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A moderated mediation examination of proactive personality on employee creativity : A person-environment fit perspective

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A person-environment fit perspective

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Abstract

Purpose – By integrating proactive perspective and person-environment fit (P-E fit) perspective, this study intends to examine a moderated mediation model of proactive personality to investigate its effects on employee creativity. The current study proposes felt responsibility for change mediates the relationship between proactive personality and employee creativity. The purpose of this paper is to identify core self-evaluation (CSE) and developmental feedback received as personal and situational moderators on the relationship between proactive personality and felt responsibility for change.

Design/methodology/approach – A matched sample from 232 employees and their supervisors of software companies in China was used to test the hypotheses. Hierarchical regression analyses and moderated mediation approach were conducted to examine the proposed model.

Findings – The results indicate that felt responsibility for change mediates the positive relationship between proactive personality and employee creativity. CSE and developmental feedback received positively moderate the relationship between proactive personality and felt responsibility for change. In addition, CSE and developmental feedback received are two moderators in the path from proactive personality to employee creativity via felt responsibility for change such as the indirect relationship between proactive personality and employee creativity through felt responsibility for change is more pronounced when CSE and developmental feedback received are higher rather than lower, respectively.

Research limitations/implications – The paper contributes to creativity literature by identifying felt responsibility for change as the mediator on the relationship between proactive personality and employee creativity. The current study also contributes to proactive perspective and P-E fit theory by investigating the moderating roles of CSE and developmental feedback received on the relationship between proactive personality and felt responsibility for change. Although data were collected from multiple sources to avoid common method variance, the cross-sectional design cannot unequivocally examine the direction of causality in this study.

Originality/value – By examining both mediating and moderating effects, the paper contributes to uncovering the black box in which employees with proactive personality exhibit felt responsibility for change and creativity.

Keywords Core self-evaluation, Developmental feedback received, Employee creativity, Felt responsibility for change, Proactive personality

Paper type Research paper

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Introduction

Creativity, defined as the generation of useful and novel ideas by an individual or a group of individuals working together (Zhou and George, 2001), has become vital to organizational change and innovation in the turbulent global market (Ford, 2002; Gu *et al.*, 2015; Zhou and George, 2001; Zhang *et al.*, in press). Naturally, employee creativity has attracted attention from both scholars and practitioners (Chang *et al.*, 2014). As creativity is a result of distinctive individual features (Chang *et al.*, 2014), extant research has examined the role of personal antecedents on employee creativity (Gong *et al.*, 2012). Proactive personality captures individual natural deposition toward promoting constructive changes (Grant and Ashford, 2008; Gong *et al.*, 2012), and is a precursor to individual creativity (Fuller and Marler, 2009).

Although organizational researchers have studied the positive effect of proactive personality, a narrowly defined dispositional tendency to effect constructive changes (Bateman and Crant, 1993), on employee creativity (Fuller and Marler, 2009), twofold questions are needed to be further investigated. First, Barrick and Mount (2005) advanced the notion that "the primary means through which personality affects work behavior is expected to be through motivation" (p. 365). Although a few studies have studied the mediating mechanism of proactive personality on creativity such as information exchange and trust (Fuller and Marler, 2009; Gong *et al.*, 2012), they overlooked unfolding motivational process from proactive personality to creativity, and these mediators also failed to fully capture the change-oriented attributes of proactive personality (Parker *et al.*, 2010).

Second, considering the possible risks involved in proactive behaviors, individuals may not fully turn their proactivity into proactive actions (Grant and Ashford, 2008; Liang and Gong, 2012). That is, individuals tend to go through a deliberate decision process before engaging in proactive behaviors (Bindl *et al.*, 2012; Grant and Ashford, 2008; Liang and Gong, 2012). Thus, potential personal and situational cues may amplify or diminish the impacts of proactive personality on individual behaviors. Given the importance of understanding the relationship between proactive personality and proactive behaviors (Crant, 2000), few studies have investigated the boundary conditions of proactive personality on employee outcomes (Fuller *et al.*, 2006; Li *et al.*, 2010).

We intend to extend the previous studies in two ways. First, employee proactivity has three key attributes: change oriented, self-starting, and future focussed (Parker *et al.*, 2010). Proactive employees anticipate future outcomes and take actions to accumulate resources for effecting constructive changes (Gong *et al.*, 2012). Thus, we consider felt responsibility for change, defined as an individual's belief that he or she is personally obligated to bring about constructive change (Choi, 2007; Morrison and Phelps, 1999), as a motivational mediator to explain how proactive personality manifests its effects on creativity.

Second, as Parker *et al.*'s (2010) model of proactive motivation suggested, individuals' proactive goal regulation is influenced by "can do" and "reason to" motivational states. This notion is consistent with the view of person-environment fit (P-E fit) theory (Edwards, 1996; Edwards and Van Harrison, 1993), which propose that attitude, behavior, and other individual-level outcomes result not from the person or environment separately, but from the relationship between the two (Edwards, 1996). The previous literature on the P-E fit identified two forms of fit: The first form is demand-ability fit (D-A fit), defined as the extent to which the demands and requirements of the job match the skills and abilities of the person (e.g. self-efficacy) (Edwards and Van Harrison, 1993). The second form, supplies-values fit (S-V fit), is the extent to which the rewards and supplies provided

by the environment match the needs and preferences of the person (e.g. perceived organizational support). These two fits capture the degree to which the person and environment each provides what the other requires (Edwards, 1996).

By integrating the P-E fit perspective and proactive perspective, we suggest that a "can do" perception reflects an individual's perceived capability of engaging in proactive behaviors, and a "reason to" perception reflects the individual's desire to be proactive. Thus, we contend that proactive personality will be more strongly associated with felt responsibility for change when individuals' abilities match job demands and individuals want to exert proactivity. In particular, we propose that core self-evaluation (CSE), defined as an individual's perceived capability, is a "can do" moderator that influences the role of proactive personality on felt responsibility for change. In addition, developmental feedback from supervisors and coworkers signals employee proactive behaviors are supported and therefore fosters employees' desires or "reason to" perceptions to show proactivity (Raub and Liao, 2012). Hence, we propose developmental feedback received has positive effect on the relationship proactive personality and felt responsibility for change.

We make several contributions with this study. First, the current study articulates and tests a model linking proactive personality with employee creativity via felt responsibility for change to identify the motivational processes through which proactive personality manifests itself into creativity. Second, we therefore integrate P-E fit perspective and proactive perspective, and reveal that CSE and developmental feedback received as two boundary conditions for the relationship between proactive personality and felt responsibility for change, respectively. Thirdy, we show the benefits of incorporating the motivational process (i.e. felt responsibility for change) and the boundary conditions (i.e. CSE and developmental feedback received) into one integrated framework when examining the effect of proactive personality on employee creativity. (e.g. Baron and Kenny, 1986; Edwards and Lambert, 2007).

Theory and hypotheses

Proactive personality describes a behavioral tendency to identify and effect change only (Crant, 2000; Liang and Gong, 2012). We expect individuals' self-beliefs about how well they will function in response to specific situations and the self-perceptions about to what extent their responses are supported will elicit different regulatory processes regarding their choices of proactive behaviors. In this study, we intend to investigate the influencing mechanism of proactive personality on employee creativity by integrating proactive perspective and P-E fit perspective. We propose that proactive employees are likely to exert responsibility for change and make creative efforts when they trust their capabilities and receive positive organizational support.

The mediating role of felt responsibility for change

Felt responsibility for change is a malleable psychological state that reflects the extent to which an individual feels personal responsibility for generating improvement continually, rather than performing task well solely according to current standards (Fuller *et al.*, 2006; Parker *et al.*, 2006). As felt responsibility for change is a proactive psychological state that relates to employee initiative (Morrison and Phelps, 1999), we consider felt responsibility for change as a necessary intervention process to better understand why proactive employees are motivated to involve in creativity.

Proactive individuals may have an open, positive orientation toward change (Parker *et al.*, 2006). They excel at identifying growth opportunities and taking initiatives to make

meaningful changes (Crant, 2000). Hence, by putting in effort to improve situations, develop new procedures, and correct problems, proactive employees may generate high degree of responsibility for change to redefine task performance (Fuller *et al.*, 2006).

Drawing from the social capital perspective, proactive individuals will actively construct their social networks to cultivate, maintain, and improve their relationships with supervisors and senior employees (Gong *et al.*, 2012; Liang and Gong, 2012). Having relationships with them has potential benefits for proactive employees, such as access to job-related resources and strategy-related information (Liang and Gong, 2012). Resources availability signals that the organizations believe resources will be used responsibly, as well as the expectation that individuals will engage in change-oriented behaviors. Accordingly, when proactive individuals believe they have the authority to utilize resources in order to solve problems and make work-related improvements, they are more likely to feel personal responsibility for constructive change (Fuller *et al.*, 2006). In addition, access to strategy-related information allows employees to understand how their performance influences product/service quality and profitability at the organization level. This understanding of how one contributes to strategic goals and objectives enhances the individual's feelings of accountability (Fuller *et al.*, 2006).

Employees with responsibility for change tend to feel accountable for their outcomes and have willingness to undertake risk during goal achieving processes (Choi, 2007). They may enhance the motivation to generate new ideas to work procedures, and are more likely to involve in creative efforts and exert creativity (Parker and Collins, 2010). To summarize, felt responsibility for constructive change serves as a conduit through which proactive employees exhibit creativity. Thus, we hypothesize the following:

H1. Felt responsibility for change mediates the positive relationship between proactive personality and employee creativity

"Can do" and "reason to" moderators on the relationship between proactive personality and felt responsibility for change

According to previous studies on proactivity, being proactive often entails risks to the individuals. They would think ahead to evaluate the likely outcomes and anticipate possible futures before engaging in proactive behaviors (Grant and Ashford, 2008; Liang and Gong, 2012). Thus, individuals may not fully materialize their proactivity into proactive actions (Grant and Ashford, 2008; Liang and Gong, 2012). By integrating proactive perspective and the P-E fit perspective, we posit "can do" and "reason to" moderators, i.e., CSE and developmental feedback received, influence the regulation process of proactive employees to exert felt responsibility for change.

The moderating role of CSE

Drawing on the D-A fit perspective of P-E fit research, we examine CSE as a "can do" moderator for relationship that proactive personality has with felt responsibility for change. CSE refers to "fundamental assessments that people make about their worthiness, competence, and capabilities" (Judge *et al.*, 1998, p. 168). Judge and Bono's (2001) meta-analyses study found that CSE is indicated by four personality traits such as generalized self-efficacy, self-esteem, locus of control, and emotional stability. These four dimensions are unique but all fall under a higher order factor labeled CSE (Judge *et al.*, 2003; Judge and Hurst 2007). In line with previous studies on CSE (Kim *et al.*, in press; Zhang *et al.*, in press), we consider the overall CSE trait, rather than the specific CSE traits separately.

In general, high-CSE employees view themselves as capable, competent, and in control of their work (Judge *et al.*, 2004). Employees who see themselves as self-potent, self-worthy, and in control of their lives view situations as consistent with their positive self-images, and pursuing opportunities (Ferris *et al.*, 2012). They can fully actualize their traits in meeting challenging expectations, and thus highly involved in generating change and improvement (Kim *et al.*, in press). Thus, high-CSE employees are more likely to capitalize proactivity to generate felt responsibility for change. In addition, research has indicated that employees with high CSE display more persistence in social network-building activity in order to receive more job-orientated information and resources (Liang and Gong, 2012), which are conductive for proactive employees to form felt responsibility for change (Fuller *et al.*, 2006).

By contrast, employees with low CSE are likely to feel unskilled, less capable of handling challenges, and out of control of their work (Judge *et al.*, 2004). They tend to interpret their environments as containing more threats, anticipate more obstacles and greater psychological strain in their work (Kammeyer-Mueller *et al.*, 2009). Thus, they will be less likely to capitalize their proactivity to generate felt responsibility for change. Hence, we propose:

H2. CSE moderates the relationship between proactive personality and felt responsibility for change such that this relationship is more positive when CSE is higher.

The prior arguments represent an integrated framework in which felt responsibility for change mediates the relationship between proactive personality and creativity and CSE moderate the relationship between proactive personality and felt responsibility for change. Combining both the mediation and moderation hypotheses, we propose a mediated moderation model (Edwards and Lambert, 2007) and provide integrative hypotheses. Specifically, proactive employees with positive CSE are confident in their skills, knowledge, and abilities, and receive more resources or information by using networking behaviors (Liang and Gong, 2012). Thus, they are more likely to be responsible for change and motivated to take advantage of their proactivity to exhibit creativity. On the other hand, those with unfavorable CSE are less likely to turn their proactivity into felt responsibility for change and creativity. Thus, we hypothesize the following:

H3. The indirect relationship between proactive personality and employee creativity through felt responsibility for change is conditional on CSE such that this indirect relationship is more positive when CSE is higher.

The moderating role of developmental feedback received

Drawing on a P-E fit perspective, we suggest that when perceived support provided by the environment match the needs and preferences of the proactive individuals, their proactivity is more likely to emerge. Thus, we consider developmental feedback received as "reason to" moderator that influences the relationship between proactive personality and felt responsibility for change.

Developmental feedback is defined as "the extent to which organizational insiders provide employees with helpful and useful information that enables employees to learn, develop, and make improvements on the job" (Li *et al.*, 2011, p. 2). Developmental feedback has two unique characteristics: it provides useful and helpful information from others and it is future oriented, as developmental feedback recipients are directed toward learning and improvements on their jobs (Li *et al.*, 2011; Zhou, 2003). It is aligned with intrinsic motivation theory (Deci and Ryan, 2000) in that it leverages the

employee's intrinsic motivation toward learning and improvement (Li *et al.*, 2011). When proactive employees receive developmental feedback, their attention is more likely to be directed toward learning and improvement (Zhou and George, 2001), and they are more likely to undertake risk and feel responsibility to make changes.

Moreover, with the goal of effecting constructive changes (Frese and Fay, 2001), proactive employees tend to interact with others to exchange information in order to identify opportunities (Gong *et al.*, 2012). Developmental feedback conveys information and guidance on work role expectations, and enables employees to better understand task expectations (Li *et al.*, 2011). It signals that organizations encourage and support employees to make improvements and change (Zhou and George, 2001), and then increases employees' confidence that their proactivity has a good chance of being supported by organizations (Zhou and George, 2001; Zhou, 2003). Therefore, proactive employees receiving developmental feedback are more likely to capitalize their proactivity to generate felt responsibility for change.

Conversely, a lack of developmental feedback makes employees less likely to access to knowledge and information, and then inhibits the formation of felt responsibility for change (Fuller *et al.*, 2006). Moreover, even if proactive employees have potential disposition to involvement in changes and improvement, less developmental feedback signals that improvements and changes are not expected and supported by organizations. Employees may not capitalize proactivity to generate felt responsibility for change, because low level of perceived organization support restricts cues for trait-relevant expression (Tett and Burnett, 2003). Taken together, we hypothesize the following:

H4. Developmental feedback received moderates the relationship between proactive personality and felt responsibility for change such that this relationship is more positive when developmental feedback received is higher.

According to the notion that developmental feedback received moderates the relation between proactive personality and felt responsibility for change, and considering that felt responsibility for change is positively related to creativity, it is logical to propose that developmental feedback received also moderates the strength of the mediating mechanism for felt responsibility for change in the relation between proactive personality and creativity – a mediated moderation model (Edwards and Lambert, 2007). Specifically, we propose that the positive indirect relationship (via felt responsibility for change) between proactive personality and employee creativity varies as a function of developmental feedback received such that the indirect relationship is stronger when developmental feedback received is higher. Employees receiving developmental feedback may bring out high level of responsibility for change and are more likely to persist in idea generation efforts and exert creativity (Baer and Oldham, 2006; Tett and Burnett, 2003). However, less developmental feedback received may do harm for employees to experience the perception of responsibility for change and come up with new and useful ideas, and then inhibit employee creativity (Zhou and George, 2001). Therefore, we hypothesize the following:

H5. The indirect relationship between proactive personality and employee creativity through felt responsibility for change is conditional on developmental feedback received such that this indirect relationship is more positive when developmental feedback received is higher.

To summarize, we propose our conceptual model (Figure 1).

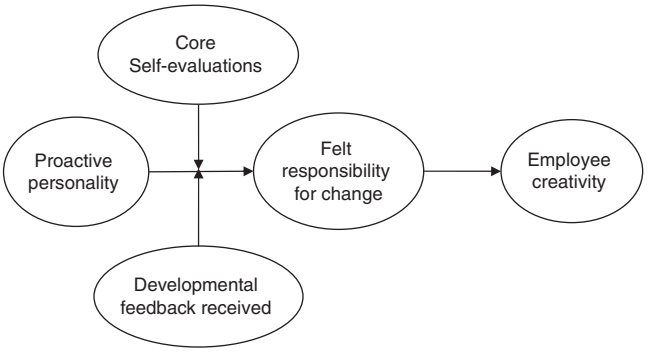

Figure 1.
The conceptual model

Methods

Sample and procedure

Data of the current study were collected from two software companies in South China. Both companies have been established for more than ten years, and focus on research and development to capture competitive advantage. All participants work on professional tasks, such as software research, new product developing and quality control, which required substantial creative ideas. Participants were randomly selected from employee list obtained from the human resource department. First, a structured questionnaire was used to supply data on their demographics, proactive personality, felt responsibility for change, core self-evaluation, and developmental feedback received. A cover letter was attached to each questionnaire to explain the objectives of the survey in order to provide assurances of confidentiality and explain procedures about how to complete and return the questionnaires. Second, in order to reduce the potential common method bias (Podsakoff *et al.*, 2003), we sent questionnaires to their supervisors to obtain employee creativity ratings. Identity numbers were assigned to each employee and supervisor to ensure the matching of their responses. All the participants completed their questionnaires during the work hours. To ensure confidentiality, the participants were instructed to seal the completed questionnaires in the return envelopes and directly return them back to us.

Of 280 employee questionnaires administered, 245 completed questionnaires were returned, resulting in a response rate of 87.5 percent. Finally, we were able to match 232 usable responses from both employee and their immediate supervisors. Of the 232 employee respondents, 73.3 percent were male and 59.2 percent were below 30 years of age. In education, 6.5 percent had finished a high school education or below, 37.5 percent had a college education or below, 49.1 percent had a bachelor's degree, and 6.9 percent had a postgraduate degree or above. They reported an average organizational tenure of 4.63 years of (SD = 3.02).

Measures

A five-point Likert scale was used to measure all main variables. The survey was initially constructed in English and all items were translated into Chinese by conducting translation and back-translation procedures (Brislin, 1986).

Proactive personality. Proactive personality was measured using the Seibert *et al.*'s (1999) ten-item scale, which was the short vision of Bateman and Crant's (1993) proactive personality scale. A sample item was "If I see something I don't like, I fix it." The Cronbach α for the scale was 0.87.

Felt responsibility for change. We adopted Morrison and Phelps' (1999) five-item scale to measure felt responsibility for change. A sample item was "I feel obligated to try to introduce new procedures where appropriate." The Cronbach α for the scale was 0.78.

CSE. A 12-item scale developed by Judge *et al.* (2003) was used to measure CSE. A sample item was "I complete tasks successfully." The Cronbach α for the scale was 0.82.

Developmental feedback received. Developmental feedback received from supervisor and coworkers are measured by Zhou's (2003) three-item scale and Zhou and George's (2001) three-item scale, respectively. Three items measures the developmental feedback received from supervisor. A sample item was "My supervisor provides me with useful information on how to improve my job performance." Another three items measures the developmental feedback received from coworkers. A sample item was "My coworkers provide me with valuable information about how to improve my job performance." The Cronbach α for the scale was 0.82.

Employee creativity. Supervisors assessed each employee's creativity using Baer and Oldham (2006)'s four-item scale, which was derived from Zhou and George (2001)'s employee creativity scale. A sample item was "Is a good source of creative ideas" (Baer and Oldham, 2006). The Cronbach α for the scale was 0.79.

Control variables. We also included employee demographic characteristics in the analysis because previous research has indicated that employee demographic characteristic (e.g. gender, age, education, and organizational tenure) may be associated with employee creativity (e.g. Zhang and Bartol, 2010). Gender was coded as a dummy variable, with 0 as male and 1 as female. Organizational tenure was self-reported in years. Age (1 = below 30, 2 = 30-40, 3 = 40-50, 4 = above 50) and education (1 = High school, 2 = college, 3 = bachelor's degree, 4 = master's or doctoral degree) were also included as control variables.

Results

Confirmatory factor analyses (CFA)

Before testing the relationships among the constructs, we performed the CFA to test the construct validity. We first examined the baseline model that included all main variables. The overall model's χ^2, CFI, RMSEA, and TLI were applied to assess the model fit. Against the baseline model of five factors (Model 1), we examined five alternative models (Models 2-6).

Table I presents the CFA results of the proposed model. As shown in Table I, the nested models exhibited significantly worse fit than the baseline model, as seen from the significant χ^2 difference tests and model fit indices (Liang and Gong, 2012). The baseline model fit the data well ($\chi^2(175) = 381.24$, $p < 0.01$; IFI = 0.94, TLI = 0.91, CFI = 0.94, RMSEA = 0.07) whereas all the alternative models exhibited significantly worse fit than baseline model. Hence, we treated the five variables as independent variables in further analyses.

Descriptive statistics

Means, standard deviations, reliabilities, and intercorrelations of the focal variables are presented in Table II. As shown in Table II, proactive personality was positively correlated with felt responsibility for change ($r = 0.38$, $p < 0.001$) and employee creativity ($r = 0.41$, $p < 0.001$). Moreover, felt responsibility for change was positively correlated with creativity ($r = 0.61$, $p < 0.001$). These bivariate results provided preliminary support for the hypothesized relations.

Models	Factors	χ^2	df	$\triangle\chi^2$	RMSEA	IFI	TLI	CFI
Model 1	Five factors	381.24	175		0.07	0.94	0.91	0.94
Model 2	Four factors: proactive personality and felt responsibility for change combined into one factor	747.24	179	366.00***	0.12	0.83	0.76	0.83
Model 3	Four factors: proactive personality and core Self-evaluations for change combined into one factor	761.97	179	380.73***	0.12	0.83	0.75	0.83
Model 4	Four factors: core Self-evaluations and felt responsibility for change combined into one factor	452.72	179	71.47*	0.08	0.92	0.88	0.92
Model 5	Two factor: employee rated variables combined into one factor	931.51	184	550.27***	0.13	0.78	0.69	0.78
Model 6	One factors: all variables combined into one factor	1067.83	185	686.59***	0.14	0.74	0.64	0.74

Notes: *$p < 0.05$; ***$p < 0.001$

Table I. Comparison of measurement models for study variables

Hypotheses testing

We conducted a series of multiple regression analyses to examine all the hypotheses. We examined the proposed relationships while controlling for gender, age, education, and organizational tenure. We centered proactive personality and CSE with their product terms in order to attenuate multicollinearity in the moderation regressions (Aiken and West, 1991).

We conducted a hierarchical multiple regression analysis to test all the hypotheses. *H1* predicts that felt responsibility for change mediates the positive relationship between proactive personality and employee creativity. We entered the variables into the model in three steps. The control variables were entered first, followed by the independent variable of proactive personality and, finally, the mediator (felt responsibility for change) was entered to test the mediation effect. As shown in Table III, proactive personality was positively related to felt responsibility for change ($\beta = 0.38$, $p < 0.001$) and employee creativity ($\beta = 0.39$, $p < 0.001$). Moreover, when felt responsibility for change was entered, the relationship between proactive personality and employee creativity became less significant ($\beta = 0.18$, $p < 0.001$), whereas felt responsibility for change was still found to be positively related to employee creativity ($\beta = 0.57$, $p < 0.001$). Thus, *H1* was supported.

H2 proposes that CSE moderates the relationship between proactive personality and felt responsibility for change. As shown in Table II, the interaction between proactive personality and CSE was positively related to felt responsibility for change ($\beta = 0.17$, $p < 0.001$). We plotted the interaction effects using Stone and Hollenbeck's (1989) procedure. As shown in Figure 2, the relationship between proactive personality and felt responsibility for change increases as CSE increases. Hence, *H2* received support.

H4 predicts that developmental feedback received moderates the relationship between proactive personality and felt responsibility for change. As shown in Table III, the interaction between proactive personality and developmental feedback received was positively related to felt responsibility for change ($\beta = 0.12$, $p < 0.05$). As shown in Figure 3, the relationship between proactive personality and felt responsibility for change increases as developmental feedback received increases. Thus, *H4* received support.

Table II.
Means, standard deviations, and correlations among all variables

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Proactive personality	3.53	0.41	(0.87)							
2. Felt responsibility for change	3.65	0.48	38***	(0.78)						
3. Core self-evaluations	3.96	0.35	0.01	0.64***	(0.82)					
4. Developmental feedback received	4.09	0.52	0.20**	0.66***	0.53***	(0.82)				
5. Employee creativity	3.91	0.42	0.41***	0.60***	0.23**	0.41***	(0.79)			
6. Gender	0.27	0.44	−0.04	−0.03	−0.06	−0.18**	0.05			
7. Age	1.37	0.59	0.15*	0.11	−0.03	−0.14*	0.18**	−0.02		
8. Education	2.57	0.72	−0.01	−0.05	0.02	−0.07	0.02	0.01	0.01	
9. Organizational tenure	4.63	3.02	0.05	0.22**	0.17**	−0.05	0.04	0.01	0.58***	−0.07

Notes: Cronbach's α's are presented in parentheses. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

	Employee creativity			Felt responsibility for change			
	Model1	Model2	Model3	Model4	Model5	Model6	Model7
Control variables							
Gender	0.06	0.08	0.08	−0.03	−0.02	0.08	0.08*
Age	0.24**	0.17*	0.23***	−0.03	−0.10	0.07	0.05
Education	−0.02	−0.01	0.01	−0.03	−0.02	−0.03	0.01
Organizational tenure	−0.10	−0.08	−0.23***	0.24**	0.26**	0.12*	0.08
Independent variable							
Proactive personality		0.39***	0.18**		0.38***	0.28***	0.30***
Mediator							
Felt responsibility for change			0.57***				
Moderator							
Core Self-evaluations						0.40***	0.43***
Developmental feedback received						0.42***	0.49***
Two way interactions							
Proactive personality × core self-evaluations							0.17***
Proactive personality × developmental feedback received							0.12*
R^2	0.04	0.19	0.46	0.05	0.19	0.67	0.73
R^2 change	0.04*	0.15***	0.26***	0.05*	0.14***	0.48***	0.05***
F	2.56*	10.84***	31.27***	3.17*	10.90***	65.99***	65.46***
F change	2.56*	42.10***	107.82***	3.17*	39.65***	164.34***	21.44***

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table III. Hierarchical regression results

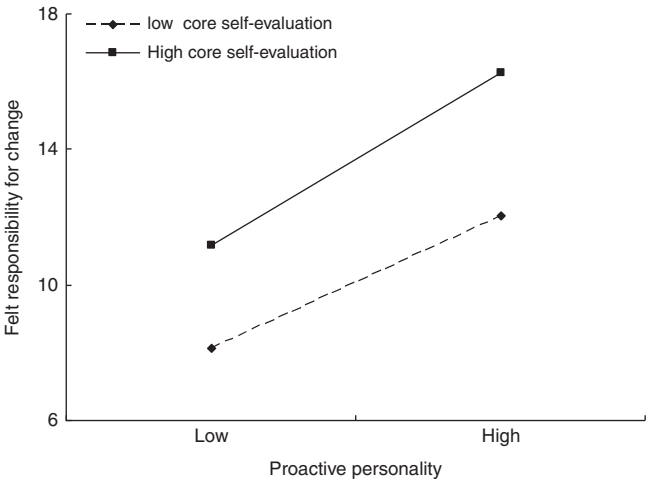

Figure 2. The moderating effect of core self-evaluations on the relationship between proactive personality and felt responsibility for change

To test *H3*, we employed the moderated mediation approach outlined by Edwards and Lambert (2007). As the approach argues, moderation effects can occur at different stages of a three-variable mediation chain (X → M → Y). Specifically, moderation can be found at the first stage (X → M), the second stage (M → Y) and both the first and second stages (X → M and M → Y) (Edwards and Lambert 2007; Khan *et al.*, 2014). The results,

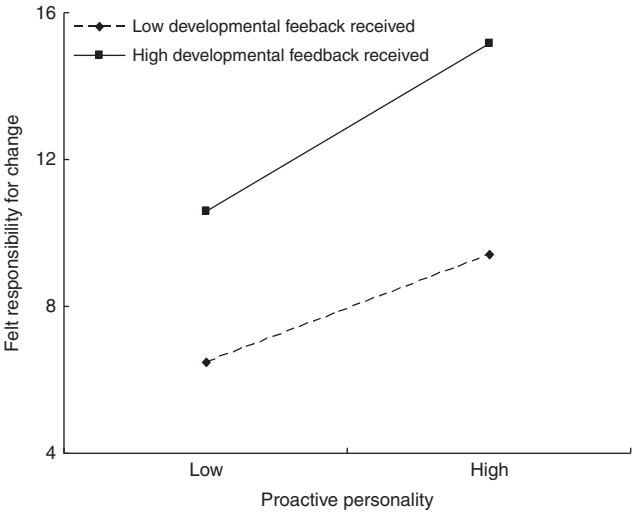

Figure 3.
The moderating effect of developmental feedback received on the relationship between proactive personality and felt responsibility for change

summarized in Table IV, show that the indirect effect of proactive personality on employee creativity via felt responsibility for change was significant ($\beta = 0.34$, $p < 0.01$) when CSE was low (1 standard deviation below the mean), and also significant ($\beta = 0.78$, $p < 0.01$) when CSE was high (1 standard deviation above the mean). Overall, the size of the difference in the indirect effect of proactive personality on employee creativity was 0.23, with the 95 percent confidence intervals computed using bootstrap estimates excluding zero. Thus, *H3* was supported. Moreover, the results support a first-stage moderating effect ($\Delta\beta = 0.45$, $p < 0.01$), suggesting that proactive personality interacts with CSE to predict felt responsibility for change, which, in turn, influences employee creativity. Hence, *H2* received further support.

H5 predicts that developmental feedback received moderates the proactive personality-felt responsibility for change-employee creativity mediating linkage. As shown in Table IV, the indirect effect of proactive personality on employee creativity via felt responsibility for change was both significant when developmental feedback received was low ($\beta = 0.35$, $p < 0.01$) and high ($\beta = 0.77$, $p < 0.01$). Overall,

	Proactive personality (X) → Felt responsibility for change (M) → Employee creativity (Y)			
	Stage		Effect	
Moderator variable: core self-evaluation	First P_{MX1}	Second P_{YM}	Direct P_{YX1}	Indirect $P_{MX1} \times P_{YM}$
Low core self-evaluations (−1 SD)	0.34**	0.48**	−0.02	0.16**
High core self-evaluations (−1 SD)	0.78**	0.50**	0.26**	0.39**
Differences between low and high	0.45**	0.01	0.28*	0.23*
Low developmental feedback received (−1 SD)	0.35**	0.42**	0.15	0.15**
High developmental feedback received (−1 SD)	0.77**	0.54**	0.27**	0.41**
Differences between low and high	0.42**	0.11	0.11*	0.26**

Notes: *$p < 0.05$; **$p < 0.01$

Table IV.
Testing moderated mediating effects

the size of the difference in the indirect effect of proactive personality on employee creativity was 0.26, with the 99 percent confidence intervals computed using bootstrap estimates excluding zero. Thus, *H5* was supported. Moreover, the results presented in Table IV support a first-stage moderating effect ($\Delta\beta = 0.42$, $p < 0.01$), indicating that the interaction of proactive personality and developmental feedback received influences felt responsibility for change, and then leads to employee creativity. Hence, *H4* received further support.

Discussion

This study developed and tested a moderated mediation model of employee creativity by integrating the mediators (i.e. felt responsibility for change) and moderators (i.e. CSE and developmental feedback received). Based on the sample of 232 participants, we found that felt responsibility for change operates as a mediating mechanism that links proactive personality and employee creativity. Furthermore, we found that CSE and developmental feedback received positively moderated the relationship between proactive personality and felt responsibility for change. These results advance the current understanding of the mechanisms by centering the mediating effect of felt responsibility for change and revealing the boundary conditions of proactive personality's impact on employee creativity.

Theoretical implications

The current study has several important contributions. First, in response to the call of investigating the mediating mechanism between proactive personality and creativity (Gong *et al.*, 2012), we theoretically formulate and empirically examine felt responsibility for change as the motivational process that mediating proactive personality and employee creativity. Echoing proactive personality as an individual deposition to promote change (Bateman and Crant, 1993; Crant, 2000), the current study shows the direct relationship between proactive personality and responsibility for change. It supports the view that the proactive personality trait played a role in shaping positive job-related motivational processes (Fuller and Marler, 2009). In addition, the current study reveals that felt responsibility for change is a motivational antecedent of employee creativity. It also provides empirical evidence supporting Morrison and Phelps' (1999) contention that felt responsibility for change should be related to forms of proactive behavior other than taking charge behavior.

Second, the current study reveals that "can do" (i.e. CSE) and "reason to" (i.e. developmental feedback received) moderators can regulate the decision process of employees to exert proactivity. We found that individual perception of one's capability and perceived support from organizations are two essential conditions for proactivity manifesting itself into specific proactive outcomes (Li *et al.*, 2010; Liang and Gong, 2012). This finding supports the idea that individuals go through a deliberate decision process before engaging in proactive behaviors (Grant and Ashford, 2008; Liang and Gong, 2012). It also contributes to the P-E fit theory by investigating the roles of individual difference and contextual factor in the proactivity activating process.

Third, we found that CSE was a "can do" moderator on the relationship between proactive personality and felt responsibility for change because, on one hand, high-CSE individuals had strong self-perceptions about their capabilities, regarding themselves as powerful and focussing on advantages and positive thoughts about themselves (Zhang *et al.*, in press), and are more likely to exhibit a high degree of felt responsibility for change. On the other hand, proactive individuals with high CSE can get access to

job-related resource or information by building social networks with senior employees and supervisors, which was conductive for the formation and maintenance of felt responsibility for change (Fuller *et al.*, 2006). These findings shed some light on CSE theory by uncovering the boundary conditions of CSE on proactive personality and felt responsibility for change. Our study also addresses the call of Bono and Colbert (2005) to explore the role of CSE on improving motivation. The significant interaction between proactive personality and CSE suggests that clustering the personality factors within individuals, rather than focussing on proactive personality only, would contribute to the literature on proactivity (Judge *et al.*, 2004).

Fourth, our study is one interesting attempt to examine developmental feedback received as the "reason to" moderator of the relationship between proactive personality and felt responsibility for change. Specifically, developmental feedback directs the employees' attention toward change and improvements, and increases their confidence that proactivity is supported by organizations (Zhou, 2003), and then, triggers individual proactive employees to bring out the feelings of responsibility for change. Our results contribute to trait activation theory by providing further evidence that perceived external contexts facilitated the expression of individual dispositions (Tett and Burnett, 2003). This finding therefore shed light on the interactionist perspective by exploring how individual motivational state (i.e. felt responsibility for change) can be influenced by the interaction of individual personality and perceived environment.

Finally, examination of CSE and developmental feedback received uncovers the boundary conditions of felt responsibility for change's mediating role in proactive personality and creativity. Our findings indicated that its mediating effects were more significant when CSE and developmental feedback were higher, respectively. By formulating a mediated moderation model, this study disentangles the motivational process and contingency conditions of proactive personality on employee creativity. These findings also address Liang and Gong's (2012) call of further examining the dispositional moderators (e.g. CSE) and contextual variables (e.g. developmental feedback received) in explaining when individual proactivity manifest itself into specific proactive behaviors.

Practical implications

In practical terms, employee proactivity and creativity are essential to organizational change and innovation performance. As proactive personality and CSE are fairly stable traits (Gong *et al.*, 2012; Judge and Hurst, 2007), if an organization has particularly strong needs for employee-driven constructive change, organizations need to select individuals based on their proactive personality and CSE in selecting candidates from the labor market.

Our findings support the value of developmental feedback received from supervisors and coworkers as a possible way to promote employees' feelings of responsibility for change and creativity. Hence, organizations should facilitate a culture or climate that is supportive of helping and openness to feedback. In particular, organizations should encourage supervisors and employees to provide useful and supportive feedback to each other in order to channel employee proactivity into creativity. Meanwhile, managers and employees should pay special attention to the quality of the feedback as being developmental rather than as just providing a large amount of information.

Limitations and directions for future research

This study has several limitations. First, we cannot unequivocally determine the direction of causality with cross-sectional data in this study. Although we obtained

information of proactive personality and employee creativity (from leaders) from separate sources, the ratings of proactive personality, felt responsibility for change and core self-evaluation are from the same source (i.e. employees). In order to avoid common method bias, future research should conduct a longitudinal design and collect data from multiple sources.

Second, we used data collected from employees working on different job positions in two companies. Thus, participants' behaviors and their interactions may be influenced by job positions and organizational context, which can affect the precision and generalization of our findings (Zhang and Bartol, 2010). We suggest that future research gain more insight by examining the effects of job position on employee creativity in diverse organizational contexts.

Third, although existing research has suggested that creativity is subject to a variety of contextual influences (Chang *et al.*, 2014), our investigation only examined the impacts of individual-level variables on employee creativity. To enrich theory and knowledge of employee personality and creativity at team level, future research should conduct a multi-level research design to investigate the roles of team-level contextual factors (e.g. team interdependence, team innovative climate) on the relationship between proactive personality and employee creativity.

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Further reading

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