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Team Empowerment, Individual Goal Orientations, and Employee Creative Performance: A

Case of Cross-level Interactions

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Team Empowerment, Individual Goal Orientations, and Employee Creative Performance: A
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Abstract

Intrigued by relationship between team motivational context and individual characteristics in the organizational reality, we developed and tested a cross-level model to investigate the interactive effects of team empowerment and individual goal orientations on individual creative performance through the mediating mechanism of an individual's creative self-efficacy. Using multi-wave multi-source data from 63 R&D teams in three IT companies, we found that (1) team empowerment, individual learning goal orientation, and individual performance orientation are all positively related to individual creative performance through mediation of creative self-efficacy; (2) learning orientation and performance approach orientation could both supplement the effects of team empowerment on individual creative self-efficacy. Our findings point to the importance of individual goal orientation in shaping the effects of team motivation climates and provide insights for both scholars and practitioners. The specific practical implications include but are not limited to (1) individuals with learning and performance approach orientations should be identified during hiring procedures given that they could still thrive in less empowered teams and maintain a relatively high level of creative self-efficacy and creative outcomes; (2) managers should consider assigning employees who are more learning oriented to more empowering and open-ended tasks in order to obtain better creative results.

Keywords:

Team Empowerment, Goal Orientations, creative self-efficacy, creative performance

Individual Goal Orientations, Team Empowerment, and Employee Creative Performance: A Case of Cross-level Interactions

Introduction

Competition in the twenty-first century global economy is characterized by a high demand for creativity and innovation. Creativity, which we define as developing new ideas and products, stimulates organizational innovation, both of which have become essential for businesses to survive in a world of rapid change (George & Zhou, 2001). Over the past three decades, research focused on understanding and improving creativity has recognized creativity as a function of the joint effects of organizational contexts and individual characteristics (cf. Shalley, Zhou & Oldham, 2004; Hirst, van Knippenberg, & Zhou, 2009; Hirst, van Knippenberg, Chen, & Sacramento, 2011).

In an ideal situation, one could optimize creative outcomes by hiring job candidates with the highest creative potential and providing them a motivating work environment to encourage creative efforts, but the organizational reality is often less than “ideal.” Recognizing that the organizational reality offers different combinations of team motivational context and individual characteristics, we pose the question of “what can managers do to ensure high creativity?” Building on the interactionist approach that examines the interplay between contextual factors (e.g. team characteristics) and individual differences (e.g. goal orientations) (e.g. Hirst et al, 2009; Hirst et al., 2011), we specifically seek to extend our understanding of the relationship between team empowerment and individual goal orientations, two factors that been argued to increase creativity.

Team empowerment reflects a team’s generalized effectiveness and collective sense of control over resources (Kirkman & Rosen, 1999; Kirkman, Rosen, Tesluk, & Gibson, 2004). Team empowerment is particularly conducive to creativity for at least two reasons. First,

empowerment by definition is essential to internal task motivation and self-efficacy, both of which are critical for the germination of novel and useful ideas (Block, 1987; Conger & Kanungo, 1988; Randolph, 1995; Shalley et al., 2004; Chen & Kanfer, 2006; Zhou, Wang, Chen, & Shi, 2012). Secondly, jobs that demand creativity often lack stringent and defined role descriptions (Kazanjian, Drazin, & Glynn, 2000), where motivation and a sense of control are important in directing sustained energy and productivity. Accordingly, empowerment, the process of instilling motivation and self-determination, should provide great conduit for creativity (Dong, Liao, Chuang, Zhou, & Campbell, 2015).

While team empowerment is a team motivational property, individual goal orientations represent individuals' motivational potential. Among the three dimensions of goal orientations (i.e., learning, performance, and avoid orientations), learning orientation has been found to positively influence one's creativity, while the results on performance and avoid orientation are inconclusive (Hirst et al., 2009). In this study, we examine the joint effects of team empowerment and individual goal orientations on individual creativity through the mediating mechanism of individual creative self-efficacy.

Literature Review and Hypotheses

Team empowerment and individual creativity

Team empowerment is a team's increased collective motivation (Kirkman & Rosen, 2000). It reflects a team's generalized effectiveness and a collective sense of control over resources (Kirkman & Rosen, 1999; Kirkman, et al., 2004; Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Seibert, Wang, & Courtright, 2011; Jiang, Flores, Leelawong, & Manz, 2016). Empowered employees are more persistent and more likely to take initiative to improve quality and seek innovative solutions, which is beneficial to team members' job attitudes and performance (Spreitzer 1995; Kirkman & Rosen, 1999; Hyatt & Ruddy, 1997). Research

finds that not only are empowered teams more productive and proactive, but individual members of empowered teams also report higher job satisfaction and organizational commitment (Kirkman & Rosen 1999; D’Innocenzo, Luciano, Mathieu, Maynard, & Chen, 2016).

Team empowerment consists of four aspects: potency, meaningfulness, autonomy, and impact (Kirkman & Rosen, 1997; 1999). Potency reflects a team’s collective competence toward task performance and generalized effectiveness (Kirkman & Rosen, 1999; Guzzo, Yost, Campbell, & Shea, 1993). Individuals in a highly potent team are surrounded by competent teammates, which creates a relatively safe environment for individuals to take risks and try new ideas under team accountability. Meaningfulness refers to a team’s collective sense of its tasks being worthwhile and valuable (Kirkman & Rosen, 1999; Kirkman et al., 2004). It reflects a team’s intrinsic penchant for task goals, which is an important conduit for creativity (Amabile, 1996). This collective cognition on the significance of tasks is likely to increase knowledge sharing and information exchange among individual team members (Seibert et al., 2011), resulting in process improvement and task innovations (Deci & Ryan, 1985).

Autonomy reflects the degree to which a team experiences substantial independence, freedom, and discretion in completing tasks (Hackman, 1987; Kirkman & Rosen, 1999; Kirkman et al., 2004), and has been recognized as an important antecedent of creativity (e.g., Shalley, 1991; Zhou, 1998). Research suggests that an individual’s feeling of control over resources will be positively affected by distal goals and loose monitoring, which are present in the situation of team empowerment (Bandura, 1982; Harackiewicz & Manderlink, 1984). Empirical studies have also shown that perceived job autonomy leads to stronger self-determination and creative self-efficacy (i.e., Wang, Zhang, & Martocchio, 2011). Individuals produce more creative work when perceiving themselves as having a choice in

how to accomplish their tasks (e.g., Liu, Chen, & Yao, 2011; Amabile & Gitomer, 1984) and when experiencing higher autonomy and a stronger sense of ownership or control over their own work (Bailyn, 1985; Paolillo, & Brown, 1978; West, 1986). Finally, impact reflects the extent to which a team perceives its contributions as significant to its stakeholders (Kirkman et al., 2004). A team's collective sense of task significance (Hackman & Oldham, 1980) that has been found to increase individual task motivation. When individuals work in jobs that are characterized by potency, meaningfulness, autonomy, and impact, they are likely to experience a high level of motivation, which leads to higher levels of creativity (Shalley et al., 2004; Amabile & Grysiewicz, 1987; Farmer, Tierney & Kung-McIntyre, 2003; Hackman & Oldham, 1980). Overall, we expect that all four dimensions of team empowerment contribute to individual creativity.

Creative efficacy as mediator

As a powerful predictor of creativity, creative self-efficacy has been found to explain a significant portion of variance in individual creativity (Tierney & Farmer 2002; Gong, Huang, & Farr, 2009). It also serves as a mediator that conducts the effects of distal influences (e.g., team empowerment) to change individual behavior. For instance, team potency fuels individual self-efficacy in builds individuals' confidence in the team's ability to provide materials and significance and contributes to a greater organizational goal (Hackman, 1987; Hackman & Oldham, 1980). Meaningfulness and impact act as social persuasion, convincing individual team members of task value, which boosts members' individual self-efficacy and leads to higher individual creativity (Shalley et al., 2004; Amabile & Grysiewicz, 1987; Farmer et al., 2003; Hackman & Oldham, 1980).

Therefore, we hypothesize that a positive relationship exists between team empowerment and individuals' creativity through the mediation of increased creative self-efficacy.

H1: Team empowerment is positively related to individual team members' creativity, through the mediation of creative self-efficacy.

Goal orientations, creative self-efficacy, and creativity

Goal orientations are individual motivational frameworks for interpreting and responding to organizational context (Farr, Hofmann, Ringenbach, 1993; Dweck, 1999; VandeWalle, 1997). Recent research has suggested that individual goal orientations consist of three orthogonally distinct dimensions: learning goal orientation, performance goal orientation, and avoid orientation (e.g. Porath & Bateman, 2006; Hirst, et al., 2009; Hirst, et al., 2011). Learning orientation describes an individual's predominant desire to obtain knowledge and develop competence. Performance orientation signifies the individual's predominant desire to obtain favorable evaluations and demonstrate competence relative to others. Avoid orientation concerns the individual's predominant desire to avoid demonstrations of incompetence and subsequent negative evaluations (VandeWalle, 1997; Dragoni, 2005; Payne, Youngcourt, & Beaubien, 2007).

Learning goal-oriented individuals like to pursue challenges, obtain knowledge, and develop competence (VandeWalle, 1997), and are more likely to be creative at work (Hirst et al., 2009). They like to try new ideas, learn from past experiences and social counterparts, and maintain a positive outlook on creative endeavors (Gong et al., 2009; Zhang, Jex, Peng, & Wang, 2017). Research by Gong and colleagues (2009) has suggested that learning goal-oriented individuals are likely to develop a higher level of creative self-efficacy, which in turn leads to a higher level of creative performance. Specifically because their primary focus is to develop competence and learn from others, these employees are more likely to develop mastery and vicarious learning experience than their non-learning-oriented counterparts at work (Gong et al., 2009; Dweck, 1986). In addition, learning-oriented employees are more persistent when faced with setbacks and risks, which helps in maintaining their positive

attitudes towards creative endeavors (Gong et al., 2009; Bandura, 1986). Indeed, Gong and colleagues have found empirical support for an indirect relationship between learning goal orientation and individual creativity through the mediation of creative self-efficacy (Gong et al., 2009). Based on these studies, we expect that this positive indirect relationship will hold in the current study.

H2: An individual's learning goal orientation is positively related to his or her creativity at work, through the mediation of creative self-efficacy.

Unlike learning orientation, the effects of performance orientation have been understudied and remain inconclusive. On the one hand, some scholars argue that performance-oriented employees focus on gaining favorable evaluations and outperforming others (Hirst et al., 2009). This focus on external reference (Nicholls, 1975) would undermine intrinsic task interests and discourage performance-oriented individuals from making innovative attempts which are risky in nature (Elliot & McGregor, 2001; Janssen & van Yperen, 2004; Hirst et al., 2009). In addition, the entity-based mentality that performance cannot be enhanced through learning could impede performance-oriented employees from trying new things and gaining new knowledge (Dweck 1986). These characteristics suggest that performance orientation is either negatively related or not at all related to creativity (Hirst et al., 2009). On the other hand, however, more recent evidence has suggested that performance orientation influences employees similarly to learning orientation in terms of increasing employee creativity and learning behavior (Payne, et al., 2007; Gong, Kim, Zhu, & Lee, 2013). In their work on intrinsic motivation and creativity, Grant and Berry (2011) argued that the other-focused psychological process positively influences creativity by emphasizing the “usefulness” of ideas developed, which is a core component of creativity (Amabile, 1996; Shalley et al., 2004). Empirical evidence has also suggested positive relationships between performance approach orientation and task performance (Church,

Elliott, & Gable, 2001; Yeo, Loft, Xiao, & Kiewitz, 2009; Gong et al., 2012). More importantly, as their primary focus is to demonstrate competence, they are likely to achieve mastery and vicarious learning experience to receive favorable evaluations from supervisors and co-workers. In addition, research suggests that performance-oriented employees are likely to have high self-efficacy resulting from high performance evaluations (i.e. social persuasion, Bandura, 1986), which is a key to creativity (Tierney & Farmer, 2002; 2004). Furthermore, the external references of performance-oriented individuals would result in positive social exchange relationships with co-workers and supervisors, which will increase their self-efficacy and creativity (cf. Liao, Liu, & Loi, 2010). Therefore, we hypothesize that performance-approach orientation is positively related to individual creativity, through the mediation of creative self-efficacy.

H3: An individual's performance goal orientation is positively related to his or her creativity at work, through the mediation of creative self-efficacy.

Avoid orientation denotes an individual's desire to avoid demonstrations of incompetence and consequent negative judgments (VandeWalle, 1997; Dragoni, 2005; Payne, et al., 2007). Employees with an avoid orientation are characterized as risk-averse and maladaptive (Dweck, 1986; Yeo, et al., 2009). The effort withdrawal/minimization tendency (Church et al., 2001; Yeo et al., 2009) would result in lower levels of mastery and vicarious learning. Research has found avoid orientation to be negatively related to performance in various settings (e.g., Yeo et al., 2009; Dierdorff, Surface, & Brown, 2010). Lower levels of perceived competence will result in negative social recognition, which are all detrimental to one's creative self-efficacy. Such decreased levels of creative self-efficacy ultimately result in lower creativity. In line with this logic, we expect that avoid orientation is negatively related to creativity, through the mediation of creative self-efficacy.

H4: An individual's avoid orientation is negatively related to his or her creativity at work, through the mediation of creative self-efficacy.

The interactions between goal orientations and team empowerment

Team empowerment, as a team context for individual members, provides goal-related information which should activate an individual's learning goal orientations (Tett & Burnett, 2003). Goal orientations, on the other hand, shape an individual's interpretation of team context. While individuals with learning and performance goal orientations are likely to perceive team empowerment positively, those with avoid goal orientations could negatively perceive empowerment as threatening, causing them to feel insecure.

Specifically, in the eyes of learning-oriented employees, team empowerment engenders trust and support from the organization and its managers (Kirkman & Rosen, 1999). An empowered team with high potency where members are confident in each other's competence, provides opportunities for learning-oriented team members to develop task mastery and to obtain new skills and knowledge. The collective sense of task significance and meaningfulness in an empowered team also promotes individual learning and mastery goals. Therefore, we hypothesize that the two collaborate to further positively affect creative self-efficacy, which ultimately increases one's creativity.

H5: Learning goal-oriented individuals have higher creative self-efficacy in empowered teams, resulting in them being more creative in these teams.

Research suggests that whether the performance-oriented employees engage in creative activities depends on the extent to which such activities are rewarded and recognized by the environment (VandeWalle, 1997; Hirst et al., 2011). In an empowered team, proactivity and taking initiative are highly regarded qualities that are likely to be recognized (Kirkman & Rosen., 1999). In addition, performance-oriented employees are likely to take the other-perspective (Grant & Barry, 2011) and are more motivated by positive interactions or social

exchanges with others, which is an essential aspect of the cohesion of team empowerment. Potency denotes heightened collective beliefs of a group's capability, which will only boost individual creative self-efficacy. Autonomy, another integral aspect of the team empowerment, is believed to provide space for self-motivated, performance-oriented employees to pursue creative endeavors (Liu, et. al., 2011).

Therefore, we would expect that performance-oriented employees would have higher creative self-efficacy and creativity in an empowered team.

H6: Performance-oriented individuals have higher creative self-efficacy in empowered teams, resulting in them being more creative in these teams.

In contrast, individuals with avoid goal orientation are prone to evade ambiguous and open-ending cues that accompany the nature of team empowerment. They may interpret empowerment as risky and more intimidating which could hinder their sense of competence and self-determination. Lack of clear expectations could be demotivating for the avoid-oriented-individuals (Dweck, 1986; Yeo, et al., 2009). They are more likely to perceive self-empowered team as frustrating and stressful environment, resulting in even lower level of creative self-efficacy. Instead of allowing for the learning experience to occur or attempting to prove oneself, they are likely to withhold the effort that's crucial for the creative outcome to avoid risks or failures (e.g., Dierdorff, et al., 2010). Therefore, we hypothesize:

H7: Avoid goal-oriented individuals have lower creative self-efficacy in empowered teams, result in them being less creative in these teams.

The overall hypothesized model can be depicted in the figure below.

Insert figure 1 about here

Methods

Participants and Procedure

Data were collected from 455 employees in 63 technical R&D teams in three mobile communications design and manufacture companies from Southeast China, as part of the companies' initiatives to improve productivity and innovation. The primary job responsibilities of these teams include creating innovative products in the fields of digital communication and information technology. The sizes of the teams range from 5 to 10. With authorization from the top management, one of the authors contacted all current employees and explained with the nature of the study. To minimize same source biases, the data were collected through three waves of surveys with assistance of the HR departments of each company by one of the authors. Wave 1 (immediately before the start of the fourth quarter) survey included items on demographic information, individual goal orientations, and team empowerment. Wave 2 survey was conducted with the same group of employees approximately 5 weeks afterwards to assess individual creative-self-efficacy and intrinsic motivation. Wave 3 data (supervisor ratings on employee performance and creativity) were collected at the end of the fourth quarter during annual performance appraisal period at the participating companies. The time lag between each wave ranges from 4 to 6 weeks. Each employee was assigned a unique code prior to the study, and this code was used to match surveys of each wave. To ensure confidentiality, the matching process was handled independently by the researchers without involving HR departments from each company.

Of the surveys distributed, 419 were returned in the first wave, 415 returned in the second wave, and 318 returned in the final wave, yielding a response rate of 70.1%. Seventy-six percent of the participants were male. On average, their age, organizational tenure, and working group tenure were 29.37 years ($SD = 5.04$), 38.56 months ($SD = 59.08$), and 29.43

months ($SD = 31.58$), respectively. Among all respondents, 82.1% held bachelor's degrees or higher.

Measures

Goal Orientations. Individual Goal Orientations were measured with a 13-item scale developed by Brett and VandeWalle (1999). Learning Goal Orientation ($\alpha=.75$) was measured by five items. A sample item was "I am willing to select a challenging work assignment that I can learn a lot from". Performance-approach Goal Orientation ($\alpha=.77$) was measured by four items. A sample item was "I prefer to work on projects where I can prove my ability to others". Avoid Goal Orientation ($\alpha=.74$) was measured by four items. A sample item was "Avoiding a show of low ability is more important to me than learning a new skill".

Creative Self-efficacy. The Individual Creative Self-efficacy ($\alpha=.89$) was measured by a 3-item scale developed by Tierney & Farmer (2002). A sample item was "I feel that I am good at generating novel ideas at work".

Individual Creative Performance. The 13-item scale developed by George and Zhou (2001) was used to assess employee Creative Performance ($\alpha=.94$). Supervisors were asked to evaluate to what extent they believe each of the 13 behaviors accurately described their employees. A sample item was "The employee suggests new ways to achieve goals or objectives".

Team Empowerment. Team Empowerment was assessed by a 12-item scale developed by Kirkman et al., (2004) ($\alpha=.87$). This scale included 3 items for each of the four team empowerment dimensions, that is, potency, meaningfulness, autonomy, and impact. Sample items were "My team has confidence in itself. (potency)"; "My team believes that its projects are significant. (meaningfulness)"; "My team makes its own choices without being told by management. (autonomy)"; and "My team has a positive impact on this company's customers. (impact)".

Control variables. In testing the hypotheses, we controlled for age (in years), gender, education level (in years of post-high school education), organizational tenure (number of months working in the current company), occupation tenure (number of months in R&D occupation), job tenure (number of months in current job), and team tenure (number of months working in the current team), duration of relationship with the current supervisor. In addition, to eliminate possible alternative explanation, we controlled for the effects of *intrinsic motivation*. The 5-item scale developed by Tierney, Farmer, and Graen (1999) was used to assess Intrinsic Motivation ($\alpha=.85$). A sample item was “I enjoy finding solutions to complex problems”.

All measures were based on a 7-point Likert scales (1=*extremely inaccurate*, 7=*extremely accurate*). All scales were originally written in English, and were validated using the double-blind translation-back translation procedures (Brislin, 1993).

Results

Table 1 provides descriptive statistics and zero-order correlations for all individual level variables. As expected, learning goal orientation, performance-approach goal orientation, and creative self-efficacy were all positively related to the outcome variable—supervisor rated creative performance ($r = .18, .169$, and $.311$, respectively, $p < .01$). Avoid goal orientation was not related to creative performance ($r = -.014$, $p > .05$). Among the control variables, educational levels and intrinsic motivation were positively correlated with creative performance ($r = .137$ and $.182$, respectively, $p < .05$).

There is one team level variable in this study—Team Empowerment. The between-group variance (ICC1) was found to be .16, indicating that 16% of the variance team empowerment can be attributed to team membership (Bliese, 2000). The median Rwg score for team empowerment was .90, indicating high levels of agreement within teams regarding sense of

empowerment (Janz, Colquitt, & Noe, 1997). ICC2 of team empowerment is .47. Although the ICC 2 value (.47) might be a little lower than desired, the satisfactory ICC1 level (.16) and high Rwg (.90) indicate the validity of team empowerment as a group-level variable (Bliese, 2000).

 Insert table 1 here.

Table 2 shows the discriminate validity of the constructs included in this study. Confirmative Factor Analysis results suggest that the five-factor model fits the data better than the alternative models (chi-square 560.72, GFI = .90, and RMSEA = .07).

Test of the theoretical model involves 2 stages. In the first stage, Hierarchical Linear Modeling was used to test the cross-level main effects and interactions (Hofmann, Griffin, & Gavin, 2000), and results of these analysis are reported in table 3. In the second stage, the PRODCLIN program was used for testing the mediating effects of creative self-efficacy (cf. MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Fritz, Williams, & Lockwood, 2007), and the results are reported in table 4. This method has a number of advantages over traditional approaches such as the Baron and Kenny's (1986) test of mediation effects. First, it has stronger statistical power while maintaining balanced Type-1 error rates (MacKinnon et al., 2007). In addition, it allows for testing the indirect relationship in multi-level data (Liao et al., 2010).

Table 3 shows the HLM results for cross-level main effects. Models 1-3 show the effects of various sets of predictors on creative self-efficacy. In the first step (Model 1), control variables were entered into the model. Among all control variables, participants' education and intrinsic motivation had positive effects on creative self-efficacy. In the second step (Model 2) main effects of team empowerment, learning goal orientation, performance-

approach orientation, and avoid orientation were tested, and in Model 3 all interaction terms were entered to test the moderating effects of goal orientations. Team empowerment and learning goal orientation are both positively related to individual creative self-efficacy (Model 2, $\text{coeff} = .20$, and $.09$, $p < .05$, respectively). Performance orientation and avoid orientation was not significantly related to creative self-efficacy (Model 2, $\text{coeff} = .03$, $p > .05$; $\text{coeff} = -.2$, $p > .05$, respectively), therefore H 3 and H4 were not supported. Learning goal orientation and performance-approach orientation were found to interact with team empowerment in affecting creative self-efficacy (Model 3, $\text{coeff} = -.20$, $-.14$, $p < .05$, respectively), providing initial support for H5 and H6. Avoid goal orientation did not interact with team empowerment to influence creative self-efficacy (Model 3, $\text{coeff} = -.001$, $p > .05$),

Models 4, 5, and 6 in table 3 show the effects on creativity. While learning and performance orientations both positively affect creativity (Model 5, $\text{coeff} = .11$, and $.10$, $p < .05$, respectively), team empowerment does not have a direct effect on creativity. Meanwhile, creative self-efficacy is positively related to creativity (Model 6, $\text{coeff} = .26$, $p < .05$). These results provide initial support H1, H2, H5, and H6, but not H3, and H4.

Table 4 shows the PRODCLIN program results on the proposed mediating effect of creative self-efficacy. For hypotheses with initial support from HLM results (i.e., H1, H2, H5, and H6), none of the 95% confidence intervals contained zero, indicating significant effects of the hypothesized relationships, where the confidence, providing full support on the hypothesized indirect effects. Therefore, H1, H2, H5 and H6 were fully supported. Namely, team empowerment and learning goal orientation both positively affect employee creativity through the mediation of creative self-efficacy; learning goal and performance orientations also interacted with team empowerment to influence creativity through creative self-efficacy. Although not hypothesized, we found that learning and performance goal orientations both

positively affect individual creativity directly (coeff=.11, .10, $p<.05$, respectively), suggesting that individuals with such goal orientations are more likely to be creative at work.

To further probe the nature of the interaction effects, we plotted the results (see figures 2 and 3). Figures 2 and 3 shows that learning and performance goal orientations had stronger influences on individual employees under the condition of low team empowerment; similarly, team empowerment had stronger effects on creative self-efficacy for individuals with lower learning and performance goal orientations. That is, instead of adding on top of each other, goal orientations and team empowerment actually supplemented each other in influencing creative self-efficacy.

Insert table 4, figures 1 and 2 here

Discussion

The current research examined the cross-level relationships among team empowerment, individual goal orientations and individual-level creative performance. The results suggest that collective motivational climate (i.e. team empowerment in this study) significantly affects individual members' creative performance though enhanced creative self-efficacy. Specifically, individual goal orientations interact with team empowerment in shaping individual creative self-efficacy and therefore creative performance. In the case when team empowerment is low or absent, learning and performance orientations could supplement the effects of team empowerment, and render higher levels of individual creative self-efficacy and result in higher levels of creativity, compared to those without such orientations.

Among all three dimensions of goal orientations, previous research had only identified learning goal orientation as an antecedent to creative performance (Gong, 2009), while the effects of performance and performance-avoid dimensions have remained largely underexplored. By testing avoid orientation and performance orientation, we presented a more orthogonal and complete picture for research on goal orientation, and all three dimensions of the goal orientation act as a multifaceted construct in context of creativity research. In general, we found that performance goal orientation had similar effects of learning goal orientation in influencing individual creative self-efficacy and creativity.

Research on empowerment seems to be headed to a new direction illuminated by some initial empirical evidence that empowerment may sometimes act as a double-edged sword (Matthews, 2015). Our study illuminates this intricacy by demonstrating that individual goal orientations shapes empowerment perceptions. Empowerment research would benefit from a congruence point of view, meaning that empowerment is not going to be a one-time static set of cues taken at the face value. Instead, individuals may understand empowering cues differently and engage differently. It's the engagement or the empowerment-individual traits congruence that matters the most.

Practical implications and study consideration

While the importance of creativity has been widely acknowledged by business owners and managers, the practice of identifying creative workers and facilitating workplace creativity should be ceaseless efforts. Anecdotal experience and communications with these business practitioners confirm this urge for comprehensive understanding of drivers of creativity. In general, the results from this study are consistent with "interactionist" approaches to understanding creativity (Amabile, 1983; Woodman & Schoenfeldt, 1989; Oldham & Cumming, 1996) and suggest that both personal and contextual factors should be taken into account to promote the level of creativity in work organizations. Results of this

research have practical implications for organizations interested in creating the right work environment to enhance individual creativity.

Our findings suggest that team empowerment practices should be implemented and managers can attempt to incubate empowering team climate to engender the best creative outcomes from employees. The findings in this study indicate that it is possible for supervisors to either stimulate or stifle employees' creative efforts by modifying or adjusting the level of empowerment. In addition, identifying job candidates with potential to be creative is critical. Our study shows that individuals with learning and performance approach goal orientations could still thrive in teams that were not so empowered and maintain a relatively high level of creative self-efficacy and creative outcomes therefore should be identified during hiring procedures. In other words, individual with a learning goal orientation should be given special consideration for task that requires creativity especially when the environment cannot be characterized as "empowering".

An interactional approach in this study also indicates how contingencies should be generated to induce creative behaviors. Employees don't automatically master creative and innovative challenges at the same level, and not all employees are equally responsive to empowerment. This study found that individuals differ in their learning orientation, which also has a direct impact on how creative they can be responding to empowerment tactics. At the meantime learning orientation moderates the relationship between team empowerment and creativity such that people who are more learning –goal oriented exhibit higher creativity when empowered than those who are not as learning oriented. A direct implication for practicing managers could be that managers should consider assigning employees who are more learning oriented to more empowering and open-ended tasks in order to obtain better creative results.

Despite the theoretical and practical contribution, our study does possess some limitations for future research to consider. For instance, although we used a time-lag design and managed to collect 3 waves of data, we did not measure creative self-efficacy in the first wave which limited our capability to infer causality. Future research should consider addressing this shortcoming.

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Table 1 Descriptive Statistics and Pearson Inter-Correlation for all individual (N=419)

variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Organization	-	-														
2. Age	29.80	4.80	.106*													
3. Sex	-	-	.082	.033												
4. Education	4.56	1.63	.365**	.130**	.039											
5. Occupation tenure/months	32.43	49.42	.076	.586**	.103*	.133*										
6. Org tenure/months	39.67	37.57	.255**	.659**	.159**	.109*	.695**									
7. Team Tenure/months	27.18	26.82	.202**	.542**	.065	.103*	.588**	.729**								
8. Tenure with current boss/months	20.27	23.27	.289**	.362**	.034	.245*	.644**	.636**	.673**							
9. Intrinsic motivation (phase 2)	5.48	.71	-.029	.066	-.111*	.047	.134**	.062	.148**	.176**	.85					
10. Learning goal (phase 1)	5.50	.87	-.016	-.079	-.880	-.920	-.261**	-.150**	-.170**	.170**	.300**	.75				
11. Perf-App goal (phase 1)	4.96	1.00	.076	-.026	-.026	.019	-.093	-.002	-.013	.015	.177**	.530**	.74			
12. Perf-Avoid goal (phase 1)	3.73	1.18	.110	.022	.027	.143*	.176**	.095	.041	.174**	-.043	-.071	.196**	.77		
13. Creative self-efficacy (phase 2)	5.48	.71	-.042	.115*	.133*	.082	.072	.056	.111*	.067	.660**	.333**	.212**	-.061	.89	
14. Creative performance (phase 3)	4.92	.76	.038	.083	-.169*	.137*	.091	.030	.001	.011	.182**	.180**	.169**	-.014	.311**	.94

Table 2 Overall fit indexes for the antecedent of the model

Model	χ^2	df	χ^2/df	TLI	GFI	RASEA
Null	3164.95	224	-	-	-	-
One-factor model	1796.42	203	8.85	.53	.59	.146
Two-factor model	1265.41	202	6.26	.68	.72	.119
Five-factor model	560.723	192	2.92	.88	.90	.072

(1) One-factor model: All items of three components of commitment were loaded on one factor; Two-factor model: LGO, PGO and VGO were loaded on one factor and intrinsic motivation (IM) and creative self-efficacy (CSE) items on the other; Five-factor model: LGO, PGO, VGO, IM and CSE were treated as five factors;

Table 3 Model Testing Results

(N=413, team n = 63)

variables	Creative Self-Efficacy (phase 2)			Supervisor Rated Creative Performance (phase 3)		
	Model 1	model2	model3	Model 4	Model5	Model6
Intercept	5.41**	5.42**	5.41**	4.930**	4.950**	4.950**
Level 1 variables						
Organization	-.070	-.060	-.060	.001	.020	.020
Age	.007	.006	.005	.004	.004	.004
Gender	-.130	-.150*	-.150*	-.160*	-.180*	-.200*
Education	.040*	.049*	.050*	.070*	.070*	.060*
Occupational Tenure	.000	.001	.001*	-.000	.000	.000
Organizational Tenure	.001	.001	.001	.002	.001	.001
Team Tenure	.001	.002	.002	.001	.002	.002
Tenure with Supervisor	-.003	-.004*	-.004*	-.003	-.004	-.002
Intrinsic Motivation (phase 2)	.760**	.690**	.680**	.170**	.100	-.080
Creative Self-Efficacy (phase2)						.260**
Learning Goal (LGO)		.090*	.100*		.110*	.080
Performance-Approach Goal (PGO)		.030	.020		.100*	.090
Avoid Goal (AGO)		-.020	-.020		-.040	-.040
Level 2 variables						
Empowerment		.200*	.220**		0.20	.24
Cross-Level Interactions						
Empowerment x LGO			-.200*			.090
Empowerment x PGO			-.140*			-.100

Empowerment x AGO

-.001

-.080

* $p < .05$, ** $p < .01$

Table 4 PRODCLIN results for indirect effects

Relationships	95% confidence interval	
Team Empowerment-CSE-creativity	.004	.113
LGO - CSE-creativity	.002	.013
Team Epwr x LGO-CSE-creativity	-.114	-.003
Team Epwr x PGO-CSE-creativity	-.071	-.008

Figure 1 The Overall Model

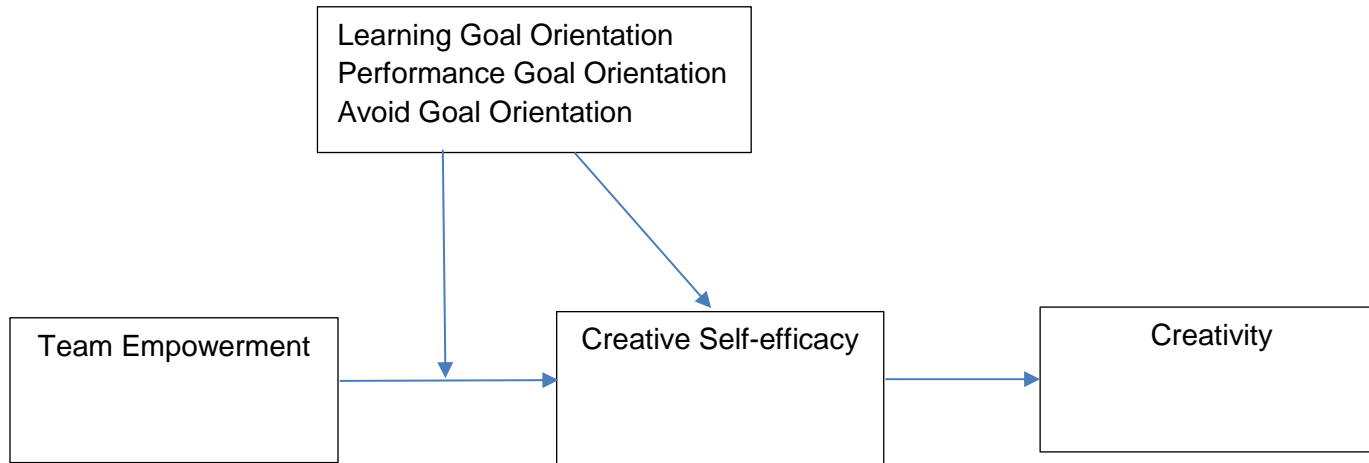


Figure 2 The Interaction effects of team empowerment and learning goal orientation

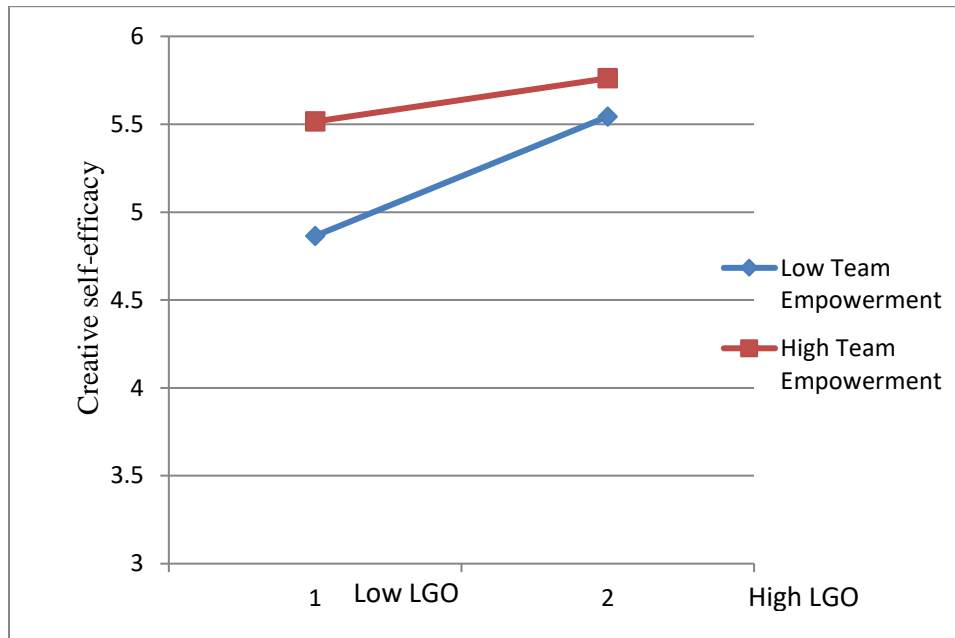


Figure 3 Interaction effects of team empowerment and performance-approach goal orientation

