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PROACTIVE PERSONALITY AND INNOVATIVE BEHAVIOR: THE MEDIATING ROLES OF JOB-RELATED AFFECT AND WORK ENGAGEMENT

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We examined the potential effects of job-related affect and work engagement as mediators in the relationship between proactive personality and innovative behavior. The Proactive Personality Scale, Positive and Negative Affect Schedule, Work Engagement Scale, and Innovative Behavior Scale were completed by 320 primary- and middle-school teachers in western China. Results showed that proactive personality was significantly and positively related to the teachers' innovative behavior. The effect of proactive personality on innovative behavior was partly mediated by both positive affect and work engagement in simple mediator roles, and by the sequential mediating effects of positive affect and work engagement. Possible explanations are discussed in light of previous findings. Limitations and suggestions for future research are discussed.

Keywords: proactive personality, innovative behavior, job-related affect, work engagement.

In the context of the workplace, *innovative behavior* represents a complex set of actions involving intention to promote, seek, and disseminate new ideas, and attempts to implement these ideas in work practice (Janssen, 2005; Messmann & Mulder, 2012; Scott & Bruce, 1994). Innovative behavior is expected and encouraged in organizations because it acts as a preemptive resource for organizations to ensure their effectiveness and competitive advantage (Messmann & Mulder, 2014; Thurlings, Evers, & Vermeulen, 2015; Zhou &

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Hoever, 2014). Therefore, the study of what motivates or enables individuals' innovative behavior is critical for administrators (Scott & Bruce, 1994). Previous researchers have worked within a broad framework in attempting to identify potential factors that contribute to innovation, such as innovation climate, task variety, job characteristics, social support, psychological contracts, work motivation, and self-efficacy (Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Hammond, Neff, Farr, Schwall, & Zhao, 2011; Thurlings et al., 2015).

Recently, numerous studies have been conducted to explore which individuals are more likely to display innovative behaviors in the workplace based on the Big-Five model of personality. For example, Williamson, Lounsbury, and Han (2013) found that the variables of extraversion and openness were significantly and positively correlated with innovative behavior, whereas, Madrid, Patterson, Birdi, Leiva, and Kausel (2014) and Yesil and Sozbilir (2013) found that openness was the only personality variable that was related to innovative behavior. However, it has been suggested that the Big Five model is not tailored specifically for studies in the work domain, and that additional personality constructs, such as proactive personality, should be considered when studying personality traits that determine innovative workplace behavior (Borman, 2004; L. Li, Liu, Liu, & Wang, 2016; Paunonen & Jackson, 2000).

In regard to an individual's disposition toward taking action to influence his or her work environment, it has been demonstrated that proactive personality has significantly more validity than the Big Five personality traits in predicting innovative behaviors (Crant, 1995; Seibert, Kraimer, & Crant, 2001; Thomas, Whitman, & Viswesvaran, 2010). Individuals with a strongly proactive personality consistently attempt to promote their career prospects in comparison with passive individuals (Seibert et al., 2001). Individuals with a strongly *proactive personality* are likely to engage in generating, disseminating, and implementing ideas as they constantly look for ways and means to improve their current circumstances (Crant, 2000; M. Li, Wang, Gao, & You, 2017). Moreover, proactive people tend to actively engage in building social networks and updating their professional knowledge, both of which are behaviors positively related to innovation (Kim, Hon, & Lee, 2010; Thompson, 2005). Therefore, we expected that proactive personality would positively predict innovative behavior.

Although the link between proactive personality and innovative behavior has been established (Chen et al., 2013; Kim et al., 2010; L. Li et al., 2016; Taştan, 2013), few researchers have examined the intervening mechanisms that may underlie this relationship. Recently, in studies on job-related affect and work engagement researchers have suggested some possible processes, in which the roles of affective states and engagement have been emphasized (De Dreu, Baas, & Nijstad, 2008; Huhtala & Parzefall, 2007; Seibert, Crant, & Kraimer, 1999).

Thus, our purpose in the current study was to examine whether or not job-related affect and work engagement mediate the relationship between proactive personality and innovative behavior among teachers in western China.

Positive and Negative Affect as Mediators

Job-related affect refers to an individual's affective experiences in the workplace. Researchers have demonstrated that this is a major factor that contributes to employees' innovation (Choi, Sung, Lee, & Cho, 2011; De Dreu et al., 2008; L. Li et al., 2016; Wang, Wang, You, & Dang, 2010). Consistent with the view of affect priming theory (Forgas, 1995) and the broaden-and-build theory of positive emotions (Fredrickson, 2001), *positive affect* can broaden an individual's cognitive scope, facilitate flexible thinking and problem solving, and enhance positive performance, whereas *negative affect* is associated with events that hinder the fulfillment of objectives, which, in turn, narrows an individual's thoughts and actions (Forgas & George, 2001; Fredrickson, 2001; Isen, 2000; Isen, Daubman, & Nowicki, 1987). Thus, it is thought that innovative behavior is associated with facilitating positive affect and alleviating negative affect. Results of empirical analyses support this assumption. For example, De Dreu et al. (2008) revealed that positive affect was positively associated with the generation of ideas and display of innovation, whereas negative affect was negatively associated with these variables. Choi et al. (2011) demonstrated a positive relationship between positive affect and innovation implementation and a negative relationship between negative affect and innovation implementation. In a similar vein, Wang, et al. (2010) found that positive affect was positively associated with teaching innovation, whereas negative affect had the opposite effect.

Researchers have also established that there is a close association between proactive personality and affect experience in the workplace. Individuals with a strongly proactive personality are typically characterized by self-confidence, optimism, satisfaction, hopefulness, and with low levels of distress, hopelessness, fear, and other components of negative affect (M. Li et al., 2017; Seibert et al., 1999; Thomas et al., 2010; Tolentino et al., 2014). Furthermore, researchers have also demonstrated that individuals with a very proactive personality experienced positive emotions more often than did individuals with a less proactive personality (Randolph & Dahling, 2013). All these positive characteristics are associated with a positive affect experience in relation to innovative behavior. Considering the robust relationship among proactive personality, affect states, and innovative behavior, we expected that proactive personality would facilitate positive affect and alleviate negative affect, which, in turn, would motivate employees to exhibit innovative behavior.

Work Engagement as a Mediator

Work engagement refers to a positive and psychologically fulfilling state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Bakker, & Salanova, 2006). Highly engaged individuals are inclined to pursue a sense of challenge and immerse themselves in work (Salanova, Agut, & Peiró, 2005), and they are also likely to enthusiastically look for, promote, and accomplish new and creative ideas (Chang, Hsu, Liou, & Tsai, 2013; De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014). Consequently, work engagement may be a source of innovative behavior, and innovative behavior is likely to be strengthened by a high level of work engagement. Findings in studies support this proposal of work engagement as an antecedent to innovative behavior. For example, Huhtala and Parzefall (2007) noted that employee innovativeness was negatively influenced by burnout and was likely to occur when employees were engaged with their work. Song, Kolb, Lee, and Kim (2012) found that work engagement had a significant impact on employees' knowledge-creation practices in the Korean business context. Agarwal, Datta, Blake-Beard, and Bhargava (2012) surveyed Indian managerial employees and found that their work engagement correlated positively with their innovative behavior.

Proactive personality is associated with facilitating positive affect and alleviating negative affect, and is an important factor in determining the effect of work engagement. Tims, Bakker, and Derks (2012) contended that employees with a proactive personality are more likely to craft their own jobs and, thus, are more likely to become engaged with, and perform well in their job, than are those employees who do not have a proactive personality. Bergeron, Schroeder, and Martinez (2014) studied faculty members at U.S. research universities and found that individuals with a strongly proactive personality engaged more frequently in both task and organizational citizenship behaviors and also worked more hours per week than did individuals with a less proactive personality. Similarly, L. Li, Zhong, Chen, Xie, and Mao (2014) found that proactive personality was positively associated with work engagement in a Chinese sample. Based on this literature, we proposed that proactive personality would exert a significant indirect influence on innovative behavior through work engagement.

The Sequential Mediating Effect of Job-Related Affect and Work Engagement

In the workplace, the affect that engenders competitive reward systems is strongly associated with employees' engagement (Maslach, Schaufeli, & Leiter, 2001). Positive affect facilitates effort and persistence, which prompts individuals to become engaged with work activities, whereas negative affect has a negative relationship with work engagement. For example, Salanova, Llorens, and Schaufeli (2011) found that employees who were happy when they were at work were more likely to show greater interest in their work and, in turn,

were more motivated and engaged in their behavior than were those who were unhappy. Moreover, Erdil and Müceldili (2014) found that envy, which is a characteristic of negative affect in the workplace, was negatively associated with work engagement and positively associated with the propensity to quit the job. Additionally, as argued above, proactive personality is an important determinant of the effects of affect and work engagement (L. Li et al., 2014; Randolph & Dahling, 2013; Tolentino et al., 2014). Hence, positive and negative affect may play mediating roles in the relationship between proactive personality and work engagement.

Based on the above information, we proposed that positive and negative affect and work engagement would mediate the relationship between proactive personality and innovative behavior in the workplace. A model showing the proposed sequential mediating effect of positive and negative affective and work engagement on the relationship between proactive personality and innovative behavior is presented in Figure 1.

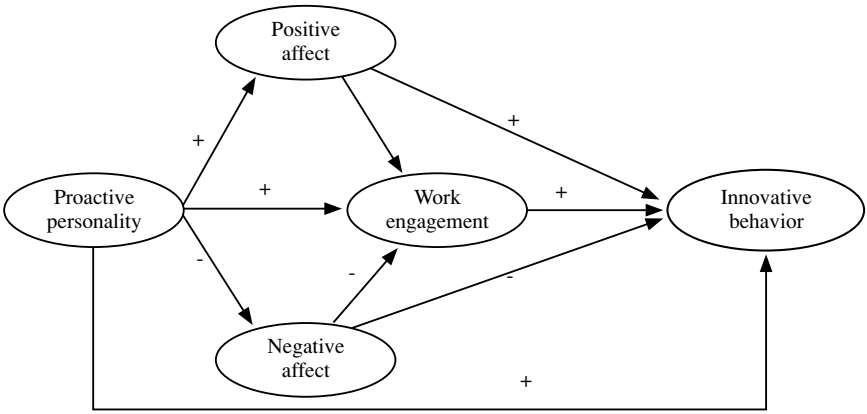

Figure 1. Hypothesized model for the mediator roles of job-related affect and work engagement in the relationship between proactive personality and innovative behavior.

Method

Participants and Procedure

Using cluster sampling, we recruited primary- and middle-school teachers employed at seven schools in western China. We distributed 354 survey forms and received 320 valid responses (203 women and 117 men). The average age of participants was 31.14 years (SD = 8.60 years), and the average duration of professional experience was 9.23 years (SD = 7.64 years). The teachers completed the self-report survey in the classroom environment where they

worked. Informed consent was obtained from all participants before they completed the survey. Each participant took from approximately 10 to 15 minutes to complete the survey.

One important issue in the present study is the use of self-report measures of innovative behavior. According to researchers of behavior, this type of measure may lead to common method or self-serving bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, as Madrid et al. (2014, p. 240) have noted "This doesn't necessarily apply to innovative behavior," because colleagues and supervisors may care little about the concerns raised by their colleagues at work, whereas employees are more sensitive to these (Madrid et al., 2014; Shalley, Gilson, & Blum, 2009). Furthermore, previous researchers have shown that the self-report of innovative behavior is highly consistent with that of a colleague or supervisor (Axtell et al., 2000; Janssen, 2005; Scott & Bruce, 1994). Therefore, in our study we used self-report measures to assess the teachers' innovative behavior, following the method recommended by Madrid et al. (2014).

Measures

Short-form Proactive Personality Scale. Proactive personality was evaluated using the shortened version of Bateman and Crant's (1993) Proactive Personality Scale that was developed by Seibert et al. (1999). The short-form Proactive Personality Scale comprises 10 statements, such as "I am always looking for better ways to do things." Each statement is rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). In the present study, the short-form Proactive Personality Scale had good reliability (Cronbach's alpha coefficient = .71). Confirmatory factor analysis (CFA) results indicated that the scale had an excellent fit according to the indices of comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR); $\chi^2 = 55.23$, $\chi^2/df = 1.64$, CFI = .97, TLI = .95, RMSEA = .046, SRMR= .051.

Positive and Negative Affect Schedule (PANAS). Positive and negative affect toward the job were evaluated using the PANAS (Watson, Clark, & Tellegen, 1988), following the recommendations of De Dreu et al. (2008) and L. Li et al. (2016). The PANAS comprises two subscales, each with 10 affect adjectives and is designed to assess the general dimensions of positive affect (e.g., interesting, encouraging, attentive) or negative affect (e.g., afraid, hostile, distressed). Participants are asked to rate their feelings experienced in the workplace over the last week on a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*extremely*). In the present study, the PANAS had good reliability, with a Cronbach's alpha coefficient of .76 and .82 for the positive affect and negative affect subscales, respectively. CFA results indicated that the two-factor model had acceptable construct validity; $\chi^2 = 433.96$, $\chi^2/df = 2.93$, CFI = .91, TLI = .90, RMSEA = .078, SRMR = .076).

Work Engagement Scale. Work engagement was evaluated using a 16-item scale that was adapted by J. Li, Xu, and Chen (2006) from the Utrecht Work Engagement Scale (Schaufeli, Salanova, González-Romá, & Bakker, 2002). The scale comprises three dimensions: vigor (e.g., "I feel strong and vigorous in my work."), dedication (e.g., "I am enthusiastic about my job."), and absorption (e.g., "I'm happily engrossed in my work."). Participants are asked to rate the level of engagement they experienced just before filling out the survey on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In the present study, the Work Engagement Scale had satisfactory internal consistency reliability, with Cronbach's alpha coefficients ranging from .78 to .85. CFA results indicated that the three-dimensional model had acceptable fit: $\chi^2 = 239.58$, $\chi^2/df = 2.66$, CFI = .94, TLI = .91, RMSEA = .072, SRMR = .050.

Innovative Behavior in Teaching Scale. Innovative behavior in teaching was evaluated using a 16-item scale developed by Zhang and Zhang (2012). The scale comprises three dimensions: innovative ideas, evaluated with four items (e.g., "I seek out new teaching methods, techniques, and/or product ideas at work."), innovation actions, evaluated with six items (e.g., "I use different teaching methods to teach skills and knowledge."), and results of innovation, evaluated with six items (e.g., "I encourage my students to discuss controversial issues."). Participants are asked to rate the extent to which they engage in and display innovative behaviors at work on a 6-point Likert-type scale ranging from 1 (*not at all*) to 6 (*to an exceptional degree*). In the current study, the Innovative Behavior in Teaching Scale had good psychometric properties, with Cronbach's alpha coefficients ranging from .76 to .84, and acceptable fit: $\chi^2 = 242.33$, $\chi^2/df = 2.59$, CFI = .92, TLI = .92, RMSEA = .066, SRMR = .051.

Assessment of Common Method Variance

Because data were collected by self-report, we used Harman's single-factor test for common method variance (Podsakoff et al., 2003). Exploratory factor analysis resulted in the extraction of seven factors. The first factor explained 18.25% of the variance, (Hair, Anderson, Tatham, & Black, 1998). Results of CFA, and calculation of 90% confidence interval (CI) showed that the single-factor model was a poor fit: $\chi^2 = 6337.62$, $\chi^2/df = 4.97$, CFI = .35, TLI = .32, RMSEA = .112, 90% CI [0.109–0.114], SRMR = .107. Thus, common method variance was not problematic in the data.

Results

Preliminary Analyses

Means, standard deviations, and bivariate correlations for all the measured variables are displayed in Table 1. Proactive personality, positive affect, and work engagement were significantly and positively correlated with innovative

behavior, and negative affect was significantly and negatively related to innovative behavior. Proactive personality was positively correlated with positive affect and work engagement and negatively correlated with negative affect. Positive affect was positively correlated with work engagement, and negative affect was negatively correlated with work engagement. These results provided the necessary prerequisite for structural equation model analysis.

Table 1. *Descriptive Statistics and Intercorrelations Between the Self-Report Measures of Study Variables*

	M	*SD*	1	2	3	4	5
1 Proactive personality	36.85	6.02	1				
2 Positive affect	30.87	4.58	0.33**	1			
3 Negative affect	20.54	5.62	-0.12*	-0.02	1		
4 Work engagement	60.64	8.39	0.43**	0.31**	-0.27**	1	
5 Innovative behavior	20.98	4.35	0.61**	0.42**	-0.15*	0.57**	1

Note. $N = 320$, α = Cronbach's α coefficient, * $p < .05$, ** $p < .01$.

Mediation Analyses

The structural equation modeling procedure was used to investigate the primary hypothesis concerning the three-path mediating effect of positive and negative affect and work engagement in the relationship between proactive personality and innovative behavior. Structural equation modeling analyses were conducted using Mplus v7 (Muthén & Muthén, 2012) with maximum likelihood estimation. In line with the recommendations of Hu and Bentler (1999) and Kline (2011), several indices were calculated to evaluate the overall fit of the model to the data: chi-square statistic (χ^2), χ^2/df ratio, RMSEA, SRMR, CFI, and TLI. The results showed that the fit was acceptable: χ^2/df ratio < 3, CFI and TLI > .90, RMSEA < .08, SRMR < .10, or excellent: χ^2/df ratio < 2, CFI and TLI > .95, RMSEA < .06, SRMR < .08.

Measurement model. According to the two-step procedure outlined by Anderson and Gerbing (1988), we performed a CFA to test the measurement model before testing the structural relationships. The measurement model consisted of five interrelated latent variables: proactive personality, positive affect, negative affect, work engagement, and innovative behavior. To improve the ratio of variable-to-sample size, and to increase the stability of parameter estimates, item parceling was used to create indicators of proactive personality, positive affect, and negative affect, as each construct was assessed with more than six items. Each item parcel was made up of the average of three or four measured items with the random assignment technique. Thus, three item parcels were created for proactive personality, positive affect, and negative affect. CFA analysis showed that the measurement model provided a good fit to the

data: χ^2 = 190.58, χ^2/df = 2.93, CFI = .93, TLI = .90, RMSEA = .078, 90% CI [0.065–0.091], SRMR = .073.

Structural model. The hypothesized model with all direct paths between research variables fitted well to the data in structural model analyses (see Figure 1): χ^2 = 199.40, χ^2/df = 2.97, CFI = .93, TLI = .90, RMSEA = .079, 90% CI [0.066–0.091], SRMR = .055. In the structural model, the path from proactive personality to positive affect (β = .46, p < .01), negative affect (β = -.14, p < .05), work engagement (β = .47, p < .01), and innovative behavior (β = .61, p < .01) were significant, and the path coefficients from positive affect (β = .16, p < .01) and work engagement (β = .24, p < .01) to innovative behavior were also significant, except for the path from negative affect to innovative behavior (β = .002, t = .043, p = .97). In addition, the path from positive affect (β = .23, p < .01) and negative affect (β = -.29, p < .01) to work engagement were significant. Next, we removed this path from negative affect to innovative behavior, which was not significant, to create the final model. The final model also had a good fit to the data: χ^2 = 199.10, χ^2/df = 2.93, CFI = .93, TLI = .90, RMSEA = .078, 90% CI [0.065–0.090], SRMR = .055. These results suggest that proactive personality may influence innovative behavior partly through the simple mediator roles of positive affect and work engagement and through the sequential mediating effects of positive and negative affect and work engagement.

Full versus partial mediation. To test the full versus partial mediation model, the following two mediation models were compared with chi-square difference: (a) partial mediation model in which the direct path from proactive personality to innovative behavior was not constrained; and (b) full mediation model in which the direct path from proactive personality to innovative behavior was constrained to zero. The indices of the full mediation model: χ^2 = 270.92, χ^2/df = 3.93, CFI = 089, TLI = .85, RMSEA = .096, 90% CI [0.084–0.108], SRMR = 0.069 did not fit as well as those of the partial mediation model: χ^2 = 199.10, χ^2/df = 2.93, CFI = .93, TLI = .90, RMSEA = .078, 90% CI [0.065–0.090], SRMR = .055. The chi-square difference test showed that excluding the direct path significantly decreased the goodness of fit, $\Delta\chi^2$ (1, N = 320) = 71.82, p < .001). Consequently, the partial mediation model was supported. Standardized path coefficients of the final structural model are depicted in Figure 2.

Assessment of mediation. The bootstrapping procedure in Mplus v7 was used to examine the significance of the mediating effects of job-related affect and work engagement. Specifically, 1,000 bootstrap samples were generated using random sampling with replacement from the data (N = 320). The mediating effects of positive affect, negative affect, and work engagement and their associated 95% CI are displayed in Table 2. Bootstrapping analysis revealed that all indirect effects were significant, except for the indirect path: proactive personality→negative affect→work engagement→innovative

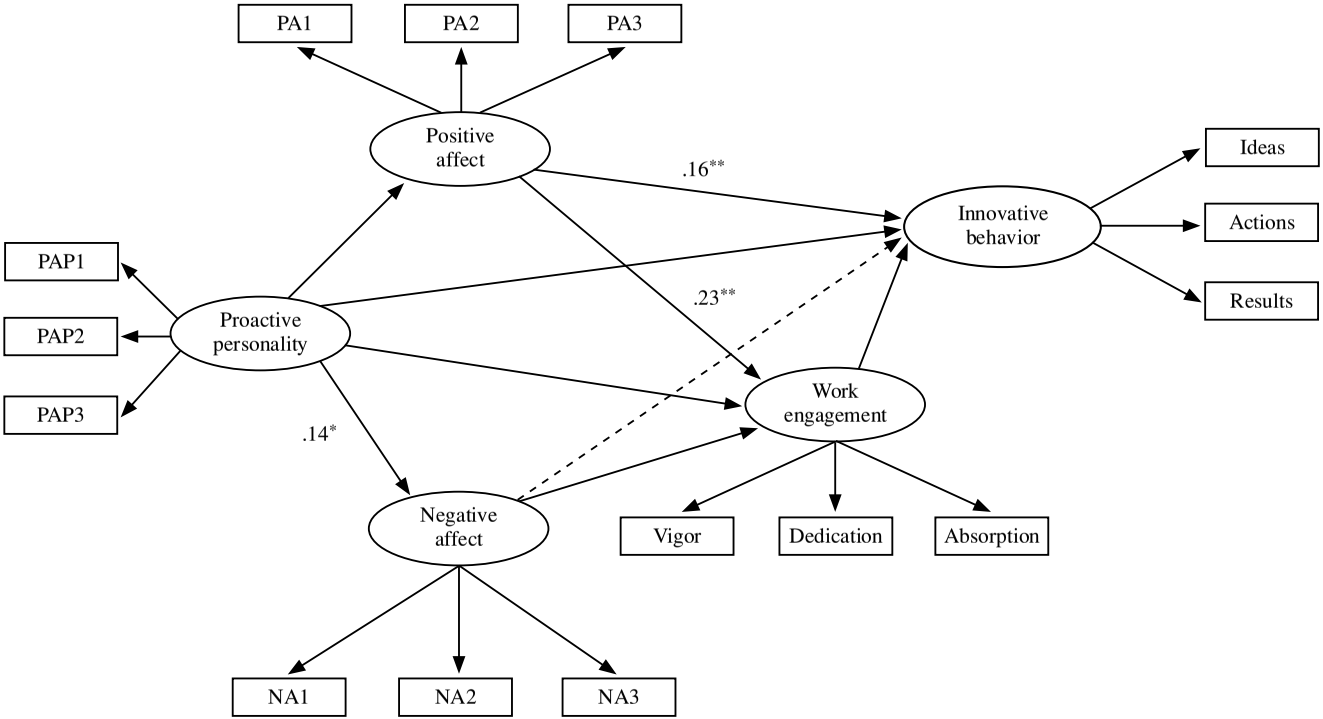

Figure 2. Final model for the sequential mediation effect of job-related affect and work engagement in the relationship between proactive personality and innovative behavior. Path coefficients are standardized. PAP = proactive personality; PA = positive affect; NA= negative affect. * $p < .05$, ** $p < .01$, *** $p < .001$.

behavior. Consequently, in the light of these results, it can be considered that the association between proactive personality and innovative behavior is partially mediated by positive affect and work engagement as simple mediators, and by a sequential mediator comprising proactive personality→positive affect→work engagement→innovative behavior.

Table 2. *Bootstrapping Indirect Effects and 95% Confidence Intervals for the Final Mediational Model*

Model pathways	Point estimate	95% CI	
		Lower limit	Upper limit
PAP→PA→IB	0.075	0.017	0.132
PAP→NA→IB	0.039	0.002	0.076
PAP→WE→IB	0.114	0.047	0.181
PAP→PA→WE→IB	0.025	0.003	0.048
PAP→NA→WE→IB	0.009	-0.001	0.020

Note. PAP = proactive personality; PA = positive affect; NA = negative affect; WE = work engagement; IB = innovative behavior.

Discussion

Our central objective was to examine the significance of proactive personality in fostering innovative behavior in teachers, and to extend the previous literature by investigating the mediating effects of affect and work engagement in this relationship. In line with previous studies (Kim et al., 2010; Seibert et al., 2001), the results demonstrated that proactive personality enhanced the teachers' innovation at work as a response to trait-related cues as well as the Big Five model of personality. This indicates that the teachers with a strongly proactive personality were more actively searching for opportunities, exhibiting initiative, and involving themselves in innovation than were those teachers with a less proactive personality. Proactive personality may promote innovative behavior in a variety of ways. Individuals with a very proactive personality are inclined to develop social networks (Thompson, 2005), to have positive emotions (Randolph & Dahling, 2013; Seibert et al., 1999), and a high degree of autonomy (Chen et al., 2013), and are engaged with their work (Bateman & Crant, 1993; L. Li et al., 2014). All of these personality traits provide individuals with psychological and social resources to pursue and reap the rewards of innovative behavior. Our findings suggest that the results reported by Seibert et al. (2001) can be generalized to Chinese culture, in which collectivism is emphasized (Hofstede, 1980).

Moreover, we examined job-related affect and work engagement as mediators in the relationship between proactive personality and innovative behavior.

Consistent with Choi et al. (2011), Madrid et al. (2014), and Seibert et al. (1999), our results show that proactive personality played a significant role in predicting positive affect, negative affect, and innovative behavior. Furthermore, the results also show that positive affect significantly predicted innovative behavior, whereas negative affect did not, although negative affect was negatively associated with innovative behavior. This result is inconsistent with those in previous studies, in which the researchers concluded that negative affect is a variable that is an important antecedent to creativity (Choi et al., 2011; De Dreu et al., 2008; Wang et al., 2010), but our result is consistent with the finding of Madrid et al. (2014) that negative mood does not predict innovative behavior because innovative behavior involves more than the idea generation that mainly constitutes creativity, and is, rather, a complex combination of generation, promotion, and application of new ideas (De Dreu, Nijstad, Bechtoldt, & Baas, 2011). In addition, in accordance with De Spiegelaere et al. (2014), Salanova et al. (2005), and Tims et al. (2012), we found that proactive personality can predict work engagement, and that work engagement had a distinct predictive effect on innovative behavior. Thus, in summary, we found that proactive personality exerts a significant indirect effect on innovative behavior via positive affect and work engagement.

In accordance with previous studies (Salanova et al., 2011; Seibert et al., 1999), our findings demonstrated that proactive personality was positively correlated with positive affect and negatively correlated with negative affect and, further, we found that both positive and negative affect significantly predicted work engagement. Based on prior literature in which it has been shown that work engagement is an antecedent to innovative behavior (Tims et al., 2012), it is plausible to hypothesize that proactive personality exerts an indirect influence on innovative work behavior through the sequential mediating effects of job-related affect and work engagement. Our mediation analysis provided support for the serial pathway: proactive personality→positive affect→work engagement→innovative behavior. However, the results of a bootstrapping procedure did not support the sequential mediating effect of negative affect and work engagement on the association between proactive personality and innovative behavior, although the results did support the direct effect of negative affect on work engagement and of work engagement on innovative behavior. This suggests that positive affect had a greater impact on innovative behavior than did negative affect.

With this study we have made an important contribution to the understanding of the relationship between proactive personality and innovative behavior. However, there are limitations that should be addressed. First, the study was cross-sectional in design, and, therefore, cause–effect inferences cannot be made. Future investigators should adopt an experimental or longitudinal design to determine the cause–effect relationships among the study variables. Second, we

examined the role of long-lasting job-related affect in the relationship between proactive personality and innovative behavior. Future researchers should investigate the role of short-term affect and should analyze the differences in the roles of long- and short-term affect in the relationship between proactive personality and innovative behavior. Finally, the data in this study were collected via self-report. Future researchers should adopt multiple assessment methods to confirm and improve the validity of our study.

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