

Servant leadership and innovative behavior: a moderated mediation

Servant
leadership and
innovative
behavior

Zhining Wang and Lijun Meng

School of Management,

China University of Mining and Technology, Xuzhou, China, and

Shaohan Cai

Sprott School of Business, Carleton University, Ottawa, Canada

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Abstract

Purpose – The purpose of this paper is to explore the cross-level effect of servant leadership on employee innovative behavior by studying the mediating role of thriving at work and the moderating role of team reflexivity.

Design/methodology/approach – This research collected data from 199 dyads of employees and their direct supervisors in 55 work units, and tested a cross-level moderated mediation model using multilevel path analysis.

Findings – The findings suggest that thriving at work mediates the relationship between servant leadership and innovative behavior. The results also show that team reflexivity positively moderates the relationship between servant leadership and thriving at work and the mediating effect of thriving at work.

Practical implications – The empirical findings suggest that organizations should make efforts to promote servant leadership and encourage team reflexivity. Moreover, managers should make efforts to stimulate employees' thriving at work, thereby facilitating employee and organizational development.

Originality/value – This research identifies thriving at work as a key mediator that links servant leadership to innovative behavior and reveals the role of team reflexivity in strengthening the effect of servant leadership on employee innovative behavior.

Keywords Innovation, Leadership, Multilevel analysis, Positive psychology

Paper type Research paper

Introduction

In today's increasingly dynamic business environment, innovation is essential for organizations to achieve competitive advantages (Anderson *et al.*, 2014; Shin *et al.*, 2017). This is especially true for China, one of the most rapidly developing economies (Cai *et al.*, 2018; Kwan and Chiu, 2015). Arguably, employees' innovative behavior, such as development and implementation of novel and useful ideas, is the foundation of all organizational innovation (Scott and Bruce, 1994). Thus, it is critical to explore the mechanisms that promote employee innovative behaviors in the Chinese context.

Given the critical role of leaders in their organizations, the influence of leadership on employee innovative behaviors has attracted much attention (Feng *et al.*, 2016; Dhar, 2016; Tu and Lu, 2013). Nevertheless, Chinese leadership styles are often authoritarian and commanding, as a result of a traditionally hierarchical society. Such a leadership style may hinder employee innovative behaviors, thereby making it difficult to meet contemporary management needs (Cai *et al.*, 2018; Lu *et al.*, 2017). Servant leadership, on the other hand, is a leadership style rooted in pro-social and people-centered behaviors, and aims to develop employees to their fullest potential in the areas of task effectiveness, community stewardship, self-motivation and future leadership capabilities (Chiniara and Bentein, 2016; Liden *et al.*, 2008). Arguably, servant leadership is the leadership style that meets the changing



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management requirements in China. Servant leaders demonstrate serving-employees-oriented behaviors and altruistically work for the employees' benefit (Greenleaf, 1977; van Dierendonck, 2011). Thus, such leadership is critical in facilitating employee innovative behaviors, which are discretionary behaviors not included in employees' formal job responsibilities or organizational formal reward systems (Janssen, 2000; Liden *et al.*, 2014).

In this paper, we first examine whether thriving at work mediates the relationship between servant leadership and employee innovative behavior. Several studies have shown that the relationship between servant leadership and employee innovative behavior is mediated by various factors, including meaningful work (Cai *et al.*, 2018), leader identification (Zhuang and Chen, 2015), and psychological contact fulfillment (Panaccio *et al.*, 2015). However, these researches mainly focus on the connections between employees and external factors (e.g. job, leader and organization), but overlook employee's psychological states and developmental capabilities at work. Notably, the function of servant leadership is to serve employees through promoting their growth and development, thereby enabling employees to achieve long-term development (Chiniara and Bentein, 2018; Liden *et al.*, 2008). As such, employees' growth and development play critical roles in realizing the effects of servant leadership. To study such effects, we focus on thriving at work, which is defined as "a positive psychological state in which individuals experience both a sense of vitality and a sense of learning at work" (Spreitzer *et al.*, 2005). This construct captures the employees' ability of continuous development at work (Paterson *et al.*, 2014; Spreitzer *et al.*, 2005), and forms a critical mechanism through which work contexts positively enable employees (Spreitzer *et al.*, 2005). Furthermore, it is reported that thriving at work is able to facilitate employee innovative behaviors (Carmeli and Spreitzer, 2009; Wallace *et al.*, 2016). Thus, it is possible that thriving at work plays a mediating role in the relationship between servant leadership and innovative behavior.

Second, this study explores the moderating role of team reflexivity. According to the contingency perspective of leadership, leadership is a social construct and can be fully examined only in the specific context in which it occurs (Yukl, 2010; Zhang *et al.*, 2012). Because thriving at work is a subjective experience (Prem *et al.*, 2017; Spreitzer *et al.*, 2005), the effect of servant leadership on employees' thriving at work relies on whether employees perceive and recognize leaders' support and assistance. In this sense, team reflexivity plays a critical role in this process by fostering information processing. Team reflexivity is defined as a team's conscious reflection on their objectives, strategies and processes (West, 2000; Schmutz *et al.*, 2018). We maintain that team reflexivity enables employees to quickly and accurately seize the opportunities and directions provided by servant leaders, thus they are able to experience more thriving at work. As such, we examine whether team reflexivity strengthens the influence of servant leadership on employee innovative behavior by facilitating their thriving at work.

This study intends to make significant contributions to the existing literature in three ways. First, it examines the mediating role of thriving at work, which offers more insights into the underlying mechanism through which servant leadership influences employee innovative behavior. Second, this research extends existing literature by studying an important additional antecedent, servant leadership and outcome of thriving at work, employee innovative behavior. Third, it examines the moderating effect of team reflexivity. Our findings are consistent with the prediction of the contingency perspective of leadership, which emphasizes the importance of social context, such as intra-organizational teams, in explaining the role of servant leadership in realizing the full potential of employees.

Theory and hypotheses

Servant leadership

The construct of servant leadership was initially developed by Greenleaf (1977), who stated: "The servant leader is servant first. It begins with a natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead" (p. 27). Differing from the

other types of leaders, who fundamentally concentrate on improving organizational performance, a servant leader is sincerely engaged in serving employees (Hoch *et al.*, 2018). For this reason, previous research has theorized that servant leadership can facilitate employees' extra-role behaviors, including innovative behaviors. Servant leaders serve employees and bring out the best in employees by fostering their growth and development. Their primary focus is on fulfilling employees' growth, development and prosperity (Greenleaf, 1977; Yang *et al.*, 2018). Such leaders rely on one-on-one communication to understand employees' abilities, needs, goals and potential. With knowledge of each employee's unique characteristics and interests, servant leaders then help employees to realize their full potential and achieve career success (Liden *et al.*, 2008).

Empirical studies find that servant leadership positively influences numerous important individual psychological and behavioral outcomes. The psychological outcomes include organizational commitment (Lapointe and Vandenberghe, 2018), psychological needs (Chiniara and Bentein, 2016), positive psychological capital (Hsiao *et al.*, 2015) and engagement (Carter and Baghurst, 2014). The behavioral outcomes are mainly related to extra-role behaviors, such as innovative behavior (Cai *et al.*, 2018), citizenship behavior (Chiniara and Bentein, 2018), voice behavior (Lapointe and Vandenberghe, 2018) and creative behavior (Liden *et al.*, 2014).

Thriving at work

Spreitzer *et al.* (2005) defines thriving at work as a two-dimensional concept, characterized by the joint experience of vitality and learning. Specifically, vitality refers to a sense that one is full of energy and feels alive at work; learning refers to the acquisition and application of knowledge and skills. They further argue that vitality and learning, reflecting the affective and cognitive components of the psychological experience of personal growth, are two equally important and indispensable dimensions of thriving at work.

Thriving at work is beneficial to employees themselves and to the organizations in which they work. It has been found to affect numerous important organizational outcomes, such as innovation (Wallace *et al.*, 2016), organizational citizenship behavior (Li *et al.*, 2016) and job performance (Porath *et al.*, 2012). Furthermore, extant studies show that various types of leaders and supervisors contribute to employees' thriving at work, including empowering leadership (Li *et al.*, 2016), family supportive supervisors (Russo *et al.*, 2015) and supervisor support (Paterson *et al.*, 2014).

Contingency perspective of leadership

The contingency perspective of leadership suggests that the effectiveness of leadership is contingent on the context in which leaders are situated (Yukl, 2010). In the context of intra-organizational teams, this perspective maintains that team climate is a critical situational factor, which may maximize the effects of servant leadership if it is aligned with the characteristics of servant leadership (Zhang *et al.*, 2012). In the current study, we explore the moderating role of one key element of team climate, namely "team reflexivity," on the effectiveness of servant leadership. Investigating how team reflexivity influences the effectiveness of servant leadership is important, because servant leaders support and promote employees' growth and development, and team reflexivity may enhance the effort of servant leaders by deepening employees' understandings of opportunities and directions provided by servant leaders.

The mediating role of thriving at work

We predict that servant leadership contributes to employees' thriving at work for two reasons. First, servant leaders genuinely care for employees' career development (Liden *et al.*, 2008). Such leaders give employees opportunities to acquire work-related knowledge, help them to enhance existing skills or develop new ones and provide them with

performance feedback. Thus, employees are more likely to engage in personal work and strive to perform better, which in turn leads to their thriving at work (Spreitzer *et al.*, 2005). Second, servant leaders empower employees by encouraging and pushing them to decide how to complete job tasks by themselves (Liden *et al.*, 2008). By allowing employees to handle difficult situations in the way that they feel is best (Liden *et al.*, 2014), servant leaders enable them to make decisions freely. When employees are able to make decisions by themselves, they feel energized, and such autonomy often creates opportunities for learning (Spreitzer *et al.*, 2012). Thus, we propose that:

H1. Servant leadership is positively related to employees' thriving at work.

In addition, we expect thriving at work to be a critical catalyst of innovative behaviors. As mentioned, employees' thriving at work involves vitality. When employees experience vitality at work, they are likely to engage in and carry out innovative behaviors (Kark and Carmeli, 2009). Notably, innovative behaviors demand energy. Innovators not only need to develop new ideas, but also need to make an effort to promote the ideas within the organization (Parker *et al.*, 2006). In particular, when an innovator faces suspicion and hindrance from others, his/her willingness to defend the idea is particularly important (Dutton *et al.*, 2001). Employees' thriving at work also involves learning. When employees perceive themselves to be learning and improving at work, they are likely to be motivated to identify problems and promote solutions to the problems. Learning enables them to enrich their expertise (i.e. domain-related knowledge and skills), which lays the foundation for innovative behaviors (Amabile, 1988) and ensures the success of innovative efforts (Carmeli and Spreitzer, 2009; Wallace *et al.*, 2016). Previous studies have also reported positive relationships between thriving at work and innovative behaviors (i.e. Carmeli and Spreitzer, 2009). Therefore, we propose:

H2. Thriving at work is positively related to innovative behavior.

In summary, the preceding logical developments suggest that servant leadership contributes to employee innovative behaviors by stimulating their thriving at work. This is because servant leaders support employees' growth and development, and empower them with decision-making discretion. Support and autonomy offered by servant leaders increase thriving at work that employees personally experience, which in turn leads to their innovative behaviors. Thus, it is hypothesized that:

H3. Thriving at work mediates the relationship between servant leadership and employee innovative behavior.

The moderating role of team reflexivity

Based on the contingency perspective, we suggest that the effectiveness of servant leadership might be affected by the level of team reflexivity. As previously mentioned, servant leadership stimulates employees' thriving at work by providing the opportunities and directions of learning and decision-making discretion. When the level of team reflexivity is high, team members overtly communicate about the team's goals, as well as the means to achieve these goals together (West, 2000). During this process, team members can fully understand how to utilize servant leaders' support and assistance to achieve their team goals. Thus, they are able to accurately and quickly grasp opportunities and directions, which are conducive to their personal growth and development. Conversely, in a team with a low level of team reflexivity, the team members may feel ambiguous about the support and guidance of servant leaders, thus they may miss the opportunities of career development. In sum, team reflexivity enables team members to better understand and seize the opportunities and directions offered by servant leaders to promote employees' thriving

at work. We thus argue that such reflexivity enhances the influence of servant leadership on employees' thriving at work. Therefore, we suggest:

H4. Team reflexivity moderates the effect of servant leadership on employees' thriving at work, such that the relationship is stronger when team reflexivity is higher.

H4 predicts that team reflexivity moderates the effect of servant leadership on thriving at work. Recall that *H3* predicts that there is an indirect effect of servant leadership on innovative behavior, via thriving at work. Since, as mentioned above, team reflexivity enhances the effectiveness of servant leadership, we also expect that team reflexivity will enhance the indirect effects of servant leadership predicted in *H3*. We hypothesize that:

H5. Team reflexivity will moderate the indirect relationship between servant leadership and employee innovative behavior through thriving at work, such that this indirect relationship will be stronger when there is a higher level of team reflexivity.

Method

Sample and procedures

We collected multilevel data from 23 firms located in Jiangsu province in East China. We first contacted the HR executives of each company, and they agreed to participate in our survey. Next, we asked the HR executives to select core-knowledge teams in their companies, such as R&D teams, to conduct the survey. They have been required to ensure that all the surveyed team members participate in the study voluntarily. At the beginning of each survey questionnaire, we provided instructions to explain our research purpose and guide participants to answer questions.

We conducted two-wave, multiple-source surveys at an average two-week interval. At Time 1, employees reported their direct supervisors' servant leadership, teams' team reflexivity, their own thriving at work and demographic information. At Time 2 (around two weeks later), their direct supervisors rated employees' innovative behaviors. To match the dyads, we asked employees to provide their own and their direct supervisors' name, and also asked supervisors to provide the name of each employee they assessed. After receiving all questionnaires, the two-waved data were matched based on the names provided by respondents. Once dyads were matched, we coded them with numbers and deleted names to ensure anonymity.

We originally distributed questionnaires to 350 employees of 72 teams, and 289 completed surveys were returned at Time 1. The supervisors of the team members that responded at Time 1 were contacted at Time 2. They all responded. After screening for missing data and information and matching employees to their teams, we received 199 usable samples from 55 work units (three to five employees per work unit). Among the 199 employees, approximately 51.3 percent of the respondents were male, 77.4 percent were 30 years old or younger, 89.4 percent held a bachelor degree or higher, 69.8 percent reported job tenure of five years or less and 56.3 percent were junior staff; among the 55 teams, 38 percent come from state-owned enterprises.

Measures

All items of measures were rated based on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Although all the measures were originally developed in English, the scales of servant leadership, thriving at work and innovative behavior also had Chinese versions, which were adopted for the current study. Moreover, the team reflexivity scale was translated into Chinese using a back translation approach. The Appendix provides a full list of our scale items.

Servant leadership. The supervisor's servant leadership was measured by Liden *et al.*'s (2015) seven-item scale. One sample item is "My leader can tell if something work-related is going wrong." Cronbach's α coefficient for this scale is 0.93.

Thriving at work. We used the ten-item scale, developed and validated by Porath *et al.* (2012), to measure thriving at work. The scale includes five items measuring vitality and another five items measuring learning. Sample items include "I feel alive and vital" and "I find myself learning often." Cronbach's α coefficient for this scale is 0.88.

Team reflexivity. Team reflexivity was measured by a six-item scale adopted from Monks *et al.* (2016). One sample item is "My co-workers and I often review our objectives." Cronbach's α coefficient for this scale is 0.97.

Innovative behavior. Each employee's direct supervisor assessed their innovative behavior by using the six-item scale developed by Scott and Bruce (1994). One sample item includes "Promotes and champions ideas to others." Cronbach's α coefficient for this scale is 0.79.

Control variables. We controlled for employees' gender, age, education, job tenure, rank and firm type (0 = state-owned enterprises, 1 = others). Prior studies have suggested that these factors may affect innovative behaviors (Liu *et al.*, 2016; Montani *et al.*, 2017; Tu and Lu, 2013).

Measurement validation

We conducted a series of confirmatory factor analyses using Mplus 7.4 to validate the discriminability of servant leadership, thriving at work, team reflexivity and innovative behavior. To maintain a favorable ratio of sample size to parameters, we created item-parcels by combining the highest-loading item with the lowest-loading item, the second-highest-loading item with second-lowest-loading item and so on (Bagozzi and Edwards, 1998). We created four parcels for servant leadership, six for thriving at work (three per dimension), three for team reflexivity and three for innovative behavior. The four-factor model provides an excellent fit to the data ($\chi^2(98)=191.29$, RMSEA = 0.07, CFI = 0.96, TLI = 0.95 and SRMR = 0.05). We further compared our hypothesized model to two alternative models: a three-factor model combining servant leadership and team reflexivity. This model resulted in a significantly worse fit than our hypothesized model, with $\chi^2(101)=1,078.57$, RMSEA = 0.22, CFI = 0.58, TLI = 0.50 and SRMR = 0.16; and a second-factor model, with servant leadership and team reflexivity loaded on one latent factor, and thriving at work and innovative behavior loaded on another latent factor. The model also shows a worse fit than our hypothesized model, with $\chi^2(103)=1,240.07$, RMSEA = 0.24, CFI = 0.51, TLI = 0.43 and SRMR = 0.17. These results support the discriminant validity of these four measures.

Data aggregation

To investigate the appropriateness of aggregating individual scores of servant leadership and team reflexivity to the work unit level, we first assessed inter-rater agreement by computing the r_{wg} value (James *et al.*, 1984). We then calculated intraclass correlation coefficients (ICCs). The value of ICC(1) is interpreted as the proportion of variance explained by group membership. The value of ICC(2) being greater than or equal to 0.70 indicates that the group means are reliably different (Bliese, 2000). The average r_{wg} value for servant leadership was 0.95, and the intraclass correlations for servant leadership were 0.44 for ICC(1) and 0.74 for ICC(2), with the one-way analyses of variance statistically significant ($p < 0.05$). The average r_{wg} value for team reflexivity was 0.97, and the intraclass correlations for team reflexivity were 0.37 for ICC(1) and 0.68 for ICC(2), with the one-way analyses of variance statistically significant ($p < 0.05$). These results support aggregating individual scores of servant leadership and team reflexivity to the group-level analyses.

Analytic strategy

Because employees' responses were nested within teams, we employed Mplus 7.4 to test our theoretical model (Muthén and Muthén, 1998-2015), which allowed us to estimate within- and between-unit influences simultaneously. We used manifest variables to conduct path analysis in the estimation. The significance of multilevel indirect and moderated mediated effects was tested by using the Monte Carlo method (available from www.quantpsy.org) to compute confidence intervals (CIs) (Preacher *et al.*, 2010).

Results

Descriptive statistics and correlations

Table I presents descriptive statistics and bivariate correlations for all variables.

Hypotheses testing

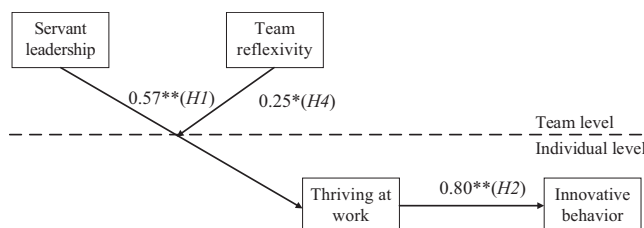
We present the direct effects among the variables in Figure 1. As shown in Figure 1, servant leadership was positively related to thriving at work ($\gamma = 0.57, p < 0.01$); thus, *H1* was supported. Thriving at work was positively related to employee innovative behavior ($\gamma = 0.80, p < 0.01$), supporting *H2*.

To test the mediation effect of thriving at work predicted by *H3*, we used a Monte Carlo procedure with 20,000 replications to estimate a 95 percent CI (Preacher *et al.*, 2010). The results showed that servant leadership indirectly influenced employee innovative behavior through their thriving at work, with the indirect effect = 0.45 (95% CI: 0.20, 0.73). Therefore, *H3* was supported.

Variable	Mean	SD	1	2	3	4	5	6
<i>Individual level</i>								
1. Gender	0.49	0.50						
2. Age	2.28	0.60	-0.16*					
3. Education	3.21	0.79	-0.05	0.04				
4. Job tenure	2.79	1.39	-0.05	0.55**	0.03			
5. Rank	1.65	0.91	-0.16*	0.24**	-0.03	0.32**		
6. Thriving at work	4.12	0.65	0.09	-0.00	0.16*	0.04	-0.18*	
7. Innovative behavior	4.28	0.59	0.03	0.11	0.02	0.02	-0.06	0.39**
<i>Team level</i>								
1. Firm type	0.38	0.49						
2. Servant leadership	4.15	0.71	-0.18					
3. Team reflexivity	3.67	0.51	-0.08	-0.17				

Notes: $n = 199$ employees and 55 teams. * $p < 0.05$; ** $p < 0.01$

Table I.
Means, standard
deviations and
bivariate correlations



Notes: Unstandardized path coefficients for the hypothesized model.

* $p < 0.05$; ** $p < 0.01$

Figure 1.
Results of
multilevel model

H4 predicted that the effect of servant leadership on thriving at work is moderated by team reflexivity. The multilevel modeling results indicated a positive effect of team reflexivity on the random slope between servant leadership and thriving at work ($\gamma = 0.25$, $p < 0.05$). Thus, *H4* was supported.

H5 predicted that team reflexivity moderates the mediating effect of thriving at work. The results showed that there was a significant difference between the indirect relationship between servant leadership and employee innovative behavior via their thriving at work, across different levels of team reflexivity (diff = 0.20, 95% CI: [0.04, 0.41]). Specifically, the effect of the indirect relationship was bigger and significant at higher levels of team reflexivity (estimate = 0.55, 95% CI: [0.25, 0.89]), and it became weaker but still significant when team reflexivity was low (estimate = 0.35, 95% CI: [0.15, 0.60]). Thus, *H5* was supported.

Discussion

Understanding how leadership styles promote innovative behavior has become an important research question for both management and innovation researchers (Feng *et al.*, 2016; Dhar, 2016; Tu and Lu, 2013). One stream of research addressing this question has investigated the role of servant leadership in eliciting employee innovative behavior (Cai *et al.*, 2018; Panaccio *et al.*, 2015; Zhuang and Chen, 2015). Inasmuch as servant leaders serve employees by facilitating their growth and development (Chiniara and Bentein, 2018; Liden *et al.*, 2008), the purpose of this study was to extend this research stream by investigating thriving at work as a mediating mechanism and team reflexivity as a moderating factor. By testing a multilevel, moderated mediation model consisting of these constructs, we found that servant leadership promotes employee innovative behavior via employees' thriving at work, and this indirect influence became more effective with the presence of high team reflexivity. These results suggest that employees led by a servant leader and embedded in team contexts with a high level of team reflexivity are more likely to thrive at work, and subsequently exhibit more innovative behaviors. These findings offer important theoretical and practical implications and future research directions.

Theoretical implications

Our research contributes to the existing literature in three ways. First, we combine servant leadership theory with the literature on thriving at work, and identify thriving at work as a mediator between servant leadership and employee innovative behavior. Several recent studies have utilized meaningful work, leader identification and psychological contact fulfillment to explain the underlying mechanisms of how servant leadership boosts employee innovative behavior (Cai *et al.*, 2018; Panaccio *et al.*, 2015; Zhuang and Chen, 2015). Our study compliments their findings by showing that servant leaders can exert influence on employees through stimulating employees' thriving at work. By highlighting the importance of a thriving state that employees experience at work, the current study advances our understandings of the psychological processes and work capabilities triggered by servant leadership that promotes individual growth and development.

Second, the relationships between servant leadership, thriving at work and innovative behavior revealed by the current study also contributes to the literature on thriving at work. The leaders or supervisors have been found to be critical environmental factors for thriving at work in the extant empirical studies (Li *et al.*, 2016; Paterson *et al.*, 2014; Russo *et al.*, 2015). The current study supports and extends relevant literatures by examining the positive influence of servant leadership on thriving at work. Additionally, our finding that thriving at work can promote innovative behaviors is in line with the results of Wallace *et al.* (2016)

and Carmeli and Spreitzer (2009). It further confirms the critical role that thriving at work plays in individual and organizational development.

Finally, this study advances our knowledge of the boundary conditions of “servant leadership → employee innovative behavior” relationship. Prior studies examine only the direct effect of team reflexivity on innovation (e.g. Schippers *et al.*, 2015), but the moderating effect of team reflexivity on the relationship between servant leadership and innovative behavior has never been examined. The current study advances leadership and innovative behavior literatures by testing the moderating role of team reflexivity in the relationship of “servant leadership → thriving at work → innovative behavior.” Our results also indicate that team reflexivity not only directly influences individual outcomes (Chen *et al.*, 2018; Schippers *et al.*, 2015), but also acts as a contextual factor enhancing the relationship between leadership and individual outcomes.

Practical implications

As an important source of organizational competitive advantage, employee innovative behaviors enable organizations to adapt to a dynamic environment (Anderson *et al.*, 2014; Shin *et al.*, 2017). Therefore, as today’s working environment generally requires employees to adapt to business and organizational changes, organizations must understand how to promote employee innovation, in order to generate and implement novel ideas, and to solve emerging problems.

This research offers several managerial implications for managers. First, our findings show that organizations may benefit from recruiting servant leaders, promoting potential servant leaders internally and nurturing existing leaders to become servant leaders. Accordingly, when recruiting a manager, companies may utilize various hiring and selection profiles or tools (e.g. personality tests) to assess whether applicants show the characteristics of a servant leader or have the potential to become one. They may also design training programs to cultivate existing managers into servant leaders. Moreover, organizations may include the core attributes of servant leaders (e.g. concerning about employees and satisfying employees’ needs) into performance appraisal criteria and develop incentive systems accordingly to evaluate their organizational leaders and encourage managers to become servant leaders.

Second, our empirical finding that thriving at work can enhance employee innovative behavior highlights the importance of thriving at work to individual and organizational development. Therefore, organizations can develop appraisal tools to assess applicants’ potential thriving at work during their hiring process. The more thriving at work the applicants may experience, the more likely they will exhibit positive behaviors beneficial to organizations. Moreover, managers can also design training programs and shape company culture and work environment, for example, by means such as facilitating broad information sharing, to stimulate employees’ thriving at work.

Finally, the study revealed a positively moderating effect of team reflexivity on the relationship between servant leadership and thriving at work and the mediation of thriving at work. Accordingly, we argue that organizations should exert an effort to improve team reflexivity. They may launch intervention programs, for example, requiring teams to hold regular work meetings to review teams’ goals and find better means to achieve these goals. Organizations may also evaluate and reward teams based on specific indicators of team reflexivity (i.e. reflecting on and communicating the group’s objectives, strategies and processes), in order to enhance the level of team reflexivity.

Limitations and directions for future research

This study has several limitations which suggest meaningful future research directions. First, although we measured the independent and mediator variables (i.e. servant

leadership and thriving at work) and the dependent variables (i.e. innovative behavior) at two different time points, this time-lagged design may not fully establish the causality of our conceptual model. Future research can adopt more rigorous design such as longitudinal studies or controlled experiments, in order to reveal the causality of the variables in the model.

Second, future studies should further improve the measure of employee innovative behavior. In the current study, we asked team leaders to rate employee innovative behaviors. However, it is more conducive to use multiple indices to probe more thoroughly into employees' innovative behaviors (e.g. using objective measures such as the number of suggestions, patents or research outputs), if such information is available.

Finally, we conducted this research in Mainland China. Hence, it remains unclear whether our findings can be applied to other countries with different cultural backgrounds. Although existing leadership studies have reported fairly consistent results in the settings of both Eastern and Western cultures (e.g. Liden *et al.*, 2014; Ling *et al.*, 2016), it is still worth testing whether this specific model will hold in the settings of other national cultures.

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Appendix

Servant leadership

- (1) My leader can tell if something work-related is going wrong.
- (2) My leader makes my career development a priority.
- (3) I would seek help from my leader if I had a personal problem.
- (4) My leader emphasizes the importance of giving back to the community.
- (5) My leader puts my best interests ahead of his/her own.
- (6) My leader gives me the freedom to handle difficult situations in the way that I feel is best.
- (7) My leader would not compromise ethical principles in order to achieve success.

Thriving at work

At work:

- (1) I feel alive and vital.
- (2) I have energy and spirit.
- (3) I do not feel very energetic (R).
- (4) I feel alert and awake.
- (5) I am looking forward to each new day.
- (6) I find myself learning often.
- (7) I continue to learn more and more as time goes by.
- (8) I see myself continually improving.
- (9) I am not learning (R).
- (10) I am developing a lot as a person.

Team reflexivity

- (1) My co-workers and I often review our objectives.
- (2) The methods used by my co-workers and I to get the job done are often discussed.
- (3) My co-workers and I regularly discuss whether we are working effectively.
- (4) My co-workers and I often review whether we are getting the job done.
- (5) My co-workers and I often modify our objectives in the light of changing circumstances.
- (6) We often discuss how well we communicate information.

Innovative behavior

Please rate each of your subordinates on the extent to which he or she:

- (1) searches out new technologies, processes, techniques and/or product ideas;
- (2) generates creative ideas;
- (3) promotes and champions ideas to others;
- (4) investigates and secures funds needed to implement new ideas;
- (5) develops adequate plans and schedules for the implementation of new ideas; and
- (6) is innovative.

Corresponding author

Zhining Wang can be contacted at: wzncunt@126.com