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When and why does transformational leadership influence employee creativity? The roles of personal control and creative personality

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This study develops and tests a model of the underlying mechanisms linking transformational leadership and employee creativity using a sample of 240 matched middle-level manager and front-line supervisor dyads from a large foreign joint-venture company in China. We propose that personal control and employee creative personality serve as a unique psychological mechanism and an important boundary condition to simultaneously influence the relationship between transformational leadership and employee creativity. Results of moderated-mediation analyses provided support for our conceptual model, showing that transformational leadership was positively related to personal control, which also had a positive impact on employee creativity. Furthermore, creative personality was found to moderate the relationship between transformational leadership and personal control, which in turn, mediated the joint effect on employee creativity. Findings of this study provide insights into the research on leadership development and work design in HRM, which can inform human resource managers to design effective strategies and systems that can increase employees' creativity.

KEYWORDS

creative personality, employee creativity, personal control, transformational leadership

1 | INTRODUCTION

Employee creativity has been recognized as a critical underpinning for organizational growth and success (Zhou & Hoever, 2014; Zhou & Shalley, 2011). Accumulating research evidence has demonstrated that employee creativity has strong implications for many important performance outcomes (Anderson, Potočnik, & Zhou, 2014; Liu, Jiang, Shalley, Keem, & Zhou, in press). Research, therefore, has continued to explore potential factors that can facilitate employee creativity in the workplace (Anderson et al., 2014; Zhou & Hoever, 2014). In this respect, HRM plays a vital role in developing human capital for employee creativity through its major functions of training development, work design, and strategic recruitment in organizations (e.g., Binyamin & Carmeli, 2010; Dul, Ceylan, & Jaspers, 2011). Developing effective leadership such as transformational leadership has been regarded as a useful way to motivate employees to generate novel and useful ideas for services, practices, and procedures (Henker, Sonnentag, & Unger, 2015; Shalley & Zhou, 2008; C. J. Wang, Tsai, & Tsai, 2014; G. Wang, Oh, Courtright, & Colbert, 2011; Zhou & Shalley, 2011). A number of studies have revealed that transformational leadership has a positive impact on creative outcomes (Gong, Huang, & Farh, 2009; Gumusluoglu & Ilsev, 2009; Henker et al., 2015; Pieterse, Van Knippenberg, Schippers, & Stam, 2010; Shih, Chiang, & Chen, 2012; Wang et al., 2014). Given the evidence for its effectiveness, researchers have begun to investigate different underlying mechanisms through which transformational leadership influences employee creativity (e.g., Eisenbeis & Boerner, 2013; Gong et al., 2009; Gumusluoglu & Ilsev, 2009). In doing so, past research has focused on a few key mechanisms—intrinsic motivation, creative process engagement, creative self-efficacy, and prosocial motivation underpinned by componential theory of creativity, social cognitive theory, and prosocial motivation theory (cf. Amabile, 1998; Chen, Li, & Tang, 2009; Gong et al., 2009; Gumusluoglu & Ilsev, 2009; Henker et al., 2015; Shin & Zhou, 2003). The findings of these studies are inspiring, but more research attention is needed to explore other job-focused motivational mechanisms that are relevant to advance our understanding of the transformational leadership–creativity relationship within an individual's work role from the HRM perspective

(Anderson et al., 2014; Li, Deng, Leung, & Zhao, in press; Liu et al., in press; Shih et al., 2012). The expected findings of this study can provide new insights into the work design research in HRM, which informs HR managers to think of effective strategies and systems that can redesign frontline employees' work roles for creativity.

One of the potential but neglected job-focused motivational mechanisms is personal control, which has been defined as "an individual's beliefs, at a given point in time, in his or her ability to affect a change, in a desired direction" (Greenberger & Strasser, 1986, p. 165). Researchers have conceptualized personal control as one's sense of autonomy in initiating and regulating action, and the degree to which the person believes that his or her behavior influences important outcomes in the work environment (Brockner et al., 2004). The importance of personal control is based on the notion that individuals have an innate need to manipulate and change the work environment (Greenberger & Strasser, 1986). This notion is similar to the need for autonomy, a core concept in cognitive evaluation theory that describes how individuals are motivated to seek autonomy and influence over their work role and outcomes (Deci, 1975; R. M. Ryan & Deci, 2000). Researchers have suggested that autonomy plays an important role in the "need–satisfaction" process of cognitive evaluation theory, implying that when individuals are able to manipulate their work role and influence their work outcomes, they will become psychologically satisfied at work (Ashforth & Saks, 2000; Gagne & Deci, 2005; Ryan & Deci, 2000). Although the importance of personal control has been made explicit in the literature, its potential role in the transformational leadership–creativity relationship has yet been empirically investigated. Thus, examining whether personal control is an effective mechanism linking transformational leadership to employee creativity is theoretically important for work design research in HRM, and also practically imperative for HR department to design effective strategies for job redesign of frontline employees (Ashford & Saks, 2000; Liu et al., in press; Spector, 1986).

Despite the mediating role of personal control, the follower-centric approach to creativity has become increasingly important (Anderson et al., 2014; Zhou & Shalley, 2011; Zhu, Avolio & Walumbwa, 2009). Evidence explaining how personal characteristics of employees influence their perceptions of leadership effectiveness remains sparse in creativity research (Anderson et al., 2014; George, 2007; Liu et al., in press; Zhou & Shalley, 2011). Researchers have studied the effect of one of the important individual difference variables—creative personality on creative outcomes. A review of research has shown that creative personality has been examined as a moderator in relation to different leadership behaviors (e.g., supervisor developmental feedback, supportive supervision, noncontrolling supervision, and close monitoring from supervisors) to predict creative outcomes in several studies (George & Zhou, 2001; Madjar, Oldham, & Pratt, 2002; Oldham & Cummings, 1996; Zhou, 2003). The findings reported in these studies are important, but they have been mixed and inconclusive. This suggests that creative personality can either exacerbate or mitigate the effect of specific leadership behaviors on creative outcomes. We therefore propose creative personality, dispositional characteristics of being confident, open, flexible, or capable (Barron & Harrington, 1981; Gough, 1979), as a boundary condition in elucidating when and why transformational leadership is conducive to personal control in employees with different creative personalities. The expected findings relating to the moderating role of creative personality can inform the HR department to develop appropriate training programs that can motivate employees with different levels of creative personality to engage in creativity.

Figure 1 depicts our hypotheses about the relationships in our conceptual model and highlights the goal of this study. We propose to test a moderated-mediation model to understand the relationship between transformational leadership and employee creativity. Specifically, (a) personal control is conceptualized as a job-focused motivational mechanism mediating the transformational leadership–creative relationship, and (b) creative personality is theorized as a boundary condition moderating the link between transformational leadership and personal control. It is also expected that personal control can mediate the joint effect of transformational leadership and creative personality on employee creativity.

2 | THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

According to cognitive evaluation theory, individuals have an innate need or a strong desire for autonomy and control over their work role and outcomes (Deci & Ryan, 1985). The fulfillment of this need for personal control serves as the motivational basis for personal growth and effective performance within a work role (Ryan & Deci, 2000). When individuals perceive themselves as having the freedom to manage the details of their work role and being able to influence important work outcomes, their psychological need becomes fulfilled (Gagne & Deci, 2005; Ryan & Deci, 2000), thereby motivating them to engage in creative activities (Van Yperen, 2003). Thus, prior research has focused on identifying potential factors that promote the satisfaction of the need for personal control and conditions that undermine employees' personal control in different organizational settings (e.g., Ashford & Saks, 2000; Brockner et al., 2004; Tangirala & Ramanujam, 2008).

Cognitive evaluation theory postulates that controlling and noncontrolling aspects of work conditions may inhibit and facilitate the satisfaction of the need for personal control (Deci, 1975; Ryan & Deci, 2000). Controlling conditions are often interpreted by individuals as external pressure to accomplish a particular outcome. These conditions, such as deadlines and constant evaluation, tend to

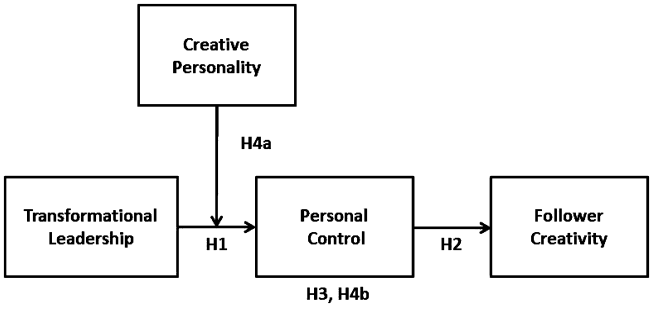

FIGURE 1 Hypothesized model of the motivational processes linking transformational leadership and employee creativity

promote an external locus of causality that undermines the satisfaction of the need for personal control (Deci, 1975; Deci & Ryan, 1985). In contrast, noncontrolling conditions are perceived by individuals as the absence of external constraint to achieve a particular outcome. These conditions, such as providing choice and influence over aspects of the work role, tend to promote an internal locus of causality, increasing the satisfaction of the need for personal control within a work role (Deci, 1975; Ryan & Deci, 2000).

Although the satisfaction of the need for personal control can serve as the motivational basis for creative endeavors, existing research has largely focused on the underlying effects and practice on employee creativity underpinned by the componential theory of creativity, intrinsic motivation theory and prosocial motivation theory (Amabile, 1996, 1998; Anderson et al., 2014; Liu et al., in press). Scholars have also emphasized their attention on the scope and content of the creativity-related task itself (i.e., an individual's interest in and excitement for solving problems and tacking complex tasks) to facilitate creativity (e.g., Gong et al., 2009; Gumusluoglu & Ilsev, 2009; Shin & Zhou, 2003). This suggests that intrinsic motivation focuses only on the internal state of employees who are attracted to and energized by a task itself, instead of by other potential factors within a work role (Deci & Ryan, 1985). Thus, the present study aims to extend the existing research and challenge this assumption by proposing personal control to be another important job-focused motivational mechanism that underlies employee creativity at work. More precisely, we suggest that transformational leadership is a key noncontrolling condition to influence creativity by motivating employees to experience high levels of personal control within a work role based on the prediction of cognitive evaluation theory.

2.1 | Transformational leadership and personal control

Building on earlier work (e.g., Ashford & Saks, 2000; Greenberger & Strasser, 1986; Spector, 1986), Brockner et al. (2004) proposed that personal control is a sense of control over a broader environment, including one's immediate task and social context at work (Spreitzer, 1995). Specifically, personal control is a combination of two closely related constructs: autonomy and impact (Brockner et al., 2004). *Autonomy* refers to one's autonomy in initiating and regulating action (Deci & Ryan, 1985); that is, people consider themselves to be the origin of their action (DeCharms, 1968). *Impact* is the degree to which a person believes that important outcomes affecting others in their work environment are contingent upon their behavior (Spreitzer, 1995). Hence, employees experience high levels of personal control when they believe they have autonomy and influence over what happens in their work role. In contrast, personal control will be lower when employees believe they have limited independence in managing their behavior to make a difference at work (Brockner et al., 2004). Past research has demonstrated that personal control is associated with employees' work attitudes and behaviors, such as organizational commitment, trust in management, organizational identification, job satisfaction, work stress, innovative behavior, job performance, job complexity, job responsibility, and voice behavior (see Allen & Greenberger, 1980; Brockner et al., 2004; Greenberger, Strasser, & Lee, 1988; Kanter, 1983; Spector, 1986; Tangirala & Ramanujam, 2008; Thompson, 1981).

Consistent with cognitive evaluation theory, leaders can be regarded as the key noncontrolling condition that facilitates the satisfaction of the need for personal control, given their influence on task characteristics and work design (Ryan & Deci, 2000). This suggests that transformational leadership can play an important role in the need–satisfaction process because it influences how employees perceive their job characteristics (Piccolo & Colquitt, 2006), work-related goals (Bono & Judge, 2003), and work meaning (Arnold, Turner, Barling, Kelloway, & McKee, 2007).

According to Bass (1985) and Bass and Avolio (1994), transformational leadership suggests that certain leaders can raise employees to a higher level of achievement, motivate them to transcend their personal interests for the collective welfare, focus them on their abilities to facilitate personal growth, and develop their intellectual capabilities to approach problems in new ways. All these leadership behaviors have direct implications for the satisfaction of the need for personal control. For instance, transformational leaders can increase employees' personal control over their work behavior by providing them with necessary resources and support to act independently and by enabling them to see how their own individual effort is important and influential for the overall team and organizational effectiveness (Bass, 1995; Bass & Avolio, 1994; Tse, Huang, & Lam, 2013). Also, when a leader displays inspirational motivation, employees are encouraged to internalize a compelling vision that reflects the importance of emphasizing social and human capital for excellent work (Tse et al., 2013). The employees are expected to experience a strong sense of autonomy and control over the details and outcomes of their work (Bass, 1985; Tse et al., 2013). In this process, transformational leaders enhance employees' expectancy of how their effort will make a significant difference in work outcomes and contribute to positive improvements for their organization (Kark, Shamir, & Chen, 2003; Tse & Mitchell, 2010). Employees who experience personal control will experience high levels of self-initiative and autonomy to influence details of their job and work environment. Thus, we predict:

> **Hypothesis 1:** *Transformational leadership is positively associated with personal control.*

2.2 | Personal control and employee creativity

Drawing on the characteristics of personal control, we posit that it is effective in facilitating employee creativity for two reasons. First, creative tasks are uncertain in nature. Creativity focuses on the development and adoption of new ideas for which the necessary knowledge, strategies, and coordination have yet to be acquired (Hirst, Van Knippenberg, & Zhou, 2009). Creative processes are therefore often unpredictable and their progress usually comes in spurts among unforeseen delays, setbacks, and costs (Janssen & Van Yperen, 2004). This uncertain task nature often leads employees to ill-defined work choices and trial-and-error activities and therefore requires high levels of independence and control in determining how to approach task processes (Ohly, Sonnentag, & Pluntke, 2006). Employees with

high levels of personal control are expected to experience high levels of autonomy in initiating actions and have a higher expectancy that their actions will lead to a desirable outcome (Tangirala & Ramanujam, 2008). Thus, employees with high levels of personal control are likely to be more effective in dealing with uncertain and ambiguous task activities during creative attempts. Furthermore, employees who experience high levels of personal control are inclined to appraise the uncertain task nature of creativity as a challenge for personal gains rather than as a threat for personal losses (Van Yperen, 2003). On this basis, we argue that creativity is more likely to be facilitated by personal control, reflecting a sense of freedom to attempt new things, as well as an expectation that their outcomes will make a difference at work.

Second, employees seeking creativity exist in an interdependent system where one's behavior affects not only himself but also his coworkers (Griffin, Neal & Parker, 2007). In essence, creativity involves interrupting existing work practices, which may cause difficulties with coworkers, and the perceived usefulness of creativity can also be controversial among parties with interest–conflict in organizations (George, 2007). We argue that personal control is a sense of control over one's task and social context, reflecting high expectancy of achieving ultimate success during setback and hassle (Ashforth & Saks, 2000). Hence, employees with high levels of personal control are more likely to expect that their efforts can successfully influence their work environment, such as "having the ear of" the controlling parties and expecting that they will attain their ultimate goals (Brockner et al., 2004, p. 78). These employees may tend to devote more persistent efforts toward creative processes despite being confronted by obstacles and criticisms (Van Yperen, 2003). On this basis, we argue that employees with high levels of personal control will expect that they can successfully resolve workplace issues by better exploring alternatives that have potential impacts on themselves, others, and organizations (Tangirala & Ramanujam, 2008). They are therefore more motivated to engage in creative activities than those with low levels of personal control at work. The preceding discussion and evidence concerning the characteristics of personal control and the fundamental aspects of creativity lead to the following prediction:

> **Hypothesis 2:** *Personal control will be positively related to employee creativity*.

2.3 | The mediating role of personal control

Although prior research has demonstrated that the motivational basis of transformational leadership for creativity is a process of increasing employees' intrinsic task motivation (Gumusluoglu & Ilsev, 2009; Shin & Zhou, 2003; Wang et al., 2014), the role that personal control plays in the "need–satisfaction process" has not been discussed and examined. Following our earlier theoretical discussion and the research evidence provided for Hypotheses 1 and 2, it is logical to predict that transformational leadership can influence employees' sense of personal control within their work role, which will also exert a positive impact on employee creativity based on the need–satisfaction process underpinned by major premises and assumptions of cognitive evaluation theory (Deci, 1975; Deci & Ryan, 1985). We propose that personal control serves as a crucial mediator in transmitting the direct effect of transformational leadership to employee creativity. Thus, we predict:

> **Hypothesis 3:** *Personal control will mediate the relationship between transformational leadership and employee creativity*.

2.4 | The moderating role of creative personality

According to Gough (1979), individuals who score high on creative personality are self-confident, flexible, open, or capable, whereas those who score low on creative personality are conventional, inflexible, interest-narrow, or conservative. Creative personality has been theorized as a moderator in relation to specific leadership behaviors in several creativity studies and has been found to be associated with creativity (Zhou & Oldham, 2001), mood and work support (Madjar et al., 2002), and the presence of coworkers (Zhou, 2003). There have been a few studies examining how creative personality interacts with situational specific leadership behaviors (e.g., supervisor developmental feedback, supportive supervision, noncontrolling supervision, and close monitoring from supervisors) to predict employee creativity using different samples across organizational settings (George & Zhou, 2001; Madjar et al., 2002; Oldham & Cummings, 1996; Zhou, 2003). However, the findings are mixed and inconclusive, suggesting that creative personality can either exacerbate or mitigate the effect of specific leadership behaviors on creative outcomes (Oldham & Cummings, 1996; Shin & Zhou, 2003).

With respect to the mitigating perspective, we argue that high creative personality serves as a factor that makes transformational leadership less effective for personal control. Research has demonstrated that personal autonomy is a core aspect of creative personality (Mumford & Gustafson, 1988; Sheldon, 1995). Employees with high creative personality are therefore predisposed to seek out personal autonomy, even while working in an unfavorable or challenging work context (Feist, 1998). A field study showed that individuals with high creative ability are better able to manage aversive situations associated with their creative performance (Choi, Anderson, & Veillette, 2009). On this basis, we propose that high creative personality can nullify or mitigate the effects of transformational leadership on personal control because employees with high creative personality are already motivated and autonomous. Such employees are less likely to rely on their managers' transformational leadership in order to experience a sense of personal control over their work situations, even though the situations are uncertain, complex, and unpredictable (Sheldon, 1995). Empirical evidence also provides partial support for the mitigating perspective, showing that effective leadership behaviors may not be conducive to the intrinsic task motivation of employees with high creative personality. For example, Shin and Zhou (2003) found that less conservative employees (i.e., can be conceptually similar to high creative personality) rely less on the positive effect of transformational leadership to experience intrinsic task

motivation than their more conservative counterparts. Hence, we assert that high creative personality may be likely to weaken the positive effect of transformational leadership on personal control in this study.

Compared to the mitigating effect of high creative personality, we propose that low creative personality can increase the positive effect of transformational leadership on personal control because low creative personality can exacerbate the relationship. Employees with low levels of creative personality are not autonomy oriented and feel less control over their work role and surrounding context (Feist, 1998; Gough, 1979). Researchers have also argued that employees low in creative personality may be more likely to find their work role demanding and their work environment unsupportive, which prevents them from being able to perform their tasks well (Mumford, Scott, Gaddis, & Strange, 2002). Consequently, transformational leadership can play an important role in facilitating personal control of employees low in creative personality by offering them organizational resources, giving them direction, and providing them with more discretion to act for their own behavior (Bass, 1985; Bass & Avolio, 1994). Such employees can experience a greater sense of autonomy and view a strong association between their behavior and important work outcomes (Tangirala & Ramanujam, 2008). This perspective on the moderating effect of creative personality has been corroborated with the findings of Madjar et al. (2002), who found that employees with low creative personality perceive nonwork support as a valuable resource by displaying creative behavior more than employees with high creative personality. Although Madjar et al. (2002) did not directly test the interaction effect of transformational leadership and creative personality on personal control, their findings are useful for conjecturing the enhancing moderating effect in this study.

Taken together, we argue that employees low in creative personality may tend to perceive their managers' transformational leadership as more important and instrumental, so they may be more likely to experience higher levels of personal control than those high in creative personality. Hence, we predict:

> **Hypothesis 4a:** *Creative personality will moderate the relationship between transformational leadership and personal control such that, for employees low in creative personality, transformational leadership has a stronger positive impact on personal control than for employees high in creative personality.*

2.5 | Moderated-mediation effect

Based on the hypothesized relationships in the model (Figure 1) and theoretical discussion of cognitive evaluation theory, it is likely to expect that creative personality can interact with transformational leadership to influence personal control, which will in turn determine employee creativity. Thus, it is likely that creative personality will conditionally influence the strength of the indirect relationship between transformational leadership and creativity, thereby demonstrating a moderated mediation between transformational leadership, personal control, and employee creativity, as depicted in our model (Figure 1). Following on the theoretical discussion and empirical evidence concerning Hypotheses 1 through 3 and 4a discussed earlier, we anticipate that, for employees low in creative personality, the effect of transformational leadership on personal control and ultimately on employee creativity will be stronger. In contrast, for employees high in creative personality, the effect of their transformational leadership on personal control and creativity will be weaker. We propose the following:

> **Hypothesis 4b:** *Creative personality will moderate the indirect effect of transformational leadership on employee creativity (through personal control). Specifically, personal control will mediate the indirect effect when employees are low in creative personality but not when they are high in creative personality.*

3 | METHOD

3.1 | Sample and procedure

The sample for this study consisted of 300 frontline supervisors and 50 middle-level managers working in a large foreign joint-venture company located in a major city in China. The company adopted Western management practices to enhance their operational effectiveness and efficiency. As part of their job duties, middle-level managers were responsible for facilitating their subordinates in generating and implementing new and useful ideas for organizational development. Each frontline supervisor had been working closely with their immediate manager to develop possible ideas and suggestions for improving their own performance, as well as the operation systems and products of the company.

Using the internal mail system of the company, two types of questionnaires were used to collect data from middle-level managers and frontline supervisors. The manager questionnaires were distributed to 50 middle-level managers, and each manager was asked to provide ratings on the creative performance of their immediate subordinates. The subordinate questionnaires were sent to 300 frontline supervisors, and each supervisor was asked to provide responses to survey items pertaining to their manager's transformational leadership behaviors, their own creative personalities, and personal control. An identification code was used to match frontline supervisor responses and middle-level manager ratings for each set of questionnaires.

Of the questionnaires sent out, 40 manager and 260 subordinate questionnaires were completed and returned, yielding response rates of 80% and 87%, respectively. After deleting incomplete and unmatched questionnaires, a total of 240 matched manager–supervisor dyads (37 managers and 240 supervisors) provided useable data for this study. Of the manager sample, 53% were male, 73% were above age 36, and 60% had tertiary education. Their average organizational tenure was 10 years. Of the subordinate sample, 55% were male, 68% above age 32, and 38% had tertiary education. Their average organizational tenure was 2.5 years.

3.2 | Measures

The questionnaires were administered in Chinese but were originally constructed in English. To ensure equivalence of the measures in the Chinese and the English versions of the survey instrument, the standard translation and back-to-back translation procedure was used (Brislin, 1980). An experienced translator was hired to translate all survey instrument items from English to Chinese, and another translator was then asked to translate the Chinese items back to English to ascertain their semantic similarities. All measures consisted of items with response options ranging from 1 (strongly disagree) to 7 (strongly agree), unless otherwise indicated.

3.2.1 | Transformational leadership

The five dimensions of transformational leadership were measured with 20 items from the Multifactor Leadership Questionnaire (MLQ 5X-short; Bass & Avolio, 1995). This scale has been widely used to measure individual perceptions of transformational leadership behaviors. The scale uses four items to measure idealized attributes ("My manager acts in ways that build my respect"); idealized behavior ("My manager talks to us about his/her most important values and beliefs"); inspirational motivation ("My manager expresses his/her confidence that we will achieve our goals"); intellectual stimulation ("My manager seeks different perspectives when solving problems"); and individualized consideration ("My manager spends time teaching and coaching me"). Confirmatory factor analysis showed that the five dimensions of transformational leadership were highly intercorrelated (r = .89 to .97) and that the second-order model of transformational leadership scale yielded a satisfactory fit to the data [chi-square (χ^2) = 488.56, degrees of freedom (df) = 165; root mean square error of approximation (RMSEA) = 0.09; comparative fit index (CFI) = 0.93; incremental fit index (IFI) = 0.93)]. We then followed the methods of prior research and averaged scores from the five dimensions to form an overall mean score for transformational leadership (Bono & Judge, 2003; Gong et al., 2009; Gumusluoglu & Ilsev, 2009; Shin & Zhou, 2003). The alpha reliability for this scale was .96.

3.2.2 | Creative personality

Gough (1979) developed the creative personality scale to assess the extent an individual perceives himself or herself as creative. The scale has been used to measure individuals' creative personality in previous research (Madjar et al., 2002; Oldham & Cummings, 1996; Zhou, 2003; Zhou & Oldham, 2001). The scale consists of 30 personality adjectives that include positive traits (18 items) and negative traits (12 items). One point is given each time one of the 18 positive items is checked (+1), and one point is subtracted each time one of the 12 negative items is checked (−1). Positive adjectives include *capable*, and negative adjectives include *conservative*. We followed past research and summed up the values of positive and negative adjectives to create a creative personality score for each respondent (Madjar et al., 2002; Zhou, 2003). Those who score high on the scale are more likely to understand problems with broad interests that enable them to be aware of divergent information. We then calculated the reliability of the creative personality score using a linear combination weighted for the number of items on each subscale and the correlation between the subscales. The reliability of this scale was .70. (Lord & Novick, 1968).

3.2.3 | Personal control

To assess personal control, we used six items from Spreitzer's (1995) psychological empowerment scale. The scale measured two dimensions: self-determination ("I have significant autonomy in determining how I do my job") and impact ("My impact on what happens in my department is large"). These six items have been validated by Brockner et al. (2004) and Tangirala and Ramanujam (2008) to measure personal control for empirical investigation. Confirmatory factor analysis revealed that the items loaded significantly (γ = 0.75 to 0.97, p < .01) on personal control and also indicated that the one-factor model of personal control yielded a good fit to the data (χ^2 = 97.85, df = 9; RMSEA = 0.20; CFI = 0.92; IFI = 0.92). Hence, we followed previous research to average six items to form a score for personal control. The alpha reliability for this scale was .86.

3.2.4 | Creativity

The extent to which individuals display creative behavior was measured based on managers' ratings of George and Zhou's (2001) 13-item creativity scale. The items reflect the generation and communication of creative ideas and novel suggestions at work. A sample item is "This employee comes up with creative solutions to problems." Confirmatory factor analysis indicated that the items loaded significantly (γ = 0.61 to 0.91, p < .01) on creativity scale and also revealed that the one-factor model of creativity yielded a satisfactory fit to the data (χ^2 = 314.88; df = 65; RMSEA = 0.13; CFI = 0.90; IFI = 0.90). We averaged the 13 items to create a single score for creativity. The alpha reliability for this scale was .95.

Although the RMSEA value of personal control and creativity is relatively higher than the recommended threshold of 0.10, Kenny, Kaniskan, and McCoach (2015) suggest not to compute the RMSEA for models with small degree of freedom and chi-square and low N because they can artificially lead to large values of RMSEA. Given that the chi-square and degree of freedom of both constructs are relatively smaller in this study, it is not surprising that their RMSEA values are higher than the recommended standard. However, the factor loadings and other fit indices suggest that the measurement model of both constructs are good. Hence, we decided to use their full scale instead of dropping any of their items for subsequent analyses.

Given that frontline supervisors were nested within middle-level managers in different work groups, we tested our hypotheses using the mixed models analysis in SPSS. We used the mixed-model analysis instead of other analytical techniques such as hierarchical linear modeling (HLM) because it can not only account for potential nonindependence of the observations, but it can also examine any effects resulting from nonnormal sampling distributions of an indirect effect using the bootstrapping approach (MacKinnon, Lockwood, & Williams, 2004; Peugh & Enders, 2005; West, 2009).

3.3 | Control variables

Past research suggests that the demographic background of employees could account for variance in their creativity that may affect the results of the hypothesized relationships (George & Zhou, 2001; Shin & Zhou, 2003). We therefore included age, gender, education level, and organizational tenure of employees as control variables. Coding for the categorical control variables is shown in Table 1.

4 | DATA ANALYSIS

We followed the analytical procedure used by Cole, Walter, & Bruch (2008) to examine our hypotheses and the overall model in two steps. We first tested a simple mediation model (Hypotheses 1–3) and then examined the overall moderated-mediation model (Hypotheses 4a and 4b) by integrating the proposed moderating variable (creative personality) into the transformational leadership → personal control → creativity mediation model.

4.1 | Test of mediation

The rationale behind Hypotheses 1 through 3 suggests an indirect effect model in which the effect of transformational leadership on employee creativity is transmitted by personal control. We therefore tested the mediation hypotheses (Hypotheses 1–3) using the procedures developed by Preacher and Hayes (2004) with the mixed-model analysis in SPSS. We first regressed employee creativity on transformational leadership and then regressed personal control on transformational leadership. Furthermore, we regressed employee creativity on personal control by controlling for the effect of transformational leadership, and, finally, regressed employee creativity on transformational leadership by controlling for the effect of personal control. Given that the mixed-model analysis has a built-in function to generate a bootstrapping sample to estimate coefficients of each equation, such function helps examine the indirect effect (Sobel test) of the mediation model directly (Peugh & Enders, 2005; West, 2009).

4.2 | Test of moderated mediation

With respect to Hypotheses 4a and 4b, we expected that creative personality would moderate the positive relationship between transformational leadership and personal control. Furthermore, the moderation hypothesis was expected to receive support, and the strength of the hypothesized indirect (mediation) effect was expected to be conditional on the value of the moderator (i.e., creative personality; Hypothesis 4). This conditional indirect effect covered the test of moderated mediation models (Preacher, Rucker, & Hayes, 2007). To test Hypotheses 4a and 4b, we followed the procedures outlined by Preacher et al. (2007) and performed a series of mixed models analyses. Such analytical technique facilitates the recommended bootstrapping methods and provides a method for probing the significance of the indirect effects at values of the moderating variable (Peugh & Enders, 2005; West, 2009). To verify the mixed models results, we also conducted a set of additional analyses using the ordinary least squares (OLS) regression. The OLS results were substantially similar to the mixed-model results for all the hypotheses.

5 | RESULTS

5.1 | Descriptive statistics and correlations

Table 1 presents the descriptive statistics, reliabilities, and correlations for all study variables. As hypothesized, transformational leadership was positively related to personal control and employee creativity. Furthermore, personal control was positively related to creativity.

5.2 | Hypothesis testing

5.2.1 | Test of mediation

All results concerning Hypotheses 1 through 3 are reported in Table 2. As Hypothesis 1 predicted, transformational leadership was positively associated with personal control (B = .32, SE = 0.07, t = 4.71, p < .01). Furthermore, personal control significantly

TABLE 1 Means, standard deviations, reliabilities, and correlations among study variables[a]

Variables	M	SD	1	2	3	4	5	6	7	8
1. Age of employees[b]	35.01	9.12	—							
2. Gender of employees[c]	1.55	0.05	−0.21**	—						
3. Education level[d]	2.80	1.34	0.11	−0.27**	—					
4. Organizational tenure[e]	2.48	2.91	−0.30**	−0.08	−0.30**	—				
5. Transformational leadership	5.63	0.95	0.04	−0.08	0.29**	−0.10	(0.96)			
6. Creative personality	1.66	3.23	0.08	0.08	0.21**	−0.05	0.19**	(0.70)		
7. Personal control	4.67	1.02	−0.04	−0.07	0.18**	−0.07	0.29**	0.19**	(0.86)	
8. Creativity	4.60	1.00	−0.19**	0.12*	0.02	0.17*	0.16*	0.06	0.25**	(0.95)

[a]N = 240. Internal consistency reliabilities appear in parentheses along diagonal.

[b]Age of employees = exact age or year of birth.

[c]Gender of employee was coded: 1 = female, 2 = male.

[d]Education level was coded: 1 = junior school, 2 = technical studies, 3 = matriculation, 4 = tertiary, 5 = undergraduate or above.

[e]Organizational tenure = Length of time in years employees have worked in their organization.

*p < 0.05; **p < 0.01.

TABLE 2 Mixed models results for simple mediation

Variable			B	SE	t	P	LL 95% CL to UL 95% CL
Direct and total effects							
Employee creativity regressed on transformational leadership			.16	0.07	2.42	0.05	[.03 to .29]
Personal control regressed on transformational leadership			.32	0.07	4.71	0.01	[.18 to .45]
Employee creativity regressed on personal control, controlling for transformational leadership			.22	0.06	3.40	0.01	[.09 to .34]
Employee creativity regressed on transformational leadership, controlling for personal control			.09	0.07	1.37	0.20	[−.04 to .23]
	Z	SE	LL 95% CI to UL 95% CL				
Bootstrap results for Sobel test							
Effect	2.76	0.03	0.02		0.14		

Note: N = 240 employees. Unstandardized regression coefficients are reported.

Bootstrap sample size = 2000. LL = lower limit; CI = confident interval; UL = upper limit.

influenced employee creativity (B = .22, SE = 0.06, t = 3.40, p < .01), confirming Hypothesis 2. Finally, transformational leadership had a significant indirect effect on employee creativity as hypothesized (Hypothesis 3). The formal two-tailed significance test (as assuming a normal distribution) also showed that the indirect effect was significant (Sobel test; z = 2.76, SE = .03, p < .01). Results of the bootstrapping sample[1] further supported the Sobel test because the bootstrapped 95% confidence interval around the indirect effect did not contain zero (0.02–0.14). Taken together, these results supported Hypotheses 1 through 3, demonstrating that personal control mediated the positive relationship between transformational leadership and employee creativity.

5.2.2 | Test of moderated mediation

With respect to Hypothesis 4a, we predicted that the positive relationship between transformational leadership and personal control would be stronger when employees' creative personalities are low rather than when they are high. Results of hierarchical regression analysis reported in Table 3 indicated that the interaction of transformational leadership and creative personality on personal control was significant (B = −.20, SE = 0.05, t = −4.14, p < .01) after accounting for the potential effects of four control variables. We plotted the interaction effect following the procedure outlined by Aiken and West (1991) to operationalize high and low values of creative personality using one standard deviation above or below the mean. In support of our prediction, Figure 2 reveals that the slope of the positive relationship between transformational leadership and personal control was stronger for employees low in creative personality (simple slope = 0.50, t = 7.90, p < .01), whereas the slope was weaker and nonsignificant for employees high in creative personality (simple slope = 0.10, t = 1.58, n.s).

To examine the moderated-mediation model (i.e., creative personality moderates the link between transformational leadership and personal control; Hypothesis 4b) in the transformational leadership → personal control → creativity chain, we used the same analytical procedure as Cole and colleagues (2008). We also investigated the conditional indirect effect of transformational leadership on employee creativity through personal control. The lower part of Table III reports the results of the conditional indirect effects at different values of creative personality. It reveals that, at low levels of creative personality, the indirect effect of transformational leadership on employee creativity (through personal control) was positive and significantly different from zero (B = −.25, p < .01) after accounting for the main effect of four control variables. Bootstrapping results also indicated that a 95 percent bias-corrected confidence interval did not contain zero (−0.11 to −0.01). At high levels of creative personality, the indirect effect of transformational leadership on employee creativity was not significant (personal control; B = .00, n.s). The bootstrapping result revealed that a 95% bias-corrected confidence interval contained zero (−0.03 to 0.02). The results revealed that personal control mediated the positive link between transformational leadership and creativity only when employees were low (rather than high) in creative personality. These results support Hypothesis 4b.

In sum, the moderated-mediation results only provide support for Hypothesis 4a, the moderating effect of creative personality on the mediation chain of relationships between transformational leadership, personal control, and employee creativity because employees low in creative personality (B = −.25, p < .01) responded more positively to transformational leadership by experiencing high levels of personal control to generate more creative ideas than employees high in creative personality (B = .00, n.s).

6 | DISCUSSION

6.1 | Theoretical implications

This study makes several contributions to the research on transformational leadership and creativity. Our first goal was to fill an important theoretical void in the literature by examining the role of personal control in the transformational leadership–creativity relationship. In addition to intrinsic task motivation, which has been framed as a key job-focused motivational mechanism that links transformational leadership to employee creativity (Chen et al., 2009; Gumusluoglu & Ilsev, 2009; Wang et al., 2014), we now understand the impact of personal control on creativity. Based on cognitive evaluation theory, researchers have proposed that personal control reflects the feelings of autonomy and impact and can be driven by the need–satisfaction process as important motivational mechanism

TABLE 3 Results of mixed models analysis for conditional indirect effect

Predictor	Estimate	SE	*t*	*P*	LL 95% CL to UL 95% CL
	Personal Control				
Constant	12.67	14.67	0.86	0.39	[−16.25 to 41.60]
Age of employees	−0.00	0.00	−0.55	0.58	[−0.02 to 0.10]
Gender of employees	−0.11	0.14	−0.77	0.44	[−0.37 to 0.16]
Education level	0.08	0.05	1.63	0.11	[−0.02 to 0.19]
Organizational tenure	0.00	0.01	0.19	0.85	[−0.03 to 0.04]
Transformational leadership	0.27	0.06	4.14	0.00	[0.14 to 0.39]
Creative personality	0.09	0.07	1.33	0.19	[−0.04 to 0.22]
Transformational leadership × creative personality (interaction)	−0.20	0.05	−4.14	0.00	[−0.30 to −0.11]
Parameter	Estimate	SE	Wald Z	*P*	
Residual	0.89	0.08	10.77	0.00	[0.74 to 1.06]
	Employee Creativity				
Constant	23.17	14.26	1.63	0.11	[−4.92 to 51.25]
Age of employees	− 0.01	0.00	−1.34	0.14	[−0.02 to 0.00]
Gender of employees	0.34	0.13	2.97	0.01	[0.08 to 0.60]
Education level	− 0.00	0.05	0.17	0.10	[−0.10 to 0.09]
Organizational tenure	0.05	0.02	3.03	0.03	[0.02 to 0.08]
Personal control	0.21	0.06	3.40	0.01	[0.09 to 0.34]
Transformational leadership	0.08	0.07	1.39	0.17	[−0.04 to 0.23]
Parameter	Estimate	SE	Wald Z	*P*	
Residual	0.86	0.08	10.79	0.00	[0.72 to 1.03]
Creativity personality	Estimate	SE	LL 95% CI	UL 95% CI	
Conditional indirect effect at creative personality = M + 1 SD					
− SD (−1)	−0.25	0.04	−0.11	−0.01	
+SD (+1)	0.00	0.04	−0.03	0.02	

Note: *N* = 240 employees. Unstandardized regression coefficients are reported.

Bootstrap sample size = 2000. LL = lower limit; CI = confident interval; UL = upper limit.

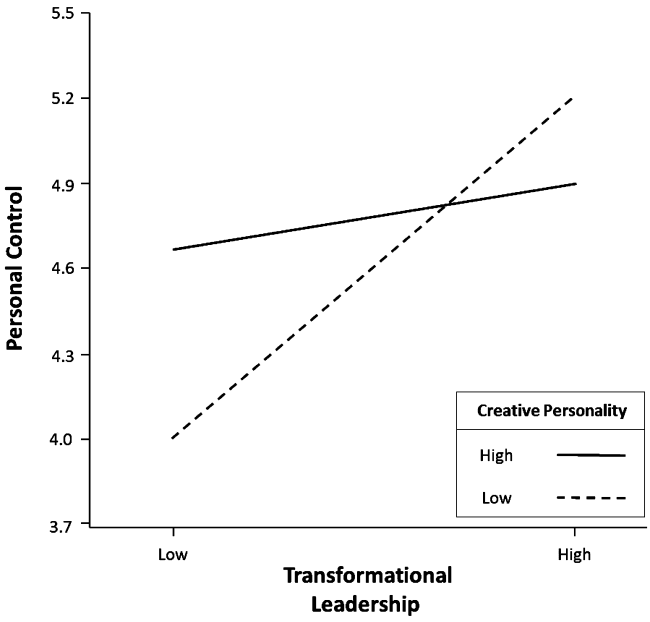

FIGURE 2 Moderating effect of creative personality on the relationship between transformational leadership and personal control

(Deci, 1975; Deci & Ryan, 2000; Gagne & Deci, 2005). This study explored the potential role of personal control, and the results showed that it had a positive impact on employee creativity and fully mediated the transformational leadership–creativity relationship. Our findings confirmed that enabling employees to experience control over their work role and instilling employees with beliefs of their influence on work outcomes is an essential condition to facilitate the positive effect of transformational leadership on creative endeavors. This provides the insight that personal control also plays an important role in the need–satisfaction process of transformational leadership for employee creativity (Brockner et al., 2004; Tangirala & Ramanujam, 2008).

Second, this study has responded to repeated calls by Anderson et al. (2014), Shalley and Zhou (2008), and Shin and Zhou (2003) to take individual differences in creative personality into consideration to understand when and why some employees perceive and respond to the influence of transformational leadership differentially. In particular, our interaction results revealed that personal control of employees low in creative personality is amplified when their managers display transformational leadership behaviors. Our results demonstrated further that the mediation-chain relationship between the study variables is more complicated than was previously understood.

We found the relationship between transformational leadership and creativity varied on account of the creative personality of employees. The mediation effect of personal control on the relationship between the study variables was found to be stronger when employees have low levels of creative personality rather than when they have high levels of creative personality. These findings support our prediction underscoring that low creative personality can magnify the positive effect of transformational leadership on personal control, whereas high creative personality can reduce the same leadership effect on personal control. This suggests that employees with different personality characteristics (e.g., creative personalities) respond differentially to transformational leadership effectiveness (Zhu et al., 2009).

Finally, this study provides insights into cross-cultural leadership effectiveness by demonstrating that the impact of transformational leadership is prevalent and effective across organizational contexts in different countries (Kirkman, Chen, Farh, Chen, & Lowe, 2009). Although we did not measure any cultural variables to test whether power distance, uncertainly avoidance, or collectivism influence the hypothesized relationships in the Chinese sample in this study, our findings indicate that the joint effect of transformational leadership and creative personality on motivational variables such as personal control are consistent with the results reported by Madjar et al. (2002) and Zhou (2003), who conducted their research using a Western sample. In support of some prior studies, our findings confirm that transformational leadership can influence important work outcomes such as employee creativity similarly in Western and Eastern countries (Kirkman et al., 2009; Shin & Zhou, 2003).

6.2 | Implications for HRM practices and managers

Given that employee creativity is important for organizational effectiveness, understanding the role of personal control in the transformational leadership–creativity relationship has three important implications for HRM practices and managerial development. First, by understanding these relationships, managers should be better able to direct the influence of transformational leadership by paying attention to employees' levels of personal control to facilitate creativity. This suggests that the HR department of organizations can design effective training programs that can equip frontline and middle-level managers with relevant knowledge and skills to exhibit transformational leadership behaviors in their daily interactions with subordinates (Carmeli, Gelbard, & Reiter-Palmon, 2013; Shih et al., 2012). Such leadership behaviors can enable the managers to understand how to promote personal control so that employees feel autonomous, energized, and satisfied in order to engage in creative activities in the workplace (Shih et al., 2012; Sheikh, Newman, & Abdul-Fattah Al Azzeh, 2013).

In line with this HRM implication, our findings also suggest that HRM managers can support transformational leaders to increase employees' sense of personal control by being more proactive and creative in redesigning job content and work roles of existing employees (Campion, Mumford, Morgeson, & Nahrgang, 2005). As suggested by the job characteristics model (Hackman & Oldham, 1975), HR managers can consider which aspects of the model can be used as a motivational approach to implement job redesign processes so that employees can experience a greater sense of freedom and control over the content and process of performing given tasks within their work roles. In doing so, employees are more likely to come up with creative solutions and ideas that can enable their organizations to improve existing work practices, and create new platforms for the development of new products and services (Wang & Noe, 2010).

Finally, the findings of this study provide insights that transformational leaders are effective in elevating personal control of employees low in creative personality whose self-esteem and self-confidence are relatively low (Feist, 1998; Gough, 1979). Although it is inevitable that there will be many employees low in creative personality working in organizations and that they will not obtain similar managerial attention and support for creativity-related tasks, they can benefit from working with transformational leaders who are able to increase their levels of personal control over their work role and outcomes. This magnifies the practical implications of transformational leadership. Not only does it provide leadership support for employee creativity, it motivates employees low in creative personality to experience high levels of personal control in the workplace. Such employees would feel satisfied and supported in generating more creative ideas for improving organizational processes and operations. Consequently, organizations should help frontline supervisors and middle-level managers develop transformational leadership in order to increase employee creativity because they are especially effective for employees low in creative personality who may receive less managerial attention and resources at work. In this regard, HR departments play a critical role in making sure that their organizations can recruit the right candidates with potential to be transformational leaders through the development and implementation of effective recruitment strategies (Ryan & Tippins, 2004), and also develop the existing managers to display transformational leadership behaviors via strategic training programs (Carmeli et al., 2013; Clarke & Higgs, 2016). For example, the HR manager of the organizations can include scenario-based sessions in the strategic training programs for transformational leadership development. The scenarios can be designed to capture specific characteristics of employees with low levels of creative personality and the work-related situations they often encounter in their organization. The training participants are then required to deal with the scenarios by applying the relevant knowledge and skills to maximize the creative potential of employees with low levels of creative personality.

6.3 | Limitations and future research directions

Although this research makes important theoretical contributions, this study has some limitations, and our findings should be interpreted against them. First, our findings provide support for the hypothesized relationships, but the cross-sectional nature of the research design limits any interpretation of causal relationships among the study variables. Future research should address this issue by conducting a longitudinal study to strengthen the causal inference of the relationships examined in this study.

Second, common-method variance may be an issue because the data for the independent, moderator, and mediator variables were collected from the same source, subordinates (Podsakoff, MacKenzie,

Lee & Podsakoff, 2003). To overcome this concern, we followed the suggestion by Gong et al. (2009) and Shin and Zhou (2003) to collect data on outcomes of creativity from managers. This study also involved testing moderated–mediated relationships that are less likely to be detected when relationships are artificially inflated (Hayes, 2013). Hence, we believe that common–method bias should not have affected the hypothesized relationships between the key variables. Nevertheless, future research should attempt to replicate the current findings by collecting data at different points in time to increase confidence in our findings.

A final problem associated with the sample is the potential lack of generalizability. The sample consisted of mostly middle-level managers and their frontline supervisors from a foreign joint-venture company in China. Our findings may have been different if there had been more employees involved in research-based jobs in the sample. This reflects an assumption that research–based jobs provide employees with more opportunities to generate and communicate new ideas at work. Thus, the majority of creativity research has tended to sample research and development (R&D) employees (George, 2007; Shalley & Zhou, 2008). While we did not test the conceptual model using an R&D sample, our findings are a conservative test and provide strong support for the hypothesized relationships. Their hypothesized effects are still salient in a non-R&D sample, implying that creativity research should not be restricted to research-based samples because many employees, including middle-level managers and frontline supervisors, may be expected to generate and communicate creative ideas for performance improvement (Anderson et al., 2014; Zhou & Shelley, 2011). Nonetheless, future research should replicate and extend our findings using a larger sample drawn from different organizational settings in different industries.

7 | CONCLUSION

This study adds to the current research on transformational leadership and creativity. Our findings provide theoretical and practical insights into this area, being the first to explore the mediating effect of personal control and the moderating effect of creative personality in the motivational process of transformational leadership and employee creativity to understand the previously inconsistent findings about the interaction effect of specific leadership behaviors and creative personality or other related dispositional variables. Our findings reveal that transformational leaders are better able to promote creativity among employees by enabling them to experience high levels of personal control over their work role and outcomes. This is particularly effective for employees low (rather than high) in creative personality.

NOTES

[1]A bootstrap sample can be referred to a relatively smaller sample that is "bootstrapped" from a larger sample. Bootstrapping is a resampling where large numbers of smaller samples of the same size are repeatedly and randomly drawn with replacements from a single original sample (Efron & Tibshirani, 1993[AU: Please provide reference for this citation or delete]).

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