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When empowering leadership fosters creative performance: The role of problem-solving demands and creative personality

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Abstract

The purpose of this paper is to investigate the circumstances under which empowering leadership fosters creative performance. Arguments were developed for a three-way interaction of empowering leadership, problem-solving demands and creative personality in this linkage. These arguments resulted in competing hypotheses from a fit and a compensation perspective. The results from a survey of 213 employees of a Flemish large industrial organization were used. We found that less creative employees in jobs with high problem-solving demands particularly benefit from empowering leadership. This paper adds to a more complex understanding of the effectiveness of empowering leadership by highlighting the relevance of the simultaneous interplay of contextual and personal factors.

Keywords: creative performance, empowering leadership, problem-solving demands, creative personality

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INTRODUCTION

Little is known about *when* empowering leadership fosters creative performance. Although empowering leadership and creative performance are intuitively linked, there are inconsistent findings about this relationship (Ahearne, Mathieu, & Rapp, 2005; Zhou & Hoever, 2014). Empowering leadership seems to have different effects on different employees (Ahearne, Mathieu, & Rapp, 2005). In order to understand these differential effects, we study the role of a job's problem-solving demands and an employee's creative personality.

There is an intuitive linkage between empowering leadership and creative performance. Empowering leadership is the opposite of controlling leadership (Oldham & Cummings, 1996; Zhang & Bartol, 2010). An empowering leader understands that it is important to pass control to employees by sharing power and by providing impact to employees to get better results. Therefore, these leaders encourage critical thinking to explore new ideas and develop alternative approaches of working. This is why these leaders are often blessed with creative employees who are motivated to solve problems while conducting work. Employees feel in charge to exercise influence and as a consequence, they perform creatively in their work (Ahearne, Mathieu, & Rapp, 2005). This creative performance involves generating novel and useful ideas that require risk taking, coming up with solutions, information-seeking and proactive behavior of employees (Zhou & George, 2001; Amabile, Schatzel, Moneta, & Kramer, 2004). The choice to study creative performance as an outcome of empowering leadership

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is supported by the rise of creative performance needs for many jobs in today's economy (Shalley, Gilson, & Blum, 2009; Zhou, Hirst, & Shipton, 2012).

However, does empowering leadership reach its expected outcome of creative performance? Although there is an intuitive linkage between empowering leadership and creative performance, research findings in different samples and contexts are not consistently supportive of this linkage (Ahearne, Mathieu, & Rapp, 2005; Zhou & Hoever, 2014). 'Empowering leadership might not always be the best "fit" for particular work settings or based on follower differences' (Sharma & Kirkman, 2015: 212). These inconsistent findings in the literature suggest the existence of moderators in the linkage between empowering leadership and creative performance (Ahearne, Mathieu, & Rapp, 2005). Specifically, it has been theorized that empowering leadership is inclined to resort to different effects on performance depending on contextual and personal factors (Hersey, Blanchard, & Natemeyer, 1979; Liu, Lepak, Takeuchi, & Sims, 2003). Therefore, this study specifically focuses on the interaction of empowering leadership with contextual and personal factors.

The choice to study a model that considers the interplay of empowering leadership with contextual and personal factors is consistent with the *interactionist perspective* on the study of creative performance (Woodman, Sawyer, & Griffin, 1993). Rather than having main effects, this perspective proposes that creative performance follows from the complex combination of actor and context. More specifically, personality, social influences and contextual influences are factors that enhance or inhibit creative employee performance (Woodman, Sawyer, & Griffin, 1993). In order to advance the interactionist perspective, there is a need for research that goes beyond either an actor-centered or a context-centered approach (Zhou & Hoever, 2014). In addressing these needs, it has been underscored that job design and dispositional factors in particular matter in interaction with leadership – specifically the knowledge aspects of job design (Ohly, Sonnentag, & Pluntke, 2006; Raja & Johns, 2010) and dispositional factors of personality (Farmer, Tierney, & Kung-McIntyre, 2003; Rodan & Galunic, 2004). Past research has focused either on aspects of leadership (Zhou & Hoever, 2014) or job design (Raja & Johns, 2010) to explain differential effects from creative personality on creative performance.

We address calls for integrative models of creative performance (Anderson, Potočnik, & Zhou, 2014) by incorporating aspects of leadership, job design and personality. Specifically, it has been suggested that the problem-solving demands of a job (Zhou, Hirst, & Shipton, 2012) and creative personality (Zhang & Bartol, 2010) hold much promise from the interactionist perspective. The reason is that these aspects are fundamentally related to both creativity demands and empowering leadership. Although the problem-solving demands of a job are a job characteristic that entails preventing, diagnosing and solving problems (Morgeson & Humphrey, 2006), creative personality is defined as being predisposed to generate and develop new ideas (Helson, 1996).

Following the leadership and creativity literature, we develop arguments for expecting that creative personality and problem-solving demands *simultaneously* moderate the linkage between empowering leadership and creative performance. We thus aim to contribute to a more complex understanding of when empowering leadership relates to creative performance. We do so by proposing a three-way interaction. We develop competing arguments in this paper for how empowering leadership, problem-solving demands and creative personality interact in generating creative performance. On the one hand, we develop a hypothesis that expects that empowering leadership is most effective when creative employees work in jobs with high problem-solving demands (i.e., a fit hypothesis). On the other hand, we develop a hypothesis that expects that empowering leadership compensates when less creative employees work in jobs with low problem-solving demands (i.e., a compensation hypothesis). Vital in these competing hypotheses is that the problem-solving demands can either inhibit or foster the effect of empowering leadership, and this specifically for employees who are more or less predisposed to be creative.

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THEORY AND HYPOTHESES

We first treat the three concepts that are involved in the proposed three-way interaction, and subsequently two alternative hypotheses for the three-way interaction are developed.

Relationship between empowering leadership and creative performance: The role of problem-solving and creative personality

Empowering leadership

Empowering leadership involves enhancing the meaning of work, fostering participation in decision making, expressing confidence in employee competencies and removing hindrances to autonomy and performance (Ahearne, Mathieu, & Rapp, 2005). In this leadership style, leaders encourage openness to opportunities and emphasize self-leadership. This leadership approach makes employees responsible for leading themselves. The leader fosters self-leadership by nurturing conditions that foster employees' feelings of being in control of an important work goal. The leader shares power and stresses the importance of the employees' job. The leader allows employees to competently pursue their work goals while being responsible for their own decisions. Employees are given the opportunity to explore solutions to problems and are allowed to implement actions without direct supervision (Pearce & Sims, 2001; Ahearne, Mathieu, & Rapp, 2005; Vecchio, Justin, & Pearce, 2010). By having discretion in their work, employees develop the spirit of continuous improvement and feel ownership of and responsibility for their work (Sims, Faraj, & Yun, 2009).

Given the nature of creativity, empowering leadership thus helps in establishing a work context in which employees are empowered to be creative. Employees explore alternatives to solving problems. The creativity literature stresses that participation in decision making and perceptions of autonomy are vital conditions for creativity. Due to the delegation of power, the conditions are fostered for an employee to search for the best possible creative solutions while performing (Amabile et al., 2004). With empowering leadership, the power to engage in creativity is decentralized to the employees (Srivastava, Bartol, & Locke, 2006).

Although empowering leadership can be conceptualized as a team-level concept (Seibert, Silver, & Randolph, 2004), individual employees differ in the extent to which empowerment initiatives affect them. A 'one-size-fits-all' approach to empowerment does not take employee differences into account. Therefore, there is high support for conceptualizing empowering leadership as an individual employee's relationship with his leader in which leaders differentiate the degree to which they empower their employees (Ahearne, Mathieu, & Rapp, 2005; Zhang & Bartol, 2010). The empowerment research acknowledges that it does not make sense to empower all employees to the same extent and that leaders should judge whom and whom not to empower (Ford & Fottler, 1995; Humborstad, Nerstad, & Dysvik, 2014). Similarly, the interactionist perspective of creativity also suggests that a one-size-fits-all approach is not relevant to fostering creative performance from empowering leadership (Woodman, Sawyer, & Griffin, 1993; Shalley, Zhou, & Oldham, 2004).

Below we first define the two concepts that influence the relationship between empowering leadership and creative performance: problem solving and creative personality, respectively. We then develop a hypothesis regarding the effect of the three-way interaction among empowering leadership, problem solving and creative personality on creative performance.

Problem-solving demands

Problem solving is part of the knowledge characteristics of a job. Jobs with high problem-solving demands require enhanced cognitive abilities while performing the work. Similar to the creative demands of work, it involves preventing problems, diagnosing problems and generating unique

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solutions to nonroutine problems (Wall, Cordery, & Clegg, 2002; Morgeson & Humphrey, 2006). When the problem-solving demands of a job are high, employees are challenged to develop new solutions to problems while stretching their competencies. This differs from the extent to which employees are empowered to be creative. The latter refers to an employee's motivation to solve problems in a creative way, whereas problem solving is an aspect of the job design. Importantly, it is not an objective aspect of the job design, but rather a perception of the employee (Zhou, Hirst, & Shipton, 2012). Following Zhou, Hirst, and Shipton (2012), the problem-solving demands of a job are defined as the extent to which individuals perceive their work to be challenging, exposing them to novel and unexpected events. These scholars have proposed that problem-solving demands are a particularly important job attribute for creativity within a work context where creativity is not explicitly required. These demands make employees develop and apply their problem-solving competencies to address work-related problems.

In the recent extension of the jobs characteristics theory, problem solving is conceptualized as being part of the motivational characteristics of work (Morgeson & Humphrey, 2006). Problem solving affects employee outcomes such as creativity. Due to the problem-solving demands of their jobs, employees experience meaning and responsibility from their work (Shalley, Zhou, & Oldham, 2004; Humphrey, Nahrgang, & Morgeson, 2007). When the problem-solving demands are high, employees must address new problems by gathering new information and acquiring new competencies. Employees' interest and positive challenges are raised by the intellectual demands of the job (Amabile et al., 2004). Employees are able to be open to new opportunities and ways of doing things. In this way, creative performance is fostered. In contrast, when there is no need for problem solving, employees can easily resort to routine approaches and creative performance is inhibited (Zhou, Hirst, & Shipton, 2012).

Creative personality

The study of personality traits has a long history in studies on organizational behavior as they have been shown to matter to many outcomes at work (Judge, Klinger, Simon, & Yang, 2008). A review by Ng and Feldman (2012) demonstrates that several traits have been linked to creative performance by previous research: openness to experience (being enthusiastic to engage in new activities), proactive personality (actively seeking new approaches to improve performance and attain better outcomes), risk-taking personality (experimenting with alternatives that may be unsafe/unconventional) and creative personality (generating and developing new ideas is a central part of these individuals' lives). Similar to other personality traits, the creative personality is a stable personal trait that makes employees predisposed to behave in a certain way. Creative personality is specifically about individuals' stable personal traits that make them disposed to behave creatively in a variety of domains. These traits affect characteristic approaches in thinking, feeling and acting during the execution of tasks. Employees with a creative personality are able to develop different alternative solutions to ambiguous problems (Ford, 1996). Feist argues that 'empirical research over the past 45 years makes a rather convincing case that creative people behave consistently over time and situation and in ways that distinguish them from others. It is safe to say that in general a "creative personality" does exist' (1998: 304).

Some people have a more creative personality than others. People differ in their predominantly stable creative personality. Initially, creativity research sought to explain creative performance from these individual differences in creative personality (Hammond, Neff, Farr, Schwall, & Zhao, 2011; Zhou & Hoever, 2014). Employees that have a creative personality look to stretch themselves and persist in formulating problem-focused responses to the challenges of their work. This willingness to persevere through the various stages of creative work may be vital to produce novel and useful ideas (Zhang & Bartol, 2010). Studies provide support for a positive linkage between creative personality and creative performance (Oldham & Cummings, 1996; Zhou & Oldham, 2001). Nevertheless, an important

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nuance is that its effectiveness depends on situational factors (Amabile, 1983). Although creative personality plays a role in creative performance, it is now acknowledged that creative personality should not be studied in isolation. Creative personality is not consistently related to creative performance, which suggests that creativity is not solely trait driven (Hammond et al., 2011). A recent review indicates that an employees' creative potential will not be realized when employees work in an unsupportive context. Conversely, employees that do not have a creative personality may actually be creative when the context supports creativity (Zhou & Hoever, 2014).

Three-way interaction among empowering leadership, problem-solving demand and creative personality

We propose a three-way interaction among empowering leadership, problem-solving demands and creative personality. Following interactional perspectives (Woodman, Sawyer, & Griffin, 1993), creative performance can be regarded as the result of a complex interplay of leadership, personal and contextual characteristics. Below we build on interactional perspectives to propose two competing hypotheses. First, we develop arguments for a fit hypothesis, and subsequently, arguments are developed for a compensation hypothesis. There are theoretical grounds for both lines of argument and given the complexity of the interactional perspective of creativity, we find it worthwhile to develop both.

Fit hypothesis

When a job has high problem-solving demands, the means to solve problems may be unclear (Campbell, 1988) and employees often develop competencies while being involved in the problem-solving process (Lindgren, Henfridsson, & Schultze, 2004). These job demands require them to be creative and generate alternatives to solve problems. Facing these demands, employees would welcome empowering leadership because their leader would smooth their path to engage in creative behaviors. Empowering leaders removes bureaucratic constraints that may be encountered when solving problems (Amabile, 1983). Specifically, employees with a creative personality may welcome this empowering leadership. Creative employees who work in jobs that require problem-solving behaviors may perceive their leaders' empowering leadership as relevant to address the demands of their jobs.

This reasoning is in accordance with the theory of trait activation, which postulates that for dispositions to manifest themselves, they must fit with the job context. Creatively disposed people would react favorably when their job context requires creativity. Whether people who are dispositionally inclined toward creativity actually are creative at work would depend on the creativity demands in their job context (Raja & Johns, 2010). Empowering leadership and problem-solving demands are such creativity demands in the job context. In support for this theory of trait activation, creative personality has been found to interact with organizational support for creativity (Farmer, Tierney, & Kung-McIntyre, 2003). Given that the leader is seen by the employee as an agent of the organization (Levinson, Price, Munden, Mandl, & Solley, 1962), empowering leadership may be seen as a form of organizational support that affects whether creative persons actually are creative at the workplace. Leadership behaviors are not universally effective. Instead, their effectiveness depends on multiple aspects, including employees' personal characteristics (Perry, Witt, Penney, & Atwater, 2010). The values emphasized in empowering leadership can be argued to fit with what is valued by a creative person (e.g., openness to new ideas, problem solving). According to the fit perspective, this value fit should drive creative performance.

The above reasoning is not only consistent with the theory of trait activation, but also with the view that leadership can be expected to interact with job design in affecting creative performance (Volmer, Spurk, & Niessen, 2012). Employees are empowered by their leaders to have a true impact on the

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organization that allows them to develop ideas that are required by the problem-solving demands of their jobs. Developing these ideas fits well with their creative personalities. Creative employees naturally have many ideas. When such employees have an empowering leader, they may feel confident to express and discuss their ideas openly with that leader. These employees may also feel more confident that their ideas will be actually used. As a consequence, these employees are more likely to display creative performance. Building on the contingency perspective of leadership (e.g., Hersey, Blanchard, & Natemeyer, 1979; House, 1996), it has been argued that leadership styles should match with the underlying demands of different jobs (Liu et al., 2003). Jobs where problem solving is more prevalent are consistent with the logic of empowering leadership in which creativity and taking initiatives when solving problems is encouraged.

In contrast, employees that do not work in a job that requires high problem solving may not perceive any benefits in their leaders' empowering behaviors that urge them to engage in creative problem solving because it is not a requirement of their jobs. As a consequence, these employees may avoid being creative although their leader empowers them to engage in creative behaviors. This may even be more the case for employees who lack a creative personality, as they are not predisposed to engage in creative behaviors. They are likely to perceive that their leaders' efforts to engage them in the creative process do not match their job requirements. For jobs in which problem-solving demands are low, other leadership styles may be more appropriate for managing employees (Liu et al., 2003).

Building on the above reasoning from a fit perspective, we propose that empowering leadership will foster creative performance for employees with a creative personality and who face high problem-solving demands in their jobs.

> Hypothesis 1: There is a three-way interaction between empowering leadership, problem-solving demand and creative personality in predicting creative performance, such that empowering leadership will be more strongly positively related to creative performance when problem-solving demands and creative personality are both high as opposed to both low.

Compensation hypothesis

In addition to the fit hypothesis, there are also theoretical grounds to develop a compensation hypothesis. It has been argued that 'leaders, to be effective, engage in behaviors that complement subordinates' environment and abilities in a manner that compensates for deficiencies and is instrumental to subordinates satisfaction and individual and work unit performance' (House, 1996: 323). When creativity is a rare outcome that extends beyond the employee's job description, it is especially prone to disruption, and it requires careful nurturing (Zhou & Hoever, 2014). When the problem-solving demands of the job are high, employees already engage in creative performance due to having unclear means or ends. As a consequence, employees' creative performance may be less prone to disruptions (George & Zhou, 2001). This would imply that when employees perceive that problem-solving demands are part of their jobs, the leader will have less impact on creative performance because the employees are already more likely to be creative. Thus, it can be argued that this nurturing will be particularly important when employees perceive that their job does not demand problem solving. When employees work in jobs with low problem-solving demands, empowering leadership may make a difference.

Importantly, the compensation perspective stresses that besides the contextual factor of problem-solving demands, personal factors, such as creative personality, also matter (House, 1996). The extent to which the empowering leader can compensate for a lack of problem-solving demands may be stronger for less creative employees. Instead of looking for new approaches for handling challenges, less creative employees may feel more comfortable resorting to their usual routines. Although it is not something they would naturally do, their leader stimulates them to generate creative ideas and to think

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along. The leader empowers employees to look for innovative solutions to problems, even when these problems extend their jobs (Ahearne, Mathieu, & Rapp, 2005). They thus also nudge less creative employees to impact the organization and give them the opportunity to engage in the creative process, even when these employees work in jobs with low problem-solving demands. The stimulating effect of empowering leadership in the context of low problem-solving demands may thus be larger when employees do not have a creative personality. In contrast, employees who have a creative personality may be more creative regardless of their job demands and leadership behaviors.

Following the reasoning for a three-way interaction from a compensation perspective, it is proposed that empowering leadership is especially useful in fostering creativity for less creative employees who find that their jobs are characterized by low problem-solving demands.

Hypothesis 2: There is a three-way interaction between empowering leadership, problem-solving demand and creative personality in predicting creative performance, such that empowering leadership will be more strongly positively related to creative performance when problem-solving demand and creative personality are both low as opposed to both high.

METHODS

Sample and procedures

The sample consisted of employees at a large plant of an international industrial organization in Flanders with a broad range of job functions. Stratified random sampling across job functions was conducted (Hair, Money, Samouel, & Page, 2007). In order to have sufficient variation in the problem-solving demands, we sought to obtain a sample with many different job functions. In sampling different jobs, we follow Zhou, Hirst, and Shipton (2012) who argue that creativity research should not focus solely on contexts where creativity is expected. They build on creativity literature to argue that creative performance may also occur in a context where creativity is not an expected outcome.

Approximately 690 employees in 70 white-collar job functions in diverse functional domains were contacted for the survey. The respondents were scattered across job functions. None of the jobs represented >5% of the respondents. Examples of job functions include customs developer, break-down coordinator, traffic coordinator, trainer, support coordinator, shipper, business analyst, quality control coordinator, logistic consultant, service engineers, production planning employees, logistic service employees, and support and administrative staff. A total of 213 employees contributed to the survey. This 31% response rate is an average response rate for web-based surveys (Cook, Heath, & Thompson, 2000). Half of the sample held a higher degree (Master's degree: 23%; Bachelor's degree: 27%). The age ranged between 20 and 58 years ($M = 38.82$; $SD = 9.6$). The majority of the sample was male (64%). Approximately 88% of the sample worked full time and the average organizational tenure of the respondents was 12.52 years ($SD = 8.90$).

Measures

All data on the continuous variables were collected on a 7-point Likert scale.

Empowering leadership

Empowering leadership was measured using Ahearne, Mathieu, and Rapp (2005) scale, consisting of 12 items. Example items are 'My manager believes that I can handle demanding tasks' and 'My manager allows me to do my job my way.' Cronbach's α for this scale was 0.94.

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Problem-solving demands

Problem-solving demands was measured using a 4-item scale by Morgeson and Humphrey (2006). This 4-item scale makes part of knowledge characteristics of the Work Design Questionnaire. An example item is 'The job requires me to be creative.' Cronbach's α for this scale was 0.88.

Creative personality

Creative personality was assessed using the Creative Personality Scale by Gough (1979). This scale contains 18 traits that describe more creative personalities (e.g., inventive and imaginative) and 12 traits that describe less creative personalities (e.g., conservative and submissive). Cronbach's α for this scale was 0.79.

Creative performance

We used the 13-item scale of creative performance that was developed by Zhou and George (2001). A sample item is 'I am a good source of creative ideas at work.' Cronbach's α for this scale was 0.96.

Control variables

We controlled for education level which has been found to be significantly related to creative performance (Hammond et al., 2011).

Analyses

Table 1 shows the correlations and the descriptive statistics. Similar to other research on creative performance, some of the correlations are high (Zhang & Zhou, 2014). In order to test for multicollinearity, VIF values were calculated for the regression analyses (Table 2). The VIF values are below the stringent cut-off value of 2, which indicates that multicollinearity is not an issue (Hair et al., 2007).

It is possible that common method variance stemming from the single respondent, cross-sectional questionnaire design may inflate correlations. In order to check for the possibility of common method variance, we followed recommendations by Podsakoff, MacKenzie, and Podsakoff (2012): we subjected all items to principal component analysis and restricted them to load on one factor (Harman, 1976). This factor explained 43% of the variance. This supports that common method variance does not confound our results.

We build on interactionist perspectives to study empowering leadership (e.g., Hersey, Blanchard, & Natemeyer, 1979; Ford & Fottler, 1995; House, 1996; Humborstad, Nerstad, & Dysvik, 2014) and creative performance (Woodman, Sawyer, & Griffin, 1993; Anderson, Potočnik, & Zhou, 2014). This perspective provides our theory-based rationale to posit a complex three-way interaction effect of

Table 1. Results of correlation analysis

	Variables	*Mean*	*SD*	*1*	*2*	*3*	*4*
1.	Problem-solving demands	5.34	1.23	(*0.88*)			
2.	Creative personality	5.95	0.72	0.21**	(*0.79*)		
3.	Empowering leadership	4.80	1.12	0.46**	0.19*	(*0.94*)	
4.	Creative performance	4.99	1.00	0.65**	0.31**	0.49**	(*0.96*)

Notes. The values in parantheses are cronbach alpha's. $N = 213$.
*$p < .05$; **$p < .01$.

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Table 2. Results of regression analysis

	Creative performance				
	M1	*M2*	*M3*	*M4*	*VIF*
Control variables					
Higher education	−0.06	−0.10	−0.10	−0.11	1.052
Independent variables					
Problem-solving demands (PS)		0.39***	0.38***	0.44***	1.388
Empowering leadership (EL)		0.21**	0.23**	0.22**	1.242
Creative personality (CP)		0.12*	0.11†	0.15*	1.151
Interactions					
CP × PS			0.05	0.02	1.453
EL × CP			−0.06	−0.05	1.214
EL × PS			−0.02	−0.01	1.284
EL × PS × CP				−0.12†	1.381
Adjusted R^2		0.28	0.28	0.29	

Notes. $N = 213$.
*$p < .05$; **$p < .01$; ***$p < .001$; †$p < .10$.

empowering leadership, problem-solving demands and creative personality in relation to creative performance. Research often is underpowered, and this is especially true when an interactive perspective is taken. The power to testing interaction effects is generally lower than for testing main effects (McClelland & Judd, 1993). This increases the chance of type 2 errors (i.e., insufficient statistical power to detect existing population effects) occurring (Dawson, 2014). Therefore, we decided to take the 10% level of significance. With this choice, we sought to avoid the possibility of taking the incorrect conclusion that our found interactions are not different from 0 due to insufficient statistical power. Given the increased complexity of the model, this choice may be even more warranted for testing three-way interactions than for testing two-way interactions. Accordingly, other research that adopts the interactive perspective on creative performance has also used the 10% level of significance (Zhou & Wu, 2010; Zhang & Zhou, 2014).

Table 2 shows the results of the stepwise moderated regression analysis (Cohen, Cohen, West, & Aiken, 2013). In model 1, we test for educational level that may be regarded as a proxy for the job type and level. This did not lead to significant results. In model 2, the independent variables were added. This led to significant and positive results for problem-solving demands ($\beta = 0.39$, $p < .01$), empowering leadership ($\beta = 0.21$, $p < .01$) and creative personality ($\beta = 0.12$, $p < .05$) as related to creative performance. In the subsequent model, the two-way interactions were added, which did not lead to significant results. Finally, in the fourth model, the interaction hypothesis was tested by adding the three-way interaction. In this model, we found support for a significant three-way interaction as hypothesized ($\beta = -0.12$, $p = .057$).

To understand the nature of the three-way interaction, we have plotted the interaction in Figure 1 and calculated slope differences in Table 3 based on the approach of Dawson and Richter (2006). According to our results, empowering leadership has the strongest positive association with creative performance when creative personality is low and problem-solving demands are high. This finding provides partial support for the fit model in Hypothesis 1 pertaining to the aspect of problem-solving demands. For creative personality, our findings provide support for the compensation model that was hypothesized in Hypothesis 2. The second hypothesis is thus also partially supported: our findings provide support for a compensation of low creative personality.

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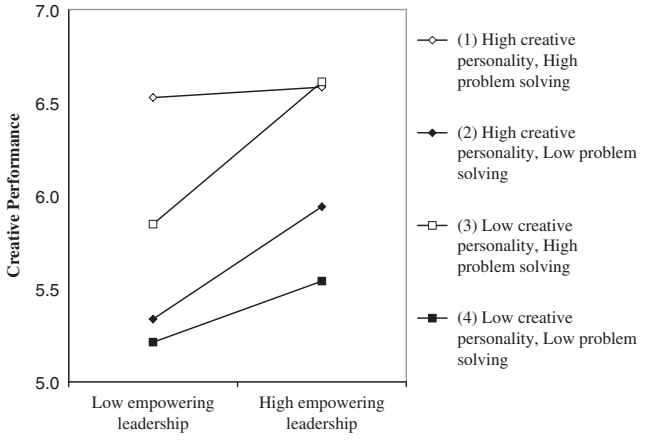

FIGURE 1. PLOT OF THE THREE-WAY INTERACTION AMONG EMPOWERING LEADERSHIP, CREATIVE PERSONALITY AND PROBLEM-SOLVING DEMANDS

TABLE 3. SLOPE DIFFERENCE TESTS

Pair of slopes	*t-Value for slope difference*
(1) and (2)	−1.444
(1) and (3)	−2.285*
(1) and (4)	−0.807
(2) and (3)	−0.481
(2) and (4)	0.891
(3) and (4)	1.541

Note. *$p < .05$.

DISCUSSION

With this paper we aim to contribute to our complex understanding of when empowering leadership fosters creative performance. We developed hypotheses on how empowering leadership, problem-solving demands and creative personality interact. There were theoretical grounds to develop two competing hypotheses from a fit perspective and a compensation perspective. According to the fit perspective (Liu et al., 2003; Raja & Johns, 2010), employees would act creatively upon their leaders' empowering efforts when they are creatively predisposed and when their job is designed to solve problems. According to the compensation perspective (House, 1996; George & Zhou, 2001), empowering leadership may compensate for a lack of problem-solving demands and a lack of creative personality.

This study found partial support for the fit hypothesis and the compensation hypothesis: empowering leadership had the strongest relationship with creative performance in jobs with high problem-solving demands (which supports the fit hypothesis) when employees have a low creative personality (which supports the compensation hypothesis). Empowering leadership is found to be particularly effective when noncreative employees work in a job with high problem-solving demands. These kinds of jobs require employees to identify the right means to solve problems and to come up

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with several possible creative solutions during the execution of the job. Employees without a creative personality may not feel confident or engaged in generating the creative solutions that their job requires. Their leader can foster their felt confidence in their competencies to engage in idea generation, as well as their felt meaningfulness of solving problems by being creative. Below, we explain how these findings generate theoretical and practical contributions, as well as discussing some limitations and future research possibilities.

Theoretical contributions

In most jobs in the current information society, it is not possible for leaders 'to have all the answers' or 'make all the decisions' (Lovelace, Manz, & Alves, 2007: 375), which emphasizes the need for empowering leadership to foster creative performance. Previous research on empowering research, however, suggests that employees are not uniformly receptive to empowering leadership. Accordingly, it has recently been stressed that the interactionist perspective of empowering leadership requires further development (Ahearne, Mathieu, & Rapp, 2005; Humborstad, Nerstad, & Dysvik, 2014; Sharma & Kirkman, 2015). The complexity of this perspective makes it possible to develop competing arguments. In this paper, competing arguments were presented for the way in which empowering leadership, problem-solving demands and creative personality interact. Arguments were built simultaneously for a fit model and a compensation model. Our findings highlight the complexity of the interactionist perspective by finding support for arguments from both of these perspectives: when empowering leadership fits with the problem-solving demands of a job, it compensates for low creative personality.

The finding that the two-way interactions were not significant and the three-way interaction was significant provides an interesting and valuable insight into the effect of leadership and creativity. It supports our basic assumption that personal and contextual factors simultaneously intervene with empowering leadership and should be studied in complex interplay with one another. Contingency theories of the effectiveness of leadership often point at multiple moderators (e.g., Hersey, Blanchard, & Natemeyer, 1979; House, 1996). In the path–goal theory of leadership (House, 1996: 323) it is stressed that both contextual and personal factors matter to the effectiveness of leadership. Accordingly, our results support the need to simultaneously consider problem-solving demands (i.e., contextual factors) and creative personality (i.e., personal factors). As has been recently advanced in the empowering leadership literature, an interactional perspective of empowering leadership fosters our understanding of the outcomes of empowering leadership (Sharma & Kirkman, 2015).

More specifically, this paper contributes to the debate on a more complex understanding of when empowering leadership relates to creative performance by integrating theorizing on the need to consider the job as a contextual boundary condition of the effectiveness of empowering leadership (e.g., Liu et al., 2003) with the need to consider personal factors (e.g., Ahearne, Mathieu, & Rapp, 2005; Zhou & Hoever, 2014). Liu et al. (2003) specifically consider that the effectiveness of leadership depends on the kind of job in the organization. Empowering leadership would be specifically relevant to jobs with high problem-solving needs. We add to this insight that the effectiveness of empowering leadership in these jobs depends on the extent to which the employee has a creative personality. When creative employees face high problem-solving demands, increasing empowering leadership makes little difference for creative performance. In contrast, when less creative persons perceive high problem-solving demands in their jobs, their leaders can still drive creative performance by empowering them. Our findings thus provide support for the idea that personality functions as an interpretation scheme through which employees perceive and react to how they are managed in their jobs (Nishii & Wright, 2008).

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Practical implications

Several steps can be followed when creative performance is important and lacking from certain employees. First, it is important that the job expectations signal problem solving. This should be consistently signaled in employee performance management and competency management (Decramer, Smolders, & Vanderstraeten, 2012; Audenaert, Vanderstraeten, & Buyens, 2014). For instance, problem-solving demands should be clear from the job description, performance planning processes, competency model, personal development plan, performance feedback, performance appraisal and performance reward. When these processes are designed to consistently signal the problem-solving demands, it can be assessed whether employees also perceive it as such. Subsequently, it may be relevant to analyze the extent to which employees have a creative personality. During selection procedures, employees can be assessed on their creative personalities. Finally, when new or existing employees do not have a creative personality, empowering leadership can make the difference. Empowering leadership is beneficial to employees who lack a creative personality. These employees need this extra push to feel competent and perceive meaning in engaging in the problem-solving demands required by their jobs. The leaders' empowering leadership can be managed in diverse phases of employee performance management and competency management (Decramer, Smolders, & Vanderstraeten, 2012; Audenaert, Vanderstraeten, & Buyens, 2014).

Limitations and future research

The results should be interpreted in light of several limitations and future research could extend some of our findings. First, our results could suffer from common method bias due to the use of cross-sectional, self-reported data. For confidentiality reasons, it was stressed that the respondents' answers were anonymous. Therefore, we could not identify the respondents and collect time-lagged data. Because social desirability may cause common method bias, we emphasized in the survey that the data were anonymous and that there are no right or wrong answers (Podsakoff, MacKenzie, & Podsakoff, 2012); however, the studied model involves testing interactions. Because interaction effects are less likely to guide the cognitive map of the respondents, it is less likely to cause common method bias. Because interaction relationships are found in data, common method bias is unlikely to be an issue (Siemsen, Roth, & Oliveira, 2010). Nevertheless, future research could use multisource and longitudinal data. In addition, because our study was based on data from jobs within one organization, the external validity could be questioned. Creativity may differ between organizations. Nevertheless, our method had the advantage of avoiding contamination of the data due to sector and organizational differences. In addition, the chosen organization was ideal for our purposes due to its large scale and the presence of different jobs with different problem-solving demands.

Conclusion

The aim of this study was to examine the complexities of the ways in which empowering leadership, problem-solving demands and creative personality affect creative performance. Arguments were built for a three-way interaction among empowering leadership, problem-solving demands and creative personality. Data on 213 employees in an industrial organization in Belgium were used. The analysis showed that empowering leadership compensated for a low creative personality when it matched well with the (high) problem-solving demands of the job. Our results thus contribute to a more complex understanding of when empowering leadership is effective by simultaneously considering personal and contextual factors.

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