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# From creative process engagement to performance: bidirectional support

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## Abstract

**Purpose** – The purpose of this paper is to explore the effect of creative process engagement on employees' in-role performance, and does so by considering the support that employees received from and given to their supervisors.

**Design/methodology/approach** – Using data from 540 questionnaires collected in China, this paper conducts a hierarchical regression analysis to test the proposed model.

**Findings** – Creative process engagement positively affects employees' in-role performance. However, the moderating effect of receiving support on the above relationship is not significant. Instead, it is the interaction of receiving support from and giving it to supervisors that moderates the relationship between creative process engagement and in-role performance.

**Research limitations/implications** – The study has some contributions to the conservation of resource (COR) theory. The authors find that acquiring new resources such as receiving support from supervisors is not always effective. The acquisition process of resources should be considered with the investment process of resources. According to the COR theory, people invest resources to gain resources and protect themselves from losing resources or to recover from resource loss (Halbesleben *et al.*, 2014). The findings of the study show that employees investing resources is not just for gaining resources. Sometimes, they invest resources such as giving support to supervisors to remain a relatively balanced relationship.

**Practical implications** – Companies can encourage employees to place more attention on creative process engagement to improve in-role performance. In addition, when offering support to employees, managers should consider whether the employees are able to give it back in response to the received support, and distribute their support to employees accordingly.

**Originality/value** – This paper explored employee's engagement at creative process in a more novel way and clarified the relative effect of creative process engagement on in-role performance. Also, this paper was the first to pay attention to the bidirectional nature of supervisor support.

**Keywords** In-role performance, Creative process engagement, Giving support, Receiving support

**Paper type** Research paper

## Introduction

As the competition between companies has become increasingly heated, how to solve the problems creatively in the workplace is more important than ever before (Treffinger *et al.*, 2008). Employees have the natural tendency to engage in some creative activities or different creative processes while carrying out their tasks (Eschleman *et al.*, 2014; Zhang and Bartol, 2010a). The engagement in creative processes, namely, creative process engagement, is expected to be increasingly critical as a component for individual success (Gilson and Shalley, 2004). As a high level of job performance is the most crucial sign of success in work (Ng *et al.*, 2005), how creative process engagement can help employees to achieve better performance should be concerned.



However, considerable less research has focussed on the effect of employees' creative process engagement on job performance, especially their in-role performance which is required by the formal job description (Riketta, 2008). Though creative process engagement has recently appealed to the attention of some scholars, these scholars have merely regarded creative process engagement as an intervening process between leadership and creativity (Henker *et al.*, 2015; Zhang and Bartol, 2010a; Zhao and Gao, 2014). In fact, creative process engagement allows employees to think and deal with tasks creatively to produce novel and useful solutions to problems (Zhang and Bartol, 2010b). Therefore, this engagement may greatly influence employees' in-role performance. To fill this gap in the previous research, this study first explores the relationship between creative process engagement and in-role performance.

Due to its difference with general job engagement, creative process engagement may have specific effects on in-role performance. On the one hand, engagement in a creative activity takes more time and efforts (Shalley and Gilson, 2004), which leaves less resources for other activities (Gilson *et al.*, 2005). Therefore, employees' in-role performance would be negatively affected; On the other hand, resources (e.g. skills or knowledge) acquired from engaging in creative activities in one area can benefit employees in other areas (Eschleman *et al.*, 2014), thus leading to higher levels of in-role performance. As resources play such important roles in the relationship between creative process engagement and in-role performance, this study pays attention on one kind of resources – supervisor support and examines whether it has a moderating effect on the engagement-performance relationship above-mentioned.

Evidences have shown that providing support for employees can help employees in many ways (Rhoades and Eisenberger, 2002). Among the different available support, supervisor support is the most efficient one (Casimir *et al.*, 2014). Supervisors who are deemed to be supportive have been found to be effective in managing the emotions of their subordinates (Dawley *et al.*, 2008). The efforts of supervisors such as encouraging employees, giving advices, and offering information can improve employees' job efficiency, which helps activate the transition from creative process engagement to in-role performance. In addition, based on the conservation of resource (COR) theory (Hobfoll, 1989), individuals with more resources are better positioned for resource gains (Halbesleben *et al.*, 2014). As supervisor support is a kind of important resources (Choi *et al.*, 2012), receiving supervisor support makes employees own more resources at work. Comparing to their colleagues with less supervisor support, employees engaging in creative processes may gain better in-role performance if they have more resources by receiving supervisor support.

Previous research has consistently focussed on the role of supervisors providing support for employees, and has generally ignored the influence of employees giving support back to supervisors. In practice, however, when employees receive support from others, they often feel the obligation to return such help (Eisenberger *et al.*, 2001). This sense of obligation also applies to support received from supervisors. Therefore, to consider only the support that employees receive from supervisors yields an incomplete picture that fails to show the full potential for reaching improved performance (Väänänen *et al.*, 2005). Employees at work often pay attention to the reciprocal relationship with their supervisors and to the norm of receiving and giving. And employees would commonly give several kinds of support to supervisors. Therefore, the moderating role of receiving support is then influenced by its interaction with giving support. In this study, we pay attention to the bidirectional nature of supervisor support.

The purpose of the study is to explore how employees' creative process engagement affects in-role performance, and examine the moderating role of supervisor support. By uncovering employees' engagement in three different creative processes and its connection with in-role performance, we seek to fill the research gaps in the fields of both creativity and job engagement. Furthermore, we intend to examine the moderating effect of supervisor support and its bidirectional nature by considering the receiving and giving support simultaneously.

## Literature review and hypotheses development

### *Creative process engagement and in-role performance*

Creative process engagement refers to employees' involvement in creativity-relevant methods or processes. The creative processes include three stages, namely, problem identification, information searching and encoding, and idea generation (Zhang and Bartol, 2010a). This study focusses on an employee's creative process engagement, and regards it as a special kind of job engagement.

Job engagement has emerged as a potentially important topic in research of employee performance and organizational management (Rich *et al.*, 2010; Rayton and Yalabik, 2014). The concept of engagement is first introduced by Kahn (1990) and then has been developed a lot (Vigoda, 2000; Yasin Ghadi *et al.*, 2013). Job engagement can also be regarded as a strong sense of responsibility and commitment to one's own performance. Clearly, employees do generally feel that their performance depends mainly on their own efforts (Britt, 2003). Considerable studies have shown that job engagement can significantly affect work-related outcomes such as job performance (Rich *et al.*, 2010; Robertson *et al.*, 2012), job satisfaction (Warr and Inceoglu, 2012), and person-job fit (Lu *et al.*, 2014). In this study, we choose to investigate the in-role performance instead of the overall performance. We use the definition proposed by Vigoda (2000) and treat in-role performance as an employee's formal behavior in relation to his or her role requirement which is the basic job duty and task required by job description. Concerning the relationship between job engagement and in-role performance, many empirical studies have suggested that job engagement as a type of positive attitude can directly improve an employee's performance (Rich *et al.*, 2010; Robertson *et al.*, 2012).

Researchers have not reached a consensus about the role of creative process engagement played on in-role performance. Based on the attention capacity theory, a person's capacity for attention is limited (Kahneman, 1973). When he or she spends effort on a certain task, the level of engagement in other areas would be affected (Gilson *et al.*, 2005). Therefore, creative process engagement would affect an individual's engagement in other work-related areas, and eventually influence his or her in-role performance. Unlike other job engagement, creative process engagement requires a high level of cognitive ability and takes a lot of time and energy (Shalley and Gilson, 2004). From this perspective, it seems that creative process engagement is negatively related to in-role performance. However, from the perspective of the activation theory, appropriate stimulation is helpful for promoting job performance (Zhang and Bartol, 2010b). When employees engage in creative activities, not only can their new ideas improve their activation levels, but the activation level can also be increased through the process of problem identification and information searching. This kind of activation would effectively contribute to higher levels of in-role performance.

In this study, we propose that employees' creative process engagement can lead to great improvements of their in-role performance. The creative process starts with problem identification (Zhang and Bartol, 2010a). At this stage, employees have to

structure the problem and have to identify goals, procedures, restrictions, and information relevant for the solution to the problem (Reiter-Palmon and Illies, 2004). When facing various kinds of problems, the process of problem identification is of benefit not only for dealing with current problems (Henker *et al.*, 2015), but the information and enhanced abilities in the process are also beneficial for analysis and judgment in relation to other problems. Such improved capacity can result in enhanced overall in-role performance. At the second stage, the time spent on information search and encoding is positively related to solution quality (Illies and Reiter-Palmon, 2004). Therefore, more time spent on this creative process can help employees to better solve work problems, which will lead to higher in-role performance. Furthermore, the process of searching and encoding information to solve identified problems can also enrich an individual's knowledge. This knowledge can improve employees' general abilities to a large extent, and that gives rise to a higher level of in-role performance. Finally, employees would try to generate new ideas or a significant number of alternatives to the same problem before choosing the final solution (Zhang and Bartol, 2010a). The new ideas or the final solution would be indirectly or directly beneficial to the problem, such that both of them can greatly promote employees' in-role performance. Accordingly, we propose the following hypothesis:

*H1.* Employees' creative process engagement has a positive effect on in-role performance.

#### *Supervisor support*

Although individuals' engagement is the dominant factor for better in-role performance, when difficulties appear, employees often need support to gain a higher level of in-role performance. Scholars generally believe that social support is an important resource (Bakker and Demerouti, 2007). If employees can receive some social support, then the same level of job engagement can result in better in-role performance, and this benefit applies to creative process engagement as well. Since supervisor support originates from day-to-day contact between employees and their supervisors, it is more important in reducing job stress than the other support (Md-Sidin *et al.*, 2010). We believe that it is also more efficient to affect the impact of creative process engagement on in-role performance. Therefore, our study focusses on the moderating effect of supervisor support.

Supervisor support involves supervisors' expressions of the concern, or the tangible assistance that is intended to enhance the well-being of the subordinates, including emotional support and instrumental support (Kossek *et al.*, 2011). As creative process engagement is time-consuming and risk-taking (Dewett, 2006), support from supervisors can minimize the potential risks, thus promoting the transition of the engagement to better in-role performance. Additionally, supervisors have a more comprehensive perspective of the job and the people they are supervising (Blanch and Aluja, 2012), when employees engage in creative activities, supervisors know when and how to provide necessary support for these subordinates. In this regard, receiving supervisor support can facilitate the positive effect of creative process engagement on in-role performance. Furthermore, in the view of resources, engaging in creative processes requires high levels of cognitive abilities and takes a lot of resources (Shalley and Gilson, 2004). Receiving supervisor support would timely replenish the resources consumed by the engagement. Therefore, we expect to find that the positive relationship between creative process engagement and in-role performance would be stronger when receiving support is high.

In contrast to their counterparts who receive low levels of supervisor support, employees who receive more supports during every stage of the creative processes tend to have higher levels of in-role performance. First, during the problem identification stage which involves structuring the problems and identifying goals, procedures, restrictions, and related information (Reiter-Palmon and Illies, 2004), employees can structure the problems better and solve the problems more efficiently with the help from supervisors, thus achieving better in-role performance. During the second stage of creative process engagement, employees need to search and encode information to solve the identified problems (Zhang and Bartol, 2010a). As supervisor support includes support for helpful work-related information and discussing work-related problems (Antani and Ayman, 2003), receiving the support at this time can make it easier to solve the problems, which gives rise to a higher level of in-role performance. Finally, when employees engage in the idea generation stage, they tend to seek connections with solutions used in diverse areas or to generate a significant number of alternatives to the same problem before choosing the final solution (Zhang and Bartol, 2010a). Receiving supervisor support such as the encouragement or appreciation on these creative-related behaviors and providing related information can help employees solve the problems in better ways, which would absolutely result in a higher level of in-role performance.

Based on this view, employees who receive high levels of support from supervisors commonly find that, their creative process engagement can lead to better in-role performance than that of employees who receive lower levels of support. We therefore hypothesize:

- H2.* Receiving support positively moderates the relationship between creative process engagement and in-role performance such that the relationship will be stronger for employees with high levels of receiving support than for employees with low levels of receiving support.

Social support is a form of social interaction that involves the exchange of resources between at least two persons with the aim of helping the recipient (Cinamon, 2009). Therefore, supervisor support with the aim to help the subordinates involves the exchange of resources between supervisors and subordinates. However, earlier researchers have tended to ignore the active role of support recipients in the social interactions, and most studies have conceptualize employees as basically passive agents in such exchange relationships (Väänänen *et al.*, 2005). In fact, however, many studies have shown that providing support is commonly associated with higher levels of well-being (Post, 2005). Recipients of support generally feel compulsory to pay back what they have received. If they are unable to do so, they tend to doubt their own positions and the values in their relationships with the support givers (Roberto and Scott, 1986). Recently, some researchers have turned to focussing on the bidirectional nature of social support, and have recognized the advantages of giving as well as receiving support (Shakespeare and Obst, 2011). In close relationships such as those of married couples, receiving support without returning has been associated with increases in negative moods and decreases in positive moods (Gleason *et al.*, 2003). For elderly adults, it is also better to give than to receive (Thomas, 2009).

Drawing on the notion of reciprocity norms, we posit that social support that lacks reciprocity may cause supportive interactions to have negative effects (Buunk and Hoorens, 1992). Supportive reciprocity, however, can help an employee to generate a strong sense of social identity and belonging (Rook, 1987). Especially when such supportive reciprocity exists between employees and their supervisors, the employees'

sense of identity and belonging would become stronger. This positive sentiment would influence the effect of receiving support, which will eventually affect the relationship between creative process engagement and in-role performance. Based on the theory of esteem enhancement (Batson and Powell, 2003), the act of giving help may benefit the support provider, mainly by promoting a self-image grounded in the sense of being an important and valuable person in the world or in organizations. When employees can offer support to supervisors, the sense of playing a valuable role becomes stronger. On the contrary, as in the case of elders who find themselves dependent on support from others, people who feel unable to give support to their supervisors may have the feelings of neediness and dependency (Thomas, 2009). Employees who always receive support from supervisors regardless of giving back would feel capacity-constrained and may become less self-confident. This feeling of inadequacy would influence the effect of receiving support from supervisors, which would consequently affect the relationship between creative process engagement and in-role performance.

In terms of the relationship between creative process engagement and in-role performance, the role of supervisor support seems to be complex. In the processes of creative engagement such as problem identification or information searching and encoding, employees would benefit a lot if they receive some supports from supervisors. For the supervisors know their followers' needs better (Blanch and Aluja, 2012), the timely and suitable support is a valuable resource when employees engage in different creative processes. Receiving support at this time would help employees in their creative process engagement and then contribute to better in-role performance. However, giving support to others may not be helpful if people are in great need of external support to help them to finish their creative activities. Therefore, giving support to supervisors does not have the same directly moderating role as receiving support. In addition, due to the influence of reciprocity and self-esteem (Batson and Powell, 2003), employees would give support to supervisors in the meantime of receiving it. The effect of receiving support would then be influenced by this interaction with giving support, which further affects the relationship between creative process engagement and in-role performance.

Employees giving support to supervisors includes giving support for work-related duties, helpful work-related information, encouragement/appreciation, and listening to and discussing work-related problems (Antani and Ayman, 2003). If receive high levels of the support from supervisors but give a little, employees may feel themselves indebted and invaluable (Roberto and Scott, 1986). All these negative feelings would lead to imbalanced communication (Väänänen *et al.*, 2005) between employees and their supervisors. If it happens, the employees engaging in creative processes cannot obtain the necessary information to solve problems, which will influence the effect of creative process engagement on in-role performance. On the contrary, if employees both receive and give high levels of support to keep frequent and balanced exchanges with supervisors, their creative process engagement will contribute to the best in-role performance with the necessary information available and the positive sentiment in the creative processes. We therefore formulate the following hypothesis and propose our conceptual framework in Figure 1:

- H3.* The interaction of receiving support and giving support will moderate the relationship between creative process engagement and in-role performance such that the creative process engagement will have the strongest and positive relationship with in-role performance when receiving and giving support are both high.

**Method**

*Sample and procedure*

The data included in this research were collected through questionnaires completed by employees who came from four companies in China. Two of these companies were state-owned, one private, and the other a joint stock company. Additionally, three of these firms belonged to manufacturing sector and the fourth belonged to service sector. We contacted the human resource departments of the sampled firms to seek their participation, and then discussed the purposes of the study and explained the procedures for implementing the survey. We coded the questionnaires with pre-assigned identification numbers and administered the survey to employees.

Out of the 702 distributed questionnaires, 540 usable ones were returned with the response rate of 76.92 percent. In this sample, 63.52 percent of the respondents were male and 64.26 percent were married, about 72.96 percent of the respondents were in young age, between 20 and 35. Most of the participants had got bachelor's degrees (61.67 percent). Workers who had been in their organizations for more than three years made up 52.96 percent of the respondents, and 26.11 percent of the senior workers had been with their firms for above ten years.

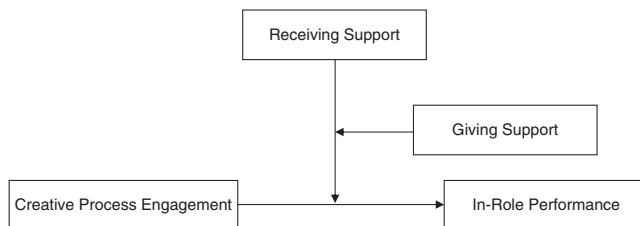
*Measures*

All of the items adopted to measure the variables used a five-point Likert scale. For measuring creative process engagement, receiving support, and giving support, 1 meant "never" and 5 meant "very frequently." For measuring in-role performance, 1 represented "strongly disagree" and 5 represented "strongly agree." Each variable was measured by well-developed scales including multiple items. The survey items were translated to Chinese using a double-translation procedure (Harkness and Schoua-Glusberg, 1998) in order to guarantee the accuracy of the translation.

*Creative process engagement.* We used 11 items developed by Zhang and Bartol (2010a) to measure creative process engagement. Three dimensions were included: problem identification, information searching and encoding, and idea generation. Sample items were, "I think about the problem from multiple perspectives"; "I consult a wide variety of information"; "I consider diverse sources of information in generating new ideas." The reliability of this construct was 0.94.

*In-role performance.* Five items drawn from Eisenberger *et al.* (2010) were used to measure in-role performance. These items included "I adequately complete assigned duties"; "I complete tasks that are expected of me." These items assessed tasks that the employees were expected to perform as normal functions of their jobs. The construct reliability was 0.78.

*Supervisor support.* Support received and given were both measured using the items from the Antani and Ayman (2003) scale. Four items were used to measure receiving support, including "How often you receive support for work-related



**Figure 1.**  
Theoretical  
research model



duties from supervisor?" Giving support was also measured with four items including "How often you give support for encouragement/appreciation regarding events to supervisor?" The construct reliabilities for receiving support and giving support were 0.90 and 0.89, respectively.

*Control variables.* We included age, education, and marital status as control variables. These variables are generally correlated with creativity and in-role performance (Casimir *et al.*, 2014). Age was measured in years. Education was coded as 1 for "high school," 2 for "college," 3 for "bachelor" and 4 for "master or above." Marital status was coded as 1 for "married," 2 for "single" and 3 for "other."

### Analysis

Following previous research (Zhou and George, 2001; Ramaswami *et al.*, 2013; Hochwarter *et al.*, 2014), we used the moderated hierarchical regression analysis (Cohen *et al.*, 2003) to examine the hypothesized two-way and three-way interactions on in-role performance. Hierarchical regression is one of the most useful tools for testing interaction effects, for it allows researchers to base variables' order of entry on their causal priority (Cohen and Cohen, 1983; Zhang and Bartol, 2010a). Both main effects variables were centered prior to creating the interaction term to minimize any non-essential ill-conditioning effects (Aiken and West, 1991).

## Results

We conducted a confirmatory factor analysis to examine the distinctiveness of our scales for all the variables used. The proposed measurement model fitted the data well ( $\chi^2 = 128.899$ ,  $df = 215$ ,  $CFI = 0.941$ ,  $IFI = 0.941$ ,  $RMSEA = 0.067$ ). Additionally, we assumed that employees themselves knew well about their behaviors in work, including the behaviors in creative activities, their interactions with supervisors, and their in-role performance. Considering this, we collected our data from self-reports of respondents. Therefore, there may be a problem of common method variance which we used Harman single-factor method to test (Podsakoff *et al.*, 2003). We conducted factor analysis to all the variables. Results revealed that methods variance accounted for 24.45 percent in the measures, which indicated that the influence of common method variance was not substantial.

Pearson correlation was used to examine whether there were linear associations between the independent, moderators, and dependent variables. Table I presents the means, standard deviations, and correlations matrix of the variables. A hierarchical regression analysis was performed to test the hypotheses and the results could be seen in Table II. The results, as presented in Model 2, showed that creative process engagement had a significant and positive effect on in-role performance ( $\beta = 0.39$ ,  $p < 0.001$ ), thus supporting *H1*. From Model 4, we could see that there was no significant effect of receiving support on the relation between creative process engagement and in-role performance ( $\beta = 0.05$ ,  $p > 0.1$ ). Therefore, *H2* was not supported. But from the results shown in Model 6, we could see that the interaction terms of creative process engagement, receiving support, and giving support significantly and positively affected in-role performance ( $\beta = 0.11$ ,  $p < 0.05$ ). When we entered the interaction terms, the variance of in-role performance significantly enhanced ( $\Delta R^2 = 0.02$ ,  $p < 0.01$ ), which suggested that the interaction of receiving support and giving support moderated the effect of creative process engagement on in-role performance. *H3* was therefore supported.

To examine any significant interaction effects in detail, we plotted the simple slopes of creative process engagement-performance regression at one standard deviation

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	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Age	32.25	7.66								
2. Education	2.59	0.82	-0.19***							
3. Marital status	1.37	0.51	-0.49***	0.15**						
4. Tenure	6.92	7.22	0.77***	-0.21***	-0.41***					
5. Creative process engagement	3.53	0.62	0.01	-0.02	0.02	0.00	(0.94)			
6. Receiving support	3.34	0.68	-0.02	-0.04	-0.00	-0.05	0.27***	(0.90)		
7. Giving support	3.21	0.68	-0.05	0.00	0.03	-0.02	0.30***	-0.80***	(0.89)	
8. In-role performance	3.63	0.49	0.26***	-0.13**	-0.10*	0.13**	0.40***	0.18***	0.09*	(0.78)

**Table I.**

Means, reliabilities, and bivariate correlations

**Notes:**  $n = 540$ . Education: 1 = high school, 2 = college, 3 = bachelor, and 4 = master or above. Marital status: 1 = married, 2 = single, and 3 = other. Cronbach's  $\alpha$  values are in parentheses. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

below the mean and one standard deviation above the mean of the receiving support and giving support (Aiken and West, 1991). From Figure 2, we could see that different types of simple slopes represented different levels of receiving support and giving support.

### Discussion

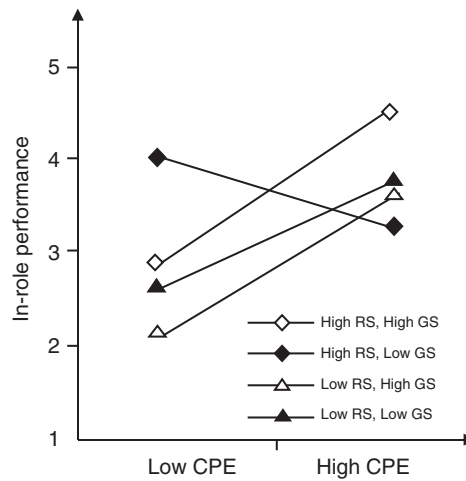
In line with our first hypothesis, we found that creative process engagement had a positive effect on in-role performance, which suggested that engaging in creative activities was a good way to improve in-role performance for employees. Then, we found that the moderating effect of receiving support on the relationship between creative process engagement and in-role performance was not significant. One reason for this result could be that as employees become more concerned with realizing their self-worth, the outcome of an enhanced in-role performance is not the only way for them to prove their values. Another important way is reflected in the process they develop for improving their in-role performance such as engaging in creative process engagement and the exchange with their supervisors. As engaging in creative activities is a kind of extra-role behavior (Kiazad *et al.*, 2014), when spend more time and efforts on these activities, employees may feel themselves more valuable in their organizations. In addition, for the three stages of creative process engagement take more time and efforts (Shalley and Gilson, 2004), solving the problems creatively is the evidence of one's capability. Individuals may think that receiving supervisor support is a sign of incompetence in the view of their supervisors or other employees. As seen in other cases of dependency, being helped can be associated with decreased self-esteem and depressed feelings on the part of the recipients (Nadler, 1987; Nadler and Fisher, 1976). In this way, receiving support from supervisors may weaken the positive role of creative process engagement on in-role performance.

Once considering the giving support, we found that the relationship between creative process engagement and in-role performance was affected both by receiving support from supervisors and giving support to supervisors. Specifically, the effect of creative process engagement on in-role performance was the strongest when receiving support and giving support were both in high levels; the effect was also very strong (the second

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	0.41 (5.87)***	0.40 (6.27)***	0.40 (6.22)***	0.39 (6.17)***	0.37 (5.87)***	0.35 (5.65)***
Education	0.02 (0.31)	0.02 (0.33)	0.02 (0.38)	0.02 (0.41)	0.02 (0.44)	0.02 (0.46)
Marital status	-0.10 (-2.19)*	-0.09 (-2.16)*	-0.08 (-2.09)*	-0.08 (-2.10)*	-0.08 (-1.93)	-0.08 (-1.93)*
Tenure	-0.22 (-3.26)**	-0.20 (-3.33)**	-0.20 (-3.19)**	-0.19 (-3.14)**	-0.17 (-2.82)**	-0.16 (-2.64)
Creative process engagement		0.39 (9.94)***	0.37 (9.28)***	0.37 (9.28)***	0.39 (9.69)***	0.34 (7.52)***
Receiving support			0.05 (1.23)	0.07 (1.71)	0.22 (3.50)**	0.24 (3.56)***
Creative process engagement × receiving support				0.05 (1.23)	0.05 (1.25)	-0.08 (-1.13)
Giving support				0.05 (1.23)	-0.20 (-3.10)**	-0.20 (-3.12)**
Creative process engagement × giving support						0.22 (3.36)**
Receiving support × giving support						0.05 (1.10)
Creative process engagement × receiving support × giving support						0.11 (2.06)*
$R^2$	0.09	0.24	0.24	0.24	0.26	0.28
$\Delta R^2$	0.09***	0.15***	0.00	0.00	0.02**	0.02**
$F$	12.35***	31.52***	26.77***	23.18***	21.84***	17.79***

Notes:  $n = 540$ .  $t$ -values are in parentheses. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Figure 2.**  
Three-way  
interaction between  
creative process  
engagement (CPE),  
receiving support  
(RS), and giving  
support (GS)



strongest) when the supports received and given were both low. These results showed that the balance of giving and receiving support could significantly and positively influence the relationship between creative process engagement and in-role performance. In other words, the reciprocal relationship between supervisors and employees had a positive effect on employees. No matter receiving support and giving support were both in high levels or both in low levels, as long as they were relatively balanced, the effect of creative process engagement on in-role performance would be enhanced.

If the reciprocal exchange between individuals and their supervisors happened frequently, employees could get the necessary help from their supervisors without feeling indebted and incapable whenever in identifying problem stage or searching and encoding information stage. Therefore, the engagement in these processes would lead to great improvement in in-role performance. Additionally, the frequent exchange can help employees well understand their supervisors' attitudes such as which is the best solution to problems and how to choose the best way to solve problems, thus, this exchange helps the idea generation process to lead to higher in-role performance. Furthermore, supportive reciprocity can help employees to generate a strong sense of social identity, belonging, and trust (Rook, 1987), and this positive sentiment can facilitate the positive effect of creative process engagement on in-role performance.

If the support exchanges are reciprocal but not very frequent, individuals feel that they are keeping balanced relationships with their supervisors. These balanced relationships make employees satisfied with their work, which is consistent with earlier research showing that people are most satisfied when they perceive their supportive relationships as being equitable or reciprocal (Gleason *et al.*, 2008). The satisfaction in work together with the above-mentioned sense of social identity and belonging can also help employees' creative process engagement to gain better in-role performance even without enough information from supervisors.

Furthermore, when receiving support was low and giving support was high, creative process engagement can also have a positive effect on in-role performance. This finding was consistent with some earlier researchers' suggestions that it was better to give than to receive (Thomas, 2009; Ferguson *et al.*, 2010). Employees engage in different creative processes such as identifying problems and searching and encoding information to

creatively solve problems (Zhang and Bartol, 2010a). Apart from the creative solutions, individuals can also acquire valuable resources such as information, experience, or skills from these processes. If employees can share these resources with their supervisors in response to the low levels of support received, they tend to consider themselves more valuable both in the supervisor-subordinate relationships and the organizations. In addition, numerous authors have noted that only when the support recipient experiences reciprocity from the support provider does support have positive psychological and health-related consequences, for the sense of indebtedness in the relationship is reduced in this way (Antonucci, 1990; Väänänen *et al.*, 2005).

Finally, we found that the effect of creative process engagement on in-role performance would be negative when receiving support was high but giving support was low. This result was consistent with our hypothesis, and it indicated that when the support received was much more than the support given, employees may feel themselves incapable. Although employees have access to supervisor support in the processes of engaging in creative activities, their sense of reduced self-worth, indebtedness, and shame may lead to imbalanced interpersonal communication (Väänänen *et al.*, 2005). Poor communication can negatively influence the quality of information or work-related advices from supervisors, and then influence the effect of creative process engagement on in-role performance. Furthermore, due to the imbalanced and over-benefited relationship with their supervisors, employees tend to produce negative feelings and thoughts which will adversely affect the relationship between creative process engagement and in-role performance.

### *Implications*

This study contributes to the literature in a few ways. First, we explore employees' engagement at creative activities in a more novel way, which enriches the job engagement literature. Also, the findings of this study clarify the relative effect of creative process engagement on in-role performance. Although the bidirectional nature of social support has been investigated in some studies in the health area (Väänänen *et al.*, 2005; Thomas, 2009), this study is the first to pay attention to the bidirectional nature of supervisor support. We point to the importance of giving support as well as receiving support and the bidirectional nature of supervisor support in organizational behavior field.

Furthermore, our study has some contributions to the COR theory. We find that acquiring new resources such as receiving support from a supervisor is not always effective. The acquisition process of resources should be considered with the investment process of resources. In addition, based on the COR theory, people invest resources to gain resources and protect themselves from losing resources or to recover from resource loss (Halbesleben *et al.*, 2014). The findings of our study show that employees investing resources are not just for gaining resources. Sometimes, the aim of investing resources such as giving support to supervisors is to remain a relatively balanced relationship.

The findings of our research also have several implications for managerial practice. First, employees can be encouraged to place more attention on creative process engagement. Such engagement can increase in-role performance effectively, which makes great contributions to the whole company.

Second, when offering support to employees, managers should realize the bidirectional nature of support, and consider whether the employees are willing to give back support in response to receiving it. For those people who are able to give more while receiving less, managers can provide less support if the firm's resources are limited; if the resources for support are sufficient, managers can increase the levels of

support given to them, which would lead creative process engagement to generate the strongest effect on in-role performance. For employees who give less while receiving more, no matter how abundant the resources are, managers should limit the support provided for these employees in case of producing negative effect.

Finally, managers should not only distribute support reasonably, but should also encourage employees to give support actively. Managers can create a helpful atmosphere for both supervisors and employees to frequently and positively interact with each other. This balanced interaction can benefit both the individual employees and the whole company.

#### *Limitations and research directions*

Our study has several limitations that can be addressed in future research. First, creative process engagement is a kind of job engagement that needs time to show results in terms of in-role performance. The cross-sectional study approach, compared with the longitudinal approach, prevents us from drawing causal inferences (Henker *et al.*, 2015). A longitudinal design and a follow-up study are needed for future research.

Second, we assessed all the data only from the respondents' point of view, which may have increased the possibility of common method variance. Although our preliminary tests did not indicate any serious problem with common method variance, future researcher can collect data from multiple resources including the supervisors to reconfirm the relationship between creative process engagement, receiving and giving support, and in-role performance.

Third, this study only investigated the effect of creative process engagement on in-role performance. The role of this special engagement on extra-role performance and the overall job performance is little known to us. This needs to be explored in future work to help us understand the differences between the different relationships.

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**Further reading**

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