Visionary leadership and employee creativity in China

Abstract

Purpose: The aim of this paper is to explore how visionary leadership influences employees' creativity in R&D teams in China, and the role of employee knowledge sharing and goal orientation.

Design/methodology/approach: A survey was conducted on 331 professional technical engineers in R&D departments of 62 high tech corporations in China. Hierarchical regression was used to model the relationships between visionary leadership style, employee goal orientations, knowledge-sharing and employee creativity.

Findings: The results show that visionary leadership is positively associated with employee creativity in Chinese organizations and the relationship is positively mediated by employee knowledge-sharing. Furthermore, employee "learning goal" orientation strengthens the relationship between visionary leadership and employee knowledge-sharing, whereas employee "performance-avoid goal" orientation weakens the relationship between visionary leadership and employee knowledge-sharing.

Originality/value: This study contributes to the literature on the effects of leadership on employee creativity by showing that, contrary to Western organizations, where a less directive leadership style is generally recommended to enhance employee creativity, in Chinese organizations, visionary leadership is positively associated with employee creativity, but the effect is contingent on employees' goal orientations and knowledge-sharing.

Keywords: visionary Leadership; goal orientation; knowledge-sharing; creativity; China; collectivist culture.

Introduction

Employee creativity is the basis for organizational creativity, an organization's core competency and ultimately an organization's competitive advantage (Woodman et al., 1993). Hence, many organizations have been looking for various ways to foster employee creativity, including examining the use of different leadership styles (e.g. Amabile et al., 2004; Mathisen et al., 2012; Bai et al., 2016). However, while some studies have found that leadership style plays an important role in promoting employee creativity, limited empirical research has been conducted in non-Western contexts. In China, as in many transition economies, in order to compete globally and as a result of Western education, many Chinese organizations have adopted Western management practices. However, the applicability of Western management theories to vastly different cultures such as China is increasingly being questioned. For example, it has been shown that leadership behaviours in China show evidence of cultural, political and economic influences (Fu and Tsui, 2003) and influences of Chinese philosophies such as Confucianism and Daoism (Ma and Tsui, 2015). Cross-cultural leadership researchers have long argued that in cultures such as China, which show high-power distance and collectivism, directive leadership plays a much more important role compared with Western cultures (Dorfman et al., 1997). For example, Hui et al. (2004) showed that in contrast to Western cultures where directive leadership tends to be viewed as stifling creativity, in some Asian cultures highly directive leadership may have a positive effect on creativity. There is also some evidence that national culture may affect employee knowledge-sharing and goal orientations. Knowledge-sharing has been argued to be stronger in collectivistic cultures (Chen and Choi, 2005) and some studies have shown that learning goal orientation is stronger in certain cultures (Tweed and Lehman, 2002). However, the relationships between leadership style and employees' knowledge-sharing, goal orientation and creativity in Chinese organizations have not been investigated.

It is, therefore, of both theoretical and practical interest to examine whether the optimal leadership styles that enhance employee creativity in Western cultures hold in a non-Western culture such as

China. As stated by Shenkar and von Glinow (1994), by examining the limits of theories developed in Western cultures, studies in other cultures such as China can identify contingent factors and help develop existing theories. Our study contributes both to general academic research on leadership and creativity and, more specifically, to research on Chinese management by showing how, contrary to Western organizations, where a less directive leadership style is generally recommended to enhance employee creativity (Andriopoulos, 2001; Mathisen et al., 2012), in Chinese organizations, visionary leadership is positively associated with employee creativity; however, the effect is contingent on employees' goal orientations and knowledge-sharing. The rest of this paper is structured as follows. First, we outline our conceptual framework and hypotheses. Then we describe our data collection, analysis and results. We conclude with a discussion of the theoretical and practical implications, limitations and suggestions for further research.

Conceptual framework and hypotheses

Figure 1 here

Visionary leadership and employee creativity

The conceptual framework we propose is shown in Figure 1. Many influential theories on how leadership affects organizational performance have been investigated in the last two decades, such as charismatic leadership theories (Conger and Kanungo, 1994) and transformational leadership theories (Bass, 1998). Furthermore, different leadership styles have been shown to influence creativity (Bai et al., 2011； Cheung et al., 2011; Zhang and Zhou, 2014; Chen and Hou, 2016). However, studies of the relationships between leadership and creativity in different cultures are

relatively limited. Previous studies have shown that the nature of collectivist cultures such as China affects leadership (Casimir and Waldman, 2007), knowledge-sharing (Michailova and Hutchings, 2006; Huang et al., 2008; Ma et al., 2014) and creativity (Goncalo and Staw, 2006; Eisenberg, 1999). Other studies have highlighted how the preferred leadership style may depend on the power distance in the culture (Dorfman et al., 1997). For example, Hui et al. (2004) also found that compared with Westerners, Chinese employees react less negatively to low autonomy conditions while Shin and Zhou (2003) found in a study of Korean organizations that a transformational leadership style was positively related to employees' creativity. Therefore, the optimal leadership style that works in Western countries may not be optimal in a non-Western culture such as China.

In this study, we argue that, given the distinct characteristics of Chinese culture (e.g. collectivism, high power distance), visionary leadership is particularly favourable for improving employees' creativity in Chinese organizations. Although visionary leaders may share many characteristics of charismatic and transformational leaders, visionary leaders also display characteristics and behaviours that help followers to achieve organizational goals such as confidence, pro-social use of power, and organizational capabilities (Sashkin and Sashkin, 2002). Visionary leaders can stimulate employee creativity by helping employees to understand the organizational vision (Bass, 1998) and by arousing enthusiasm for the shared vision, which creates a positive climate for creativity. Therefore, we propose the following hypothesis:

H1： Visionary Leadership is positively related to employee creativity in Chinese organizations.

Mediating role of knowledge-sharing

The relationship between knowledge-sharing and creativity has been examined extensively in the literature (e.g. Lin, 2007). Prior research suggests creativity is strongly dependent upon the process by which individuals acquire new knowledge and skills (e.g. Dong et al., 2017). While engaging in knowledge-sharing processes, individuals tend to build a common language and set of beliefs that

lead to mutual trust, which positively affects creativity. In addition, the more that individuals engage in the knowledge-sharing process, the more opportunities they have to increase their knowledge and experience through mutual stimulation of different ideas, thus improving their creativity (Ancona and Caldwell,1992).

We argue that leaders may influence this process by fostering a climate that encourages knowledge-sharing. Amabile et al. (2004) investigated leader behaviours related to perceived leader support and found that leaders can foster creativity through direct help with the project, the development of subordinate expertise and the enhancement of subordinate intrinsic motivation. Other researchers have shown that leadership behaviours such as supportive leadership can influence knowledge sharing (Cavaliere et al., 2015). We, therefore, propose the following hypothesis:

H2：Knowledge-sharing mediates the relationship between visionary leadership and employee creativity.

Moderating role of goal orientation

The process of developing novel and useful solutions to resolve problems in the organization is often the result of goal-directed behaviour, which is affected by individuals' goal orientations or preferences to pursue goals in a specific situation (Brett and Van de Walle, 1999). Dweck (1999) found that individuals' goal orientations motivate individuals to seek out, or avoid, opportunities for learning, knowledge-sharing and creativity. Therefore, we argue that the effects of visionary leadership on knowledge-sharing may be moderated by individuals' goal orientations, which includes learning goal orientation, performance-prove orientation and performance-avoid orientation (Brett and Van de Walle, 1999). "Learning goal" orientation is the desire to develop new knowledge, master new situations and improve self-competence through learning (Brett and Van de Walle, 1999). Learning goal orientation is based on incremental implicit theories (Dweck, 1999)

which assume that personal attributes can be developed and good performance can be achieved through effort. Thus, individuals with a learning orientation are motivated to acquire new knowledge through knowledge-sharing with colleagues and continue to deepen their own knowledge. Knowledge-sharing is regarded as a means and a strategy to develop more competence and capabilities. Individuals with a learning orientation tend to perceive other colleagues as collaborators and to perceive knowledge-sharing with other colleagues as a reciprocal exchange of information in which sharing valuable knowledge and skills will inevitably lead to valuable information gains from their colleagues in the future. Therefore, we hypothesize:

H3a: Learning goal orientation moderates the relationship between visionary leadership and knowledge-sharing such that the relationship is stronger for subordinates with stronger learning goal-orientation than it is for those with a weaker learning goal-orientation.

"Performance-prove" orientation is the desire to prove one's competence and to gain favourable judgment about it (Brett and Van de Walle, 1999). Individuals with a performance-prove orientation seek positive feedback about their performance compared to others and expect to be able to show superior ability in front of others. Thus, they are more willing to share their views. At the same time, individuals with a performance-prove orientation believe that ability is a fixed attribute that is difficult to develop (Brett and Van de Walle,1999). Therefore, they are less worried about expressing their opinions openly and losing credibility during the knowledge-sharing process. Under visionary leadership, individuals are encouraged to participate in team cooperative behaviour and to make more contributions to achieve organizational goals, so individuals with a high performance-prove orientation are more likely to want to prove their abilities, to gain positive feedback from colleagues and are more likely to be involved in knowledge-sharing. Therefore, we hypothesize:

H3b: Performance-prove goal orientation moderates the relationship between visionary leadership and knowledge-sharing such that the relationship is stronger for subordinates with a stronger

performance-prove goal orientation than it is for those with a weaker performance-prove goal orientation.

"Performance-avoid" goal orientation is the desire to avoid disproving one's competence and to avoid negative judgments about it. Button et al. (1996) argue that if individuals with a performance-avoid goal orientation believe that participation in the activity may be seen as low-skilled or may result in negative evaluations from others, they may exhibit defensive behaviours. Therefore, due to the fear of negative evaluations in the process of knowledge-sharing, individuals may participate less in knowledge-sharing. Therefore, we hypothesize:

H3c: Performance-avoid goal orientation has a negative moderating effect on the relationship between visionary leadership and knowledge-sharing such that the relationship is weaker for subordinates with a stronger performance-avoid goal orientation than it is those with a weaker performance-avoid goal orientation.

Methodology

Sample

Data was collected from leaders and their subordinates in R&D teams of high-technology organizations located in three Economic Development Zones in Nanjing, China. We were supported by the Nanjing Economics Development Committee to contact 120 knowledge-intensive organizations in the biomedical industry, the electronic information industry, the new energy industry and other high technology industries. Seventy-eight organizations agreed to participate in our research. In each organization, one R&D manager and his/her 6-8 R&D subordinates were selected as respondents. This procedure provided 78 R&D work units comprising 540 R&D employees including both R&D managers and his/her subordinates. Questionnaires were sent to each of the target respondents by mail. A possible problem in relying on a single data collection

method is common method bias (Podsakoff et al., 2003). To avoid common source bias, leaders and subordinates were paired but data from leaders and subordinates were collected in separate anonymous questionnaires. Two sets of questionnaires were used: one for subordinates to rate the independent, mediating and moderating variables (leaders' visionary leadership characteristics, employee goal orientations and knowledge sharing) and another questionnaire for their supervisors to rate the dependent variable (subordinates' creativity). Supervisor and subordinate responses were matched by means of anonymous codes. A cover letter attached to each of the questionnaires informed the respondents of the confidentiality of their responses and the voluntary nature of their participation in the survey. We also assured them that their personal-coded ID (provided at the top right hand corner of the questionnaire) would only be used to match their responses to the ratings provided by their supervisors.

Following procedures suggested by Cascio (2012), we adopted blind back-translation to assess the equivalence of the wording of measures that had been translated. We prepared the questionnaires in English, had a professional translator translate the questionnaires into Chinese first, and then had another professional translator translate it back into English. We compared the back-translated versions with the originals to ensure accuracy.

We received completed and valid questionnaires from 331 subordinates and 62 supervisors (equivalent to a response rate of 71 per cent for subordinates and 79 per cent for supervisors). Of the 331 subordinate respondents, males accounted for 56 percent, undergraduate degree holders or above accounted for 65 percent, 81.5 percent were aged below 40 years old and the average work experience was 57 months. Of the 62 supervisors, males accounted for 68 percent, undergraduate degree holders or above accounted for 92 percent, 41.5 percent were aged below 40 years old and the average work experience was 73 months. The breakdown by industry was 33.5 percent from the biomedical industry, 20.8 percent from the electronic information industry, 13.9 percent from the new energy industry, 12.1 percent from the software industry and 19.6 percent from other high

technology industries. We assessed the potential for nonresponse bias following the procedure proposed by Armstrong and Overton (1977). Differences in industries, firm size, firm ownership and firm age between the responding and nonresponding companies were not significant.

Construct measurement and development

The rating scale for all items ranged from 1 "strongly disagree," to 7 "strongly agree." To ensure the validity and reliability of measurement, this study adopted measures of visionary leadership, employee creativity, knowledge-sharing, goal learning orientation, performance-prove orientation and performance-avoid orientation from previous research. Following Cascio (2012), we tested the reliability of these constructs using Cronbach's alpha coefficient, which confirmed that the constructs in this paper have good reliability.

Dependent variable

Employee Creativity

Employee creativity was assessed by the direct supervisors of the R & D personnel, using Farmer et al.'s (2003) scale, which consisted of four items. Examples include: "The employee seeks new ideas or new ways to solve problems", "the staff tries to develop the new methods to work," etc. The Cronbach alpha test showed the construct had good reliability (Cronbach's alpha =0.86).

Independent variables

Visionary Leadership

Visionary Leadership was based on assessments of supervisors by their subordinates. We asked subordinates to answer five questions about whether their supervisor had characteristics of a visionary leader (e.g., my leader has the vision and blueprint for the future), based on questions which have been used in previous studies (Conger and Kanungo, 1994). The Cronbach alpha test showed the construct had good reliability (Cronbach's alpha = 0.92).

Knowledge-sharing

Knowledge-sharing was measured by asking the R&D subordinates to respond to eight questions adapted from Lu et al. (2006) about their own knowledge-sharing behaviours. Examples include statements such as “In daily work, I volunteered to teach business knowledge to colleagues" and "I make useful knowledge and work experience available to share with colleagues without reservation, as long as the colleagues need them”. The Cronbach alpha test showed the construct had good reliability (Cronbach's alpha = 0.812).

Employee goal orientation

We adopted Van de Walle’s (1997) three-factor scales to assess employee goal orientation which includes “learning goal orientation”, “performance-prove orientation” and “performance-avoid orientation”. The learning goal orientation scale has five items, such as “I often look for opportunities to develop new skills and knowledge”. The performance-avoid orientation scale has four items such as “I won’t take on a task at work if my performance would reveal that I had low ability”. The performance-prove goal orientation has four items such as “I’m concerned with showing that I can perform better than my co-workers”. Cronbach alphas for the learning, prove, and avoid goal orientation were 0.89, 0.83, and 0.80, respectively.

Control variables

We controlled for respondents' individual characteristics such as gender, age, educational level and tenure in the organization. We also controlled for some organizational level characteristics, such as firm ownership, firm size and firm age, which have been found to influence creativity (Farmer et al., 2003).

Results

Correlations among study variables

Table 1 displays the means, standard deviation and correlations among the variables. The correlations indicate that visionary leadership is significantly associated with knowledge-sharing and creativity ($r=0.50$, $p<0.001$; $r=0.32$, $p<0.001$, respectively). We also found that the three goal orientations are all significantly related to knowledge-sharing ($r=0.28$, $p<0.001$; $r=0.33$, $p<0.001$; $r=-0.44$, $p<0.001$).

Table 1 here

Measurement model

The measurement model was tested using Confirmatory Factor Analysis (CFA) to confirm that each of the measurement items loaded significantly onto the scales with which they were associated. In order to meet the requirement for an adequate sample size relative to the number of indicators, we reduced the 8-items measuring knowledge-sharing into 4 items according to the factor loading, following the item parcelling strategy recommended by Hall et al. (1999). The results of the overall

CFA and the goodness-of-fit statistics showed acceptable fit with the data (χ2 of 964.84 with 284 degrees of freedom; CFI=0.93; IFI=0.93; NFI=0.90; RMSEA=0.09). (Kelloway (1998) indicates that RMSEA values of <0.10 represent a good fit, while values below 0.05 represent a very good fit to the data.)

We also examined two alternative measurement models: (1) a one-factor model and (2) a four-factor model where items measuring three types of goal orientation were loaded onto one factor. The results of the one-factor model produced the following goodness-of-fit statistics: χ2 of 3128.37 with 299 degrees of freedom; CFI=0.80; IFI=0.80; NFI=0.77; RMSEA=0.17. The four-factor model produced the following goodness-of-fit statistics: χ2 of 1716.65 with 293 degrees of freedom; CFI=0.87; IFI=0.87; NFI=0.85; RMSEA=0.12. There were significant differences between the two nested models (one- and four-factor models) and the baseline model (six-factor model). The chi-square difference between the baseline model and the one factor model was 2163.53 (d.f. = 15, $p<0.01$) while the chi-square difference between the baseline model and the four-factor model was 851.81 (d.f. = 6, $p<0.01$), further supporting the six-factor model as the preferred model.

Regression models

We tested the hypotheses using hierarchical regression analysis, including tests of mediation and moderation effects according to the three-step procedure recommended by Baron and Kenny (1986). The following conditions must be met to support a mediating relationship. First, the independent variable must be significantly associated with the mediator. Second, the independent variable must be significantly associated with the dependent variable. Finally, after the mediator is entered, the relationship between the independent and dependent variables should either disappear (full mediation) or significantly diminish (partial mediation). Hierarchical moderated regression was used to test the moderation hypotheses. Interaction terms often create multi-collinearity problems because of their correlations with main effect. We thus computed the

interaction terms by centring the variables before multiplying them with each other. Table 2 shows the results.

Table 2 here

Model 1 shows the results of a regression analysis using creativity as the dependent variable and only the control variables as predictors. Model 2 adds visionary leadership as a predictor. This step revealed that visionary leadership was significantly related to employee creativity ($\Delta R2 = 0.08$, $F = 7.95$, $p < 0.001$); thus, hypothesis H1 was supported. This result establishes that there is an effect that may be mediated. In model 5, knowledge-sharing served as the dependent variable and visionary leadership as the predictor. The results showed that visionary leadership was significantly and strongly related to knowledge-sharing ($\beta=0.45$, $p < 0.001$). This step showed that the antecedent variables are correlated with the mediator. In the third step, we tested other regression models using creativity as the dependent variable and both visionary leadership and knowledge-sharing as predictors. The results showed that visionary leadership was significantly related to creativity (model 2) and was significantly related to knowledge-sharing (model 5); however, the relationship between visionary leadership and creativity became non-significant related when knowledge-sharing is added (model 3). This suggests that knowledge-sharing fully mediates the relationship between visionary leadership and creativity. Therefore, hypothesis H2 is supported.

Hypotheses 3a, 3b and 3c concern the moderating effect of learning orientation, performance-prove orientation and performance-avoid orientation respectively on the relationship between visionary leadership and knowledge-sharing. The visionary leadership variables were entered first in each of the moderated regressions, followed by the three dimensions of goal orientation and items for the interaction between visionary leadership and the moderating variables.

The results of the moderated regression analyses showed that learning orientation had a significant moderating effect (model 6, β=0.11, p < 0.05). Performance-prove orientation did not moderate the relationship of visionary leadership with knowledge-sharing (model 7, β=-0.01, n.s.) while performance- avoid orientation had a weak significant moderating effect (model 8, β=-0.10, p<0.05).

Discussion

Our findings confirm the strong relationship between visionary leadership and knowledge-sharing in Chinese high tech organizations. This supports Amabile et al. (2004) who found that perceived leader support has a positive influence on creativity. Our findings support the view that visionary leaders foster creativity by serving as good role models, supporting, inspiring and encouraging subordinates (Amabile et al., 2004). However, our findings contrast with the study of Ma et al. (2014) who found no significant effect of leadership style on knowledge-sharing in their study of Chinese organizations. This may be explained by their study sample, which was drawn from firms in the construction industry where knowledge-sharing is arguably less significant than in high-tech industries. Our study also contradicts their original hypothesis that a democratic leadership style would be positively related to knowledge-sharing while an authoritarian leadership style would be negatively related to knowledge-sharing. While this may be true in individualistic cultures, in collectivist cultures, where group interests are more important than individual interests, our study shows that employees may respond more positively to a more directive leadership style. This emphasizes the importance of considering the cultural context when examining the effects of leadership styles.

Secondly, the results indicate the important mediating role of knowledge-sharing in the relationship between visionary leadership and employee creativity. Previous research shows that employees' ability to generate novel ideas depends on the confrontation of their own knowledge set with opposing viewpoints held by organizational peers (Hoever et al., 2012). This link between

knowledge-sharing and creativity has been well documented in Western organizations and would be expected to be strong in a collectivist culture like in China, where group or team harmony and collective good is emphasized. Our findings confirm this. However, our study also shows the importance of considering the relationships between leadership style, knowledge-sharing and creativity as the relationships may not be straightforward.

Thirdly, the results also confirm the important moderating effect of goal orientation. Our study shows that where there is a high level of learning orientation, visionary leadership has a stronger positive effect on knowledge sharing but when employees have a high performance-avoid orientation, the relationship between visionary leadership and knowledge-sharing is weakened. Our research is in line with De Clercq et al.'s (2017) research which found that the effect of task conflict on employee creativity depends on employees' learning orientations and their goal congruence with organizational peers. It is also supported by Giustiniano et al. (2016) who show that individuals' orientations toward learning from others can significantly enhance organizational creativity.

Our study's findings again contrast with the findings of Ma et al. (2014) who found that goal commitment had no impact on knowledge-sharing in the Chinese organizations they studied. This result was unexpected by Ma et al. (2014) who had hypothesized a positive relationship between goal commitment and knowledge-sharing. However, again the differing results might be explained by the sample of firms and the measures they used. In their study, they examined construction firms and measured goal commitment using responses to questions such as "I am strongly committed to pursuing this project goal". The nature of project goals as well as their importance may differ between construction project teams and high tech R&D teams. Our study measured employee goal orientation rather than commitment to the project goal, which may also explain the different finding. Employees may exhibit the same level of commitment but have different goal orientations.

Conclusion

Theoretical implications

From a theoretical perspective, our study contributes to research on the effects of leadership on employee creativity, firstly, by elaborating how the effect of leadership on employee creativity is moderated by employees' goal orientations and mediated by employees' knowledge-sharing and, secondly, by showing how leadership theories that apply in a Western culture may not apply in a non-Western culture such as China. Our study shows that, in contrast to Western organizations where less directive leadership styles are favoured in fostering employee creativity (Andriopoulos, 2001; Mathisen et al., 2012), in Chinese organizations, employee creativity is enhanced by a visionary leadership style. However, we show that the effect is contingent on employees' goal orientations and knowledge-sharing practices. Our findings suggest that visionary leadership has stronger positive effects on employee knowledge sharing where there is a high learning goal orientation. Conversely, the relationship of visionary leadership and employee knowledge sharing is weakened where there is a high performance-avoid orientation. More generally, this highlights the contingent nature of the effects of leadership on employee behaviours and reinforces the need to consider individual, organizational as well as socio-cultural factors in studies of leadership and its effects on employee behaviours.

Practical implications

Our study also has some practical implications for management of creativity in Chinese organizations. Firstly, our study suggests that employee creativity in R&D teams in Chinese organizations is improved by visionary leadership. However, managers should be aware that visionary leadership is most effective in generating creativity only when employees exhibit a strong learning orientation and are willing to update their knowledge base.

Secondly, the findings have implications for employee recruitment, training options and incentive systems. The results suggest that when knowledge-intensive companies recruit employees, they

should proactively choose employees with a higher learning-orientation. In order to stimulate creativity, organizations should also establish a knowledge-sharing culture and a clear knowledge-sharing incentive system. To boost the influence of a learning orientation on knowledge-sharing, organizations should provide various training opportunities to employees which not only create an organizational culture that stimulates learning but also reinforce the capability of learning-oriented employees to integrate their own knowledge base with those of their colleagues.

Thirdly, employees with a performance-avoid orientation may be concerned that knowledge-sharing might lead to a loss of face (which is a serious concern in China), lead to conflict with co-workers or disagreements with supervisors, which might hinder their promotion. The findings suggest that organizations need to create communication systems and incentive systems that encourage knowledge-sharing by such employees.

Limitations and future research

We should note some limitations in this study. Firstly, our study collected data from a limited set of industries and from a single geographic region in one country. These effects may be different in other industries, countries and regions. Future research might be conducted with a sample of firms from a wider selection of industry sectors, countries or regions.

Secondly, although our research considers the influence of organizational factors such as firm ownership, firm age and firm size, we recognize that other elements of organization design such as autonomy, control mechanisms and the relationship between leaders and subordinates in the organization may possibly influence employees' creativity. Future research could investigate the effect of these organizational variables.

Finally, although our study has shown how visionary leadership could have a positive influence on creativity in Chinese organizations, some researchers have suggested that there could also be

negative influences. The potentially dangerous "dark side" of leadership in post-communist countries undergoing economic and social transition was highlighted by Luthans et al. (1998). In a high power-distance country such as China, employees are used to obeying superiors' instructions without question, which could lead to negative effects of visionary leadership on innovation. It is, therefore, important to explore possible negative effects as well as positive effects of visionary leadership in future studies.

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Table 1. Means, standard deviations and correlations

Variable	Mean	S.D.	1	2	3	4	5
1. Visionary leadership	4.64	0.87	—				
2. Knowledge-sharing	4.90	0.69	0.50***	—			
3. Creativity	4.79	0.89	0.32***	0.58***	—		
4.Learning orientation	4.62	0.98	0.49***	0.28***	0.21***	—	
5.Performance- prove orientation	4.38	0.89	0.36***	0.33***	0.31***	0.53***	—
6. Performance-avoid orientation	3.28	0.76	-0.36***	-0.44***	-0.39***	-0.32***	-0.31***

N=331, Two-tailed test,*p<.05;**p<.01; ***p<.001

Table 2. Model results

Variable	Creativity			Knowledge-sharing				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Gender	0.03	0.03	0.03	-0.02	-0.01	-0.01	-0.01	0.01
Age	-0.08	-0.05	-0.06	-0.04	0.01	0.02	0.01	0.03
Educational level	0.03	0.03	0.01	0.05	0.05	0.04	0.06	0.03
Tenure	-0.01	-0.07	-0.07	0.15	-0.15	-0.15	-0.11	-0.18**
Firm ownership	0.23**	0.11**	0.04*	0.21***	0.12*	0.11*	0.11*	0.10*
Firm size	-0.01	0.02	0.07	-0.15**	-0.10*	-0.10*	-0.11*	-0.10*
Firm age	0.01**	0.21**	0.17**	0.11	0.06	0.06	0.04	0.07
Visionary leadership(VL)		0.30***	0.04		0.45***	0.46***	0.42***	0.37***
Moderating variables								
Learning orientation(LO)					0.03	0.05		
Performance-prove orientation(PO)							0.15**	
Performance-avoid orientation(AO)								-0.30***
Interaction								
VL×LO						0.11*		
VL×PO							-0.01	
VL×AO								-0.10*
Mediating variable								
Knowledge-sharing			0.54***					
Adjusted R2	0.07	0.15	0.36	0.06	0.26	0.28	0.28	0.35
△R2	0.09***	0.08***	0.21***	0.08	0.20	0.01*	0	0.01*
F	4.23	7.95	21.16	3.97	13.89	13.16	13.53	17.84

N=331

Figure 1. Conceptual model