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Creative performance pressure as a double-edged sword for creativity: The role of appraisals and resources

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Abstract

Creativity, or the generation of novel and useful ideas or products, is widely viewed as the cornerstone of organizational innovation and success. However, high pressure to be creative may have mixed implications for employee creativity. In this article, we first systematically conceptualize the nature of the concept of creative performance pressure. Next, building on transactional stress theory, we investigate (a) how creative performance pressure influences employee creativity through different appraisals (i.e., challenge and hindrance) and (b) the moderating role of a job and personal resource (i.e., servant leadership and promotion focus) in the stressor appraisal process. In Study 1, we developed a creative performance pressure scale and assessed its psychometric properties across two samples ($N = 181$ for Sample 1; $N = 253$ for Sample 2). In addition, using multi-wave, multi-source data (Study 2), we tested our hypotheses in a Chinese sample ($N = 206$). The results demonstrated that creative performance pressure can have both positive and negative effects on employee creativity through challenge and hindrance appraisals, respectively. Servant leadership moderated the effect of creative performance pressure on challenge and hindrance appraisals, by transmitting the beneficial and detrimental effects of creative performance pressure to creativity, respectively. Similarly, promotion focus moderated the relationship between creative performance pressure and hindrance appraisal. We discuss future research directions and offer several practical implications for both organizational leaders and human resource (HR) practitioners.

KEYWORDS
challenge appraisal, creative performance pressure, creativity, hindrance appraisal, promotion focus, servant leadership

Organizations are increasingly seeking to boost employee creativity given its critical role in gaining a sustained competitive advantage in today's rapidly changing environment (Anderson et al., 2014; Hoever et al., 2018). This sharp focus on creativity may also produce considerable pressure on employees, as they may feel the need and urgency to continuously produce novel and useful ideas, products, services, or organizational processes (Shalley & Gilson, 2004). Unfortunately, researchers have not investigated the influence of this pressure to generate a high level of creative performance on employee creativity, perhaps due to the lack of an existing construct of creative performance pressure.

In this study, we define *creative performance pressure* as the subjective experience of the need to achieve high levels of creative performance because being creative (or not) has substantial consequences for

the employees and the organization they work for. These inherent substantial consequences urge employees to increase creative performance and to avoid failure of the creative endeavor, which becomes internalized and creates a feeling of urgency (Baumeister, 1984). Despite its practical significance, no study has investigated the relationship between creative performance pressure and creativity. The pressure to increase creativity is linked closely to employees' personal growth and well-being, and represents a significant source of work stressor which may influence employee creativity. Therefore, it is important to systematically introduce the creative performance pressure concept to the creativity literature and examine how creative performance pressure matters in facilitating or inhibiting creativity.

We argue that creative performance pressure could be a double-edged sword, producing bright and dark side effects for employee creativity. As a unique type of work stressor, the substantial consequences involved in creative performance pressure combine both positive and negative aspects. Building on the transactional stress theory (Lazarus & Folkman, 1984) and the challenge-hindrance stressor framework (Cavanaugh et al., 2000), we contend that appraisal serves as a mediator between creative performance pressure and creativity. Specifically, high pressure for creative performance conveys the information that creativity is needed and creates opportunities for employees to acquire recognition or appreciation, respect, and personal development by generating and expressing new ideas (Li et al., 2017), which may stimulate challenge appraisal of this stressor. At the same time, because high creative performance may require a high investment of resources to transform, develop, and refine new ideas that are not certain to reap benefits and may even be perceived as weird, inappropriate, and risky (Mainemelis, 2010; Staw, 1995), the pressure of raising creative performance may trigger hindrance appraisal of this stressor. In turn, these appraisals of creative performance pressure as a challenge or a hindrance will have beneficial or detrimental effects on employee creativity, respectively.

Transactional stress theory states that cognitive appraisals of stressors depend not only on the nature of the work stressor, but also hinges on the resources that are available (Lazarus & Folkman, 1984). These resources can be personal or social aspects that are functional for achieving employees' work goals or coping with work stressors (Bakker & Demerouti, 2017), which regulates their attention to certain features (i.e., positive or negative aspects) of the stressor. Therefore, in the present study, we propose that employees' appraisal of creative performance pressure may vary depending on job resources (servant leadership) and individual resources (promotion focus). We choose servant leadership as an important job resource that can moderate the relationship between creative performance pressure and cognitive appraisals, because compared to other more top-down leadership approaches (e.g., transformational leadership), servant leaders lead from the bottom and emphasize promoting the growth and development of employees (Van Dierendonck, 2011). Moreover, servant leaders understand the concerns and worries of followers and prioritize their needs (Eva et al., 2019; Greenleaf, 1977). Finally, a meta-analysis showed that when predicting employee outcomes, servant leadership explained important incremental variance beyond other types of leadership (Hoch et al., 2016). Thus, servant leaders can provide the resources that employees need to focus their attention on the positive aspects of creative performance pressure.

In addition, we examine promotion focus as an important individual resource that regulates the relationship between creative performance pressure and challenge/hindrance appraisal, because promotion focus is associated with aspirations, gain maximization, approach-oriented goal pursuit, and high activation of positive emotions (Koopmann et al., 2019). Different from other personal factors such as openness to experience, promotion focus is more proximal in influencing work-related cognitions (Lanaj et al., 2012) and allows individuals to recognize creative ideas more easily (Zhou et al., 2017). Moreover, as noted earlier, how individuals appraise creative performance pressure can be determined by their attention to different features of the pressure. Promotion focus can affect whether and to what extent an employee is oriented toward "growth and development, or opportunity" (Higgins & Tykocinski, 1992), which may alter how creative performance pressure is appraised.

The current study contributes to the literature in several ways. First, our study is the first to systematically introduce the creative performance pressure concept into the realm of creativity research and examine its influence on creativity. We also develop a creative performance pressure scale and validate its psychometric properties in different samples. In doing so, we not only build on insights from existing theoretical work but also advance previous work on work pressure and creativity. Second, by explicitly considering challenge and hindrance appraisals as distinct mechanisms linking creative performance pressure to creativity, our work responds to calls from Gutnick et al. (2012) to explain the inconsistent findings regarding the relationship between work stressors and creativity and provides empirical evidence that creative performance pressure is potentially a double-edged sword. Third, by exploring servant leadership and promotion focus as two key boundary conditions of the effects of creative performance pressure, we offer a framework for understanding when creative performance pressure promotes or inhibits subordinate creativity. Our work thus offers a dialectical perspective in understanding the effects of creative performance pressure and sheds light on how to regulate the relationship between creative performance pressure and creativity.

1 | THEORETICAL DEVELOPMENT AND HYPOTHESES

Different from work stress (which emphasizes the state when individuals perceive that demands in the work environment tax or exceed their resources, Lazarus & Folkman, 1984), work stressors are factors or experiences that exert adaptation pressure on individuals, which may create fertile development opportunities or impede personal goals and well-being (Cavanaugh et al., 2000). Work stressors can be objective environmental factors (e.g., job demands) or subjective experiences of any factor or combination of factors that make individuals feel they are under pressure (e.g., role conflict) (Mitchell

et al., 2019). They can be an activator of stress but do not necessarily lead to stress, since stress also depends on the available resources. In this article, we define creative performance pressure as the subjective experience of an urgency to achieve high levels of creative performance, as being creative (or not) has substantial consequences for this individual and the organization they work for. It is a unique type of work stressor that combines both positive and negative factors. On the one hand, employees who experience high creative performance pressure understand that meeting high levels of creative performance can result in positive consequences such as personal growth (Li et al., 2017) and breakthroughs for organizations (Staw, 1995). On the other hand, failing to strive for creative performance excellence is linked to negative consequences, such as wasting valuable resources and being labeled as incompetent (Mainemelis, 2010; Pisano, 2019).

Creative performance pressure is conceptually distinct from a variety of related work stressors. First, it should be differentiated from the concept of creative requirements, as the former emphasizes the inherent substantial consequences and the urgency to raise creative performance, whereas the latter only highlights the requirement of jobs, teams or organizations is to undertake creative actions and does not mention the urgency or the related high stakes (Shalley et al., 2000; Unsworth et al., 2005; Unsworth & Clegg, 2010). Second, creative performance pressure is also different from routine performance pressure. Although both cause employees to experience urgency and pressure, routine performance pressure highlights the quantity of work or the effectiveness of performance activities (Madjar et al., 2011), whereas creative performance pressure emphasizes the generation of new and original ideas (Amabile, 1996).

1.1 | Creative performance pressure and creativity

Transactional stress theory (Lazarus & Folkman, 1984) proposes that when encountering a work stressor, individuals first evaluate its meaning and significance to their well-being. If the stressor is relevant, individuals will make appraisals to frame its meaning in relation to them. In particular, challenge appraisal involves the perception of stressors as an opportunity for personal growth and well-being, whereas hindrance appraisal is the assessment of a workplace stressor as thwarting, inhibiting, or limiting toward personal growth and well-being (Li et al., 2020; Searle & Auton, 2015). The stress literature has shown that these two different appraisals of work stressors often affect work outcomes in opposite directions, but they do not represent opposite ends of a single continuum and should be considered separate and independent constructs. They are not mutually exclusive: a stressor can be appraised as both a challenge and a hindrance simultaneously (Horan et al., 2020; Webster et al., 2011).

Following this theory, we argue that appraisals can function as mechanisms that underlie the association between creative performance pressure and creativity. On the one hand, creative performance pressure can be appraised as challenging, thus reflecting a psychological state focused on realizing potential gains or opportunities. This is because high creative performance pressure creates an opportunity for employees to excel and obtain personal growth (Li et al., 2018; Shin et al., 2017). When successfully coping with this kind of stressor, employees will experience a sense of personal accomplishment, and their achievements may bring favorable outcomes and breakthroughs to organizations (Staw, 1995). In addition, to achieve high creative performance, employees need to acquire new knowledge and develop their skills, which will provide opportunities for personal development and learning at work (Prem et al., 2017). Therefore, employees may appraise this pressure as challenging.

In addition, we expect that challenge appraisals of creative performance pressure stimulate creativity. Challenge appraisal can influence employee outcomes through their impact on one's positive emotions, approach, motivation and problem-focused coping. First, when creative performance pressure is appraised as challenging, employees are more likely to experience positive emotions (Skinner & Brewer, 2002), thus leading them to consider the generation of novel and useful ideas as an optimal, enjoyable experience (George & Zhou, 2007; Li et al., 2018). Second, challenge appraisals are associated with an approach orientation (Schneider et al., 2009), which facilitates a flexible and generative thinking style and motivates employees to engage in exploratory thoughts and novel directions (Gutnick et al., 2012). Similarly, challenge appraisal also increases problem-focused coping (LePine et al., 2005; Searle & Auton, 2015), which promotes individuals to learn more at work and thus leads to more creativity (Prem et al., 2017). Therefore, we expect that creative performance pressure will have a positive effect on employee creativity if this pressure is appraised as a challenge.

On the other hand, creative performance pressure can also be appraised as a hindrance. This is because creative performance in the workplace is highly uncertain (Zhang et al., 2020). As the possibility of failure is high in creative endeavors (Janssen et al., 2004; Leung et al., 2014), employees may spend both time and valuable resources to engage in creative endeavors, without bringing beneficial outcomes for organizations and themselves in return. Failing to achieve high creative performance pressure may also reveal employees' inability to generate novel and useful ideas, which may threaten their self-image (Li et al., 2018; Yuan & Woodman, 2010). Even worse, the failure of creative endeavors may bring about negative consequences such as performance decline, job loss (Madjar et al., 2011), or demotion (Pisano, 2019). In addition, novel ideas may be perceived as weird, inappropriate, unworkable, or too risky (Mainemelis, 2010), possibly endangering their advocates' prestige in the eyes of colleagues and supervisors. Even in contexts in which creativity is considered to be highly important, creative endeavors are still highly uncertain and may still have unintended consequences. For example, Bromham et al. (2016) found that although interdisciplinary research is widely considered a hothouse for innovation, such highly novel research proposals may encounter lower funding success. Similarly, Boudreau et al. (2016) reported that evaluators may systematically give lower scores to research proposals involving highly novel research ideas. Thus, these potential difficulties and dark sides of creativity may focus an employee's attention on whether they can accomplish their creative performance goals and on the negative consequences of possible failure of their creative endeavors.

In addition, we expect that hindrance appraisals of creative performance pressure will harm employee creativity, as hindrance appraisals relate to low motivation, reduced coping effort, and reduced resources. Hindrance appraisals of creative performance pressure are likely to be related to low motivation to engage in creative processes, because these employees are likely to believe that no reasonable level of effort will be adequate to meet these types of stressors. For example, prior studies have shown that negative appraisals are associated with reduced control and increased escape coping (Fugate et al., 2008) and emotion-focused coping (e.g., Li et al., 2018). Moreover, any effort expended to cope with stressors would likely be viewed as sapping resources that could otherwise be used for dealing with work stressors associated with valued outcomes that could be met (LePine et al., 2005). In addition, hindrance appraisal of creative performance pressure reduces the mental resources and cognitive capacity that should be allocated to creative processes (Byron et al., 2010, for a review). Following this logic, we expect creative performance pressure to have a negative effect on employee creativity if this pressure is appraised as a hindrance.

Based on the foregoing discussion, we argue that creative performance pressure may increase or decrease employee creativity through different appraisals. Challenge and hindrance appraisals will mediate the relationship between creative performance pressure and creativity. In line with our reasoning, prior empirical studies have shown that challenge and hindrance appraisals can function as major mechanisms linking work stressors and outcomes in opposite ways. For instance, challenge appraisals positively mediate the relationships between stressors and task performance (e.g., LePine et al., 2016) and thriving at work (Prem et al., 2017). Conversely, hindrance appraisals negatively mediate the relationships between stressors and task performance (LePine et al., 2016). Therefore, we propose:

Hypothesis 1a. *Challenge appraisals positively mediate the relationship between creative performance pressure and creativity.*

Hypothesis 1b. *Hindrance appraisals negatively mediate the relationship between creative performance pressure and creativity.*

1.2 | The influence of resources on the stress process

Creative performance pressure is characterized by the urgency to be creative. However, the transactional stress theory (Lazarus & Folkman, 1984) states that cognitive appraisal of a certain stressor depends on not only the nature of the stressor but also on the resources available to the employee to cope with the stressor (Gutnick et al., 2012). Resources embody both social and personal aspects and can help individuals cope with stressors (Bakker & Demerouti, 2017). Thus, we investigate how job resources (servant leadership) and personal resources (promotion focus, taken as a trait) influence the relationship between creative performance pressure and appraisals.

1.2.1 | The moderating influence of servant leadership

We propose that as a job resource, servant leadership will influence how employees appraise and respond to creative performance pressure. In particular, a servant leader will provide social and emotional support in a stressful situation, thereby facilitating employees' challenge appraisal and mitigating their hindrance appraisal of creative performance pressure. The concept of servant leadership was introduced by Greenleaf (1977), who stated that servant leaders seek to develop followers first on the basis of their altruistic and ethical orientation. Different from other leadership behaviors (such as transformational leadership, which focuses on inspiring and encouraging followers to attain mission-focused ends), servant leaders emphasize the best interest of the follower, such as followers' individual growth and development (Mittal & Dorfman, 2012; Walumbwa et al., 2010). Thus, we argue that servant leadership is well suited for amplifying the positive appraisal of creative performance pressure.

Servant leaders prioritize individual members' personal growth and career development (Greenleaf, 1977) and provide employees with emotional resources (e.g., by exhibiting empathy and compassion and healing subordinates' emotional suffering, Barbuto Jr & Wheeler, 2006) and organizational resources to deal with creative performance pressure. Specifically, by offering individual developmental support (Chen et al., 2015) and creating conditions that enhance followers' well-being (Van Dierendonck, 2011), servant leaders may have an impact on the appraisal of a stressor as challenging or hindering. Servant leaders' support and resources enhance individuals' perception of the manageability of stressors (Roberts et al., 1994), helping them to increase the confidence to deal with high creative performance pressure (Gutnick et al., 2012) and making them recognize its bright sides. In addition, servant leaders think highly of the recognition, acknowledgment, and realization of each person's abilities (Greenleaf, 1977) and often exhibit empathy and compassion when employees are confronted with difficulties (Barbuto Jr & Wheeler, 2006). Through these processes they can relieve employees' concerns about possible harmful consequences of the failure of creative endeavor and make them focus more on personal development. Thus, employees under high (rather than low) servant leadership are less likely to appraise creative performance pressure as a hindrance (i.e., a mitigating interaction effect). Instead, they are more likely to appraise this pressure as challenging (i.e., an accentuating interaction effect, Gardner et al., 2017). Therefore, we propose:

Hypothesis 2a. *Servant leadership moderates the positive relationship between creative performance pressure and challenge appraisals, such that this relationship becomes stronger when employees perceive their leaders as more serving.*

Hypothesis 2b. *Servant leadership moderates the positive relationship between creative performance pressure and hindrance appraisals, such that this relationship becomes weaker when employees perceive their leaders as more serving.*

1.2.2 | The moderating influence of promotion focus

We argue that as a personal resource, employee promotion focus will influence to what extent creative performance pressure evokes different appraisals. The transactional stress theory states that personal factors like personal resources will shape the appraisals, in which they (a) determine what is salient for well-being in a given situation; and (b) provide the basis for evaluating potentially stressful situations (Lazarus & Folkman, 1984). Promotion focus can be treated as a stable individual trait that leads an individual to orientate toward ideals and to achieve gains (Higgins, 1997; Sacramento et al., 2013). It can influence individuals' appraisal of creative performance pressure, since the individuals with high promotion focus are more likely to notice the potential benefits involved in creative performance pressure and to find resources helping them to address high creative performance pressure.

Research has shown that individuals with high promotion focus prioritize success and higher levels of achievement and are growth-oriented in achievement striving (Higgins, 1997, 1998; Lockwood et al., 2002). They are eager to approach targets that match their desired goals and are sensitive to positive outcomes (Higgins, 1997; Johnson et al., 2010). This makes the potential growth and development involved in creative performance pressure more salient because individuals with high promotion focus are especially likely to notice and recall information relating to the pursuit of success and goals (Higgins & Tykocinski, 1992). In a related vein, individuals with high (rather than low) trait promotion focus are likely to find strategies to deal with stressful situations, which provides a basis for them to evaluate creative performance pressure. Specifically, researchers have found that promotion focus serves as an important trait that makes individuals acquire skills, knowledge, and other potential resources to build confidence and capability (Wallace et al., 2016). These skills, knowledge, and resources could help them deal with stressful situations and face the potential risks involved in creative performance pressure, making them less likely to appraise creative performance pressure as a hindrance. This suggests that by making the potential growth and development involved in creative performance pressure more salient and by motivating individuals to find potential coping resources, promotion focus strengthens the positive relationship between creative performance pressure and challenge appraisals and mitigates the positive relationship between creative performance pressure and hindrance appraisals. Thus, our third set of hypotheses is:

Hypothesis 3a. *Promotion focus moderates the positive relationship between creative performance pressure and challenge appraisals, such that this relationship becomes stronger when promotion focus increases.*

Hypothesis 3b. *Promotion focus moderates the positive relationship between creative performance pressure and hindrance appraisals, such that this relationship becomes weaker when promotion focus increases.*

1.3 | A moderated mediation model

As already mentioned, we hypothesize that servant leadership and promotion focus will moderate the differential effects of performance pressure on stress appraisals, which will in turn influence creativity. Specifically, high (vs. low) servant leadership will prioritize employees' needs and development and will offer them emotional resources, developmental support, and organizational resources, making them more likely to appraise high creative performance pressure as a challenge (vs. a hindrance). By focusing on the challenging aspects of creative performance pressure, employees' creativity will be enhanced. In addition, high (vs. low) promotion-focused individuals should have more personal resources available that help them pay attention to the positive aspects of creative performance pressure, which makes them less likely to appraise creative performance pressure as a hindrance. By reducing hindrance appraisal of creative performance pressure, employee creativity will be less harmed. In sum, we propose the model in Figure 1, in which creative performance pressure relates positively to challenge and hindrance appraisals, which subsequently relate to employee creativity. Further, the indirect effects are moderated by servant leadership and promotion-focus. We thus posit:

Hypothesis 4a. *The indirect effect of creative performance pressure on creativity through challenge appraisal will be stronger when servant leadership is higher rather than lower.*

Hypothesis 4b. *The indirect effect of creative performance pressure on creativity through hindrance appraisal will be stronger when servant leadership is lower rather than higher.*

Hypothesis 5a. *The indirect effect of creative performance pressure on creativity through challenge appraisal will be stronger when promotion focus is higher rather than lower.*

Hypothesis 5b. *The indirect effect of creative performance pressure on creativity through hindrance appraisal will be stronger when promotion focus is lower rather than higher.*

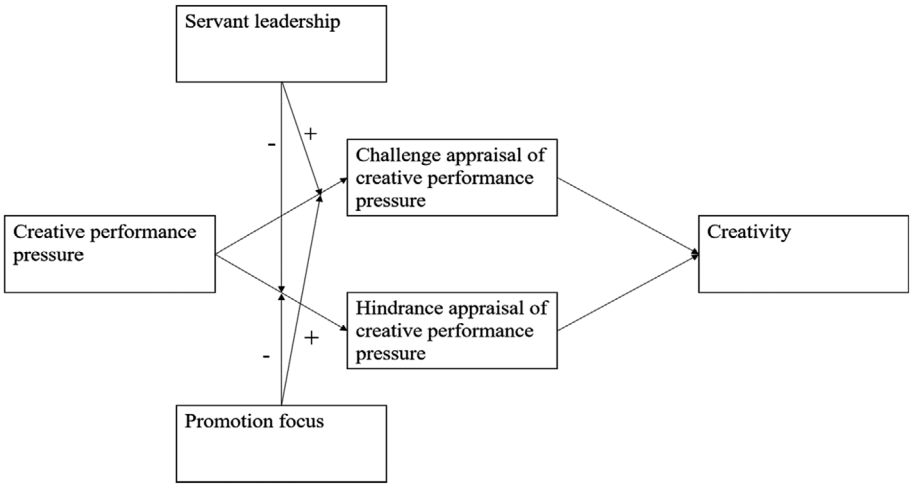

FIGURE 1 Theoretical model

The above-mentioned research goals and hypotheses will be examined in two studies. Study 1 develops and validates the measurement of the creative performance pressure scale in two samples. In Study 2, we test the overall model.

2 | STUDY 1: MEASUREMENT OF CREATIVE PERFORMANCE PRESSURE

No prior study has investigated creative performance pressure when studying creativity. Therefore, our first aim was to develop a valid measure of creative performance pressure. In doing so, we looked at existing measures in the performance pressure and creativity literature to develop a measure of creative performance pressure, using two separate samples. Sample 1 was used to develop and test a tentative measure of creative performance pressure, and Sample 2 was used to cross-validate the factor structure obtained for Sample 1 and to examine the convergent and divergent validity of our measure.

2.1 | Method study 1

2.1.1 | Participants

Sample 1 was obtained by contacting an independent group of 207 employees from a high-tech company in China. We received 181 valid responses (a response rate of 87.4%). Slightly more than half (56.9%) of the participants were male, the average age was 31.12 years ($SD = 1.97$) and on average they had worked for their current organization for 2.62 years ($SD = 1.26$). Sample 2 was obtained by contacting 288 participants from a real estate company in China. We received 253 valid responses (a response rate of 87.8%). About half of the participants were male (45.8% male), the average age was 27.15 years ($SD = 3.92$); and participants had stayed in their current organization for 1.63 years ($SD = 1.14$).

2.1.2 | Measures

A measure of *creative performance pressure* was included in both Sample 1 and Sample 2. Following Hinkin's (1998) deductive approach, we adapted four items from prior research (Mitchell et al., 2019) in such a way that they reflected the pressure related to creative performance (i.e., the subjective experience of tension or urgency to generate novel and operable work-related ideas) (see Appendix A for the items). To assess the content validity, we invited 5 HR managers from high-tech firms and four researchers (two doctoral students in organizational behavior and two professors in organizational behavior or organizational psychology) to assess the degree to which each item matched our definitions of creative performance pressure. These procedures resulted in the four representative items for creative performance pressure that were used in Sample 1 and Sample 2. The participants were requested to indicate the extent to which each of the four items matched their experience of creative performance pressure (1 = "strongly disagree", 7 = "strongly agree."). A sample item is "I feel tremendous pressure to find new uses for existing methods or equipment" (Cronbach's $\alpha = 0.90$ in Sample 1; Cronbach's $\alpha = 0.94$ in Sample 2).

In addition, to differentiate creative performance pressure from other related concepts, Sample 2 included creative requirements and routine performance pressure. Following translation/back-translation procedures, all items were translated into Chinese (Brislin, 1970). In Sample 2 of Study 1, we measured *creative requirements* with five items developed by Unsworth et al. (2005). A sample item is "My job requires me to have ideas about changing ways of organizing work" (Cronbach's $\alpha = 0.93$). *Routine performance pressure* was measured with the four-item scale developed by Mitchell et al. (2019). A sample item is "The pressures for performance in my workplace are high" (Cronbach's $\alpha = 0.92$).

2.1.3 | Analytical procedure

Exploratory (Sample 1) and confirmatory factor analyses (Sample 2) using Mplus 7.0 (Muthén & Muthén, 2012) were conducted to examine the factor structure of the creative performance pressure scale.

TABLE 1 Means, standard deviations, correlations, and square roots of AVE of study variables (study 1: Sample 2)

Variables	Mean	SD	1	2	3
1. Creative performance pressure	4.45	1.24	(0.89)		
2. Creative requirement	4.37	1.20	0.56**	(0.86)	
3. Routine performance pressure	5.05	1.08	0.34**	0.28*	(0.87)

Note: $N = 253$; The square roots of AVE values are reported in the parentheses;
*$p < 0.05$, **$p < 0.01$ (two-tailed test).

TABLE 2 Confirmatory factor analyses of measurement models (study 1: Sample 2)

Model	χ^2	df	$\triangle\chi^2$	RMSEA	CFI	TFI	SRMR
Model 1: Three factors	120.18	62		0.06	0.98	0.98	0.04
Model 2: Creative performance pressure and creative requirement were combined into one factor	743.99	64	623.81***	0.20	0.76	0.71	0.11
Model 3: Creative performance pressure and performance pressure were combined into one factor	831.61	64	711.43***	0.21	0.74	0.68	0.15

Note: $N = 253$;
***$p < 0.001$.

All questions were answered on a Likert-type scale (1 = "strongly disagree"; 7 = "strongly agree").

2.2 | Results study 1

2.2.1 | Sample 1

We presented the items of creative performance pressure to a sample of employees and carried out an exploratory factor analysis (EFA), examining to which degree these items confirmed our expectations concerning their psychometric properties (Hinkin, 1998). Using principal axis factor analysis, one factor was identified with an eigenvalue of 3.1 which explained 76.7% of the total variance of the items. All factor loadings were greater than 0.70 and all were significant at $p < 0.01$.

2.2.2 | Sample 2

Following Hinkin's (1998) scale development procedure, we examined whether the items measuring creative performance pressure converged well and whether this concept could be differentiated from related constructs (i.e., creative requirements and routine performance pressure) in Sample 2. To examine the convergent and discriminant validity of creative performance pressure, we followed Fornell and Larcker's (1981) methodological recommendations to investigate the average variance extracted (AVE) in a measurement model such as creative performance pressure, creative requirement, and routine performance pressure.

As shown in Table 1, our novel four-item creative performance pressure scale was also reliable in Sample 2, Cronbach's $\alpha = 0.94$. Moreover, the AVE value was 0.80 for creative performance pressure, suggesting that it had satisfactory convergent validity. The square root of the AVE values for the three constructs (i.e., creative performance pressure, creative requirement, and routine performance pressure) were all greater than the inter-construct correlations, providing evidence of discriminant validity.

Next, we performed a series of confirmatory factor analyses. As shown in Table 2, a reasonable fit was found for the hypothesized three-factor model ($\chi^2 = 120.18$, $df = 62$, RMSEA = 0.06, CFI = 0.98, TFI = 0.98, SRMR = 0.04). In addition, this baseline model provided a better fit than other alternative models. Therefore, the analyses using Sample 2 show that the creative performance pressure scale had good construct validity and that it could be differentiated from related constructs such as creative requirements and routine performance pressure.

3 | CONCLUSION STUDY 1

Taken together, our scale development procedures and empirical results indicate that our conceptualization of creative performance pressure as a one-factor concept could be maintained. These findings suggest that this measure is well-suited as a starting point for further research on creative performance pressure.

4 | STUDY 2: HYPOTHESIS TESTING

Based on the creative performance pressure measure developed in Study 1, Study 2 was designed to examine the full model and our hypotheses (see Figure 1).

4.1 | Method study 2

4.1.1 | Participants

To test our hypotheses, we collected survey data from the sales teams of a fast-fashion retailer that sells clothing and shoes in China.

Embedded in an industry with high competition and uncertainty, the employees in these teams need to display creativity by developing new strategies to promote products (e.g., making use of the live streaming platform to promote clothing and shoes), enhancing sales by changing product visibility (e.g., introducing novel ways to display products according to different themes) and devising novel ways to cross-sell products (e.g., personalizing clothing, shoes, and accessories combinations). Such examples of creativity are being increasingly recognized as essential to gain success and competitive advantage for the companies. Thus, the employees of these sales teams feel the need and urgency to continuously develop novel strategies to promote products and provide services. With the help of the human resource manager of the company, we conducted a field study using a multi-source, time-lagged research design among 251 employees and 53 supervisors. At the first time point, subordinates were asked to report demographics, creative performance pressure, appraisals (challenge and hindrance) of creative performance pressure, promotion focus, and servant leadership. At the same time, supervisors were asked to report employee creativity for each team member. Two weeks later (the second time point), we again collected supervisory ratings of employee creativity. We eliminated all dyads for which no complete information was available ($n = 45$, as either the subordinates or the leaders did not submit data). The final sample comprised 206 employees and 49 supervisors, representing response rates of 82.1% and 92.4%, respectively. The average age of the sample was 33.48 years ($SD = 4.75$), the average organizational tenure was 3.85 years ($SD = 1.77$), 62.6% were women, 66.5% held a college degree and 23.3% held a university degree.

4.1.2 | Measures

Creative performance pressure was measured with the scale developed in Study 1 (Cronbach's $\alpha = 0.90$).

Challenge and hindrance appraisals were measured by using the two four-item scales developed by Searle and Auton (2015). Respondents were asked to think about the creative performance pressure they experienced in the last 2 weeks and assess how it is likely to affect them. A sample item of challenge appraisal is "It will help me to learn a lot" (Cronbach's $\alpha = 0.90$). A sample item of hindrance appraisal is "It will hinder any achievements I might have" (Cronbach's $\alpha = 0.94$).

Servant leadership was measured by a 7-item scale from Liden et al. (2015). Sample items are "My leader puts my best interests ahead of his/her own", and "My leader gives me the freedom to handle difficult situations in the way that I feel is best." Cronbach's α was 0.93.

Promotion focus was measured with nine items of the Chinese version (Zhao & Namasivayam, 2012) of the regulatory focus scale (Lockwood et al., 2002). Sample items are "I frequently imagine how I will achieve my hopes and aspirations" and "I often think about the person I would ideally like to be in the future." The internal consistency of the overall scale was Cronbach's $\alpha = 0.92$.

Creativity T2 was measured by asking managers to rate their subordinates' creativity using Oldham and Cummings' (1996) three-item scale, for example, "This person's work is creative" (Cronbach's $\alpha = 0.88$).

Control variables included demographic variables as well as subordinate creativity at Time 1. To relieve the concern about potential reverse causalities, *Creativity T1* was controlled in this study. It was measured with Oldham and Cummings's (1996) scale (Cronbach's $\alpha = 0.87$). Demographic variables included *age*, *gender* (0 = female, 1 = male), *level of education* (1 = High school or below, 2 = College degree, 3 = Bachelor degree, 4 = Master degree or above) and *organizational tenure*. Studies of creativity indicate that these demographic factors may influence individual creative performance (e.g., Baer & Kaufman, 2008; Ng & Feldman, 2008). Note that we also conducted analyses with and without control variables, and, comparing the two, results were consistent and robust. These analyses are available upon request from the first or corresponding author.

4.1.3 | Analytical strategy

Given the nested structure of the data (i.e., a supervisor provided assessments for several subordinates), we used regression analysis to test our hypotheses and employed multilevel modeling procedures via Mplus 7.0 (Muthén & Muthén, 2012) to deal with the issue of non-independence caused by employees being nested in groups.[1] In addition, following Selig and Preacher (2008), we tested indirect and conditional indirect relationships using a parameter-based resampling approach to calculate bias-corrected confidence intervals by using 20,000 resamples via the R program.

4.2 | Results study 2

4.2.1 | Confirmatory factor analyses (CFA)

We conducted a confirmatory factor analysis (CFA) to assess the distinctiveness of six core variables in our study (i.e., creative performance pressure, challenge appraisal, hindrance appraisal, servant leadership, promotion focus and creativity). The data demonstrated a reasonable fit with the hypothesized six-factor model ($\chi^2 = 768.51$, $df = 419$, RMSEA = 0.06, CFI = 0.93, TFI = 0.92, SRMR = 0.05). This baseline model provided a better fit than other alternative models, such as a five-factor model with challenge appraisal and hindrance appraisal collapsed into one factor ($\chi^2 = 1631.39$, $df = 424$, RMSEA = 0.12, CFI = 0.76, TLI = 0.74, SRMR = 0.11) and a two-factor model with Time 1 rated variables combined into one factor and Time 2 rated variables combined into another factor ($\chi^2 = 3779.32$, $df = 433$, RMSEA = 0.19, CFI = 0.33, TLI = 0.28, SRMR = 0.21).

4.2.2 | Descriptive statistics

Table 3 presents the means, standard deviations, and intercorrelations for the study variables. Creative performance pressure was positively

related to both challenge appraisal ($r = 0.24$, $p < 0.01$) and hindrance appraisal ($r = 0.21$, $p < 0.01$). Furthermore, challenge appraisal was positively correlated with creativity T2 ($r = 0.34$, $p < 0.01$), whereas hindrance appraisal was negatively correlated with creativity T2 ($r = -0.33$, $p < 0.01$). The pattern of these results is generally consistent with our mediation Hypotheses H1a and H1b.

4.2.3 | Hypothesis tests

Hypothesis 1 predicted that there is a positive indirect effect of creative performance pressure on creativity through challenge appraisal. As shown in Table 4, creative performance pressure was positively related to challenge appraisal of creative performance pressure ($B = 0.21$, $SE = 0.07$, $p < 0.01$, Model 1). Challenge appraisal of creative performance pressure was positively related to employee creativity ($B = 0.20$, $SE = 0.06$, $p < 0.01$, Model 10). In addition, as shown in Table 5, the indirect effect from creative performance pressure to creativity through challenge appraisal of creative performance pressure was significant ($B = 0.05$, $SE = 0.02$, 95% bias-corrected CI = [0.01, 0.10], excluding zero; Hypothesis 1a supported).

Hypothesis 1b predicted a negative indirect effect of creative performance pressure on creativity through hindrance appraisal. As shown in Table 4, the direct effect of creative performance pressure on hindrance appraisal of creative performance pressure was significant and positive ($B = 0.32$, $SE = 0.11$, $p < 0.01$, Model 5). Hindrance appraisal of creative performance pressure was negatively related to creativity ($B = -0.15$, $SE = 0.04$, $p < 0.01$, Model 10). In addition, as shown in Table 5, the indirect effect from creative performance pressure on creativity through hindrance appraisal of creative performance pressure was significant ($B = -0.05$, $SE = 0.02$, 95% bias-corrected CI = [−0.08, −0.01], excluding zero), supporting Hypothesis 1b.

Hypothesis 2a predicted that the positive relationship between creative performance pressure and challenge appraisal would become stronger with increasing servant leadership. As shown in Table 4, the interaction term was significant for challenge appraisal ($B = 0.19$, $SE = 0.08$, $p < 0.05$, Model 2). The interaction effect is presented in Figure 2. The relationship between creative performance pressure and challenge appraisal was positively significant in the high servant leadership group (1 *SD* above the mean, $B = 0.41$, $SE = 0.13$, $p < 0.01$). However, this relationship was insignificant in the low servant leadership group (1 *SD* below the mean, $B = 0.04$, $SE = 0.09$, *n.s.*). The difference between the high and low servant leadership groups was significant ($B_{diff} = 0.37$, $SE = 0.18$, $p < 0.05$). Taken together, Hypothesis 2a was supported.

Hypothesis 2b predicted that the positive relationship between creative performance pressure and hindrance appraisal would become weaker with increasing servant leadership. Table 4 shows that the interaction term was significant on hindrance appraisal ($B = -0.25$, $SE = 0.12$, $p < 0.05$, Model 6). We plotted the interaction effect in Figure 3. The relationship between creative performance pressure and hindrance appraisal was positively significant in the low servant leadership group (1 *SD* below the mean, $B = 0.55$, $SE = 0.16$, $p < 0.01$). However, this relationship was insignificant in the high servant leadership group (1 *SD* above the mean, $B = 0.06$, $SE = 0.17$, *n.s.*). The difference between the high and low servant leadership groups was significant ($B_{diff} = -0.49$, $SE = 0.23$, $p < 0.05$). In conjunction, these findings support Hypothesis 2b.

Hypothesis 3a stated that the positive relationship between creative performance pressure and challenge appraisal becomes stronger when promotion focus increases. As shown in Table 4, the interaction term was not significant for challenge appraisal ($B = 0.03$, $SE = 0.06$, *n.s.*, Model 3). Hypothesis 3a was not supported.

Hypothesis 3b proposed that the positive relationship between creative performance pressure and hindrance appraisal becomes weaker when promotion focus increases. As shown in Table 4, the interaction term was significant for hindrance appraisal ($B = -0.18$, $SE = 0.08$, $p < 0.05$, Model 7). We plotted the interaction effect in Figure 4. The relationship between creative performance pressure and hindrance appraisal was weaker when promotion focus was high

TABLE 3 Descriptive statistics and correlations for the study variables (study 2)

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Creative performance pressure	5.29	1.07	(0.90)									
2. Challenge appraisal	5.35	1.01	0.24**	(0.90)								
3. Hindrance appraisal	3.86	1.55	0.21**	−0.19**	(0.94)							
4. Creativity-T2	5.24	0.98	0.10	0.34**	−0.33**	(0.88)						
5. Servant leadership	5.00	1.00	0.06	0.12	−0.03	0.16*	(0.93)					
6. Promotion focus	5.34	1.19	0.12	0.12	−0.07	0.22**	−0.03	(0.92)				
7. Creativity-T1	5.22	1.04	0.06	0.29**	−0.19**	0.31**	0.17*	0.15*	(0.87)			
8. Age	33.48	4.75	0.03	0.03	0.01	−0.02	−0.03	0.04	−0.01	--		
9. Gender	0.37	0.48	0.10	−0.06	0.01	−0.10	−0.01	0.03	−0.08	−0.03	--	
10. Education	2.13	0.57	−0.06	−0.06	−0.09	0.02	−0.03	0.12	0.07	−0.26**	−0.04	--
11. Tenure	3.85	1.77	−0.06	−0.07	0.04	0.02	−0.13	0.10	−0.03	0.25**	0.01	−0.15*

Note: $N = 206$; Cronbach's alpha coefficients are in parentheses on the diagonal;
*$p < 0.05$, **$p < 0.01$ (two-tailed test).

TABLE 4 Results of regression analysis (study 2)

	Challenge appraisal				Hindrance appraisal				Creativity-T2	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Control variables										
Employee age	0.01(0.01)	0.01(0.01)	0.01(0.01)	0.01(0.01)	−0.01(0.02)	−0.01(0.02)	−0.01(0.02)	−0.01(0.02)	−0.01(0.01)	−0.01(0.01)
Employee gender	−0.12(0.15)	−0.11(0.14)	−0.13(0.15)	−0.13(0.14)	−0.11(0.22)	−0.13(0.22)	−0.07(0.22)	−0.09(0.21)	−0.16(0.13)	−0.16(0.12)
Employee education	−0.12(0.11)	−0.09(0.11)	−0.14(0.10)	−0.11(0.09)	−0.16(0.18)	−0.19(0.17)	−0.16(0.17)	−0.20(0.16)	−0.06(0.12)	−0.05(0.12)
Employee tenure	−0.03(0.03)	−0.01 (0.03)	−0.04(0.03)	−0.01 (0.03)	0.03(0.06)	0.01(0.06)	0.04(0.05)	0.01(0.06)	0.01(0.04)	0.02(0.03)
Creativity-T1	0.27**(0.07)	0.24**(0.07)	0.25**(0.08)	0.21**(0.07)	−0.30*(0.12)	−0.26*(0.12)	−0.26*(0.11)	−0.21(0.12)	0.24**(0.08)	0.15*(0.08)
Main effects										
Creative performance pressure	0.21**(0.07)	0.22**(0.07)	0.20**(0.07)	0.22**(0.07)	0.32**(0.11)	0.30**(0.11)	0.32**(0.10)	0.30**(0.11)	0.09(0.05)	0.09(0.05)
Servant leadership		0.04(0.07)		0.05(0.07)		0.01(0.11)		−0.01(0.10)		
Promotion focus			0.06(0.06)	0.08(0.06)			−0.10(0.08)	−0.11(0.08)	0.14*(0.06)	0.11*(0.05)
Interaction effects										
CPP * SL		0.19*(0.08)		0.20*(0.08)		−0.25*(0.12)		−0.28*(0.11)		
CPP * PF			0.03(0.06)	0.06(0.05)			−0.18*(0.08)	−21*(0.08)		
Mediation effects										
Challenge appraisal										0.20**(0.06)
Hindrance appraisal										−0.15**(0.04)
−2 Log-Likelihood	555.70	546.84	554.06	543.86	744.80	739.24	738.86	731.44	536.46	507.61

*$p < 0.05$, **$p < 0.01$.

TABLE 5 Results of indirect relationship and conditional indirect relationships (study 2)

Relationships	B	SE	95% bias-corrected CI
Creative performance pressure → Challenge appraisal → Creativity			
Indirect relationship	0.05	0.02	[0.01, 0.10]
Conditional indirect relationships			
High servant leadership (+1 *SD*)	0.10	0.05	[0.02, 0.21]
Low servant leadership (−1 *SD*)	0.01	0.02	[−0.04, 0.06]
Difference	0.09	0.05	[0.01, 0.22]
High promotion focus (+1 *SD*)	0.06	0.03	[0.01, 0.13]
Low promotion focus (−1 *SD*)	0.04	0.02	[0.01, 0.09]
Difference	0.02	0.03	[−0.05, 0.07]
Creative performance pressure → Hindrance appraisal → Creativity			
Indirect relationship	−0.05	0.02	[−0.08, −0.01]
Conditional indirect relationships			
High servant leadership (+1 *SD*)	−0.01	0.02	[−0.05, 0.05]
Low servant leadership (−1 *SD*)	−0.08	0.03	[−0.14, −0.03]
Difference	0.07	0.04	[0.01, 0.16]
High promotion focus (+1 *SD*)	−0.02	0.02	[−0.05, 0.03]
Low promotion focus (−1 *SD*)	−0.08	0.03	[−0.13, −0.03]
Difference	0.06	0.03	[0.01, 0.14]

(1 *SD* above the mean, $B = 0.11$, $SE = 0.16$, *n.s.*) than when promotion focus was low (1 *SD* below the mean, $B = 0.55$, $SE = 0.12$, $p < 0.01$). The difference between the high and low promotion focus conditions was significant ($B_{diff} = -0.44$, $SE = 0.19$, $p < 0.05$). Taken together, Hypothesis 3b was supported.

We further tested whether the indirect relationships between creative performance pressure and creativity via appraisals (challenge, H4a; hindrance, H4b) were moderated by servant leadership. As shown in Table 5, the indirect relationship between creative performance pressure and creativity through challenge appraisal was significant in the high servant leadership group ($B = 0.10$, $SE = 0.05$; 95% bias-corrected CI = [0.02, 0.21], excluding zero). This indirect relationship was insignificant in the low servant leadership group ($B = 0.01$, $SE = 0.02$; 95% bias-corrected CI = [−0.04, 0.06], including zero). The difference between the high and low servant leadership groups was significant ($B_{diff} = 0.09$, $SE = 0.05$, 95% bias-corrected CI = [0.01, 0.22], excluding zero). Thus, H4a was supported.

In addition, we found that the indirect relationship between creative performance pressure and creativity via hindrance appraisal was significant in the low servant leadership group ($B = -0.08$, $SE = 0.03$; 95% bias-corrected CI = [−0.14, −0.03], excluding zero). However, this indirect effect was insignificant in the high servant leadership group ($B = -0.01$, $SE = 0.02$; 95% bias-corrected CI = [−0.05, 0.05], including zero). The difference between the high and low servant leadership groups was significant ($B_{diff} = 0.07$, $SE = 0.04$, 95% bias-corrected CI = [0.01, 0.16], excluding zero). Thus, H4b was supported.

We then examined whether the relationships between creative performance pressure and creativity via appraisals were moderated by promotion focus (H5a, H5b). Table 5 shows that the indirect relationship between creative performance pressure and creativity through challenge appraisal was significant for both high and low promotion focus ($B = 0.06$, $SE = 0.03$; 95% bias-corrected CI = [0.01, 0.13], excluding zero; and $B = 0.04$, $SE = 0.02$; 95% bias-corrected CI = [0.01, 0.09], excluding zero, respectively). The difference between high and low promotion focus conditions was also not significant ($B_{diff} = 0.02$, $SE = 0.03$, 95% bias-corrected CI = [−0.05, 0.07], including zero). Thus, H5a was not supported.

Finally, Table 5 reveals that the indirect relationship between creative performance pressure and creativity via hindrance appraisal was not significant when promotion focus was high ($B = -0.02$, $SE = 0.02$; 95% bias-corrected CI = [−0.05, 0.03], including zero). However, this indirect relationship was significant when promotion focus was low ($B = -0.08$, $SE = 0.03$; 95% bias-corrected CI = [−0.13, −0.03], excluding zero). The difference between high and low promotion conditions was significant ($B_{diff} = 0.06$, $SE = 0.03$, 95% bias-corrected CI = [0.01, 0.14], excluding zero). Thus, H5b was supported.

4.3 | Conclusion study 2

The results of Study 2 reveal that creative performance pressure can be appraised as a challenge, which promotes creativity. However, it may also be appraised as a hindrance, which reduces employee creativity. In addition, servant leadership influences the relationship between creative performance pressure and creativity through different appraisals. In particular, followers who perceive their leaders as more serving are more likely to appraise creative performance pressure as an opportunity to promote growth and achievement, and thus are more likely to respond to this challenge appraisal with increased creativity. Conversely, followers who perceive their leader as low on serving are more likely to

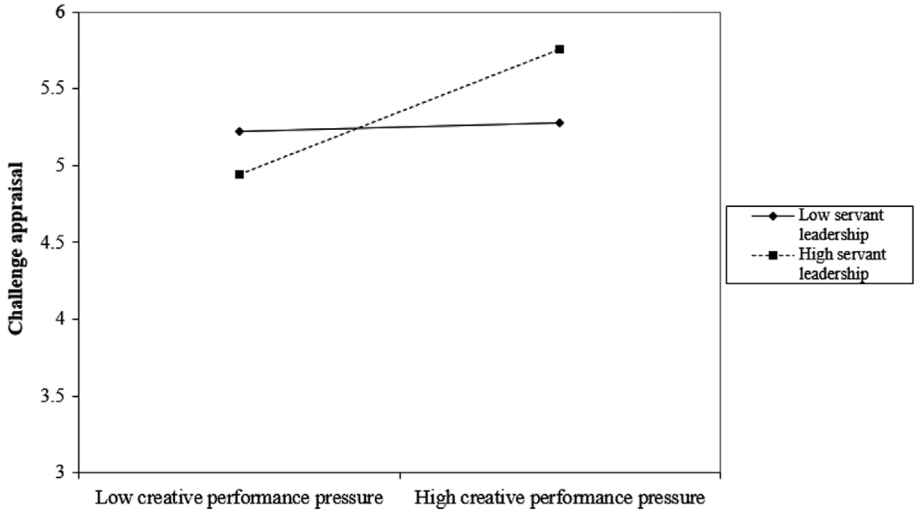

FIGURE 2 Interaction of creative performance pressure and servant leadership on challenge appraisal

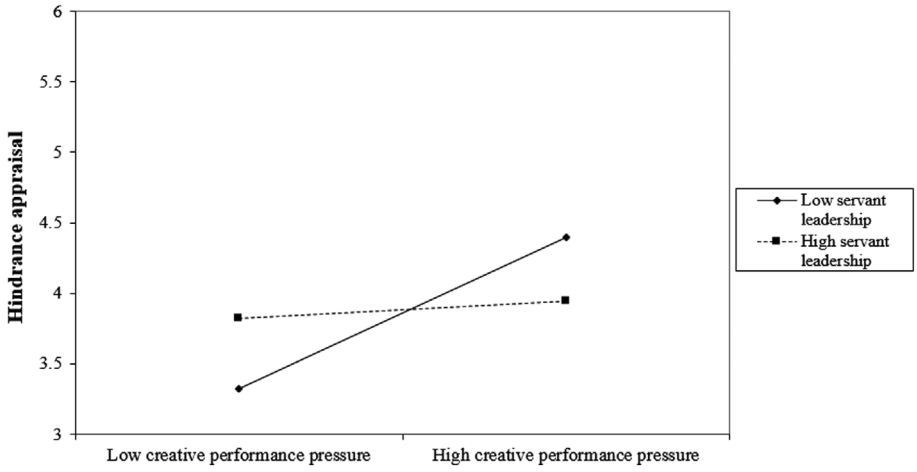

FIGURE 3 Interaction of creative performance pressure and servant leadership on hindrance appraisal

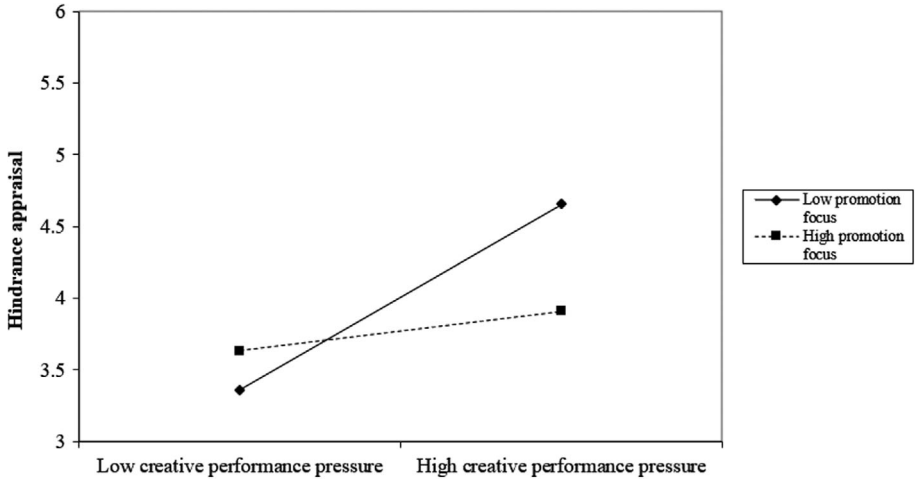

FIGURE 4 Interaction of creative performance pressure and promotion focus on hindrance appraisal

appraise it as a constraint and are more likely to respond to this hindrance appraisal with low creativity. In addition, we find that promotion focus moderates the positive relationship between creative performance pressure and hindrance appraisal such that the relationship between creative performance pressure and hindrance appraisal was weaker when promotion focus was higher.

5 | OVERALL DISCUSSION

Creativity plays a key role in the success of today's organizations and employees (Anderson et al., 2014). However, the literature to date is mixed regarding the effect of work stressors on employee creativity (i.e., positive, negative, or U-shaped; Bormann, 2020; Gutnick et al., 2012;

Montani et al., 2020). In this research, building on the transactional stress theory (Lazarus & Folkman, 1984) and presenting two studies (one to develop and validate a novel measure of creative performance pressure with two samples, $N = 181$ and 253, respectively, and a second study using a two-wave time-lagged design, $N = 206$), we found that creative performance pressure has both positive and negative effects on supervisor-rated employee creativity. A focus on the bright sides of creative performance pressure (e.g., an opportunity for growth or potential achievements) triggers challenge appraisals, which relates to increased employee creativity. Conversely, a focus on the dark sides of creative performance pressure (e.g., constraints and failures) elicits hindrance appraisals, which relate to decreased employee creativity.

Job and personal resources (i.e., servant leadership and promotion focus, respectively) play a critical role in shaping how employees perceive creative performance pressure. In particular, when leaders provide service and stewardship to followers or empower and develop people with empathy and humility (Mittal & Dorfman, 2012), employees are more likely to appraise this pressure as challenging and less likely to see it as hindering. Moreover, servant leadership moderated both the mediating effect of challenge appraisals in transmitting the positive effect of creative performance pressure to creativity and the mediating effect of hindrance appraisals in transmitting the negative effect of creative performance pressure to creativity. In addition, promotion focus was an influential personal resource that impacted how one perceives the pressure. Low promotion-focused employees were more likely to appraise the pressure as high-hindering.

However, the hypothesized moderating effect of promotion-focus was only supported for hindrance appraisals, and not for challenge appraisal. A potential explanation is that creative performance pressure is often perceived as a challenge rather than as a hindrance stressor, as indicated by the means for these concepts in Table 3. Thus, this result may be due to a ceiling effect, under which, individuals experiencing high creative performance pressure are already likely to perceive creative performance pressure as a challenge, and a high promotion focus will probably not result in even higher levels of challenge appraisal. Similarly, Koopmann et al. (2019) found that employees with high promotion focus may not benefit from appraising their positive experiences as challenging in order to increase positive emotion, as they already tend to have higher levels of positive emotions. In contrast, when employees are high in promotion focus, they will be less likely to see their job demands as hindering.

5.1 | Theoretical implications

Our study provides several implications for theory. First, by introducing a new construct, creative performance pressure, and exploring its influence on creativity, our research contributes to the creativity literature. Given the importance of employee creativity, managers and organizations have made great efforts to promote employee creativity (Anderson et al., 2014). However, it is surprising that the field has not explicitly captured creative performance pressure in their models. By differentiating this concept from creative requirements and routine performance pressure conceptually and empirically, our article takes an important first step toward this end by providing a systematic conceptualization and a psychometrically valid scale of creative performance pressure for researchers, which expands the antecedents of creativity literature and opens a new topic to the field. Relatedly, existing research on creativity has presumed that creativity brings on many beneficial consequences, meaning that organizations should make their employees more creative at work (Tierney & Farmer, 2011; Unsworth et al., 2005). However, by identifying the existence of creative performance pressure and the double-edged effect of creative performance pressure on creativity, our research suggests that the tension or urgency for employees to achieve high creative performance is not always beneficial. We thus provide a more balanced and dialectical understanding of the effects of creative performance pressure than previously assumed and highlights the need to consider the potential dark side of creative performance pressure.

Second, by examining the mediating roles of different cognitive mechanisms, we offer a new way to address the mixed findings regarding the effects of work stressors on creativity. Empirical studies on the impact of work stressors on creativity show positive (e.g., Ohly & Fritz, 2010), negative (e.g., Shalley & Perry-Smith, 2001), and curvilinear relationships (e.g., Baer & Oldham, 2006; Byron et al., 2010). The challenge-hindrance stressor framework argues that the nature of a stressor is critical for understanding its effects (e.g., Cavanaugh et al., 2000; LePine et al., 2005). This perspective provides a promising perspective to explain the inconsistent findings of previous research. Instead of taking the assumption implied in this model (i.e., using a priori-categorization approach to categorize work stressors either as or challenges or hindrances), we extend the literature on the stressor-creativity link by taking individuals cognitive appraisals into consideration (Gutnick et al., 2012). By demonstrating that the influence of creative performance pressure can either promote or inhibit creativity through challenge and hindrance appraisals, our study offers a potentially promising perspective to explain how work stressors influence employee creativity in the workplace.

A third important contribution of our research is that we identify crucial factors that moderate the indirect creative performance pressure-creativity relationship. Drawing on the theory that highlights the interplay of both work stressors and job resources in relation to employee stress reactions (Bakker & Demerouti, 2017; Lazarus & Folkman, 1984), we demonstrated that job and personal resources can function as boundary conditions that can modify the effects of creative performance pressure on appraisals and outcomes. In particular, we found that having a servant leader or a promotion focus can serve as important job and personal resources, respectively, thereby regulating employees' appraisal of high-pressure situations. This is important, since many researchers who have applied the challenge-hindrance model seem to assume that employees appraise these stressors similarly (e.g., Byron et al., 2018; LePine et al., 2005). However, this assumption is inconsistent with the transactional stress theory (Lazarus & Folkman, 1984) as well as the nature of appraisal. By testing the moderating roles of servant leadership and promotion

focus, our results demonstrate that the appraisal process is context-specific and depends on individual differences.

Finally, our research contributes to the literature on servant leadership. While studies have reported the influence of servant leadership on leader-follower relationships and employees' psychological states such as trust (see reviews of Eva et al., 2019; Van Dierendonck, 2011), no studies have specifically examined how servant leadership impacts followers' cognitive reactions to specific work stressors. Our research extends current knowledge in this area by affirming that servant leadership is effective in increasing the positive effects and buffering the negative effects of creative performance pressure on creativity.

5.2 | Practical implications

These findings have important managerial implications for both organizational leaders and HR practitioners. Although creativity is key to today's organizational success (Anderson et al., 2014; Gutnick et al., 2012), the pressure to display high levels of creative performance can be a unique source of work stressor for employees. Our research shows that creative performance pressure has both positive and negative effects on leader-rated employee creativity. A major implication for practice is that when dealing with creative performance pressure, employees should be stimulated to focus on the positive sides (i.e., challenge appraisals – seeing it as an opportunity to learn and grow; LePine et al., 2016), which is associated with increased employee creativity. For example, to fully harvest new ideas originating from employees, organizations may create and encourage learning-focused environments, which induce the recognition of achievement and the successful acquisition of new skills. Moreover, leaders should carefully express their creative performance requirements to employees and emphasize the potential benefits and opportunities of these high requirements to avoid triggering hindrance appraisals of creative performance pressure. In addition, to increase subordinates' challenge appraisals, organizational leaders can also foster team psychological safety, that is, to make sure that employees consider their team a safe place for risk-taking and that the uncertainties involved in being creative are acceptable. Relatedly, employees' challenge appraisals could be increased through HR training programs by coaching employees to perceive their creative performance pressure in a larger context, or focusing on personally meaningful aspects (e.g., broader benefits for oneself and organizations; Wrzesniewski & Dutton, 2001).

Second, our results demonstrated that servant leadership and promotion focus can regulate employees' attention when experiencing creative performance pressure. When employees perceive their leaders as truly serving their employees, they are more likely to see creative performance pressure as challenging and are less likely to see it as hindering. Therefore, leaders need to motivate themselves to serve employees and help create a creative working environment that promotes employees' challenge appraisals of creative performance pressure. To make managers take a more servant-like approach to leadership, HR professionals could consider investing in coaching programs to train current leaders to become servant leaders (for inspiration, see Yeow & Martin, 2013), and including the core attributes of servant leaders (e.g., understanding the concerns and worries of followers and prioritizing their needs) in managers' performance appraisals (Wang et al., 2019). In addition, individual promotion focus influences the relationship between creative performance pressure and hindrance appraisals. Employees with a high promotion focus are less likely to see creative performance pressure as hindering, which may buffer the negative impact of pressure on employee creativity. This has important practical implications for organizational HR practices and the assignment of work demands. In particular, for jobs that may induce high creative performance pressure, high promotion focused candidates should be preferred in the recruitment process. For those with low promotion focus, leaders may attempt to carefully and gradually increase the level of creative performance pressure they experience and provide support and other resources even more carefully.

5.3 | Limitations and future research

In spite of these strengths and contributions, several limitations should be considered when interpreting the results of this research. First, although Study 2 was based on a two-wave time-lagged design, we could not test the reciprocal impact of creativity on creative pressures or appraisals as this was not a full panel study. Similarly, Study 2 is limited in testing the causal effects among our variables, as the significant findings may be caused by endogeneity bias (reciprocal causality or omitted variables; Antonakis et al., 2010). To address this concern, we also controlled baseline creativity at T1. Future research should further examine causality by using longitudinal and experimental designs. For instance, by creating different creative performance pressure conditions (high vs. low), researchers could test how this influences employee appraisals and creativity.

Second, although we focused on the individual level of analysis to test our hypotheses (i.e., the between-person level), future research could extend creative performance pressure by applying a multi-level approach (i.e., team level and within-person level). This is important since the group context may have a unique impact on group behaviors (Choi & Sy, 2009; Mao et al., 2021) and team-level creative performance pressure may provide a more reliable estimation of the work context and could reveal consequences that may differ from those found at the individual level. For example, it is possible that when teams face high creative performance pressure, team members are likely to unite, pool resources internally, and respond collectively to the pressure. In addition, future research on creative performance pressure could also investigate the within-person level relationships (i.e., how the reactions to daily creative performance pressure are influenced by daily fluctuations in how the pressure is appraised).

Third, our research demonstrated that servant leadership and promotion focus can serve as important job and personal resources that regulate the relationship between creative performance pressure and stressor appraisals. Thus, one direction for future inquiry is an increased focus on the role of other job and personal resources in the work

stressor appraisal process. For instance, whether autonomy or job control (Häusser et al., 2010) buffer the detrimental effect of work stressors on work outcomes through appraisals still needs further investigation. Therefore, future studies can investigate the interaction effect between other work stressors and resources on employee appraisals to further clarify when and how work stressors influence employees' perceptions of work stressors and their impact on individual and organizational outcomes.

Finally, our research focuses primarily on creative performance pressure experienced by employees and how creative performance pressure relates to employee creativity. Obviously, leaders also encounter creative performance pressure, and their perception of creative performance pressure may have crossover effects on employees' perceptions of creative performance pressure, appraisals, and work outcomes. For instance, it has been shown that leaders' emotion appraisals are positively related to team members' emotion appraisal (Chang et al., 2012). It will be interesting to test whether leaders have different appraisals of creative performance pressure and how these different appraisals influence their behavior, which may translate into positive/negative results for employees.

6 | CONCLUSION

Is creative performance pressure good or bad for employee creativity? Our research demonstrated that it can be both, depending on the type of appraisal (i.e., challenge or hindrance appraisals). In addition, servant leadership appears to strengthen the positive effect of challenge appraisal and ameliorate the negative effect of hindrance appraisals. We recommend that future creativity studies should take a more balanced picture by investigating the potential dark sides of pressure to be creative. Moreover, experimental studies or full-panel longitudinal studies are encouraged to investigate the causal effects of work pressure on creativity, or other alternative mechanisms and moderators should be tested in the future.

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Data available on request from the authors

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ENDNOTE

[1] We also conducted multilevel path analysis which simultaneously examined the competing mechanisms that we proposed. The pattern of results of using multilevel path analysis was the same as the pattern of results reported here.

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APPENDIX A

Creative performance pressure measurement (English version).

1. The pressures for demonstrating originality in my workplace are high.
2. I feel tremendous pressure to find new uses for existing methods or equipment.
3. If I do not produce new ideas at high levels, my job will be at risk.
4. I would characterize my workplace as an environment where I have to identify opportunities for new products/processes.

Note: These items were adapted from Mitchell et al. (2019).

创新绩效压力(Chinese version).

1. 在我的工作中，需要展现创意的压力很大。.
2. 为了发现已有方法或设备的新用途，我感觉压力很大。.
3. 如果我无法产生高的创新绩效，我的工作将面临风险。.
4. 我所在工作场所是一个必须识别新产品/流程相关机会的环境。.