08)	-.01 (.08)
	Managerial duties		-.18 (.30)	-.21 (.30)	-.15 (.27)	-.24 (.31)	-.30 (.31)
	Mastery goal orientation		-.24 (.17)	-.21 (.15)	-.23 (.18)	-.21 (.15)	-.20 (.31)
	Performance goal orientation		-.11 (.12)	-.11 (.15)	-.11 (.11)	-.10 (.13)	-.08 (.12)
Level 2	Idea generation			.53** (.15)	.53** (.10)	.51** (.12)	.52** (.11)
	Idea generation^2			-.29** (.07)	-.30** (.07)	-.34** (.07)	-30** (.07)
	Mastery climate			-.31 (.28)	-.29 (.31)	-.73* (.32)	-.46 (.32)
	Performance climate			.08 (.30)	-.04 (.32)	.38 (.35)	.35 (.28)
	Interaction effects						
	Idea generation x mastery climate				.02 (.23)	.14 (.28)	.36 (.30)
	Idea generation^2 x mastery climate					.25 (.21)	.19 (.22)
	Idea generation x performance climate				.09 (.24)	.18 (.25)	.21 (.21)
	Idea generation^2 x performance climate					-.24 (.23)	-.20 (.17)
	Mastery climate x performance climate				-.51 (.47)	-.55 (.37)	.35 (.23)
	Idea generation x mastery climate x performance climate						-.37 (.28)
	Idea generation^2 x mastery climate x performance climate						**42* (.19)**
	Pseudo R^2		.03	.34	.32	.32	.36
	Deviance	428.25	434.12	397.01	395.71	396.50	389.81

Notes. Entries are estimations of fixed effects with robust standard errors. *n* (level 1) = 117; *n* (level 2) = 21 in all models. $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$.