

Too much of a good thing: Examining the curvilinear relationship between team-level proactive personality and team performance

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Abstract

Research has largely shown a positive linear relationship between proactive personality and job performance at the individual level. However, it remains unknown whether the same relationship holds at the team level. In this research, we propose and test a curvilinear relationship between team mean level of proactive personality and team performance. We also examine team potency and team cohesion as the explanatory mechanisms and the dispersion of proactive personality as a boundary condition for the relationship. We conducted two studies to test these ideas. In Study 1, we collected data from 93 teams in four companies from different industries. In Study 2, we collected data from 101 nursing teams in three hospitals. We found a curvilinear relationship between team mean level of proactive personality and team performance in Study 1 and replicated it in Study 2. We further demonstrated in Study 2 the moderating role of dispersion of proactive personality and the mediating role of team potency and team cohesion, respectively, in this curvilinear relationship. The positive trend of the curvilinear relationship is strengthened (weakened) when the dispersion of proactive personality is high (low). The negative trend is mitigated under high dispersion of proactive personality but is not significant under low dispersion of proactive personality. Practically, managers must be aware that team mean level of

proactive personality benefits team performance only up to a certain point.

KEYWORDS

curvilinear relationship, team cohesion, team potency, team-level proactive personality

1 | INTRODUCTION

Proactive personality is defined as an individual's predisposition toward making meaningful changes to the environment (e.g., Bateman & Crant, 1993; Fuller & Marler, 2009). Proactive individuals are active in initiating future-oriented plans, searching for opportunities to improve current circumstances, creating favorable conditions for work accomplishments, and persevering until they have achieved their goals (Fuller & Marler, 2009; Greguras & Diefendorff, 2010). Research has shown a positive linear relationship between individual proactive personality and individual outcomes (e.g., job performance, Thompson, 2005; career success, Erdogan & Bauer, 2005; see review by Crant, Hu, & Jiang, 2017).

More recently, research has begun to examine proactive personality at the team level (e.g., Chiu, Owens, & Tesluk, 2016; for a recent review, see Harris & Kirkman, 2017; Lam, Lee, Taylor, & Zhao, 2018; Williams, Parker, & Turner, 2010). This literature views team-level proactive personality as the collection (i.e., the mean value) of all team members' proactive motivational traits. While Lam et al. (2018) and Williams et al. (2010) found a positive relationship between team proactive personality and team performance outcomes (e.g., team proactive performance), Chiu et al. (2016) showed a null association. Overall, the team-level relationship remains elusive and more studies are needed.

The inconsistent findings lead us to conjecture that the relationship at the team level might not be as simple as a positive linear one. On the one hand, a certain level of personal initiative from different members can facilitate the team's goal accomplishment (Williams et al., 2010), bettering team processes and performance. On the other hand, as there are increasingly more proactive team members, their ideas or initiatives are more likely to be directed at different foci (Harris & Kirkman, 2017) and their proactive actions are more likely to differ from, or even contradict, each other (Bolino, Turnley, & Anderson, 2017). More importantly, highly proactive members are more likely to pursue their initiatives in an assertive way, "even against others' opposition" (Bateman & Crant, 1993, p. 112). Pursuing own initiatives in such a manner lowers the quality of interpersonal interactions, and makes it difficult for the team to coordinate, integrate, and channel initiative ideas, hampering the team's functioning, and thus lowering team performance. In this study, we propose that team mean level of proactive personality enhances team performance only up to a certain point, beyond which the positive relationship diminishes.

We further examine the moderating role of within-team distribution (e.g., the dispersion) of proactive personality to capture team composition of members' traits. We draw on dominance complementarity theory (Carson, 1969; Kiesler, 1983), which states that the balance between dominance/assertiveness and submissiveness/compliance can facilitate the complementary fit among team members and thus benefit team performance (Gonzalez-Mulé, DeGeest, McCormick, Seong, & Brown, 2014). When members have different levels of proactive personality (i.e., high dispersion), the more proactive members are dominant, assertive, and active and the less proactive ones are more compliant, submissive, and reactive (Grant, Gino, & Hofmann, 2011). The same team mean level of proactive personality should benefit team performance more at high within-team dispersion because of the high complementarity among members that facilitates effective interactions, coordination, and cooperation, thus yielding higher team performance (Gonzalez-Mulé et al., 2014).

We further theorize and examine team potency (Bandura, 1997) and team cohesion (Festinger et al., 1950) as mechanisms. Team potency describes team members' shared confidence in their ability to complete tasks and achieve

common goals (Campion, Medsker, & Higgs, 1993; Guzzo, Yost, Campbell, & Shea, 1993), and team cohesion depicts the interpersonal attraction or bonding among team members (Muthiane, Rintaugu, & Mwisukha, 2015; Stoverink, Umphress, Gardner, & Miner, 2014). We choose team potency and team cohesion for the following reasons. First, a team involves task (technical) and social (relational) aspects (Appelbaum, 1997). Team potency refers to the shared confidence in completing team tasks and therefore captures the *task*-related motivational state (Hu & Judge, 2017; Hu & Liden, 2015). Team cohesion, on the other hand, refers to the social bonds among team members (Barrick, Bradley, Kristof-Brown, & Colbert, 2007) and therefore captures the *relationship*-related motivational state. Because team-level proactive personality involves not only initiative taking for task fulfillment but also social interactions (Harris & Kirkman, 2017) to enable individuals to express and champion their own ideas, considering both the task and relationship aspects of motivational states enable us to capture a broader scope of processes driven by team proactive personality. Second, team potency and team cohesion, as two team emergent states, are deemed important intermediaries in linking *distal* personality inputs (e.g., proactive personality) to work outcomes (Barrick et al., 2007; Brown, Cober, Kane, Levy, & Shalhoop, 2006; Marks, Mathieu, & Zaccaro, 2001). Finally, research suggests that team potency and team cohesion are the two most frequently used mechanisms that channel team inputs into team outcomes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; Mathieu, Maynard, Rapp, & Gilson, 2008).

We advance the theory and research on proactive personality in several ways. First, in contrast with the positive linear relationship at the individual level, we show that the relationship between team mean proactive personality and team performance is curvilinear. We thus reveal the level of analysis as an important boundary condition for the prediction of proactive personality. Second, by showing a curvilinear relationship between team mean level of proactive personality and team performance, we attest to the “too much of a good thing” of proactive personality at the team level. Third, we identify explanatory mechanisms for the team-level curvilinear relationship and therefore contribute to the development of theory on how team-level proactive personality operates. Last but not the least, we adopt the team configurational approach and examine the moderating role of dispersion of proactive personality. We extend extant knowledge of team-level proactive personality by providing a nuanced understanding of the joint role of team mean proactive personality and within-team dispersion in team performance.

2 | THEORY AND HYPOTHESES

2.1 | The threshold effect of team-level proactive personality

There has been consistent and clear evidence that proactive personality enhances performance at the individual level (for meta-analyses, see Fuller & Marler, 2009; Spitzmuller, Sin, Howe, & Fatimah, 2015; Thomas, Whitman, & Viswesvaran, 2010). Yet, how proactive personality influences performance at the team level is more complicated (Lam et al., 2018; Williams et al., 2010), in that team performance is influenced not only by individual members' inputs (e.g., initiatives) but also by within-team interactions (e.g., coordination and synchronization; Driskell & Salas, 1992). As team mean level of proactive personality increases from low to moderate levels, its relationship with team performance is positive because members spot work-related problems and propose initiatives to fix them (Lam et al., 2018), all of which improve the team's work and thus promote team performance (Williams et al., 2010). Moreover, the team may not incur much interpersonal coordinative cost since team members may tolerate a certain level of dominance and assertiveness by proactive members. Even if there are different initiatives from different members, the team as an organic system can process a certain amount of them, either by choosing one or by integrating them into one. At the same time, the team can process and synchronize these different initiatives for bettering team performance (Williams et al., 2010).

However, a team may not be able to coordinate and integrate initiative ideas when too many members are very proactive. In other words, team mean level of proactive personality enhances team performance only up to a certain point, beyond which it hinders team functioning. First, too high proactive personality may hinder a team's work

progress. Highly proactive members tend to champion and pursue their own initiatives assertively, ignoring, or even going against, others' opinions (see Bateman & Crant, 1993).¹ This saturates a team with many different initiatives, exceeding the team's capacity to coordinate and integrate them (Burke, Stagl, Salas, Pierce, & Kendall, 2006). These supposedly useful but under-coordinated initiatives hinder teamwork progress, thus making proactive personality no longer beneficial, and even harmful, to the smooth achievement of the team's goals (Janssen, 2003; Janssen, Van de Vliert, & West, 2004; Parker & Bindl, 2017). The situation worsens further if different members' initiatives contradict each other, such that the team cannot pull together their actions and operate in a coordinated way, thus obstructing the team's progress.

Second, too high a mean level of proactive personality may jeopardize interpersonal relationships among members. Theory and research suggest that proactive people are assertive or dominant (Grant et al., 2011). In such a case, the team will have more members who are very assertive in advocating and implementing their own initiatives (Bateman & Crant, 1993). Here, it is the way in which proactive members pursue their own initiatives, not the different initiatives themselves, that harms the team. The assertive pursuit of own initiatives engenders high coordinative cost, or even resentment and hostility, jeopardizing interpersonal relationships and harming the team's ability to bond and perform as a whole (Bolino et al., 2017; Parker & Bindl, 2017).² To sum up, we propose that:

Hypothesis 1: Team mean level of proactive personality has a curvilinear relationship with team performance, such that this relationship is positive initially, but diminishes and inflects as it increases from low to high levels.

2.2 | The moderating role of the dispersion of proactive personality

Besides the mean, dispersion is another important element to theorize and operationalize team-level proactive personality. As Barrick, Stewart, Neubert, and Mount (1998) noted, "[o]perationalizing composition as variance among team members on a trait may be most appropriate for understanding the effect of group-level traits on compensatory tasks that benefit from diverse inputs." We draw on dominance complementarity theory to theorize the moderating effect of dispersion of proactive personality. This theory suggests that the complementary fit among team members is derived from the balance between assertiveness/dominance and compliance/submissiveness (Tiedens & Fragale, 2003; Tracey, 1994). Only when "dominance and assertiveness from one party are balanced by compliance, obedience, and submissiveness from the other party" (Grant et al., 2011, p. 529) can there be effective interpersonal interactions and cooperation (Kristof-Brown, Barrick, & Stevens, 2005).

We argue that under high dispersion, some members are more proactive in taking initiatives and more likely to lead, while others are more reactive and more likely to follow. In other words, the initiatives of highly proactive members can complement the compliance of members with low proactive personality and thus facilitate cooperation within the team and unleash the potential of team-level proactive personality. For instance, highly proactive members take charge of identifying problems and initiating promising ideas, while less proactive members accept these ideas and assist with the processing and implementation. In addition, team members perform different roles (e.g., idea generator, shaper, monitor, evaluator, completer, and finisher) based on their different personalities or behavior styles (Belbin, 1993; Gabriel, 2000; Stevens, 1998). Members with these different roles can get along harmoniously and work synergistically and productively (Fisher, Hunter, & Macrosson, 1998; Moynihan & Peterson, 2001). Proactive team members can play the role of idea generator or shaper, while those low on proactive personality can play the role of completer or finisher. Thus, under high dispersion of proactive personality, the complementarity from different members enables the team to better tap into the upside potential of proactive personality and mitigate its negative side (e.g., coordinative cost), leading to higher team performance.

Under low dispersion, however, members are similar in proactive personality. As the mean level of proactive personality increases from low to moderate levels, more team members are similarly more proactive in initiating different

ideas. Individual members exhibit stronger desire to dominate and advocate their initiatives but less willingness to compromise and follow teammates. The low complementarity among them hampers interpersonal interactions and coordination (Gonzalez-Mulé et al., 2014), creates interpersonal tension, and makes the synchronization of these initiatives more difficult. Thus, the positive relationship between team proactive personality and team performance is mitigated. As team mean proactive personality increases beyond the moderate level, there is even less complementarity because most team members are highly assertive and dominant in teamwork, making coordination more difficult. They are also less likely to work together and develop the shared belief of fulfilling team goals together, thus dampening team performance. To sum up, we hypothesize:

Hypothesis 2: Team dispersion of proactive personality moderates the entire curvilinear relationship between the mean level of proactive personality and team performance: The positive side is strengthened and the negative side is weakened (mitigated) under high dispersion, whereas the positive side is weakened (mitigated) and the negative trend is strengthened (exacerbated) under low dispersion.

2.3 | Team potency and team cohesion as mediators

We next theorize team potency and team cohesion as explanatory mechanisms. First, we expect team mean level of proactive personality to have a curvilinear relationship with team potency. At low-to-moderate levels of team mean proactive personality, an increasing number of different initiatives can be effectively accommodated and synchronized to benefit the team. Moreover, members can effectively collaborate with each other (Gonzalez-Mulé et al., 2014), scrutinize issues, and work with peers to generate feasible solutions (Crant, 2000), all of which can boost members' shared belief in team goal accomplishment.

However, as the mean level of proactive personality increases beyond a certain point (i.e., the moderate level), its positive relationship with team potency starts to decrease. Highly proactive members are more likely to advocate and enact different initiatives in an assertive manner due to their strong desire to dominate. This may cause interpersonal clashes regarding whose initiative should be adopted, who should take the leading role in teamwork, or who should be allocated more resources for idea implementation, and thus trap the team in a deadlock and even disorder. As a result, the team has difficulty in coordinating and integrating different initiatives and stalls in its progress (Mohammed & Angell, 2003), thus undermining team members' shared confidence in their ability to accomplish team tasks.

Similarly, we expect team mean level of proactive personality to have a curvilinear relationship with team cohesion. As team mean proactive personality increases from low to moderate levels, a certain level of initiatives by proactive team members can facilitate interactions and cooperation and help build relationships, thus triggering members' motivation to bond and work together (Lvina, Johns, & Vandenberghe, 2015). However, when team mean level of proactive personality increases beyond a moderate level, more initiatives and changes from proactive members pour into the team, exceeding the team's capacity to accommodate and process each initiative effectively. This is especially the case if some of these initiatives are inconsistent or even contradictory, causing interpersonal tension, dragging down the team's progress, disrupting social relationships (e.g., engenders mutual dislike, Bolino et al., 2017), and thus dampening team cohesion (Chiocchio & Essiembre, 2009). For instance, Bolino et al. (2017) stressed that team members' proactive actions (e.g., voice) with the strong intention of challenging the status quo may pressurize and distract others, causing social relationships to deteriorate.

We next move to the second-stage relationship and posit that team potency and team cohesion enhance team performance, consistent with the extensive existing evidence (see meta-analyses: Beal, Cohen, Burke, & McLendon, 2003; Gully, Incalcaterra, Joshi, & Beaubien, 2002). Team potency can raise team members' dedication to, awareness of, and concerns for team effectiveness and energize them to work closely and conscientiously (Gully et al., 2002; Hu & Judge, 2017). Team cohesion can promote team performance by increasing shared commitment toward team goals (Mathieu, Kuenkenberger, D'Innocenzo, & Reilly, 2015). Spurred on by their pride in being members of the group and having strong

bonds with each other, team members are motivated to overcome obstacles, resolve issues, and exert collective efforts for higher team performance (Beal et al., 2003). Combining the arguments for the first and second stage relationships, we hypothesize the following:

Hypothesis 3: The curvilinear relationship between team mean level of proactive personality and team performance is mediated by (a) team potency and (b) team cohesion.

2.4 | A first-stage mediated moderation model

Finally, we propose a first-stage mediated moderation model by postulating that the dispersion of proactive personality moderates the indirect curvilinear relationships between the mean level of proactive personality and team performance through team potency and team cohesion. As discussed, a high dispersion of proactive personality indicates a balance between team members in leading roles (dominance) and those in following roles (submissiveness), facilitating coordination and interaction (Tiedens, Unzueta, & Young, 2007) and task fulfillment. Thus, a certain level of team mean proactive personality would benefit team members' shared confidence in their ability to fulfill tasks more (low-to-moderate level of team mean proactive personality) or harm such confidence less (moderate-to-high level of team mean proactive personality) under high dispersion of team proactive personality.

Under low dispersion of team proactive personality, team members operate at the same or a similar level of proactivity. They are either similarly reactive or submissive and do not take initiatives (at low levels of team mean proactive personality) or they are similarly proactive and dominant in initiating changes and championing their own ideas (at high levels of team mean proactive personality). The imbalance between dominance and submissiveness among members' proactive personalities results in low complementarity, thus constraining the development of a collective belief in team goal achievements. As such, as team mean proactive personality increases, it would benefit team potency less.

Similarly, the dispersion of proactive personality also plays a moderating role in the mediated relationship through team cohesion. Under high dispersion of proactive personality, the high complementarity makes members feel more comfortable and more motivated to work together with teammates, inducing mutual liking (Estroff & Nowicki, 1992; Sadler & Woody, 2003), and thus enhancing team cohesion. The stronger cohesion among members better channels their inputs and efforts toward team performance. Under low dispersion of proactive personality, the lack of complementarity causes anxiety among members and low-quality and even hostile interpersonal relationships, thus dampening team morale and distracting members' attention away from teamwork (Grant et al., 2011). As a result, team members are less likely to work together for team goals. To sum up, we hypothesize:

Hypothesis 4: The indirect curvilinear relationship between team mean level of proactive personality and team performance, via team potency and team cohesion, is moderated by the dispersion of proactive personality, such that the curvilinear relationship is more positive under high dispersion of proactive personality than under low dispersion.

3 | OVERVIEW OF THE PRESENT RESEARCH

We conducted two field studies with multiwave and multisource designs. In Study 1, we tested the curvilinear relationship between team mean level of proactive personality and team performance and the moderating role of the dispersion of proactive personality. In Study 2, we replicated the curvilinear relationship and further tested team potency and team cohesion as the explanatory mechanisms. These two studies complemented each other and provided a comprehensive test of the team-level proactive personality–team performance relationship.

4 | STUDY 1 METHOD

4.1 | Participants and procedure

We collected data from companies in four different industries: construction, food production/inspection, architecture design, and the bank. Geographically, two are in Shenzhen (South China), one in Shandong (North China), and one in Shanghai (East China).³ We chose the sample based on the following criteria: first, there is task interdependence in a team. Before sending out questionnaires, we interviewed middle managers to make sure that members in the chosen teams worked interdependently. For example, in a team from the construction firm, each member has a specific role (e.g., soil prospection, programming, or monitoring, all comprising different stages of the whole work process), and has to work interdependently and coordinate with others to accomplish the team's common goals. Second, there is little interference from the leader. We interviewed team leaders to make sure they do not intervene much in team progress and thus team members have sufficient autonomy. Third, we chose these teams from Southern, Eastern, and Northern parts of China to increase the representativeness of the sample.

We surveyed 104 teams (with a total of 414 members)—39 teams from the construction firm, 10 teams from the bank, 32 teams from the food production/inspection company, and 23 teams from the architecture design firm. Each supervisor took charge of one team. Following Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) recommendations, we adopted a two-wave survey design to reduce common method bias. At Time 1, we asked employees to self-report their demographic characteristics (e.g., age, gender, education, and work tenure in the team) and proactive personality; 2 months later, at Time 2, we asked their supervisors to rate their teams' performance. All participants were informed that the data would be kept confidential and used only for academic research purposes. The surveys were sealed in envelopes and sent to supervisors and employees, respectively. Team members (employees) and supervisors responded to the surveys separately and sent them back to the researcher directly using prepaid envelopes. The surveys were printed with special codes to match supervisors' and team members' ratings.

After removing incomplete responses (78 participants) and problematic responses (10 participants ticked the same response across the whole questionnaire), we obtained valid responses from 352 respondents (out of the original 414) and 93 supervisors (out of the original 104) from 93 teams (i.e., 37 teams from the construction firm, 10 teams from the bank, 27 teams from the food production/inspection company, and 19 teams from the architecture design firm). The average age of the employees in this study was 29.12 years ($SD = 5.75$), with a range from 21 to 56 years. Among the employees, 206 (58.52%) were male, 80.06% had a college degree or higher, and the average tenure of employees in the teams was 2.85 years. To assess the nonresponse bias, as recommended by Rogelberg and Stanton (2007), we compared participants whose responses were invalid and not used (e.g., the incomplete responses) with those whose responses were valid and used in the analysis. We found that there was almost no difference between the two groups in terms of their demographic characteristics.

4.2 | Measures

The items in the questionnaires were translated into Chinese following the back-translation procedures from Brislin (1980).

4.2.1 | Proactive personality (employee rated)

We assessed proactive personality with the 10-item scale from Seibert, Crant, and Kraimer (1999) on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is "I love being a champion for my ideas, even against

others' opposition." Because proactive personality depicts one's own dispositional characteristics, it is better that it is self-rated in order to ensure accuracy. We used the average and the *SD* to represent its mean level and its dispersion, respectively.

4.2.2 | Team performance (supervisor rated)

We assessed team performance with the seven-item scale from Carson, Tesluk, and Marrone (2007). A sample item is "How effective was your team in meeting your expectations in terms of the quality of the final deliverable(s)?" Supervisors rated these items on a scale ranging from 1 (*extremely ineffective*) to 7 (*extremely effective*).

4.2.3 | Control variables

Following prior research, we controlled demographics (e.g., age, gender (1 = *male*; 0 = *female*), education, and average work tenure (in years) in the team) to rule out their potential influence on team effectiveness (Li, Zheng, Harris, Liu, & Kirkman, 2016; Schaubroeck, Lam, & Cha, 2007). We controlled for the team average age, gender, and education because these demographic variables will influence team outcomes (Stoverink et al., 2014). We controlled for average work tenure in the team because the experience of members working together will influence their team effectiveness (Chiu et al., 2016). Age and average tenure remain continuous. Education included four levels (1 = *Middle school and below*, 2 = *High school or junior college*, 3 = *Undergraduate* (UG), and 4 = *Masters and above*). According to the literature, larger teams often have more cognitive resources (Hu & Liden, 2015) and less effective communication (Mell, van Knippenberg, & Van Ginkel, 2014), both of which influence team process and effectiveness. We therefore controlled for team size (which ranged from three to six in our sample) to rule out its influence on our hypothesized relationships.

4.3 | Analytical strategy

In this sample, teams are nested within companies. To partial out the potential influence of companies, we considered the company ID as a higher level cluster factor rather than including it as a control variable in our analyses. According to the literature (Bauer, Preacher, & Gil, 2006; Kozlowski & Klein, 2000, pp. 48–51), it is more rigorous to consider the companies as a clustering variable than to include them as a dummy variable. This is because teams within a work unit (i.e., company) share common evaluations from the unit, thus their scores are more likely to be correlated. As stated by Bauer et al. (2006), "[it] violates the independence assumption of many statistical models" (p. 142) and generates biased results (Hox, 2002; Raudenbush & Bryk, 2002). To accurately capture the correlations among the lower level observations, we adopt the multilevel model by taking the higher level factor (i.e., the company) as a cluster to rule out its influence on lower level (i.e., team level) relationships. Hence, we followed the more rigorous method and present results accordingly.

5 | STUDY 1 RESULTS

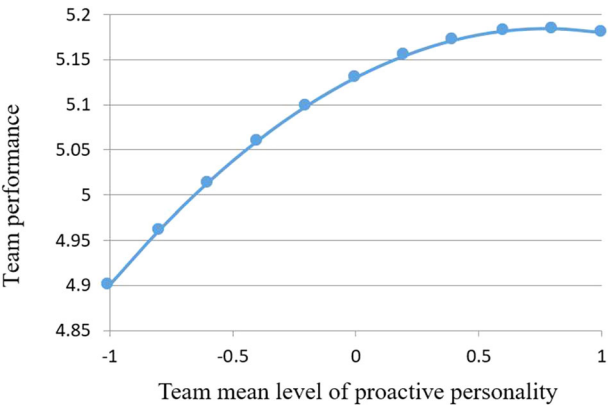
Table 1 summarizes the means, standard deviations, alpha reliability coefficients (all are above .70, see values in the diagonal line), and zero-order correlations of the measured variables.⁴ Results for Hypothesis 1 showed a curvilinear relationship between team mean level of proactive personality and team performance (Model 3 in Table 2: $\beta = -.09$, $p < .05$). As depicted in Figure 1, the relationship between team mean level of proactive personality and team performance exhibited a decreasingly positive trend until the inflection point, after which the trend first turned slightly

TABLE 1 Descriptive statistics and correlations for Study 1

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1 Proactive personality (mean)	5.17	.64	(.87)										
2 Proactive personality (SD)	.65	.34	-.20										
3 Team performance	5.42	.77	.23*	-.12	(.93)								
4 Team mean age	29.12	5.75	-.09	-.09	-.12								
5 Team gender	1.24	.38	-.10	-.04	-.03	-.07							
6 Team mean education	2.84	.47	.03	-.12	.22*	-.41***	.19						
7 Team mean tenure	2.85	2.91	-.19	-.07	-.05	.68***	.01	-.26*					
8 Team size	4.00	.99	-.10	.24*	-.07	.04	-.07	-.19	-.05				
9 Firm 1	.20	.41	-.08	.10	-.13	-.03	-.03	.01	.06	-.38***			
10 Firm 2	.58	.91	.19	-.17	.24*	-.26*	.09	.41***	-.24*	-.12	-.32**		
11 Firm 3	1.19	1.48	-.13	.08	-.14	.12	-.03	-.34**	-.04	.54***	-.41***	-.52***	
12 Firm 4	.43	1.25	.04	-.01	.03	.23*	-.04	-.06	.33**	-.18	-.18	-.22*	-.28**

Notes. N = 93 teams with 352 individuals nested (Listwise deletion).
Reliability coefficients for internal consistency are shown in the diagonal line.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

FIGURE 1 Curvilinear relationship between team mean level of proactive personality and team performance (for Study 1)



negative and then significantly negative. The stationary point of this curve was at the value of 0.78 SD of proactive personality, after which the positive trend started to decline. We tested the simple slopes at multiple points of this trend. The simple slope was significantly positive when proactive personality was at -1.5 SD ($\beta = .41, p < .001$), -1 SD ($\beta = .32, p < .05$), and the mean level (0 SD) ($\beta = .14, p < .05$). It became nonsignificant when proactive personality was at 1 SD ($\beta = -.04, p > .05$), but significantly negative when proactive personality was at 1.5 SD ($\beta = -.13, p < .05$). Therefore, Hypothesis 1 was supported.

We then tested Hypothesis 2, which proposed a moderating role of the dispersion of proactive personality in the curvilinear relationship between team mean level of proactive personality and team performance. Results indicated that the moderating effect was not significant (Model 4 in Table 2: $\beta = .08, p > .05$), failing to support Hypothesis 2.

TABLE 2 Regression analysis: curvilinear and moderating effects for Study 1

Variables	Team performance							
	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	4.95 ^{***}	.57	4.82 ^{***}	.37	5.13 ^{***}	.40	4.72 ^{***}	.41
Control variables								
Team size	-.02	.07	.00	.05	-.03	.06	.06	.07
Team mean age	-.01 [*]	.01	-.01	.01	-.01	.01	-.01	.01
Team mean gender	-.15 ^{***}	.06	-.10 ^{***}	.10	-.12 [*]	.12	.03	.12
Team mean education	.34 ^{***}	.10	.34 ^{***}	.10	.31 [*]	.14	.26	.19
Team mean tenure	.00	.00	.00	.00	.00	.00	.00	.00
Main variables								
Proactive personality (mean)			.18 ^{***}	.07	.14 ^{***}	.03	.13 ^{***}	.02
Proactive personality (SD)					-.09	.13	-.23	.15
Interaction variables								
Proactive personality (mean) $\times$ proactive personality (mean)					-.09 [*]	.04	.00	.04
Proactive personality (mean) $\times$ proactive personality (SD)							-.08 [*]	.04
Proactive personality (mean) $\times$ proactive personality (mean) $\times$ proactive personality (SD)							.08	.04
R ²		.06		.11		.15		.19
ΔR^2				.05		.04		.04

Notes. N = 93 teams with 352 individuals nested (Listwise deletion).
All analyses are at team level.
 ΔR^2 represents the incremental variance explained over the previous model.
In this table, we considered the potential cluster effects of different companies. We ran the cross-level analysis by taking the company ID as the cluster factor.
^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$ (two-tailed tests).

6 | SUPPLEMENTARY ANALYSES

To check the robustness of our results, we conducted two additional analyses (results available upon request). First, to partial out the potential influence of companies, we used a dummy-coded company ID as an alternative way to rule out firm-level influences. Results show a positive linear relationship ($\beta = .16, p < .01$) and a curvilinear relationship ($\beta = -.09, p < .01$) between mean level of proactive personality and team performance. Second, we tested our model without control variables. Results show a positive linear relationship ($\beta = .23, p < .01$) and a curvilinear relationship ($\beta = -.17, p < .01$) between mean level of proactive personality and team performance. Therefore, the results without control variables also supported Hypothesis 1.

7 | STUDY 1 DISCUSSION

Study 1 provided initial support for Hypothesis 1 by showing a curvilinear relationship between team mean proactive personality and team performance. This study extends prior individual-level research to the team level and shows that the prevailing linear positive relationship at the individual level does not generalize to the team level. However, this curvilinear relationship is yet to be replicated, the mechanisms are yet to be tested, and the moderating role of the dispersion of proactive personality was not supported. In addition, in Study 1, we could not rule out the possibility that some other individual difference factors (e.g., Big Five personality) and relational factors (e.g., team-member exchange (TMX)) might confound the relationship between team-level proactive personality and team performance.

To address these limitations, we designed Study 2 to corroborate and further extend Study 1. First, we tested all the hypotheses to provide a comprehensive test of the model. Second, since previous research indicates that proactive personality is positively correlated with some dimensions of the five-factor model of personality (e.g., extraversion, Crant & Bateman, 2000; Major, Turner, & Fletcher, 2006), we controlled for Big Five factors to ascertain the additional explanatory power of team-level proactive personality beyond that accounted for by Big Five factors. Third, TMX can influence team performance (Liu, Keller, & Shih, 2011) because the high-quality exchange relationship among members can mobilize their collective actions, such as information sharing (Liu et al., 2011) and mutual helping (Farmer, Van Dyne, & Kamdar, 2015), and thus contribute to team performance (Seers, Petty, & Cashman, 1995). We therefore controlled for TMX. Fourth, we used a different sample (nursing teams) from the healthcare industry to enhance the generalizability of the findings. Finally, we controlled for supervisors' proactive personality because it can influence the relationship between team-level proactive personality and team outcomes (e.g., team engagement; Lam et al., 2018).

8 | STUDY 2 METHOD

8.1 | Participants and procedure

We collected data from three hospitals in Shanxi Province in China. The participants were nurses (i.e., employees) and their head nurses (i.e., team leaders). To make sure that the nursing team is an appropriate context for our research, the first author conducted several face-to-face interviews with a couple of head nurses and nurses, respectively, both before and after our quantitative data collection. Nurses work in two shifts (day shift and night shift). Although some members do not work in the same shift, they interact frequently, via online chat group (i.e., WeChat group), face-to-face informal chat, and group meetings (three times a week). Nurses may transfer from one team to another, but it is infrequent because of the skills requirement and specialization of each department. Of all the nursing teams interviewed, they emphasize much on "within team communication," "team cohesiveness," "collective efficacy," and "the ability to cooperate or coordinate." In addition, although it is the head nurse's responsibility to make the key decision

for an emergency or unexpected case, the nurses have their own discretion over the daily work, and they do actively initiate ideas to make their work smooth and efficient.

Questionnaires were sent to 122 teams, including 685 employees and 122 leaders. We chose a 2-month time interval between each of the two consecutive waves. Demographic variables and proactive personality were rated by employees at Time 1, team potency and team cohesion were rated by employees at Time 2, and team performance was rated by their leaders at Time 3. We obtained complete responses from 628 (out of 685) employees and 101 (out of 122) complete responses from their leaders. Thus, 82.79% of the teams provided the data, and 91.68% of the nurses provided the data. The team size ranges from three to eight. Specifically, there are 18 teams with team size of three to five, and 83 teams with team size of six to eight. Of all the valid responses, only three of the 628 employees were male. The average age of the employees was 32.44 years, and the average work tenure of employees in the current team was 6.96 years.

8.2 | Measures

The measurement scales and rating sources for proactive personality and team performance were the same as they are in Study 1.

8.2.1 | Team potency

To measure team potency, we adopted Guzzo et al.'s (1993) eight-item scale with a 7-point Likert anchoring (1 = *to no extent*; 7 = *to a great extent*). A sample item is "Our team members have confidence in ourselves."

8.2.2 | Team cohesion

To measure team cohesion,⁵ we adopted Chang and Bordia's (2001) eight-item scale with a 7-point Likert anchoring (1 = *not at all*; 7 = *extremely well/certainly*). A sample item is "Everyone in our team tries to help if members have problems."

8.2.3 | Control variables

Besides including team age, education, work tenure, and team size in the current team (as in Study 1), we selected control variables according to the context (i.e., healthcare teams) and our research question. First, we did not include gender since there were only three male nurses in the sample teams, showing little variance. We did conduct a supplementary test by including gender as a control, and the results were substantively similar. Second, we controlled for TMX to partial out its impact on team performance using a 10-item scale from Seers et al. (1995). A sample item is "Other members of my team recognize my potential well." We also controlled for Big Five factors (using the 20-item Mini-IPIP scale from Donnellan, Oswald, Baird, and Lucas (2006)) to ascertain whether team-level proactive personality has additional explanatory power beyond that accounted for by Big Five personality. In addition, we controlled for supervisor's proactive personality (using the same scale as that used for team members after framing the content of items within the supervisor's context) to rule out its potential intervening role in team mean level of proactive personality and/or team performance.

8.3 | Analytical strategy

Before aggregating individual members' ratings of team potency and team cohesion to the team level, we checked the degree of interrater agreement (R_{wg}), the F -statistics, and the intraclass correlation coefficients (i.e., ICC (1), the proportion of between-team variance in the total variance; ICC (2), the reliability of group mean). Specifically, the R_{wg} score should be above .70 (James, Demaree, & Wolf, 1984), ICC (1) should be in the range of .10 to .25 (LeBreton & Senter, 2008), and ICC (2) should be above .50 (LeBreton & Senter, 2008). In this study, for team potency, $R_{wg} = .90$, ICC (1) = .12, and ICC (2) = .52, $F(101, 628) = 1.78$, $p < .001$, and for team cohesion, $R_{wg} = .88$, ICC (1) = .14, and ICC (2) = .57, $F(101, 628) = 1.80$, $p < .001$. These results support aggregation of individual members' ratings. Because teams are nested within companies, we considered the hospital ID as a higher level cluster factor rather than including it as a dummy control variable.

9 | STUDY 2 RESULTS

9.1 | Confirmatory factor analysis

Confirmatory factor analysis results indicated that the four-factor (proactive personality, team potency, team cohesion, and team performance) model provided a better fit to the data ($\chi^2 = 169.77$, $df = 84$, $p < .001$; incremental fit index [IFI] = .96, comparative fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .05) than alternative models—the three-factor model when combining team potency and team cohesion into one ($\Delta\chi^2 = 189.43$, $\Delta df = 1$, $p < .001$; IFI = .92, CFI = .92, RMSEA = .09), the two-factor model when combining team potency, team cohesion, and team performance into one ($\Delta\chi^2 = 301.26$, $\Delta df = 2$, $p < .001$; IFI = .90, CFI = .90, RMSEA = .12), and the one-factor model when combining all factors into one ($\Delta\chi^2 = 470.17$, $\Delta df = 3$; $p < .001$; IFI = .84, CFI = .83, RMSEA = .14). Hence, these four variables can be differentiated.

9.2 | Hypotheses testing

Table 3 summarizes the means, standard deviations, alpha reliability coefficients (all are above .70, see values in the diagonal line), and zero-order correlations of the measured variables.⁶ Supporting Hypothesis 1, results show that team mean level of proactive personality has a curvilinear relationship with team performance ($\beta = -.14$, $p < .01$, Model 3 in Table 4).

The stationary point of this curve was at the value of 0.36 SD of team mean level of proactive personality, after which the positive trend started to decline. The simple slope was significantly positive when team mean level of proactive personality was at $-1.5 SD$ ($\beta = .52$, $p < .001$), and $-1 SD$ ($\beta = .38$, $p < .01$). It became nonsignificant at $0 SD$ ($\beta = .10$, $p > .05$) or $0.5 SD$ ($\beta = -.04$, $p > .05$) but significantly negative at $1 SD$ ($\beta = -.18$, $p < .05$) and $1.5 SD$ ($\beta = -.32$, $p < .01$). The figure for this relationship resembles Figure 1 in Study 1. Therefore, Hypothesis 1 was supported.

Results for Hypothesis 2 (i.e., the moderating effect of team dispersion of proactive personality) indicate that the interaction term was significantly related to team performance ($\beta = -.07$, $p < .05$, Model 4 in Table 6). As shown in Figure 2, under high dispersion of proactive personality, in the inflection point (i.e., where the trend flattens and the simple slope is zero), the mean level of proactive personality is 0.66 SD . Thus, the curvilinear relationship shifted horizontally right, compared with the inflection point of 0.36 SD in the main curvilinear relationship. Meanwhile, we calculated the simple slopes at low, moderate, and high mean level of proactive personality for both lines of high and low dispersion of proactive personality. Under high dispersion of proactive personality, the simple slope values are: $\beta = 0.95$ ($p < .001$) (at $-1.5 SD$), $\beta = 0.73$ ($p < .001$) (at $-1 SD$), $\beta = 0.29$ ($p < .001$) (at $0 SD$), $\beta = -0.15$ ($p < .05$) (at $1 SD$), and

TABLE 3 Descriptive statistics and correlations for Study 2

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Proactive personality (mean)	3.27	.29	(.92)															
2 Team cohesion	4.11	.54	.35	(.96)														
3 Team potency	3.67	.77	.22	.38	(.93)													
4 Team performance	3.99	.58	.18	.32	.30	(.90)												
5 Team mean age	32.44	4.90	-.25	-.28	-.17	-.14												
6 Team mean education	3.22	.28	-.10	.00	.02	.08	.21											
7 Team mean tenure	6.96	3.21	-.28	-.17	-.15	-.04	.54	.04										
8 Team-member exchange	3.24	.33	.09	.12	.12	.11	-.21	-.29	.13	(.94)								
9 Team size	7.33	1.18	.17	.13	.03	-.01	-.27	-.20	-.20	-.10								
10 Proactive personality (SD)	.59	.23	.09	.11	.20	.08	.18	.22	-.08	-.04	.01							
11 Supervisor's proactive personality	3.84	.71	.10	.09	.19	.15	.03	-.07	.08	.10	-.07	.13						
12 Team extraversion	2.80	.37	.09	.08	.01	-.03	-.10	-.04	.05	.11	-.02	.15	-.15	(.89)				
13 Team openness	3.60	.34	.13	.25	.13	.12	-.21	-.16	-.12	.02	.06	.12	.12	.10	(.88)			
14 Team agreeableness	4.71	.40	-.12	.14	.11	.03	.10	.03	.08	.11	-.07	.04	.14	.14	.10	(.90)		
15 Team conscientiousness	4.18	.49	.10	.32	.11	.18	.01	-.05	.19	.09	.05	.09	.05	.16	-.11	.23	(.94)	
16 Team emotional stability	2.40	.39	-.05	.09	.12	.11	.13	.01	.08	.05	-.07	.03	-.04	.09	.12	.15	.23	(.93)

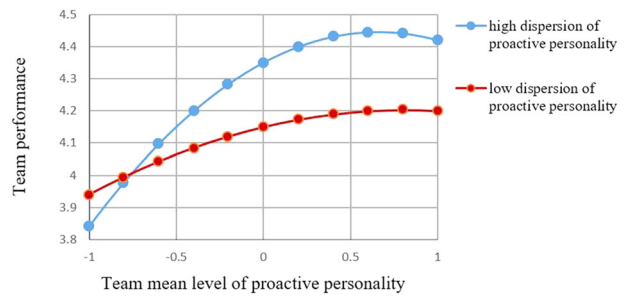
Notes. N = 101 teams with 628 individuals nested (Listwise deletion).
Reliability coefficients for internal consistency are shown in the diagonal line.
* $p < .05$;
** $p < .01$;
*** $p < .001$ (two-tailed tests).

TABLE 4 Regression analysis: main effects for Study 2

Variables	Team performance							
	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	4.72***	.36	4.61***	.36	4.23***	.35	4.25***	.36
Control variables								
Team mean age	-.03**	.01	-.03**	.01	-.02*	.01	-.02*	.01
Team mean education	.12	.11	.12	.10	.24*	.10	.20	.10
Team mean tenure	-.00	.01	.02	.01	.00	.01	.01	.01
Team size	.01	.02	.01	.02	-.01	.02	-.01	.02
Team-member exchange	.29**	.08	.28**	.09	.24**	.09	.02	.05
Supervisor proactive personality	.05	.02	.04	.02	.01	.02	.02	.04
Team-level extraversion	.06	.04	.06	.05	.06	.05	.06	.05
Team-level openness	.10	.06	.11	.08	.03	.09	.06	.09
Team-level agreeableness	-.00	.04	-.01	.05	-.03	.05	-.03	.05
Team-level conscientiousness	.45***	.02	.45***	.02	.43***	.02	.43***	.02
Team-level emotional stability	.02	.05	.02	.05	.02	.05	.02	.05
Main variables								
Proactive personality (mean)			.16***	.03	.10*	.05	.21***	.03
Proactive personality (SD)			.07*	.03	.03	.03	.10**	.04
Team potency	.31**	.04						
Team cohesion	.42**	.06						
Interaction variables								
Proactive personality (mean) $\times$ proactive personality (mean)					-.14**	.05	-.15***	.02
Proactive personality (mean) $\times$ proactive personality (SD)							.08*	.03
Proactive personality (mean) $\times$ proactive personality (SD)							-.07*	.03
R ²	.08		.19		.27		.30	
ΔR^2			.11		.08		.03	

Notes. N = 101 teams with 628 individuals nested (Listwise deletion).
All analyses are at team level.
 ΔR^2 represents the incremental variance explained over the previous model.
In this table, we considered the potential cluster effects of different companies. We ran the cross-level analysis by taking the company ID as the cluster factor.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

FIGURE 2 The moderating effect of dispersion of proactive personality on the curvilinear relationship between team mean level of proactive personality and team performance (for Study 2)



$\beta = -0.37$ ($p < .001$) (at 1.5 SD). Under low dispersion of proactive personality, the simple slope values are: $\beta = 0.37$ ($p < .001$) (at -1.5 SD), $\beta = 0.29$ ($p < .001$) (at -1 SD), $\beta = 0.13$ ($p < .05$) (at 0 SD), $\beta = -0.03$ (not significant) (at 1 SD), and $\beta = -0.11$ (not significant) (at 1.5 SD). Compared with the simple slopes of the main curvilinear relationship, we can see that under high dispersion, the positive trend (before the inflection point) was strengthened and the negative trend (after the inflection point) was mitigated. Under low dispersion, the positive trend (before the inflection point) was mitigated but the negative trend was not significant. Hypothesis 2 was partially supported.

To test Hypothesis 3 (i.e., the mediating effects of team potency and team cohesion), we first tested relationships in each stage, and then employed a bootstrapping-based analysis with 10,000 samples to construct confidence intervals (CIs) (Edwards & Lambert, 2007; Hayes & Preacher, 2010). First, in stage-specific relationship tests, results in Tables 5 and 6 show that team mean level of proactive personality has a curvilinear relationship with team potency ($\beta = -.10$, $p < .05$, Model 3 in Table 5) and team cohesion ($\beta = -.14$, $p < .01$, Model 3 in Table 6). Results in Model 1 of Table 4 show positive relationships between team potency ($\beta = .31$, $p < .001$), team cohesion ($\beta = .42$, $p < .001$), and team performance. Second, in bootstrapping-based analysis, the indirect effects were calculated based on the coefficients and standard errors associated with paths a (the first stage) and b (the second stage) in the mediated relationships. As shown in Table 7, when team potency was the mediator, the indirect curvilinear effect of team mean level of proactive personality on team performance was decreasingly positive from the low mean level of proactive personality ($\beta = .09$, $p < .05$, 95% CI [.03, .18]) to the medium mean level of proactive personality ($\beta = .05$, $p < .05$, 95% CI [.01, .09]) and then became nonsignificant at the high mean level of proactive personality ($\beta = .01$, $p > .05$, 95% CI [-.05, .05]), supporting Hypothesis 3a. Similarly, when team cohesion was the mediator, the indirect curvilinear effect of team mean level of proactive personality on team performance became decreasingly positive from the low mean level of proactive personality ($\beta = .20$, $p < .01$, 95% CI [.12, .30]) to the medium mean level of proactive personality ($\beta = .09$, $p < .05$, 95% CI [.05, .14]) and then became nonsignificant at the high mean level of proactive personality ($\beta = -.02$, $p > .05$, 95% CI [-.08, .05]), supporting Hypothesis 3b.

To test Hypothesis 4 (i.e., the curvilinear mediated moderation), we first tested moderating effects in the first stages, and then employed a bootstrapping-based analysis with 10,000 samples to construct confidence intervals (Edwards & Lambert, 2007; Hayes & Preacher, 2010). First, for first stages relationship tests, results showed significant moderating effects of dispersion between team mean proactive personality and team potency ($\beta = -.29$, $p < .001$, in Model 4 in Tables 5) and between team mean proactive personality and team cohesion ($\beta = -.28$, $p < .001$, in Model 4 in Table 6). Second, in bootstrapping-based analysis, as demonstrated in Table 8, when team potency was the mediator, the difference between the indirect effects of team mean level of proactive personality on team performance under high versus low dispersion was significant at low level of proactive personality ($\beta = .21$, $p < .001$, 95% CI [.13, .32]), significant at moderate level of proactive personality ($\beta = .08$, $p < .01$, 95% CI [.03, .13]), but not significant at high level of team proactive personality ($\beta = -.05$, $p > .05$, 95% CI [-.18, .06]). When team cohesion was the mediator, the difference between the indirect effects of team proactive personality on team performance under high versus low dispersion was significant at low level of proactive personality ($\beta = .20$, $p < .001$, 95% CI [.14, .26]), not significant at moderate level of proactive personality ($\beta = -.03$, $p > .05$, 95% CI [-.06, .00]), and significant at high level of proactive personality ($\beta = -.25$, $p < .001$, 95% CI [-.35, -.16]). Thus, Hypothesis 4 was supported.

TABLE 5 Regression analysis: curvilinear and moderating effects for Study 2

Variables	Team potency							
	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	3.43***	.63	4.89***	.63	3.88***	.64	4.76***	.67
Control variables								
Team mean age	-.02	.01	-.03	.01	-.03*	.01	-.03**	.01
Team mean education	.07	.16	-.13	.15	-.09	.15	-.22	.15
Team mean tenure	-.01	.02	.01	.01	.01	.01	.01	.01
Team size	-.02	.04	.04	.04	.01	.04	.06	.04
Team-member exchange	.37***	.05	.38***	.05	.37***	.05	.21***	.05
Supervisor proactive personality	.16**	.06	.09	.05	.20*	.06	.05	.06
Team extraversion	.01	.04	.02	.04	.01	.04	.00	.04
Team openness	.13**	.05	.09	.06	.04	.07	.05	.07
Team agreeableness	.01	.04	-.01	.04	-.03	.04	-.14	.05
Team conscientiousness	.21***	.04	.22***	.04	.19***	.04	.18***	.04
Team emotional stability	.19***	.04	.20***	.04	.20***	.04	.23***	.04
Main variables								
Proactive personality (mean)			.14**	.04	.16*	.07	.06	.05
Proactive personality (SD)			.13**	.04	.10*	.04	.35***	.06
Interaction variables								
Proactive personality (mean) $\times$ proactive personality (mean)					-.10*	.04	-.15***	.04
Proactive personality (mean) $\times$ proactive personality (SD)							-.01	.05
Proactive personality (mean) $\times$ proactive personality (SD)							-.19***	.04
R ²	.11		.18		.21		.28	
ΔR^2			.07		.03		.07	

Notes. N = 101 teams with 628 individuals nested (Listwise deletion). ΔR^2 represents the incremental variance explained over the previous Model. In this table, we considered the potential cluster effects of different companies. We ran the cross-level analysis by taking the company ID as the cluster factor. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

TABLE 6 Regression analysis: main effects for Study 2

Variables	Team cohesion							
	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	3.37***	.78	5.11***	.84	4.19***	.82	4.65***	.55
Control variables								
Team mean age	-.02*	.01	-.02*	.01	-.03***	.01	-.01	.01
Team mean education	.14	.11	.16	.11	.23*	.12	-.11	.13
Team mean tenure	-.01	.01	.02	.01	.02	.01	.01	.01
Team size	.03	.03	.01	.03	.02	.03	.02	.03
Team-member exchange	.17***	.04	.18***	.04	.19***	.04	.05	.04
Supervisor proactive personality	.02	.04	.03	.04	.00	.04	-.02	.05
Team extraversion	-.03	.03	-.02	.03	-.02	.03	-.03	.03
Team openness	.11**	.03	.09	.05	.13*	.05	.15*	.06
Team agreeableness	.01	.03	.01	.03	.02	.03	.10*	.04
Team conscientiousness	.29***	.03	.30***	.03	.32***	.03	.14	.03
Team emotional stability	.03	.03	.03	.03	.03	.03	.03	.03
Main variables								
Proactive personality (mean)			.21***	.04	.18***	.04	.01	.05
Proactive personality (SD)			.03	.03	.01	.04	.26***	.05
Interaction variables								
Proactive personality (mean) $\times$ proactive personality (mean)					-.14***	.04	-.11**	.03
Proactive personality (mean) $\times$ proactive personality (SD)							-.03	.04
Proactive personality (mean) $\times$ proactive personality (SD)							-.18***	.04
R ²	.15		.21		.27		.30	
ΔR^2			.06		.06		.03	

Notes. N = 101 teams with 628 individuals nested (Listwise deletion).
 ΔR^2 represents the incremental variance explained over the previous Model.
In this table, we considered the potential cluster effects of different companies. We ran the cross-level analysis by taking the company ID as the cluster factor.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

TABLE 7 Bootstrapped curvilinear mediating effects of team mean level of proactive personality on team performance through team potency and team cohesion for Study 2

		$\beta(mx)$	$\beta(ym.x)$	Indirect effect $\beta(mx) \times \beta(ym.x)$	95% CI for indirect effect
<i>Team potency as the mediator</i>					
Proactive personality (mean)	Low	.33 ^{**}	.27 ^{***}	.09 ^{**}	[.03, .18]
	Medium	.17 ^{**}	.27 ^{***}	.05 ^{**}	[.01, .09]
	High	.01	.27 ^{***}	.01	[−.05, .05]
<i>Team cohesion as the mediator</i>					
Proactive personality (mean)	Low	.44 ^{***}	.46 ^{***}	.20 ^{**}	[.12, .30]
	Medium	.20 ^{**}	.46 ^{***}	.09 ^{**}	[.05, .14]
	High	−.04	.46 ^{***}	−.02	[−.08, .05]

Notes. $N = 101$ teams with 628 individuals nested (Listwise deletion).

All analyses are at team level.

$\beta(mx)$ refers to the path from proactive personality to team potency/cohesion; $\beta(ym.x)$ refers to paths from team potency/cohesion to team performance. CI = confidence interval.

* $p < .05$; ** $p < .01$; *** $p < .001$ (Two-tailed tests).

10 | SUPPLEMENTARY ANALYSES

In this study, we also conducted a series of additional analyses (results available upon request). First, teams were nested within companies. To partial out the potential influence of companies, we also used a dummy-coded hospital ID as an alternative way to rule out organizational-level influences. Second, we tested our model without control variables. Third, we ran analyses excluding Big Five personality and TMX only. Results in these additional analyses are substantively similar as our original results. All hypotheses remain supported.

11 | GENERAL DISCUSSION

The current study provides a more fine-grained understanding of proactive personality at the team level. We examined the effect of team mean level of proactive personality on team performance, moderated by team dispersion of proactive personality and mediated by team potency and team cohesion. The results from two studies indicate that team mean level of proactive personality has a curvilinear relationship with team performance. In Study 2, we further tested the moderating role of team dispersion of proactive personality and the mediating roles of team potency and team cohesion in this curvilinear relationship. Specifically, under high levels of dispersion of proactive personality, the positive trend of the curvilinear relationship becomes stronger and the negative trend becomes weaker; under low dispersion, the positive trend of the curvilinear relationship becomes weaker and the negative trend becomes non-significant. Team mean level of proactive personality has a curvilinear relationship with team performance through team potency and team cohesion. We further demonstrated a moderated mediation model in which the dispersion of proactive personality moderates the indirect curvilinear relationships between mean level of proactive personality and team performance through team potency and team cohesion.

Our results partially supported Hypothesis 2. Under low dispersion, the positive trend (before the inflection point) was mitigated, but the negative trend was not significant (rather than mitigated as we expected). The nonsignificance suggests that in extreme cases where team members are almost unanimously highly proactive, team mean proactive personality has no impact on team processes and performance. Our conjecture is that there might be some counter-vailing forces that neutralize the “excessively” harmful impact of a high mean level of team proactive personality under

TABLE 8 Bootstrapped curvilinear first-stage mediated moderation effects of team mean level of proactive personality on team performance through team cohesion and team potency (for Study 2)

		Indirect effect $\beta(mx) \times \beta(ym.x)$	95% CI for indirect effect
<i>Team potency as the mediator</i>			
Proactive personality (mean) (low)	High Mo	.36***	[.27, .48]
	Low Mo	.15***	[.11, .21]
	Difference	.21***	[.13, .32]
Proactive personality (mean) (medium)	High Mo	.15***	[.11, .19]
	Low Mo	.07***	[.04, .11]
	Difference	.08**	[.03, .13]
Proactive personality (mean) (high)	High Mo	-.07	[-.15, .01]
	Low Mo	-.01	[-.07, .05]
	Difference	-.05	[-.18, .06]
<i>Team cohesion as the mediator</i>			
Proactive personality (mean) (low)	High Mo	.21***	[.15, .28]
	Low Mo	.01	[-.02, .05]
	Difference	.20***	[.14, .26]
Proactive personality (mean) (medium)	High Mo	.03*	[.01, .06]
	Low Mo	.06***	[.04, .09]
	Difference	-.03	[-.06, .00]
Proactive personality (mean) (high)	High Mo	-.15***	[-.20, -.09]
	Low Mo	.10***	[.06, .15]
	Difference	-.25***	[-.35, -.16]

Notes. $N = 101$ teams with 628 individuals nested (Listwise deletion).

Mo = Moderator (i.e., the dispersion of proactive personality).

All analyses are at team level.

$\beta(mx)$ refers to the path from proactive personality to team potency/cohesion; $\beta(ym.x)$ refers to paths from team potency/cohesion to team performance. CI = confidence interval.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

low dispersion, which represents the extreme cases. One possibility might be that when such extreme cases happen, team leaders (e.g., head nurses) intervene in the decision-making process and make the final decision. However, they will not get involved in team interactive processes when such situations do not happen. In other words, the situation is so severe in these extreme cases that leaders will get involved. To check this possibility, we also interviewed head nurses. One commented: "When the situation is too extreme, my superior (i.e., the department head) and I have to intervene and make the final decision; otherwise, we will just let the team decide."

11.1 | Theoretical contributions

This research has several theoretical implications. First, this study advances the development of multilevel theory regarding proactive personality. We show that the proactive personality–performance relationship does not generalize across the individual and team levels. As Chen, Bliese, and Mathieu (2005) point out:

"If researchers find that relationships are homologous across levels of analysis, it adds to the parsimony and breadth of theories. In contrast, should relationships prove not to be homologous across levels, it signals a boundary condition and a need to refine theories and to better understand how the processes operate at each distinct level" (p. 376).

The current study identifies the level (individual vs. team) of analysis as one important boundary condition for the theoretical prediction of proactive personality. Unlike the beneficial effect of proactive personality at the individual level, the collection of team members' dispositional proactivity generates suboptimal team outcomes when it exceeds the team's adaptation capabilities and when the complementarity fit among team members is low.

Second, departing from the prevailing positive view of proactive personality, we show a curvilinear effect of team mean level of proactive personality on team performance. Although we know a lot about individual-level proactive personality (Crant et al., 2017), research on how team-level proactive personality works is still in its infancy (Harris & Kirkman, 2017). More noticeably, no study has specifically examined the dark side of team-level proactive personality. We address and enrich the dark side of personality literature by examining the curvilinear effects of proactive personality on team performance. In doing so, we support the "too much of a good thing" *metaprinciple* advocated by Pierce and Aguinis (2013) and provide a noteworthy alternative to the current proactive personality literature.

Third, we contribute to the team-level proactive personality research by considering team potency and team cohesion as mechanisms to clarify how team-level proactive personality (its mean and dispersion) affects team performance. Little research has identified motivational states as mechanisms in the team-level personality literature. However, in a team in which there are complex interactions (Gully et al., 2002), team-level characteristics are likely to emerge from team members' personality-driven interactions and transmit team members' personality inputs into final team outcomes. Our results demonstrate that team potency and team cohesion, as two emergent motivational states, provide meaningful explanations for the curvilinear relationship between team-level proactive personality and team performance.

Finally, we expand the team configuration model to proactive personality by considering both its mean level and dispersion. Although the current literature using an additive model provides insights into how team members' mean level of proactive personality influences team outcomes, investigating the dispersion of proactive personality enables us to better understand within-team dynamics (Bell, 2007). Accordingly, we ground our arguments firmly in dominance complementarity theory and show that when members' levels of proactive personality are differentiated, there will be high complementarity among members' roles in the team's work; hence, team proactivity can be geared more toward team performance. Our research thus contributes to the literature on the distribution of proactive personality within teams.

11.2 | Practical implications

This research has practical implications for managers. We demonstrate that a high team mean level of proactive personality may not always be a blessing for team functioning and outcomes. We do not intend to discount the importance of proactive personality in the workplace; rather, we take a more nuanced view by drawing managers' attention to the potential dark sides of proactive personality regarding team functioning and effectiveness. Specifically, a too high mean of proactive personality does not benefit team performance because it does not improve team potency and team cohesion. When proactive personality increases beyond a certain level, team performance even starts to decline. One interviewee (a head nurse) from a healthcare team commented:

"We don't put too many active nurses in one team because they often compete in getting their opinions noticed and implemented. They bring temporary chaos. The cohesiveness in the team also deteriorates. Members are trained to be professional and skillful in their tasks; however, the noise caused by overly

active members makes them frustrated and less energized at work. They sometimes lose confidence in their group tasks. It causes the failure of teamwork.”

Moreover, the dispersion of proactive personality is also important. High dispersion of proactive personality among team members indicates a good balance between dominant and submissive roles and thus high complementarity, which is conducive to teamwork. During our interviews with two head nurses, both talked about the complementarity of team members. One head nurse noted:

“We learned that nurses prefer to work with peers who can complement them. For example, a nurse who is quiet prefers to work with a peer who is active. The nurse who voices a lot works more effectively with another nurse who speaks less but is good at executing ideas. The informal rule for choosing partners in our team is to find the ones who can complement each other in their personalities or behaviors.”

Thus, managers are advised to pay close attention to complementary fit. Team configuration is not just about the mean level of proactive personality: The dispersion of members’ proactive personalities is also particularly important to make sure that there is a good match among members’ roles and therefore smooth cooperation.

11.3 | Limitations and future research directions

This research has limitations that merit future investigation. First, we only examined team task performance as an outcome. However, other team outcomes are also worthy of investigation. Scholars have increasingly shifted their focus from task-specific outputs to a broader scope of performance, including, but not limited to, citizenship performance (e.g., organizational citizenship behavior), adaptive performance, and contextual performance (Griffin, Neal, & Parker, 2007). Hence, to provide a more comprehensive understanding of how team-level proactive personality influences team effectiveness, we encourage future research to investigate various outcomes beyond task-specific performance.

Second, we only considered team motivational states (i.e., team potency and team cohesion) as mechanisms. Given our focus on collective efforts toward task accomplishment and a team’s social interactions, it was appropriate to incorporate team potency and team cohesion into our model. However, we recommend that future research explore other potential mechanisms; for example, team behavioral processes, which depict the “synchronization of individual actions, information sharing, and backup behavior” (DeChurch & Mesmer-Magnus, 2010, p. 35), may exhibit promising explanatory power.

Third, future research might also consider some contextual factors as additional moderators in the model. First, job design factors, such as task interdependence, could be potential contingent factors. Under high task interdependence, each member’s performance depends on the efforts, information, support, and skills of his or her peers (Van Der Vegt, Van De Vliert, & Oosterhof, 2003). Thus, members tend to cooperate or compromise with each other’s proactive actions in order to ensure the smooth progress of their work. Second, climate factors, such as a competitive climate, can also be an important moderator. In a highly competitive climate, team members have the shared perception that their rewards and achievements are evaluated on the basis of comparison with those of their colleagues (Brown, Cron, & Slocum, 1998). The competition over finite team resources drives the team members to jockey for more rewards, regardless of peers’ gains or losses. Thus, in a highly competitive climate, the team has difficulty processing and accommodating various initiatives or ideas from different members, which hinders team progress and final performance.

12 | CONCLUSION

We advance extant knowledge of team-level proactive personality by demonstrating its curvilinear relationship with team performance through team potency and team cohesion, respectively. Our findings offer preliminary but important insights regarding how team-level proactive personality works. We hope our study will raise scholars' awareness of the limited positive effects of bright-side constructs such as proactive personality. From a practical standpoint, managers can utilize such insights to more effectively design teamwork according to team members' proactive personality.

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ENDNOTES

- ¹ To provide empirical evidence that proactive people tend to be assertive and dominant, we collected a sample of working adults ($n = 142$) through MTurk to assess the relationship between proactive personality and assertiveness, an important facet of extroversion. We measured assertiveness using eight items from Costa and McCrae (1992) (sample items include "I am dominant, forceful, and assertive" and "Sometimes I fail to assert myself as much as I can" (reverse-coded)). Results showed that proactive personality is positively related to assertiveness ($r = .49, p < .001$). Therefore, highly proactive individuals are likely to be highly assertive or aggressive in pursuing their initiatives, even against others' opposition.
- ² To provide additional evidence of interpersonal cost, we collected a different dataset ($n = 448$ individuals). We measured relative deprivation using Tougas, Rinfret, Beaton, and De la Sablonnière (2005) 4-item scale, and ostracism using Ferris, Brown, Berry, and Lian (2008) 10-item scale. Results showed that a focal member's proactive personality has a J-shaped relationship with peers' feeling of relative deprivation (in reference to the focal member), which in turn increases ostracism by peers. This means that proactive personality does not increase interpersonal cost much initially, but such cost increases substantially and quickly later.
- ³ All data were collected by the first author. Research ethics committees such as IRB are not available in the institution with which the first author is affiliated. IRB is not available in China either where the data were collected. Nevertheless, the first author strictly followed the American Psychological Association ethical guidelines and IRB standards (e.g., anonymity, confidentiality, and voluntary participation in and withdrawal from the study) during the entire data collection process.
- ⁴ Before testing the team-level curvilinear relationship, we examined the effect of individual-level proactive personality on individual performance. Consistent with previous findings (e.g., Greguras & Diefendorff, 2010), results show a positive linear relationship ($\beta = .25, p < .001$) but no significant curvilinear relationship ($\beta = -.05, p > .05$), between individual proactive personality and individual performance.
- ⁵ We did not differentiate two dimensions of team cohesion (i.e., task cohesion and social cohesion) in the analysis because according to our theory, examining them would not make additional contribution to our theory. However, to check whether these two dimensions exhibit unique roles in our model, we also conducted a supplemental analysis. The results were generally the same as when we combined them into one dimension in the analysis.
- ⁶ Similar as Study 1, we checked the individual level relationship between proactive personality and performance. Results indicated that there was a positive linear relationship ($\beta = .12, p < .05$) but not a significant curvilinear relationship ($\beta = -.05, p > .05$).

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