

Enhancing a sense of competence at work by engaging proactive behavior:

The role of proactive personality

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Abstract

To understand how individuals' senses of competence are cultivated, scholars have primarily focused on situational factors such as job autonomy and supervisor support. Against this backdrop, we propose that individuals can work as active agents and enhance their sense of competence by initiating actions that aim to master the environment. We adopt the behavioral concordance model and propose that people higher in proactive personality are more likely to engage in proactive behavior that elevates their senses of competence over time. We further propose that such behavioral concordance contributes to boosting a sense of competence is more prominent among those with higher proactive personality. Our predictions are supported by data from 172 employees and their direct supervisors in China, after controlling for the effect of job autonomy and supervisor support for autonomy. Specifically, only those higher in proactive personality engaged in more proactive behavior and increased their sense of competence over time. This study highlights both a self-initiated and a behavioral perspective on understanding the development of a sense of competence.

Keywords: proactive behavior, proactive personality, latent change score, sense of competence

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The role of proactive personality

A sense of competence, i.e., the self-perceived ability to interact effectively with the environment (White, 1959), has been proposed as a basic human need (Ryan & Deci, 2000) because it affects the processes by which individuals explore the environment and obtain resources for survival. At work, a higher sense of competence has been demonstrated to fuel work motivation, promote job performance and lead to higher levels of subjective well-being (Baard, Deci, & Ryan, 2004; Richer, Blanchard, & Vallerand, 2002; Ryan, Bernstein, & Brown, 2010). Because of the fundamental importance of having a sense of competence, scholars have devoted much attention to understanding factors that cultivate it in employees. Structural empowerment, which is an approach that focuses on how management practices such as work redesign and leader behavior can enhance employees' influence over their work (Wall, Cordery, & Clegg, 2002), has been widely adopted to address this concern. Previous studies have indicated that management practices such as job autonomy (e.g., Baard et al., 2004; Spreitzer, 1996) and empowerment leadership (e.g., Zhang & Bartol, 2010) can lead to a higher sense of competence at work. The structural empowerment approach is consistent with self-determination theory (Ryan & Deci, 2000) and also social cognitive theory (Bandura, 1986, 2001) in the sense that individuals will feel more competent when they have an opportunity to utilize their abilities and skills.

Although the structural empowerment approach has proved to be informative, especially for practice, its exclusive focus on external factors ignores the important fact that individuals are active agents and can initiate activities to self-regulate their experiences (Bandura, 1991, 2001), including maintaining and reinforcing a sense of competence at work. For example, people with higher proactive personality, or people “who [are] relatively

unconstrained by situational forces and who [effect] environmental change” (Bateman & Crant, 1993, p. 105), tend to speak up to improve their work environment (Crant, Kim, & Wang, 2011), to formulate new ideas to improve work effectiveness (Parker, Williams, & Turner, 2006) and to actively scan the environment for important cues to help them find a novel way forward (Kickul & Gundry, 2002). Proactive behavior (i.e., self-initiated, future-focused and change-oriented actions) (Parker, Bindl, & Strauss, 2010) can help people actively master the work environment, especially in the face of uncertainty and novelty (Griffin, Neal, & Parker, 2007), which can give rise to a sense of competence at work.

Past studies have reported evidence to support the notion that people with higher proactive personality can be active agents in enhancing their sense of competence and to suggest the role of proactive behavior in such an enhancement process. Nevertheless, a full examination of these issues is lacking. For example, Lin, Lu, Chen, and Chen (in press) have found that people with higher proactive personality (Bateman & Crant, 1993) tend to increase their sense of competence in academic domains over a three-month period. However, they have not examined the mechanisms that lead to a positive change. Using a time-lagged design, Greguras and Diefendorff (2010) have indicated that people with higher proactive personality are more likely to experience a greater sense of competence at work through goal achievement. Nevertheless, they did not investigate the specific actions people take in the process and did not examine whether sense of competence has increased over time. To strengthen the self-initiated perspective of a sense of competence and to understand the underlying behavioral mechanism, we specifically examine whether individuals can increase their sense of competence over time by engaging in proactive behavior and whether they are more likely to embrace experiences of being proactive and benefit from doing so.

To guide our examination, we draw on the behavioral concordance model (Côté & Moskowitz, 1998), which suggests that “individuals with high scores on a personality

characteristic experience positively valenced affect when engaging in congruent behavior compared with individuals with low scores on that personality characteristic. In contrast, individuals with high scores on a personality characteristic experience more negatively valenced affect when engaging in behavior discordant with the trait than individuals with low scores on that personality characteristic experience when engaging in that behavior” (p. 1033). Based on this theory, we propose that people with higher proactive personality, those who tend to engage in proactive behavior dispositionally (Bateman & Crant, 1993), will enjoy engaging in behavior in changing their environment and challenging the status quo. Proactive behavior is a concrete action that help individuals to shape the environment effectively (Thomas, Whitman, & Viswesvaran, 2010), which can be a behavioral means to enhance one’s sense of competence. We thus expect that people with higher proactive personality are more likely to reinforce their sense of competence when they perform more proactive behaviors. In contrast, people with lower proactive personality will not have such benefit in enhancing their sense of competence because they are less likely to engage in proactive behavior and do not appreciate experiences in doing so. Overall, by identifying this behavioral concordance mechanism, we offer a self-initiated and a behavioral perspective to understand how people can be active agents to enhance their sense of competence over time.

Theory and Hypothesis Development

We first elaborate the link between proactive personality and proactive behavior and the link between proactive behavior and an enhancement of sense of competence, which constitutes a mediation process from proactive personality to enhancement of sense of competence. We then rely on propositions of the behavioral concordance model to elaborate why the association between proactive behavior and an enhancement of sense of competence will be stronger among those higher in proactive personality.

1 The positive association between proactive personality and proactive behavior has been
2 proposed and explained based on an individual differences perspective (Bateman & Crant,
3 1993), such that people vary in their dispositional tendencies to change, manipulate and master
4 their environments and that those high in such tendencies are more likely to take concrete
5 actions to realize their proactiveness. Empirically, studies have also found a direct and positive
6 association between proactive personality and proactive behavior (see Fuller & Marler, 2009,
7 for a meta-analytic review). Because the link between proactive personality and proactive
8 behavior has been well established, we thus do not offer a formal hypothesis regarding this link.

9 We next argue that proactive behavior can enhance one's sense of competence. First,
10 proactive behavior, such as introducing new procedures and suggesting alternative ways to
11 enhance work effectiveness, provides visible evidence to support an individual's belief that he
12 or she is influential and has power to master a situation (Schwartz & Boehnke, 2004). As
13 indicated by Bandura (1994), direct mastery experiences are a powerful source of a sense of
14 competence. Second, because behavioral experiences can reinforce values and attitudes behind
15 behaviors (Bem, 1967; Frese, 1982), there is a sense-making process characterized by
16 individuals attributing their proactive endeavors in shaping the environment to personal
17 competence. Because proactive behavior is self-initiated (Frese & Fay, 2001; Grant & Ashford,
18 2008; Parker et al., 2010), an individual is more likely to attribute the values and attitudes
19 behind that behavior to an internal characteristic (Jones & Davis, 1965). Third, displaying
20 initiative proves that a person is indeed who he or she believes himself or herself to be (Frese
21 & Zapf, 1994), and at the same time, it induces feedback from others to support such self-views.
22 According to symbolic interactionism (e.g., Cooley, 1902; Mead, 1934), individuals develop
23 their self-concept through social interaction with others: they use social situations and feedback
24 from those situations to define themselves (Kleine, Kleine, & Kernan, 1993; Korpela, 1989;
25 Proshansky, Fabian, & Kaminoff, 1983). Engaging in proactive behavior signals a person's

1 attempt to influence his or her environment and to further reinforce his or her sense of
2 competence when that behavior results in constructive changes and acknowledgement from
3 others (e.g., supervisors). Based on this reasoning, we thus propose that proactive behavior will
4 lead to an increase in a person's sense of competence.

5 We further propose that the effect of proactive behavior in promoting one's sense of
6 competence will be stronger among those higher than lower in proactive personality. For those
7 who have higher proactive personality, proactive behavior will have higher utility for
8 enhancing their sense of competence because the values of being influential, dominant and
9 having the power to master a situation, which often accompany proactive behaviors, are
10 consistent with their chronic dispositions. Accordingly, those with higher proactive personality
11 will have a greater appreciation (compared to others) for the mastery experience of taking
12 charge (Côté & Moskowitz, 1998). From a self-attribution perspective, those higher in
13 proactive personality are more likely to reinforce the view of self as being competent as a
14 consequence of engaging in proactive behavior because they tend to engage in such behavior
15 without being asked to do so (Bateman & Crant, 1993). Meanwhile, those with higher proactive
16 personality will be more likely to embrace a "proactive" badge granted by others when they
17 take concrete action to improve their work environment. In contrast, those lower in proactive
18 personality are less likely to enhance their sense of competence from engaging in proactive
19 behavior, not only because they tend not to do so, but also because they may not appreciate
20 such experiences as being dominant and taking risks to challenge status quo can make them
21 full uncomfortable (Côté & Moskowitz, 1998). Although those lower in proactive personality
22 may behave proactively when they need to (Ohly & Fritz, 2010; Wu, Parker, & de Jong, 2014),
23 they are less likely to attribute a competent view to themselves from engaging in such behavior
24 because their proactive behavior is triggered by external demands. Moreover, they will not be
25 granted a "proactive" badge from others if they are forced to engage in proactive behavior.

To incorporate the above reasoning altogether, in a time-lagged design, we investigate whether proactive personality will predict proactive behavior (both assessed at Time 2), which in turn predicts changes of sense of competence from Time 1 to Time 2, while effects of job autonomy and autonomy support from supervisors (assessed at Time 1) were controlled for. We also investigate whether proactive personality will moderate the association between proactive behavior and changes of sense of competence. Finally, to empirically validate our measure of changes of sense of competence and also demonstrate the value of increasing sense of competence, we additionally examine whether the change of sense of competence from Time 1 to Time 2 can predict supervisor-rated job performance assessed at Time 3.

Method

Participants and Procedure

The data were collected from an information and technology company in China. With the assistance of human resource managers, 260 respondents and their direct supervisors were invited and informed that the survey would examine individuals' experiences of human resource practices; they were also assured of the confidentiality of their responses. Participants engaged in the survey voluntarily, with no specific rewards. Each respondent placed his/her completed survey into a sealed envelope and returned it to a box in the human resources department.

The survey was conducted at three time points. At Time 1, a total of 239 employees reported their demographics (e.g., age, gender, education and tenure), their baseline sense of competence, job autonomy and autonomy support from supervisors (the last two are control variables that will be introduced shortly). Four weeks later (Time 2), a total of 172 employees reported their levels of proactive personality and (again) their sense of competence, and their supervisors ($n = 42$) reported the employees' proactive behaviors. After four weeks (Time 3), supervisors of the 172 employees again reported the employees' overall job performance,

which will be used as a variable to show the impact of increased competence. The final 172 employees do not have different backgrounds in terms of gender, age, education, tenure and job level from 67 employees who only completed survey at Time 1.

The final sample consisted of 172 subordinates and 43 supervisors, a response rate of 66%. Each supervisor was paired with one to six subordinates (67% of the supervisors were paired with three to five subordinates). There were 94 female participants (54.7%). The average age was 28.74 years ($SD = 4.54$). With respect to organizational tenure, 40.1% had been with the company for one to two years, 33.1% for three to five years, 16.3% for six to ten years, 9.9% for eleven to twenty years and 0.6% for more than twenty years. Ninety-seven percent of respondents had post-secondary or undergraduate degrees.

Measurement

Because all of our measures were originally constructed in English, we created Chinese versions following the commonly used translation-back translation procedure (Brislin, 1970).

Proactive personality. Four items from Bateman and Crant's (1993) measure with the highest factor loadings were included to assess this construct. These items have been applied in a Chinese sample (Wu & Parker, in press) where unidimensionality and reliability (Cronbach's alpha was .71) was supported. A sample item is "No matter what the odds, if I believe in something I will make it happen." Response categories ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach's alpha for this measure was .93.

Sense of competence. Three items for competence from the Basic Needs Satisfaction at Work Scale (Deci et al., 2001) were used. The scale has been applied in Chinese samples (Chen et al., 2014; Greguras & Diefendorff, 2010). We only used three items to have a short survey questionnaire. One sample item is: "When I am working, I often do not feel very capable" (a

reversed item). Employees rated the items at Times 1 and 2 on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach's alpha was .92 and .89, respectively.

Proactive behavior. Four items assessing taking-charge behavior (Morrison & Phelps, 1999; Parker & Collins, 2010) were used. These items have been applied in a Chinese sample (e.g., Wu, Liu, Kwan, & Lee, 2016), where unidimensionality and reliability (Cronbach's alpha was .84 and .91 in two waves) were supported. Supervisors rated the extent to which an employee tried to "bring about improved procedures in your workplace," "bring about improved procedures for the work unit or department," "institute new work methods that are more effective for the company," "implement solutions to pressing organizational problems" or "introduce new structures, technologies, or approaches to improve efficiency" during the previous month (during Times 1 and 2). For all items, the response scale ranged from 1 (*not at all*) to 7 (*a great deal*). The Cronbach's alpha was .92. Because several employees were rated by the same supervisors, we calculated ICC(1) (0.37) and design effect (2.12) to gauge supervisors' rating effect, and the results suggest that supervisors' rating effects are not trivial and that data non-independence should be considered in the analysis that follows.

Other variables. We consider demographic variables (age, gender, education and tenure), job autonomy and autonomy support from supervisors as control variables. We include job autonomy and autonomy support from supervisors to control for situational impact in shaping proactive behavior (e.g., Wu & Parker, in press) and a sense of competence (e.g., Baard et al., 2004). Three items assessing autonomy in decision making from Morgeson and Humphrey's (2006) Work Design Questionnaire were used. These items have been used in a Chinese sample (e.g., Wu & Parker, in press) where unidimensionality and reliability (Cronbach's alpha was .87) was supported. A sample item is "The job allows me to make a lot of decisions on my own." The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach's alpha for job autonomy was .87. To assess autonomy support from

supervisors, three items measuring the extent to which supervisors provide autonomy from bureaucratic constraints (e.g., “My manager allows me to do my job my way”) were used. These items have been used in Zhang and Bartol’s study with a Chinese sample (2010) and their validity and reliability (Cronbach’s alpha was .81) was supported. Responses were provided on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). The Cronbach’s alpha was .86. We included overall job performance rated by supervisors as an outcome variable of an increase in competence. This can help to validate our approach in capturing changes in competence. Three items from Ashford and Black’s (1996) study for assessing employees’ overall performance, the quality of their work performance, and their ability to complete tasks on time were used. For all items, the response scale ranged from 1 (*not at all*) to 7 (*a great deal*). We first validated these items in another employee sample from China by requesting that supervisors (n=205) rate their paired subordinate. Each supervisor only had one subordinate to rate. We performed an exploratory factor analysis and results support the unidimensionality of the three items. Cronbach’s alpha was .87. In this study, the Cronbach’s alpha was .91. Results of ICC (1) (0.48) and design effect (2.45) again suggest that the supervisors’ rating effects are not trivial and data non-independence should be considered in the analysis that follows.

Measurement model

We examined a hypothesized measurement model containing seven constructs (i.e., job autonomy, autonomy support from supervisors, proactive personality, sense of competence at Times 1 and 2, proactive behavior at Time 2 and overall job performance at Time 3) (Please see Table A1 in Appendix for measurement models for each measurement at a given time). All factors were allowed to be correlated. Errors of items were not correlated, except that errors of the same item for assessing sense of competence were allowed to be correlated over time.

To address the issue of nonindependent observations in our data structure (i.e., several employees were rated by the same supervisors), we included random effects in the model and adopted a design-based approach for model estimation, because “The design-based approach takes multilevel data or dependency into account by adjusting for parameter estimate standard errors based on the sampling design” (Wu & Kwok, 2012, p.18). Using the design-based approach to address nonindependent observations is appropriate here because our primary interest is to understand single-level mechanisms rather than multi- or cross-level mechanisms. We examined the model in Mplus 7.0 (Muthén & Muthén, 2012) using the MLR estimator, an estimator that generates robust estimation of data nonnormality and nonindependence (Muthén & Muthén, 2012) (i.e., in Mplus, we mentioned Type = random complex; Estimator = MLR was mentioned in the analysis section). As suggested by Hu and Bentler (1999), we relied on four fit indices—the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR)—to evaluate our models.

The hypothesized model fit well ($\text{MLR-}\chi^2 = 245.88$, $df = 206$; CFI = .99; TLI = .98; RMSEA = .034; SRMR = .041). This model was better than alternative measurement models, including a single factor model in which all items were influenced by one factor ($\text{MLR-}\chi^2 = 2132.42$, $df = 227$; CFI = .31; TLI = .23; RMSEA = .221; SRMR = .161); a two-factor model in which all self-report items were influenced by one factor, and all supervisor-report items were influenced by the other ($\text{MLR-}\chi^2 = 1732.92$, $df = 226$; CFI = .45; TLI = .39; RMSEA = .197; SRMR = .171); a five-factor model in which all items measured at Time 1 were influenced by one factor, and other items (items for proactive behavior at Time 2, proactive personality at Time 2, sense of competence at Time 2, and overall job performance at Time 3) were influenced by the other four factors, as specified in the hypothesized measurement model ($\text{MLR-}\chi^2 = 808.65$, $df = 217$; CFI = .78; TLI = .75; RMSEA = .126; SRMR = .108); and a six-

factor model in which self-report items measured at Time 2 (items for proactive personality and sense of competence) were influenced by one factor, and other items were influenced by the other five factors, as specified in the hypothesized measurement model ($\text{MLR-}\chi^2 = 484.69$, $df = 212$; CFI = .90; TLI = .88; RMSEA = .086; SRMR = .070). Taken together, these findings suggest that our measures were discriminant of each other.

We also examined measurement invariance of competence items to ensure that our used measure detected changes in the targets construct rather than changes due to scale recalibration (i.e., beta change) and construct reconceptualization (i.e., gamma change) (Golembiewski, Billingsley, & Yeager, 1976; Sprangers & Schwartz, 1999). In the first model, we estimate a two-factor model for competence items at Times 1 (three items) and 2 (three items) without any constraints. Errors of the same item were allowed to be correlated over time. This baseline model fit well ($\text{MLR-}\chi^2 = 4.04$, $df = 5$; CFI = 1.00; TLI = 1.00; RMSEA = .000; SRMR = .020). We further constrained the equality of factor loadings for the same items over time. The model with equality of factor loadings had a similar model fit ($\text{MLR-}\chi^2 = 6.84$, $df = 7$; CFI = 1.00; TLI = 1.00; RMSEA = .000; SRMR = .024), denoting a weak invariance property. Next, we additionally imposed the equality of item intercepts for the same items over time. The model with equality of item intercepts had a similar model fit ($\text{MLR-}\chi^2 = 9.52$, $df = 10$; CFI = 1.00; TLI = 1.00; RMSEA = .000; SRMR = .060), denoting a strong invariance property. In this model, the correlation of competence over time was moderate ($r = .35$).

Results

Table 1 presents the means, standard deviations and correlations of all the variables.

To examine our hypotheses, we built a latent change score model based on latent variable of the constructs specified in the measurement model. We first created a latent change score (McArdle, 2009) to represent change of competence from Time 1 to Time 2. This latent change score approach has been recommended for understanding intra-individual change

processes (Little, Bovaird, & Slegers, 2006) and has been applied in previous organizational research (e.g., Wu, Griffin, & Parker, 2015). According to McArdle (2009), a latent change score is created by fixing and freeing specific estimates for parameters that involve variables assessed at two time points (i.e., competence at Time 1 and competence at Time 2). Specifically, we created the latent change score of competence between Times 1 and 2 by specifying (a) the predictive effect of competence at Time 1 on competence at Time 2 as 1, (b) the factor loading of competence at Time 2 on the latent change score as 1 and (c) the variance of competence at Time 2 as 0. We found that the mean of the change score was not significantly different from 0 ($p > .05$), suggesting that there is no positive or negative trend in change over time. The variance of the change score was significantly different from 0 ($p < .01$), suggesting that there are individual differences in changes of competence over time.

After obtaining the latent change score, we built the hypothesized model as follows. We first examined a model without considering the level of proactive personality as a moderator. In this model, we used proactive personality to predict proactive behavior, which in turn predicts change of sense of competence. Change of competence then predicts overall job performance. We also used proactive behavior to predict overall job performance because previous findings have suggested that proactive behavior can directly contribute to higher job performance (see Thomas et al., 2010, a meta-analytic review). In addition, we used competence at Time 1 to predict proactive behavior. Finally, we controlled for job autonomy, autonomy support, gender, education and tenure by using them to predict proactive behavior, change of competence and overall job performance. We used one-tailed significance tests to examine effects in the model because our hypotheses specify the direction of effects. As indicated by Jones (1952, p.46), “Since the test of the null hypothesis against a one-sided alternative is the most powerful test for all directional hypotheses, it is strongly recommended that the one-tailed model be adopted wherever its use is appropriate.”

The model fit well (MLR- $\chi^2 = 330.12$, $df = 262$; CFI = 0.98; TLI = 0.97; RMSEA = .039; SRMR = .053). First, only proactive personality ($b = .41$, $Z = 3.61$, $p < .01$) and education ($b = .24$, $Z = 2.94$, $p < .01$) positively predicted proactive behavior. Proactive behavior ($b = .40$, $Z = 1.87$, $p < .05$) and autonomy support from supervisors ($b = .34$, $Z = 1.98$, $p < .05$) positively—and tenure negatively ($b = -.19$, $Z = -2.06$, $p < .05$)—predicted change of competence. Moreover, proactive behavior ($b = .33$, $Z = 3.56$, $p < .01$), change of competence ($b = .09$, $Z = 2.07$, $p < .05$) and autonomy support ($b = .44$, $Z = 2.45$, $p < .01$) positively predicted overall job performance. The positive predictive effect of change of competence on overall job performance revealed that the observed change of competence is valid and substantial.

We then additionally introduced a latent interaction effect between proactive personality and proactive behavior to predict change of competence (the primary effect of proactive personality on change of competence was also included). We used this latent interaction approach because it examines moderation effects at the latent construct level while controlling measurement errors. Among several approaches in examining latent variables interaction (see Cortina, Chen, & Dunlap, 2001; Marsh, Wen, & Hau, 2004), we used latent moderated structural (LMS) equations (Klein & Moosbrugger, 2000) implemented in Mplus (Muthén & Muthén, 2012). Because a fit index for the LMS or QML approach has not been developed, and, therefore, the conventional approach of model evaluation is not possible to implement, we used the likelihood ratio test to confirm that the latent interaction model is better than a model without interaction effects ($\Delta 2LL [df=1] = 16.90$, $p < .01$) (loglikelihood values and scaling correction factors obtained with the MLR estimator were used for test). Figure 1 presents the unstandardized estimates in the model.

The latent interaction effect between proactive personality and proactive behavior was positively and significantly related to change of competence ($b = .48$, $Z = 3.83$, $p < .01$). Figure 2 presents the interaction plot. Results of simple slope tests show that proactive behavior

positively and significantly predicted change of competence when proactive personality was high (simple slope = .74, $Z = 2.94$, $p < .01$) but did not predict that change when proactive personality was low (simple slope = -.21, $Z = -1.56$, $p > .05$). This finding is in line with our hypothesis, indicating that proactive behavior cannot play a role in reinforcing sense of competence for those who are low in proactive personality.

To full examine our hypothesis regarding the moderated-mediation effect, we adopted the nested-equation path analytic approach (Edwards & Lambert, 2007; Hayes, 2013; Preacher, Rucker, & Hayes, 2007) as it integrates moderation and mediation analysis at the same time, avoiding problems when moderation and mediation analysis were conducted separately in a piecemeal approach. The results showed that proactive behavior significantly mediated the association between proactive personality and change of competence when proactive personality was high (conditional indirect effect = .30, $Z = 2.08$, $p < .05$) but did not when proactive personality was low (conditional indirect effect = -.09, $Z = -1.41$, $p > .05$). This finding was in line with our hypothesis and further indicated that proactive behavior did not have a significant mediation effect on the association between proactive personality and competence enhancement.

Discussion

In contrast to previous research that primarily focuses on how external factors shape one's sense of competence, we highlight a self-initiated process in the development of a sense of competence. We extend previous work (Greguras & Diefendorff, 2010; Lin et al., in press) by showing that those who are high in proactive personality, which is characterized by a moderated-mediation function in the behavior concordance process, can enhance their sense of competence via engaging in proactive behavior. Because previous research has focused on situational factors, such as job autonomy or autonomy support from supervisors (e.g., Baard et

al., 2004), this understanding compensates for overlooking the role of dispositional factors in initiating mechanisms that enhance an individual's sense of competence. Accordingly, our finding highlights the agentic perspective of self-regulation (Bandura, 2001) such that individuals who are more self-determined in shaping their environment (i.e., those with higher proactive personality) can reinforce their sense of competence by engaging in self-initiated proactive actions.

Our finding that proactive behavior can lead to competence enhancement widens the scope of consequence of proactive behavior. In addition to job performance, which has been widely examined (e.g., Thomas et al., 2010, a meta-analysis review), our finding suggests that proactive behavior can cultivate a positive sense of competence. Accordingly, proactive behavior can bring benefits not only to organizations but also to individuals. To date, the impact of proactive behavior on the self or an individual's psychological state has not been explored; we believe that such examination is important because it delineates the self-regulation process of proactive behavior from an individual perspective. Although proactive behavior has been regarded as a self-regulation process, how that process is operated from an individual's perspective is not fully understood. We suggest that examining the psychological impact of proactive behavior is important to opening the black box. For example, proactive behavior has been described as an effortful goal achievement process that consumes an individual's energy and regulatory resources (Parker et al., 2010). However, our finding suggests that engaging in proactive behavior may actually strengthen an individual's psychological resources because being competent can lead to a higher sense of willpower (Gailliot et al., 2007; Job, Dweck, & Walton, 2010) that supports one's actions in effecting change and leads to greater work accomplishment.

1 Finally, we should note that the positive link between proactive behavior and
2 competence change was only observed in people with higher proactive personality. This
3 finding suggests that proactive behavior does not contribute to increased self-competence for
4 all incumbents who engage in such behavior. Although those with less proactive personality
5 may engage in proactive behavior due to external forces, such as the need to be proactive under
6 time pressure (Wu et al., 2014), they may not truly appreciate and enjoy the value and
7 experience of engaging in proactive actions because being proactive is not a part of their
8 disposition. This finding suggests that whether proactive behavior can result in a higher sense
9 of competence is contingent on one's levels of proactive personality. In practice, this finding
10 again suggests the value of hiring individuals with higher proactive personality. Because such
11 individuals are more likely to sustain a higher sense of competence via their proactive actions
12 in a positive spiral, their self-initiative efforts can continually result in higher job performance
13 and organizational contributions.

14 Our investigation is not without limitations. Several issues related to research design
15 should be addressed. First, proactive personality was not assessed at the beginning of the
16 research period, and, therefore, it can be argued that our proposed mechanism is inconsistent
17 with the time orders of our variables. However, we do not believe that this issue threatens our
18 research findings and conclusions, because personality is relatively stable. It is unlikely that
19 our participants will change the proactivity of their personalities over the one month of our
20 research period. Moreover, because proactive behavior is rated by supervisors at Time 2, and
21 we focus on changes in the sense of competence, having employees report the proactivity of
22 their personalities at Time 2 will not introduce serious common method bias into the analysis.

23 Second, we acknowledge the limitation of assessing proactive behavior and senses of
24 competence at the same time (Time 2), but we would like to emphasize that the behavior
25 measure at Time 2 and the performance measure at Time 3 was reported by supervisors.

Because the behavior and performance ratings are based on supervisors' observation of employees' behavior in the past, those measures actually measure behavior and performance before Time 2 and Time 3. Sense of competence were measured at Time 1 and Time 2 by requesting employees to report their competence at that time, and thus competence measures are more about their present states. In other words, our findings actually suggest that for those high in proactive personality, proactive behavior observed by supervisors before Time 2 can predict change of competence between Time 1 and Time 2 reported by employees, and such change can predict performance observed before Time 3. Moreover, we found that competence at Time 1 cannot predict proactive behavior at Time 2, which supports our hypothesized directional relationship between proactive behavior and sense of competence. However, we acknowledge it is ideal to have a time lag between the employee and supervisor survey.

Third, we used a short time frame in our study. We believe our focus on the change of the sense of competence due to proactive actions can be captured in a short time frame. Sense of competence is more about an individual's state that can vary from time to time. This is consistent with our observation that the correlation between the sense of competence at Time 1 and Time 2 is .30. The role of proactive behavior in shaping sense of competence can be immediate because proactive actions provide direct experiences in mastering the environment. As such, our used time frame is justifiable. Fourth, although we used a longitudinal design to focus on changes in sense of competence and support the directional impact of proactive behavior on enhancing the sense of competence, our approach cannot provide a causal conclusion. Experimental studies are required to validate a casual effect.

Fifth, we recruited our sample in China, a culture characterized by its emphasis on social harmony (Chen & Miller, 2011), which might play a role in shaping our research findings because proactive behavior that challenges the status quo is not encouraged. Although our theorization is not specific to Chinese culture, it would be better to cross-validate our findings

1 on samples from other countries or cultures. Additionally, we did not measure all variables
2 over time, and, therefore, we did not have an opportunity to examine the potential reciprocal
3 impact among our research variables over time, a matter that could be further explored in future
4 studies.

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Table 1

Descriptive statistics

	<i>M</i>	<i>SD</i>	Correlations									
			1	2	3	4	5	6	7	8	9	10
1. Age	28.74	4.54										
2. Gender	1.55	.50	-.05									
3. Education	--	--	-.02	.02								
4. Tenure	1.98	1.01	.76**	-.04	-.03							
5. Job autonomy (Time 1)	4.95	.98	-.05	.08	.08	-.08						
6. Autonomy support from supervisors (Time 1)	5.17	.89	-.07	.06	.10	-.13	.55**					
7. Sense of competence (Time 1)	4.21	1.37	-.02	.07	.17*	-.09	.08	.19*				
8. Proactive personality (Time 2)	5.31	1.05	-.23**	.00	.17*	-.31**	.28**	.38**	.29**			
9. Proactive behavior (Time 2)	5.06	1.11	-.16*	-.03	.05	-.33**	.33**	.24**	.09	.52**		
10. Sense of competence (Time 2)	4.41	1.41	-.08	.00	.04	-.23**	.09	.24**	.30**	.46**	.35**	
11. Overall job performance (Time 3)	5.38	1.04	-.14	.11	.07	-.32**	.26**	.44**	.16*	.49**	.46**	.40**

Note. * $p < .05$, ** $p < .01$. Gender: “0”- Male; “1” – Female. Education: “1”- High school or below; “2” – technical secondary school; “3” – post-secondary school; “4” – undergraduate degree; “5” – master’s degree, “6” – doctoral degree. Tenure: “1”- 1 to 2 years; “2” – 3-5 years; “3” – 6-10 years; “4” – 11-20 years and “5” – 21-30 years.

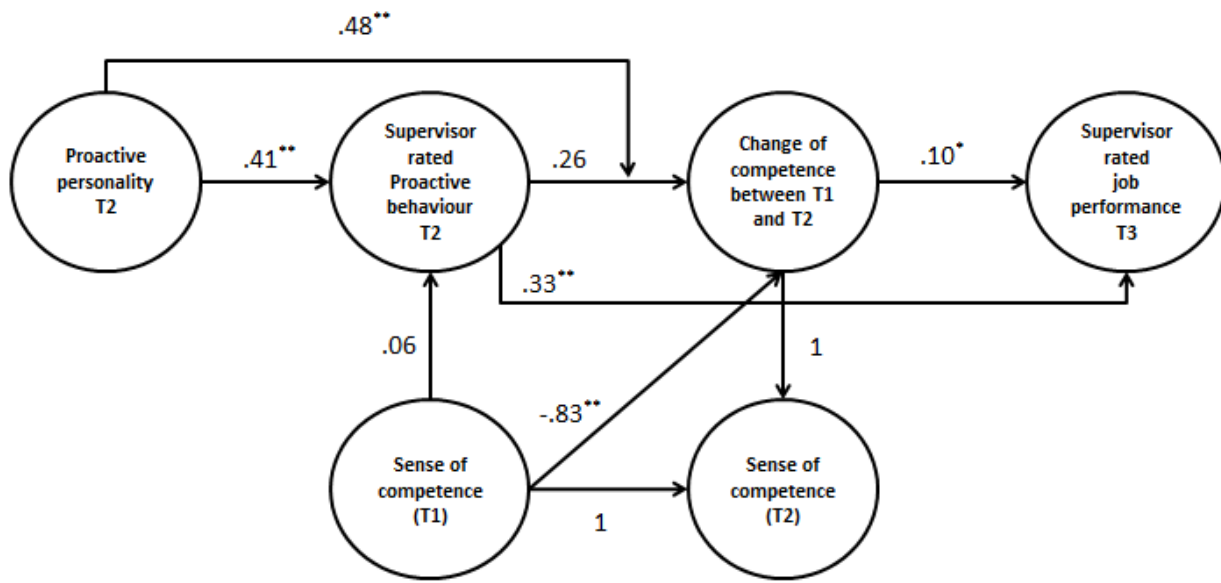


Figure 1

Unstandardized estimates in the latent change score model. Control variables and measurement parts of the model were skipped for simplicity. * $p < .05$, ** $p < .01$.

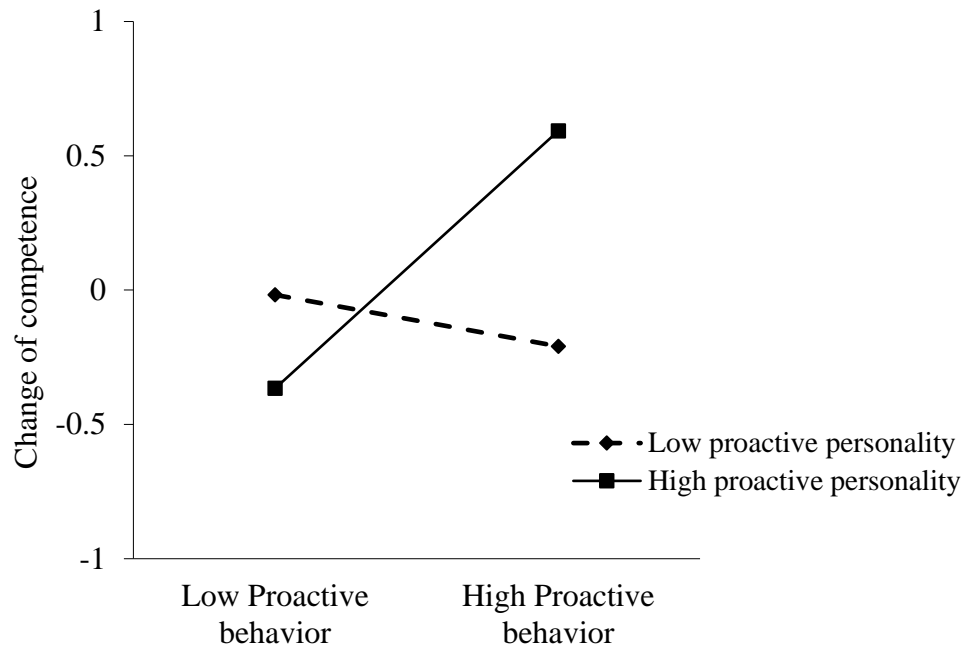


Figure 2

Interaction plot of proactive personality and proactive behaviour in predicting change of competence based on results of a latent interaction analysis.

Appendix**Table A1.**

Model fit of measurement models for each measurement at a given time

	df	χ^2	CFI	TLI	RMSEA	SRMR	Standardized factor loadings
Job autonomy (Time 1, three items)	0	0	1.00	1.00	0	0	.76/ .93/ .79
Autonomy support from supervisors (Time 1, three items)	0	0	1.00	1.00	0	0	.87/ .84/ .76
Sense of competence (Time 1, three items)	0	0	1.00	1.00	0	0	.88/ .96/ .85
Proactive personality (Time 2, four items)	2	1.54	1.00	1.00	0	0.001	.83/ .91/ .94
Proactive behavior (Time 2, four items)	2	7.22	0.99	0.96	0.12	0.016	.85/ .82/ .89
Sense of competence (Time 2, three items)	0	0	1.00	1.00	0	0	.81/ .98/ .77
Overall job performance (Time 3, three items)	0	0	1.00	1.00	0	0	.83/ .96/ .85

Note. Models with three items only are just-identified and thus have perfect fit.