REGULAR ARTICLE

Creativity in non-routine jobs: The role of transformational leadership and organizational identification

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An increasing number of individuals work in jobs with little standardization and repetition, that is, with high levels of job non-routinization. At the same time, demands for creativity are high, which raises the question of how employees can use job non-routinization to develop creativity. Acknowledging the importance of social processes for creativity, we propose that transformational leaders raise feelings of organizational identification in followers and that this form of identification then helps individuals to develop creativity in jobs with little routinization. This is because organizational members evaluate and promote those ideas as more creative, which are in line with a shared understanding of creativity within the organization. To investigate these relationships, we calculated a mediated moderation model with 173 leader–follower dyads from China. Results confirm our hypotheses that transformational leadership moderates the relationship between job non-routinization on employee creativity through organizational identification. We conclude that raising feelings of social identity is a key task for leaders today, especially when working in uncertain and fast developing environments with little repetition and the constant need to develop creative ideas.

KEYWORDS
creativity, job non-routinization, organizational identification, social identity theory, transformational leadership

1 | INTRODUCTION

'It is a mistake to separate the creativity of individual minds from the communities and social groups through which they flourish' (Haslam, Adarves-Yorno, & Postmes, 2015, p. 30)

Creativity is the generation of novel and useful ideas, products and procedures for innovation (Amabile, 1988) and is increasingly important for organizations. It can help employees in tackling day-to-day job challenges and help organizations to survive and thrive. After all, the current economic environment is characterized by a high speed of development, where the need to generate and implement novel and useful ideas is not considered a competitive advantage but rather a necessity for survival (van Knippenberg & Hirst, 2020).

Although the need for creativity in organizations is long-standing, there are more recent developments regarding the nature of jobs, which may help satisfy the need for creativity. For example, researchers observed a decline in jobs with high levels of routinization (Goos, Manning, & Salomons, 2014), parallel to an increase in knowledge-based jobs with low levels of routinization (Reijnders & de Vries, 2018). In other words, there are less jobs characterized by high degrees of repetitiveness, rules and regulations (Parasuraman &

Alutto, 1981), and more jobs with little routine and repetition, which we refer to as *job non-routinization*.

Previous work on the relationship between job non-routinization and creativity is scarce and inconsistent. Some studies revealed that routinization increased employee creativity—arguing that repetitive tasks can free employee's cognitive resources, allowing them to think about other aspects of their work (e.g., Chae & Choi, 2019; Ohly, Sonnentag, & Pluntke, 2006). Other studies found that routinization decreased innovation and creativity—saying that repetitive tasks led to more boredom and less intrinsic motivation (Choi, Anderson, & Veillette, 2009). These inconsistent findings need clarification and call for an exploration of potential moderators and mediators co-determining the relationship between job non-routinization and creativity. When identifying potential moderators and mediators, it is important to focus on the interaction between multiple actors and context factors in the workplace (Shalley, Gilson, & Blum, 2009; Zhou & Hoever, 2014).

In this work, we explore a mediated moderation model with 173 leader–follower dyads from China. We suggest that the relationship between non-routinization and creativity is moderated by transformational leadership and that transformational leaders realize their influence by increasing follower organizational identification. Transformational leaders increase follower organizational identification as they connect their followers' identity with the organization's identity by articulating grand visions of their organization, acting as role models and fostering the acceptance of common goals (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). We use the social identity theory (Haslam, 2004) to explain the importance of organizational identification for creativity and argue for the importance of having a socially shared frame of reference regarding which ideas are considered novel and valuable for the group (Haslam, Adarves-Yorno, Postmes, & Jans, 2013).

Exploring this model, we contribute to further understanding the routinization–creativity link by considering multiple actors (leader and follower) as well as the job-related context (job non-routinization) and aspects of the social context (organizational identification). This is an important contribution, because, as described above, previous research on the non-routinization–creativity link is largely inconsistent.

Another contribution of the present work lies in addressing a more general issue in the literature concerning the nationality of participants and thus generalizability of results. Most data in psychological research are collected in Western societies. For example, 86 per cent of the studies published in the *Journal of Applied Psychology* between 1995 and 2008 collected data in North America, whereas the rest of the world population is tremendously underrepresented (Shen et al., 2011). Creativity and routinization research, though including work from other Western cultures like Germany or Canada, is no exception to this general tendency (e.g., Choi et al., 2009; Ohly et al., 2006). If researchers intend to prove robustness and relevance of a phenomenon, data from other parts of the world are indispensable (Triandis & Brislin, 1984). Hence, by collecting Chinese data, we contribute one piece to reducing the imbalance of samples and help create a broader basis for generalization of creativity research.

Lastly, we contribute to practice as we provide a potential solution regarding how to raise creativity in organizations and thereby feed the constant and rising need for creativity. We suggest that for those leaders who have followers working in jobs with low routine, it will be helpful to engage in transformational leadership behaviours, ensuring that their followers can identify with their organization. This is a valuable contribution for leaders as they can work on their own leadership behaviour, rather than having to change structures or other organization-related aspects that might be out of reach.

2 | THEORETICAL DEVELOPMENT

2.1 | The relationship between job non-routinization and employee creativity

Job non-routinization captures the opposite end of routinization, whereby routinization encompasses the degree of repetitiveness of tasks and the extent to which tasks are governed by rules and regulations (Parasuraman & Alutto, 1981). Job non-routinization includes such elements as having variety in one's tasks, engaging in problem solving, or having the chance to do one's job in a variety of different ways (Jehn, 1995). As an important part of job characteristics, job non-routinization is similar to but different from related constructs like task variety and job autonomy.

Task variety refers to the extent to which a job requires the individual to show a variety of different activities and skills (Hackman & Oldham, 1976). Job non-routinization certainly overlaps with task variety in such a way that jobs with low levels of routine may require the use of different skills and activities in the process of problem solving. However, although non-routinization may go along with task variety, the reverse conclusion is not necessarily true. As such, individuals may use a high variety of skills every day but use the same skills for the same tasks and thus perform their work with a certain level of routine.

Job autonomy refers to the extent to which individuals can decide how they schedule their work, which equipment they use or which procedures they follow (Hackman & Lawler, 1971). There is an overlap of both concepts, as in both cases, individuals can decide how they go about doing their work. However, job autonomy allows for task repetition. Although individuals can decide how they schedule their work, which equipment they use and how they proceed, there may still be a repetitive character regarding the tasks. Thus, job autonomy may require a certain level of non-routinization but may also involve routine tasks, which are approached in different ways regarding schedule, equipment and procedure. We consider it important to explore job non-routinization, because it sets a focus on tasks with little repetitiveness, representing a type of work that is increasingly common (Reijnders & de Vries, 2018) but not explicitly covered by similar constructs.

Building on previous work that showed that routinization can increase (Chae & Choi, 2019; Ohly et al., 2006) as well as decrease creativity (Choi et al., 2009), we assume that non-routinization—

representing the other end of routinization—can potentially have positive as well as negative effects on creativity, depending on contextual factors. We suggest that job non-routinization is an important yet insufficient criterion for creativity. Job non-routinization is important for creativity because there has to be a job or task that leaves room for creative solutions in the first place. Job non-routinization has little repetition and rules and can evoke employee's cognitive thinking and is therefore an optimal starting point for the development of novel ideas. Job non-routinization is insufficient for creativity, however, because the room for creativity alone does not necessarily lead to creative outputs. This concern is because during the creative process, social factors come into play, which strongly determine whether or not creative ideas are useful, socially accepted and taken forward (Haslam et al., 2013). In the following section, we thus adopt a social identity approach to emphasize the importance of employees' social perspectives in the organization and believe it will shape the direction of their cognitive thinking about new ideas to accomplish non-routine tasks.

2.2 | The social identity approach and organizational identification

According to the social identity theory, people's perception and behaviour can be shaped by their social identification, which describes a feeling of being one with a social group and the value this group membership has to the individual (Ashforth & Mael, 1989; Tajfel, 1981). When individuals identify with a group, their self-perception can be formed by the group and the shared attributes that define the group, rather than by their unique individual characteristics (Turner, 1982, 1991). They will internalize their group's norms, values and goals and strive towards maintaining a positive evaluation of the group.

Following a social identity approach, organizational identification captures the extent of an employee's perception of oneness with his or her organization. Employees who strongly identify with their organization feel stronger psychological attachment to their organization than employees with low levels of organizational identification.

2.3 | Organizational identification as moderator for the job non-routinization–creativity relationship

Connecting organizational identification with creativity, Haslam et al. (2013) describe that 'when social identity is salient, creative behavior and evaluation are more likely to be informed by group values, preferences, and norms' (p. 3). Hence, when an employee thinks of himself as a member of a particular organization, he or she will more likely suggest ideas and evaluate other people's ideas in ways that reflect implicit or explicit guidelines and preferences of his organization. On the contrary, when an employee categorizes himself based on his personal identity, those aspects of himself are salient, which make him different from other people around him (Turner, 1985). In the latter case, the employee's work is informed by individual differences to others, rather than similarities. In this

scenario, his or her ideas may not match other's definition of creativity (Haslam et al., 2013), resulting in less recognition and promotion of suggested creative ideas and hence less creative output.

Although creative outputs (i.e., pictures) are rated as more creative when they conform to group norms, this is only the case as long as social identification is high. When personal identity is high, however, the opposite is true: ideas that deviate from a group norm are judged as more creative (Adarves-Yorno, Postmes, & Haslam, 2006). In a similar notion, previous work outlined that organizations should balance personal and social identification, allowing for artistic freedom and enabling idea realization through cooperation (Round & Styhre, 2017). Though differing regarding the centrality of personal identification for creativity, Round and Styhre (2007) as well as Haslam et al. (2013) describe the essential support function of organizational identification in the idea realization phase. Studies showed that when people identify with their group, they are more likely to stick to creative processes even in face of difficulty, compared with individuals who do not identify with their group—those people tend to give up (Hirst, Van Dick, & Van Knippenberg, 2009). Hence, for the enduring promotion of ideas, and the final realization of them, the social group is of essential importance. Based on this, we propose:

H1. Organizational identification moderates the relationship between job non-routinization and creativity. When the level of organizational identification is high, job non-routinization is more positively related to creativity than when the level of organizational identification is low.

After describing the importance of organizational identification for creativity, we will now move on to the question of how high levels of organizational identification can be attained through leadership.

2.4 | The role of transformational leadership for organizational identification

Many forms of leadership can impact organizational identification. At least two core qualities of transformational leaders strongly relate to creating organizational identification among followers, and we thus consider transformational leadership as matching the social identity context extremely well. The first quality is the articulation of a clear and shared vision (Avolio, 1999; Podsakoff et al., 1990). This shared vision is something all group members have in common. This commonality again gives rise to feelings of similarity among followers, which is essential for the perception of a shared social identity (Turner, 1985).

The second quality of transformational leaders in the context of organizational identification is fostering the acceptance of organizational goals (Podsakoff et al., 1990). They do so for instance by developing a team attitude and spirit among employees and encouraging employees to be 'team players'. The acceptance of organizational goals is important in two ways. First, it makes organizational identity salient, as people listen to, reflect on and finally accept organizational goals, not just their own goals. And second, it can lead to the

internalization of organizational goals, which makes working towards these goals become an act of self-expression (cf. Kark & Shamir, 2002). In this case, organizational goals become individual goals and give way for high levels of organizational identification. Previous research has confirmed that transformational leadership can positively impact organizational identification (e.g., Dvir, Eden, Avolio, & Shamir, 2002), and we thus expect to find that:

H2. Transformational leadership is positively related to follower organizational identification.

Besides the expected positive effect of transformational leadership on organizational identification, transformational leaders provide helpful direct guidance for followers in jobs with high job non-routinization beyond creating shared social identity.

2.5 | Transformational leadership as moderator of the link between non-routinization and creativity

Creativity includes two essential elements: ideas must be novel and appropriate/useful (Amabile, 1988). However, job non-routinization can only account for the novelty aspect of creativity because it implies that new tasks are being approached and new methods are being used (cf. Parasuraman & Alutto, 1981). A specific reference regarding what the creative output should be like in order to be appropriate/useful is missing in job non-routinization. Transformational leaders may fill this gap in several ways.

Transformational leaders give very explicit guidance regarding what kind of creative outputs is appropriate/useful. They do so in at least two ways. First, transformational leaders communicate a shared vision (Podsakoff et al., 1990). When hearing about the leader's vision, followers can gain a clear picture of what kind of solutions and suggestions are expected from them—helping them understand in which way they should transfer their non-routine tasks into creative outcomes. Second, transformational leaders act as role models for creativity, providing an explicit learning experience regarding what

kind of ideas and outcomes might rather be considered appropriate/useful in the organization. Concluding, individuals experiencing job non-routinization, and are led by a transformational leader, come into a position to create both novel and appropriate/useful ideas and hence be creative:

H3. Transformational leadership moderates the relationship between job non-routinization and creativity. When the level of transformational leadership is high, job non-routinization is more positively related to creativity than when transformational leadership is low.

2.6 | Organizational identification as mediator underlying the moderation of transformational leadership on the link between non-routinization and creativity

Recapitulating our previous arguments, it can be said that job non-routinization is important yet insufficient for creativity and that leaders can play a vital role in rising creativity levels for workers in non-routine jobs. They may do so (a) directly, by sharing a common vision and acting as a role model, as well as (b) indirectly, by increasing feelings of organizational identification in followers (e.g., Dvir et al., 2002). Organizational identification is essential for turning job non-routinization into creative outputs because individuals sharing the same social identity consider the same ideas as novel and useful, which increases the likelihood that novel ideas are voiced and survive in the long run (Haslam et al., 2013). Thus, we argue that social processes in the form of leadership and identification are essential for creativity in the following way:

H4. Organizational identification mediates the moderation effect of transformational leadership on the relationship between job non-routinization and creativity.

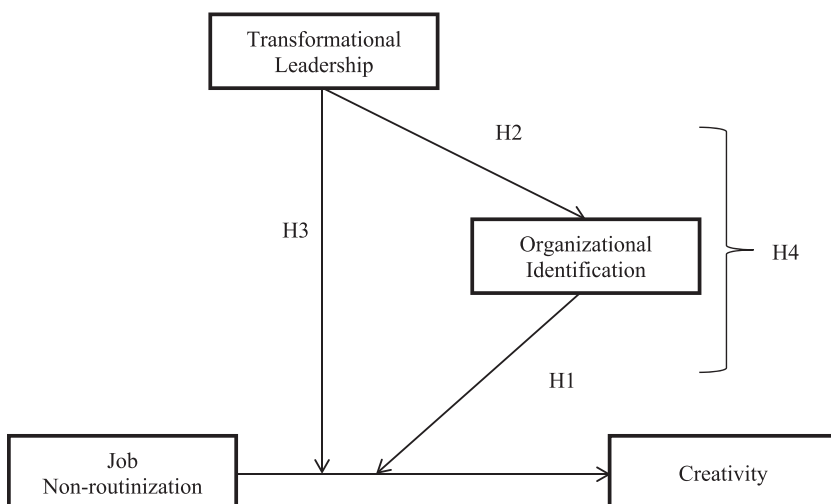The conceptual model is shown in Figure 1.

FIGURE 1 Conceptual model

3 | METHOD

3.1 | Sample

The study was conducted with 212 employees from China. All participants were registered at a part-time degree programme in a university in eastern China, while working in a broad range of different industries. We explained our research purpose and procedures to 240 students and ensured them of confidentiality and anonymity. As a result, 212 participants completed the survey voluntarily and without incentives during class hours, with a participation rate of 88.33 per cent.[1] They were asked to evaluate their job non-routinization, transformational leadership, organizational identification and some control variables. They were also asked to provide contact information of their direct supervisors. Eight weeks later, these 212 supervisors were contacted via mail to rate the focal employee's creativity. We received 173 completed questionnaires from supervisors, and the response rate is 81.60 per cent.

Out of the 173 employees, 57.89 per cent were male. Participants were aged between 24 and 50 years, and the average age was 30.44 years (SD = 4.52). In the mean, they had been working in their organizations for 4.87 years (SD = 3.37), whereas some employees just joined the organization and others were working in the organization for up to 16 years. Leaders and followers worked as dyads between a few months and up to 15 years (M = 2.84, SD = 2.46). Most of the participants held a bachelor's degree (60.59 per cent) or higher (33.53 per cent), whereas only 10 participants graduated from a technical school or below (5.88 per cent).

3.2 | Measurement

All scales were translated into Chinese, following the procedure of back-translation suggested by Brislin (1980). Unless otherwise noted, all the items were rated on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

3.2.1 | Job non-routinization

We measured job non-routinization with eight items adopted from the task type scale used by Jehn (1995), which assesses the extent to which one's work requires the use of varying skills, and the demands are non-routine. A sample item is 'I encounter a lot of variety in my normal working day'.

3.2.2 | Transformational leadership

We measured transformational leadership with 11 items adopted from Podsakoff et al. (1990), assessing the three key dimensions of leader transformational behaviour, namely, articulating a vision (a sample item is 'my leader is always seeking new opportunities for the organization'), acting as a role model (a sample item is 'my leader provides a good model for me to follow') and fostering the acceptance of organizational goals (a sample item is 'my leader fosters collaboration among subordinates'). Because these three dimensions are highly correlated, we combined them into a single transformational leadership score.

3.2.3 | Organizational identification

We measured organizational identification with five items from a scale developed by Mael and Ashforth (1992). These items assess the extent to which employees identify with their organizations. A sample item is 'The organization's successes are my successes'.

3.2.4 | Creativity

We used supervisory ratings on four items from the Tierney, Farmer and Graen's (1999) scale to measure employee creativity. This short-version scale has been validated in Chinese with good reliability and validity (Farmer, Tierney, & Kung-McIntyre, 2003). A sample item is 'The employee seeks new ideas and ways to solve problems'. Items in this instrument measure the generation of new and useful ideas, rather than other aspects of creativity (idea elaboration, idea championing and idea implementation) (Perry-Smith & Mannucci, 2017).

3.2.5 | Control variables

We controlled for main demographic variables of employees including gender (0 = *male*, 1 = *female*), age, educational level (1 = *high school or technical secondary school*, 2 = *college degree*, 3 = *bachelor's degree*, 4 = *master's degree or above*) and organizational tenure (year). We also controlled for dyadic tenure of working under the supervision of the current leader. Furthermore, we assessed employee proactive personality as a control variable with six items adopted from Bateman and Crant's (1993) scale. Controlling for proactive personality was important because it is related to both perceptions of job autonomy (Fuller, Hester, & Cox, 2010) and employee creativity (Sears, Shen, & Zhang, 2018). Therefore, we controlled for proactive personality to make sure that our results are not systematically biased.

All items of these scales are listed in Appendix A.

4 | RESULTS

4.1 | Reliability and validity of measurements

We used SPSS version 22.0 and Mplus version 7.0 (Muthén & Muthén, 1998–2012) to test the reliability and validity of the scales we used in this study. As shown in Table 1, Cronbach's α values and composite reliability of all the six scales were greater than .8, thereby

TABLE 1   Reliability and convergent validity

Scale	Number of items	Factor loading	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
Job non-routinization	8	0.585–0.925	.91	0.91	0.57
Transformational leadership	11	0.786–0.896	.96	0.96	0.69
Organizational identification	5	0.775–0.910	.93	0.93	0.72
Creativity	4	0.703–0.870	.86	0.86	0.61
Proactive personality	6	0.543–0.728	.82	0.82	0.44

indicating that these variables have good reliability. In addition, loading values and average variance extraction (AVE) values revealed good convergent validity of these measures.

Confirmatory factor analysis (CFA) was conducted in order to ensure the distinctiveness of our four key variables—job non-routinization, transformational leadership, organizational identification and creativity. There are several indicators to determine model fit. Specifically, the chi-squared value tests for exact model fit should be non-significant to indicate good model fit (i.e., Schermelleh-Engel, Moosbrugger, & Müller, 2003). The comparative fit index (CFI) measures incremental fit, whereby values higher than .95 represent acceptable model fit (Yu, 2002). The root mean square error of approximation (RMSEA) tests for approximate data fit. Values smaller than .08 are considered good (Hooper, Coughlan, & Mullen, 2008; Schermelleh-Engel et al., 2003). Standardized root mean square residual (SRMR) is a measure that provides an overall evaluation of the residuals, and the traditional cut-off criterion was smaller than .08 (Yu, 2002).

CFA results illustrate that the expected four-factor structure did only partially achieve acceptable fit (χ^2 = 981.01, df = 344, CFI = .85, SRMR = .07, RMSEA = .10). The CFI value was likely low due to the large amount of indicators included in the model, resulting in over-identified factors with increases in standard errors and instable parameter estimates (Little, Cunningham, Shahar, & Widaman, 2002). When we reduced the number of items included in each of the four factors to three by aggregating multiple items into parcels, the four-factor structure resulted in a good fit (χ^2 = 76.15, df = 48, CFI = .98, SRMR = .05, RMSEA = .06). To further examine whether a more parsimonious model could achieve equivalent or better fit, we compared the expected model with alternative nested models in which either two or three or all four factors were combined into a single one. Chi-squared difference tests showed that the expected model fitted significantly better than all plausible nested models. An overview of the results of the different CFA models can be found in Table 2.

4.2 | Descriptive statistics

Means, standard deviations, root mean square of AVEs and correlation coefficients of all study variables can be found in Table 3. As can be seen, the root mean square of the AVE was greater than the

correlation coefficients of the variables in each case. This further illustrates that the measurements used in this study have good discriminant validity.

4.3 | Hypotheses testing

To test Hypothesis 1, that organizational identification moderates the relationship between job non-routinization and creativity, we followed the procedure of moderated hierarchical regressions suggested by Aiken, West and Reno (1992). We first entered all control variables into the model in Step I, then entered non-routinization and organizational identification as two main variables in Step II and finally entered the interaction term in Step III. We standardized the two main variables before computing the interaction term to ease the interpretation of regression coefficients as well as to reduce potential effects caused by multicollinearity between main variables and the interaction term (Cohen, Cohen, West, & Aiken, 2003).

In Table 4, we display results of the regression analysis. In the second step of our regression results, we see that the relationship between job non-routinization and creativity was not significant (β = .08, p = .11).

More importantly and as hypothesized, the interaction term between job non-routinization and organizational identification in Step III predicted a significant amount of incremental variance (ΔR^2 = .04, p < .01) and suggested a significant positive interaction (β = .21, p < .01). To facilitate interpretation of the moderation effect, we plotted simple slopes for the relationship between non-routinization and creativity at one standard deviation above and below the mean of organizational identification (Aiken et al., 1992). As indicated in Figure 2, there was a significant and positive relationship between job non-routinization and creativity when organizational identification was high (β = .39, p < .01). When organizational identification was low, there was little or no relationship between job non-routinization and creativity (β = −.04, ns). Therefore, organizational identification had a moderating effect on the relationship between job non-routinization and creativity, as can be seen in the plot as well. Thus, the results support Hypothesis 1.

To test Hypothesis 2, we regressed organizational identification on transformational leadership including all control variables (see Table 4, organizational identification). Supporting Hypothesis

TABLE 2 Comparisons of confirmatory factor analysis models

	df	χ^2	$\Delta\chi^2$	CFI	SRMR	RMSEA
Expected four-factor model[a]	48	76.15		0.98	0.05	0.06
Job non-routinization and transformational leadership combined[b1]	51	402.98	336.83**	0.74	0.14	0.20
Job non-routinization and organizational identification combined[b2]	51	477.08	400.93**	0.69	0.15	0.22
Job non-routinization and creativity combined[b3]	51	305.40	229.25**	0.81	0.13	0.17
Transformational leadership and organizational identification combined[b4]	51	493.88	417.73**	0.68	0.16	0.22
Transformational leadership and creativity combined[b5]	51	307.09	230.94**	0.81	0.13	0.17
Organizational identification and creativity combined[b6]	51	301.12	224.93**	0.82	0.13	0.17
Job non-routinization, transformational leadership and organizational identification combined[c1]	53	798.92	722.77**	0.45	0.20	0.29
Job non-routinization, transformational leadership and creativity combined[c2]	53	629.84	553.69**	0.58	0.18	0.25
Job non-routinization, organizational identification and creativity combined[c3]	53	701.83	625.68**	0.53	0.19	0.27
Transformational leadership, organizational identification and creativity combined[c4]	53	719.22	643.07**	0.51	0.20	0.27
All four factors combined[d]	54	1020.91	944.76**	0.29	0.22	0.32

Note. $\Delta\chi^2$ = change of χ^2 compared with the four-factor model.
Abbreviations: CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.
[a]Job non-routinization; transformational leadership; organizational identification; creativity.
[b1]Job non-routinization and transformational leadership combined; organizational identification; creativity.
[b2]Job non-routinization and organizational identification combined; transformational leadership; creativity.
[b3]Job non-routinization and creativity combined; transformational leadership; organizational identification.
[b4]Transformational leadership and organizational identification combined; job non-routinization; creativity.
[b5]Transformational leadership and creativity combined; job non-routinization; organizational identification.
[b6]Organizational identification and creativity combined; job non-routinization; transformational leadership.
[c1]Job non-routinization, transformational leadership and organizational identification combined; creativity.
[c2]Job non-routinization, transformational leadership and creativity combined; organizational identification.
[c3]Job non-routinization, organizational identification and creativity combined; transformational leadership.
[c4]Transformational leadership, organizational identification and creativity combined; job non-routinization.
[d]Job non-routinization, transformational leadership, organizational identification and creativity combined.
**$p < .01$.

TABLE 3 Means, standard deviations and correlations

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Creativity	4.90	1.01	(0.78)								
2. Job non-routinization	4.58	1.00	0.16*	(0.75)							
3. Transformational leadership	4.85	1.08	0.18*	0.19*	(0.83)						
4. Organizational identification	4.32	1.27	0.20*	0.23**	0.22**	(0.85)					
5. Proactive personality	4.87	0.72	0.20**	0.30**	−0.06	0.09	(0.66)				
6. Gender	0.43	0.51	0.02	−0.15+	0.13+	0.07	−0.06				
7. Age	30.44	3.89	−0.01	−0.04	0.01	0.22**	−0.02	−0.14+			
8. Educational level	3.28	0.58	0.20*	0.02	0.09	−0.06	0.03	0.07	−0.15+		
9. Organizational tenure	4.87	3.37	0.07	−0.09	0.07	0.11	−0.02	−0.03	0.50**	−0.13	
10. Dyadic tenure	2.84	2.46	−0.01	0.03	−0.04	0.04	0.05	−0.02	0.43**	−0.14+	0.52**

Note. $N = 173$. Values in parentheses (which are marked in bold) on the diagonal are the square roots of average variance extracted of each scale.
*$p < .05$. **$p < .01$. +$.05 < p < .10$ (marginally significant).

TABLE 4 Hierarchical linear regression analysis on organizational identification (as mediator) and creativity (as dependent variable) (standardized betas)

	Organizational identification		Creativity							
	Step 1	Step2	Step I	Step II	Step III	Step1	Step2	Step3	Step 4	Step 5
Gender	0.11	0.08	0.03	0.02	0.03	0.03	0.02	0.02	0.01	0.01
Age	0.27**	0.27**	0.04	−0.01	−0.03	0.04	0.04	0.05	0.01	−0.02
Educational level	−0.01	−0.03	0.15+	0.15+	0.13+	0.15+	0.13+	0.14+	0.14+	0.12
Organizational tenure	−0.02	−0.05	0.12	0.14	0.15	0.12	0.12	0.11	0.11	0.13
Dyadic tenure	−0.08	−0.06	−0.03	−0.02	−0.02	−0.03	−0.02	−0.02	−0.01	−0.00
Proactive personality	0.11	0.11	0.23**	0.19*	0.18*	0.23**	0.21**	0.16*	0.16*	0.18*
JNR				0.08	0.13		0.09	0.14	0.10	0.12
OI				0.18*	0.15+				0.15+	0.13
JNR × OI					0.21**					0.18*
TL		0.21**					0.15+	0.13	0.11	0.11
JNR × TL								0.16*	0.15+	0.06
R^2	0.07+	0.11**	0.09*	0.13**	0.17**	0.09*	0.12**	0.15**	0.16**	0.19**
$F(df1, df2)$	1.92 (6, 158)	2.81 (7, 157)	2.57 (6, 158)	2.96 (8, 156)	3.60 (9, 155)	2.57 (6, 158)	2.49 (8, 156)	2.93 (9, 155)	3.01 (10, 154)	3.20 (11, 153)
ΔR^2		0.04**		0.04*	0.04**		0.03*	0.02*	0.02+	0.02*
$\Delta F(df1, df2)$		7.63 (1, 157)		3.85 (2, 156)	7.67 (1, 155)		3.04 (2, 156)	4.00 (1, 155)	3.42 (1, 154)	4.34 (1, 153)

Note. N = 173. The 'organizational identification' regression part was used to test hypothesis 2. Hypothesis 2 was supported by the significant regression coefficient of 'TL'. Steps I, II and III in 'creativity' regression part were used to test Hypothesis 1. Hypothesis 1 was supported by the significant regression coefficient of 'JNR × OI'. Steps 1, 2 and 3 in 'creativity' regression part were used to test Hypothesis 3. Hypothesis 3 was supported by the significant regression coefficient of 'JNR × TL'. Steps 3, 4 and 5 in 'creativity' regression part were used to test Hypothesis 4. Comparing Step 3 and Step 5, there is an obvious decrease of the regression coefficients of 'JNR × TL'. Therefore, Hypothesis 4 received preliminary support.
Abbreviations: JNR, job non-routinization; OI, organizational identification; TL, transformational leadership.
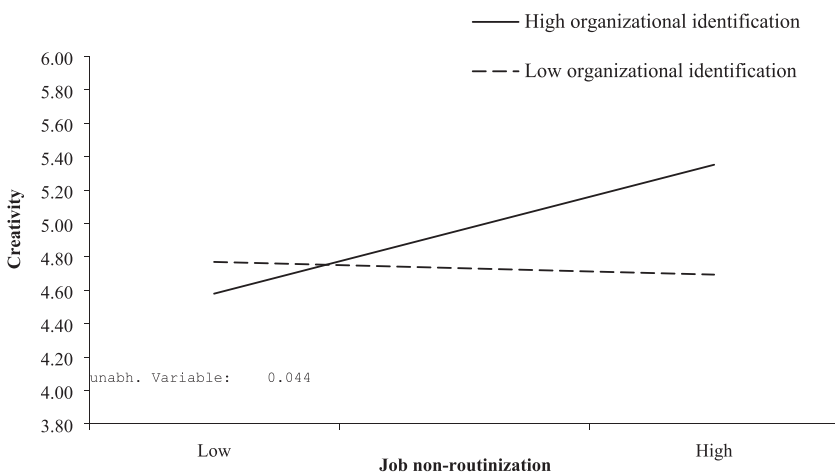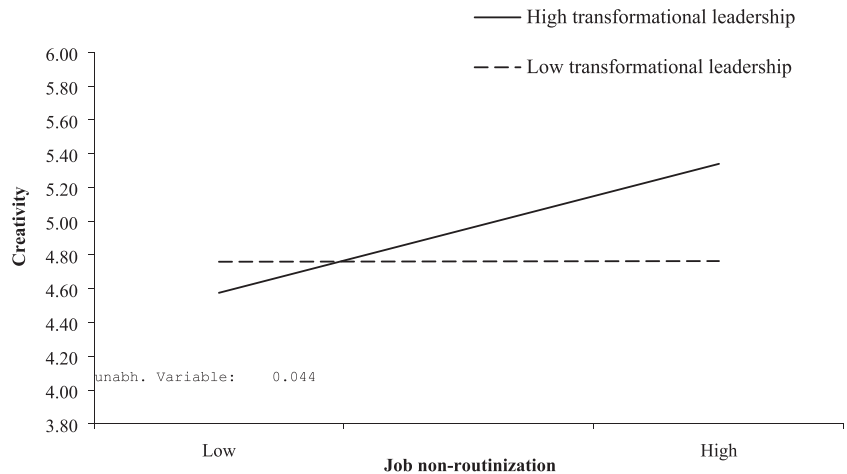*$p < 0.05$. **$p < .01$. +$.05 < p < .10$ (marginally significant).

FIGURE 2 The interactive effect of job non-routinization and organizational identification on creativity

2, transformational leadership and organizational identification were positively related ($\beta = .21$, $p < .01$).

We further tested Hypothesis 3 to examine whether transformational leadership moderated the relationship between job non-routinization and creativity. Moderated regression results (see Table 4, creativity) indicated a significant interaction between job non-routinization and transformational leadership in predicting creativity ($\beta = .16$, $\Delta R^2 = .02$, $p < .05$). As indicated in Figure 3, the relationship between job non-routinization and creativity was significant and positive when transformational leadership was high ($\beta = .39$, $p < .01$), whereas the relationship did not differ significantly from zero when transformational leadership was low ($\beta = −.00$, ns). Taken together, Hypothesis 3 was supported.

To test Hypothesis 4, that organizational identification mediates the moderating effect of transformational leadership on the relationship between job non-routinization and creativity, we followed the moderated path analysis procedures recommended by Edwards and Lambert (2007). Hypothesis 4 required us to demonstrate that the moderating effect of transformational leadership would become significantly smaller when the moderating effect of organizational identification was accounted for. In line with our prediction, the interaction term of job non-routinization and organizational identification was significant (β = .16, p < .05), and the interaction term of job non-routinization and transformational leadership turned to be non-significant (β = .06, ns) when the interaction term of job non-routinization and organizational identification was added to the model.

To examine whether this reduction was statistically significant, we calculated the size of the indirect moderation effect of transformational leadership through organizational identification, using a bootstrap procedure (Hayes, 2015). The bootstrap procedure generates a 95 per cent confidence interval for the product with repeatedly estimated values of the product using bootstrap samples. One advantage of bootstrapping is that it does not depend on the assumption of normal distribution. We drew 5,000 random samples from the full sample. As a result, the size of the indirect effect was .07 and the corrected 95 per cent confidence interval was [.01, .16]. As the confidence interval did not include a change in algebraic sign, we can conclude that the mediated moderation effect was significant. In sum, these results support Hypothesis 4, that organizational identification mediates the moderating effect of transformational leadership on the relationship between job non-routinization and creativity.

4.4 | Supplementary analysis

Besides the above findings, we explored whether there was a curvilinear relationship between job non-routinization and creativity. We did so, because job non-routinization may have the potential to increase employee creativity, while at the same time, according to the 'too-much-of-a-good-thing' effect, this relationship may not be linear.

Specifically, the relationship between job non-routinization and creativity may be inverted U-shaped, so that low to moderate levels of job non-routinization evoke employee's cognitive thinking, which could benefit creativity, but moderate to high levels of job non-routinization could make employees feel overly challenged and stressed out, leaving less cognitive resource for creativity.

We conducted a hierarchical regression to test this complex relationship. In the regression, control variables were entered at Step 1, followed by job non-routinization in Step 2 and the squared term of job non-routinization in Step 3. As can be seen in the regression results reported in Table 5, the curvilinear relationship between job non-routinization and creativity was not supported due to the lack of significance of the regression coefficient of the quadratic term (β = .04, p = .61, ns). Furthermore, unexpectedly, we found that the trend for the curvilinear relationship is U-shaped instead of reversed U-shaped because the regression coefficients for both job non-routinization term and the quadratic term were positive.

5 | DISCUSSION

In this paper, we found that transformational leadership positively impacts the relationship between job non-routinization and creativity by increasing feelings of organizational identification in followers. We thus conclude that leaders play a vital role in determining whether or not rising levels of job non-routinization can be used to produce creative outcomes. Their key leadership task in this case is to create feelings of a shared social identity with other organizational members.

5.1 | Contributions

We contribute to the creativity and routinization literature by exploring under which conditions non-routinization positively relates to creativity. It is important to identify boundary conditions and moderators of the relationship between job non-routinization and creativity because previous findings on routinization and creativity were mixed

TABLE 5 Results of curvilinear regression analyses with creativity as dependent variable (standardized betas)

	Creativity		
	Step 1	Step 2	Step 3
Gender	0.03	0.04	0.04
Age	0.04	0.04	0.03
Educational level	0.15+	0.14+	0.14+
Organizational tenure	0.12	0.14	0.14
Dyadic tenure	−0.03	−0.04	−0.04
Proactive personality	0.23**	0.19*	0.19*
JNR		0.13	0.15+
JNR × JNR			0.04
R^2	0.09*	0.10*	0.11*
$F(df1, df2)$	2.57 (6, 158)	2.59 (7, 157)	2.29 (8, 156)
ΔR^2		0.02	0.00
$\Delta F(df1, df2)$		2.56 (1, 157)	0.26 (1, 156)

Note. N = 173.

Abbreviation: JNR, job non-routinization.

$*p < .05.$ $**p < .01.$ $^{+}.05 < p < .10$ (marginally significant).

(Chae & Choi, 2019; Choi et al., 2009; Ohly et al., 2006). We contribute to understanding the non-routinization–creativity relationship in two ways: first is by providing a holistic model to explore the job non-routinization–creativity relationship, respecting multiple actors, and second is by identifying the curvilinear relationship between job non-routinization and creativity. By showing that the relationship between both is U-shaped, we can confirm both types of previous findings: low standardization (equaling high levels of non-routinization) (Choi et al., 2009) as well as high levels of routine (equaling small degrees of non-routinization) (Chae & Choi, 2019; Ohly et al., 2006) were associated with high levels of creativity. In this way, we contribute to closing the gap between seemingly contradictory previous findings.

A potential explanation for this finding is that with low levels of job non-routinization, individuals can focus all their free cognitive resources on the limited areas of work that allow for creativity and thereby achieve good results. Furthermore, individuals with high levels of job non-routineness can use all their energy and resources on developing creative outcomes. However, individuals who work with medium levels of job non-routinization may be confronted with the challenge of having to switch between tasks that require creativity and others that do not. It might therefore be harder for these individuals to deliberately create time and space for creative work, while having to finish up routine tasks.

We contribute to leadership research by deepening the understanding of circumstances under which leadership, and especially transformational leadership, can have a positive impact on follower creativity. Previous studies explored the relationship between transformational leadership and follower creativity and have identified several moderators and mediators (e.g., Jaiswal & Dhar, 2016; Zhang, Sun, Jiang, & Zhang, 2019; for an overview, see Hughes, Lee, Tian, Newman, & Legood, 2018). However, findings regarding the direct impact of transformational leadership on creativity were mixed (Koh,

Lee, & Joshi, 2019). One potential reason for these inconsistencies is the nature of the task, which was ignored in most studies and may have varied largely (Herrmann & Felfe, 2013). Hence, the importance of job non-routinization becomes evident. It can be assumed that the extent to which people experience job non-routinization determines whether they consider creativity as necessary and important for success or not. Without the necessity to be creative, the impact transformational leaders can have on follower creativity is clearly limited. Our contribution to leadership research thus lies in showing the relevance of job non-routinization when exploring relationships between leadership and creativity, adding to previous work on task novelty (Herrmann & Felfe, 2013).

We contribute to transformational leadership research by exploring one mechanism, namely, organizational identification, through which transformational leaders influence employees. In their meta-analysis, Koh et al. (2019) reviewed six theoretical frameworks to understand the mechanisms linking transformational leadership with creativity. It is interesting to note that three of those six refer to identity-based theories: social identity theory, role identification and expectation theory and, finally, relational identification theory. The specific mechanisms reviewed for these theories focused on identification with the leader, identification with innovation climate and creative identity. Organizational identification was not considered, though, which is why our work adds to this literature.

We further contribute to research and practice by collecting data from working professionals in China. We cannot assume that findings in Western samples translate to other regions of the world, because as we know since the GLOBE studies, employees rate leader qualities differently around the world (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Hence, our finding that shared social identity was important for creativity among working professionals in China is meaningful because it pushes our understanding beyond Western

societies. This finding is also in line with a few existing studies (e.g., Liu, Zhang, Liao, Hao, & Mao, 2016), and we thus conclude that creating a shared social identity, whether in China or in Western cultures, is a competitive advantage when it comes to creativity. We also conclude that shared social identity should be even more important when working in teams across countries and cultures. For example, Earley and Mosakowski (2000) found that over time, teams that were highly heterogeneous on national culture performed better and were more satisfied, than teams only moderately heterogeneous. More importantly, a common identity created in these highly diverse teams mediated this effect. Cramton and Hinds (2004) also concluded that social identity was a key component in internationally distributed teams and suggested that teams with an attitude of *mutual positive distinctiveness* are more likely to learn from subgroup differences and succeed.

Lastly, we contribute to practice by showing that it is an important task for leaders to create a shared social identity in times of constant change, where more and more employees are confronted with low levels of routine in their everyday work life (Reijnders & de Vries, 2018). It is through this shared social identity that followers use a shared frame of reference to *suggest* new ideas and approaches, that other employees *judge* the value of this idea using the same frame of reference. Shared social identity will help employees *agree* on what is creative and push new ideas to make them survive in the long run (Haslam, Oakes, Reynolds, & Turner, 1999).

5.2 | Limitations and future research

Despite our solid research design (e.g., mixture of self-rated and supervisor-rated data, as well as a time-lagged design for data collection to avoid common method bias and increase the robustness of findings; Ng & Feldman, 2012), some parts of the data collection were still cross-sectional and thus limited regarding claims of causality. Specifically, transformational leadership and organizational identification were rated at the same time, potentially allowing for reverse causation. Even if—from a leader–member exchange (LMX) perspective—a bidirectional relationship between leaders' behaviour and followers' identification is not unlikely, we do not think that this seriously impairs the validity of our conclusions.

Further, to reduce the risk of inflated relationships between concepts that were collected in the same survey at the same time, we followed the methodological recommendations of Podsakoff, MacKenzie, Lee and Podsakoff (2003). For example, before the survey was conducted, we explained the purpose of our study and ensured confidentiality and anonymity to the participants and we followed the voluntary participation principle. We also adopted validated scales and tested their factor structure after we got the data, and results of factor analysis demonstrated that common method variance is not an issue for the present study.

Another limitation of this study is that we used a leader-rated measure of follower creativity. As has been explained above, the advantage of this rating method is that it reduces common method bias, but it has some disadvantages too. First, leaders may differ with regard to their rating styles, which is why two followers who are similarly creative may not be rated similarly high in creativity because one leader may imply stricter criteria than the other. Second, according to the LMX theory, leaders usually build various one-on-one relationships with their followers (Graen & Uhl-Bien, 1995). The leader–follower relationship may bias a leader's grading of the follower's creativity, such that leaders may tend to rate those followers as more creative with which leaders have a more positive relationship. Therefore, we advocate future research to use objective indicators of employee creativity, collect both self-rated and other-rated data to measure employee creativity or collect employee creativity on a team basis and then conduct a multilevel data analysis, controlling for leader's rating bias and LMX.

Although we consider the Chinese sample as a strength of our study because it adds to previous Western samples, it may be perceived as a limitation as well. The fact that our sample comprises only Chinese employees may evoke the question to which degree our findings are generalizable due to cultural difference between Western and Eastern countries. For example, two cultural issues may relate to our research—power distance and collectivism. Chinese participants in the present study represent higher levels of power distance and collectivism (Hofstede, 1993), which has been argued to influence creativity (Erez & Nouri, 2010). Therefore, future research is advocated to conduct studies in various cultures. Despite this concern, however, the participants came from different industries, companies, age groups, education levels and tenure. The heterogeneity of the sample can, to some extent, help increase the generalizability of our findings.

In addition, integrating past research about self-construals (Singelis, 1994), people in societies with collectivistic cultures are more prone to induce an interdependent (collectivistic) self-construal, whereas people in individualistic cultures are more prone to induce an independent (individualistic) self-construal (see Bechtoldt, Choi, & Nijstad, 2012). Individuals with interdependent self-construals advocate the importance of relatedness and interdependence, and thus, it is easy for them to have high levels of organizational identification. In our study, high organizational identification benefitted creativity of employees with non-routine jobs. This finding is different from findings in previous literature that interdependent self-construals relate to poor creativity performance (e.g., Ng, 2003). These differences raise a very interesting question, that is, when does organizational identification (or collectivistic/interdependent self-construals) benefit or hinder creativity? As has been evidenced by our research, when generating new ideas is required (e.g., when employees undertake non-routine jobs), organizational identification can benefit creativity. However, when generating new ideas is not necessary, organizational identification works as a driver of social pressure for loyalty and conformity to established routines (e.g., Madjar, Greenberg, & Chen, 2011), preventing employees from challenging the status quo by providing creative ideas. We thus advocate more future research on this issue.

A limitation regarding the conclusions we can draw from our study is that we tested our model based on current evaluations of our variables, but we did not test effects of changes. For instance, we do

not know how strong changes in creativity would be if a leader was being trained in transformational leadership or if the nature of tasks changed for employees to be less routine. Change might thus be an interesting avenue for future research.

Another limitation is that we only studied the idea generation phase of creativity. According to Perry-Smith and Mannucci (2017), there are three other phases in creativity—idea elaboration, idea championing and idea implementation. The findings of our study may thus not be suitable for these three phases. However, some results of our research can be generalized to the other phases. For example, Perry-Smith and Mannucci (2017) concluded that idea implementation needs social support, shared vision and understanding. Therefore, transformational leadership might also have positive effect on this phase. Future work may thus focus on exploring the whole creativity process.

Future research should also explore social identity and creativity processes as team dynamics. In teams, not everyone identifies with the organization to the same degree. Researchers could thus explore how these varying levels of identification within a team impact ratings of creativity and creative output. For example, are there subgroups who identify more strongly with the organization and thus push each other's ideas forward while ignoring other teammates' ideas? If so, what consequences would this effect have for creativity in the team? In addition, could the salience of team identification lower creativity at the organizational level, if a different set of values regarding creativity is being used at the team versus organizational level? Furthermore, and as suggested by Family (2003), not only is the evaluation and promotion of ideas a social process, but the generation of ideas can also be more promising if understood as a collective process. In this regard, future research should dive deeper into exploring how organizational identification can support the collective idea generation process for creativity. This is especially interesting for contexts in which there is a high need to balance novelty and conformity, such as in franchise systems (Simon, Allix-Desfautaux, Khelil, & Le Nadant, 2018).

In our study, we found the moderation effect of transformational leadership and organizational identification and tested whether the amount of job non-routinization may work as a moderator with a supplementary data analysis. There may be other variables beyond these two that work together with job non-routinization to influence employee creativity such as employee's personality and other leadership styles. We also encourage future research to explore factors that may work together with job non-routinization to influence employee creativity.

Going one step further, future research should explore the question whether higher levels of creativity as rated by peers actually result in more innovation. Innovative behaviour encompasses more than the creation of novel ideas and includes elements like convincing others, getting support from management and sticking to an idea until it is realized (Lukes & Stephan, 2017; Perry-Smith & Mannucci, 2017). Because all these behaviours need social support, and organizational identification can facilitate social support, one might assume that

beyond creativity, innovative behaviour should be positively impacted by a shared and salient social identity.

6 | CONCLUSION

Social identity is more important than ever because we live in times of continual change where tasks are so diverse that individuals need to think of new ways of approaching and solving them. In this study, we found evidence that identification with the organization, as installed by transformational leaders, helps employees use the freedom they have in non-routine jobs to develop creativity. This finding shows that although creativity may come from the type of the job individuals have, it is essentially a complex process combining the nature of the job and social processes of leadership and identity. Creating a deeper understanding between the freedom to be creative and the need for a salient social identity to be considered creative will be a challenging and interesting pathway in the future of creativity research.

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ENDNOTE

[1] The response rate of employees in this study is very high, which is likely due to contacting our participants personally. The employees in our study were students enrolled in a part-time programme to pursue a degree. We introduced our study to them and handed out questionnaires during class hours. The response rate for supervisors was lower, which was likely due to contacting them by mail and because we contacted them 8 weeks after we received their contact information.

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APPENDIX A

Job non-routinization

1. I encounter a lot of variety in my normal working day.
2. The type of work done in my work unit is fairly consistent, so that people do the same job in the same way most of the time. (R)
3. How much routine is there in your job. (R)
4. To what extent is there a specific 'right way' to do things in your job. (R)
5. To what extent do you feel that you are doing the same thing over and over again. (R)
6. How much does your job include problem solving?
7. In general, how much 'thinking' time do you usually spend trying to solve such specific problems?
8. To what degree does your job include being creative?

Transformational leadership
My leader—

1. Has a clear understanding of where we are going.
2. Paints an interesting picture of the future for our group.
3. Is always seeking new opportunities for the organization.
4. Inspires others with his/her plans for the future.
5. Is able to get others committed to his/her dream.

6. Provides a good model for me to follow.
7. Leads by example.
8. Fosters collaboration among work groups.
9. Encourages employees to be 'team players'.
10. Gets the group to work together for the same goal.
11. Develops a team attitude and sprit among employees.

Organizational identification

1. This organization's successes are my successes.
2. When someone criticizes our organization, it feels like a personal insult.
3. When someone praises this organization, it feels like a personal compliment.
4. I am not interested in what others think about our organization. (R)
5. When I talk about our organization, I usually say 'they' rather than 'we'. (R)

Creativity (supervisor-rated)
This employee—

1. Seeks new ideas and ways to solve problems.
2. Generates ideas revolutionary to the field.
3. Is a good role model for innovation/creativity.
4. Tries new ideas and approaches to problems

Proactive personality

1. Wherever I have been, I have been a powerful force for constructive change.
2. Nothing is more exciting than seeing my ideas turn into reality.
3. If I see something I don't like, I fix it.
4. I excel at identifying opportunities.
5. I am always looking for better way to do things.
6. I enjoy facing and overcoming obstacles in my life.