
The Influence of Supervisors' Leadership Skills and Team Cohesion on Team Performance in Environmental Service Industry

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Abstract

The composition of a team aims to better complete tasks and further pursue high efficiency and high team performance. Team cohesion and leadership skills might be the major influences on team performance. This study aims to investigate the effects of team cohesion and leadership skill on team performance, and further test the moderating effect of members' thinking styles in environmental service industry. Through questionnaire survey, total 327 valid samples are retrieved from environmental service companies in China. The research results reveal significantly positive effects of team cohesion and leadership skills on team performance. Furthermore, the members' thinking styles had significantly moderating effect. The stronger members' thinking styles would strengthen the relationship between leadership skills and team performance. The practical implications and suggestions for future research are eventually proposed in this study.

Keywords: leadership skill, team cohesion, thinking style, team performance, environmental service industry

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INTRODUCTION

The effective communication and interaction between team leaders and members would enhance team performance (Yu et al. 2018). Apparently, excellent and highly effective teams were critical for an enterprise (Raffiee 2017). Among influencing factors in team performance, team cohesion was the intangible spiritual power and the link to closely connect team members (Balkundi and Harrison 2006). Team cohesion could have team members make progress for certain objectives at certain stage so that the entire team united to pursue the common objectives. Thus, team cohesion would directly affect the completion of team objectives and further influence team performance (Fadol et al. 2015).

Moreover, the leadership skills of a supervisor, as an important part of a team, would affect team members' behaviors and further influence team performance. For this reason, team adaptability and the attainment of high performance required the leadership and talent management (Barrick et al. 2015, Tafvelin et al. 2018). Effective leadership could create team harmonious atmosphere and achieve various team objectives through team spirits to create good team performance. The key factor in an enterprise achieving

advantageously competitive strategies was leadership (Barrick et al. 2015), as an excellent talent could form the motive and corporate value of the enterprise and the team for constant development. Therefore, testing the effects of team cohesion and leadership skills on team performance are main purpose in this study.

Finally, according to social cognitive theory, the explanation of behaviors was shaped through individual perceived environmental interaction, emphasizing that behaviors should be predicted from motivation, cognition, and situation (Carnabuci and Dioszegi 2015). In this case, team members would interact with the environment and the team, perceive the team leadership skills and cohesion to appear behaviors. From the perspective of practical intelligence, Sternberg (1994) also considered that a successful member could understand the team and environment contexts to properly apply the ability to match with the team conditions. Accordingly, when measuring team performance, member's thinking styles may were the critical factor (Chen and Chen 2018, Froehlich et al. 2015). Based on above research background and motivation, this study, with employees of environmental service companies in China as the questionnaire survey objects, attempts to discuss the relations among team cohesion, leadership skill, and

team performance. Furthermore, the moderating effect of member's thinking styles on the relationship between leadership skill and team performance is also investigated.

LITERATURE REVIEW

Team Cohesion and Team Performance

Team cohesion could promote the exchange and interaction among team members and reduce the turnover and loss rates of the members (Chang 2011). In a team with strong cohesion, the members would be more willing to exchange work-related experiences and value with each other and promote team operation to have the team present better trust and coordination as well as enhance the team members' satisfaction to reduce the loss rate and prolong the retention of the members (Chang 2011, Hetland et al. 2007). Zaccar (1988) considered that team cohesion came from team members' perceived inner motive and consensus value and was the highest realization of team spirit; team cohesion would notably and positively affect team performance. Accordingly, it is inferred that H1: team cohesion would positively affect team performance.

Leadership Skills and Team Performance

Shin et al. (2012) pointed out the primary function of leadership on team development; a leader would affect the team members' behaviors with personal ability and charm and further exchange with the members to appear mutual effects. Owens and Hekman (2016) regarded team leaders as an important factor in team performance; the combination of leadership skills and team learning could effectively enhance team performance. Lisak et al. (2016) indicated that leadership skills affected team performance through the effect on the team; leadership skills could enhance team communication, reduce internal contradiction, and further promote team members moving towards common team objectives. Accordingly, it is inferred that H2: leadership skills would positively affect team performance.

Moderating Effect of Employees' Thinking Styles

Woodman et al. (1993) argued that factors of individual cognition and thinking styles, as well as social and contextual factors would affect individual behaviors, and further contribute to team performance. Sternberg (1997) further classified employees' thinking styles into administrative, legislative, and judicial styles. Administrative thinking styles tended to completing affairs arranged by leaders; legislative thinking styles tended to engaging in creativity performance and planning constructive activities; and, judicial thinking

styles preferred to evaluating and criticizing projects. Members' thinking styles would be affected by the leaders and the reward system in the organization (Ghafourian 2012, Sternberg 1997). For instance, when a leader appreciated the employees proposing critical and improving projects aiming at the work contents, the judicial thinking styles would be encouraged. From above statements, it is inferred that H3: members' thinking styles would moderate the relationship between leadership skills and team performance. The stronger members' thinking styles would result in stronger relationship between leadership skills and team performance.

MEASUREMENT OF VARIABLE

Leadership skills are divided into transformational leadership and transactional leadership in this study. Referring to the viewpoints of Bass and Avolio (1994), 15 items are developed and measured with Likert 5-point scale. The *team cohesion* questionnaire is referred to Raver and Gelfand (2005), and 10 items are developed and measured with Likert 5-point scale. Referring to Delaney and Huselid (1996), *team performance* is divided into employees' job satisfaction, customer satisfaction, and goal attainment, including 9 items, and measured with Likert 5-point scale. *Thinking styles* (Sternberg, 1997) is measured with Likert 5-point scale, including 5 items of administrative style, 5 items of legislative style, and 5 items of judicial style.

RESEARCH RESULT

Environmental service companies in China contains environmental information electronics, environmental equipment, environmental chemistry, and material industries, where 151 samples are received from environmental information electronics industry, about 46.1% of all samples, 79 samples are from environmental equipment industry, about 24.3%, 45 samples are from environmental chemistry, about 13.8%, and 52 samples are acquired from material industries, about 15.8%. In regard to the seniority of research objects, 86 respondents show the seniority 1-3 years, about 26.3% of all samples, and followed by 82 respondents with the seniority above 10 years, about 25%.

The result of confirmatory factor analysis reveals that GFI, AGFI, and CFI of four dimensions are close to or higher than 0.9 and the RMR is lower than 0.05, showing good construct validity. The construct reliability is higher than 0.7 and the variance extracted is higher than 0.5, revealing good reliability of the dimensions (Hair et al. 1998).

Table 1. Moderated Regression Analysis

	Team Performance		
	Equation 1	Equation 2	Equation 3
Gender	-0.207**	-0.174**	-0.170**
Education	0.041	0.03	0.051
Marriage	-0.002	0.021	0.002
Age	0.085	0.079	0.07
Firm size	-0.048	-0.044	-0.03
Team Cohesion		0.197**	0.091
Leadership		0.296***	0.282***
Thinking Style (TS)			0.179*
Leadership*TS			0.126*
F Value	2.714*	7.915***	6.751***
d.f.	5	7	10
R ²	0.038	0.186	0.210
ΔR ²		0.148	0.024

Note: *p<0.05, **p<0.01, ***p<0.001

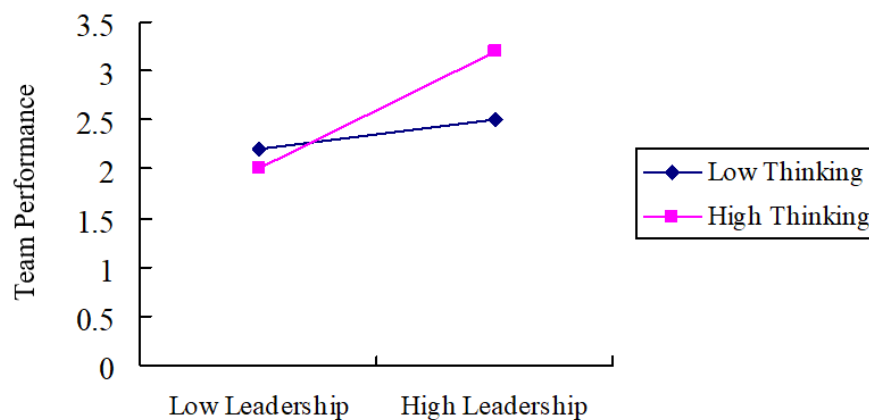


Fig. 1. Moderating effects of Thinking Style on Leadership and Team Performance

The initial moderated regression analysis (**Table 1**) tests the principal effect and moderating effect on team performance. In equation 1, the control variable is the setting of independent variables to the effect on dependent variables. The result in equation 2 reveals significantly positive effects of team cohesion on team performance ($\beta=0.196$, $p<0.01$) as well as the remarkably positive effect of leadership skills on team performance ($\beta=0.294$, $p<0.001$). Accordingly, H1 and H2 are supported.

Furthermore, the moderating effect of thinking styles on the relationship between leadership skills and team performance is tested, as equation 3 (**Table 1**). The result shows the interaction (leadership skill*thinking style) increased 2.1% variance explained on team performance ($F= 6.749$, $p<0.001$, $\Delta R^2=0.021$). Equation 3 also tested H3 that the interaction would positively affect team performance ($\beta=0.123$, $p<0.05$). H3 is therefore supported. To more clearly understand the moderation relationship, the cross diagram of moderating effect is displayed. **Fig. 1** reveals that team members with high thinking styles

would enhance the relationship between leadership skills and team performance.

CONCLUSION AND RECOMMENDATIONS

Theoretical and Practical Meaning

The existence of a team should present the objective and mission, and the leadership capabilities and styles of the team leader appear critical effects on the employees' work attitudes and the promotion of team performance in environmental service companies. It is discovered in this study that leadership skills would positively affect team performance. Leadership skills could present positive effects on team members and be the example, guide, and unite various team members (Barrick et al. 2015, Tafvelin et al. 2018).

Furthermore, team cohesion shows notably positive effects on team performance, explaining the stronger team cohesion, the higher team performance in environmental service companies. Team cohesion, as the core factor in the effective operation of a team (Balkundi and Harrison 2006), could cohere team members, enhance the close cooperation and dependency among team members, and cohere the total

strength of individual members to complete the common team objectives.

Finally, it is discovered in this study that thinking styles would appear moderating effects on members' behaviors and team performance environmental service companies, explaining that ones with stronger thinking styles, either administrative, legislative, or judicial style, would be more sensitive to the information awareness in the environment and perceive leader preference to further adjust the thinking styles to cater to the leader's preference for rewards and to positively affect team performance (Sternberg 1997). It also proves what Carnabuci and Dioszegi (2015) advocated in the social cognition theory that individual different environments would be affected by the environments and the behaviors would also be influenced by external environmental factors in specific situations (e.g. leadership skills).

In terms of practical meanings, it is considered in this study (1) to plan leader contents and practical training courses aiming at future successors and current leaders' cultivation education to implement the leadership skill cultivation mechanism through effective training and outcome assessment, (2) to formulate scientifically reasonable team objectives, define team goals at various stages, and proceed detailed task distribution, and (3) to cultivate members' thinking

styles. In the process to enhance team performance, thinking styles play the role of leverage. The cultivation of members' keen observation of leadership and team climate to flexibly adjust the thinking styles would enhance team performance in environmental service companies.

Research Limitation and Future Suggestion

In spite that this study intends to acquire objective research results, there are still factors in the results to become the research limitations. First, among 327 valid samples, environmental information electronics appear the higher proportion, about 46.1%, while environmental chemistry shows the lowest 13.8%. When the number of samples for the basic data is evenly distributed and the number of samples is increased, the research results would present better representativeness in environmental service companies. Second, the effects of leadership skills and team cohesion on team performance are discussed in this study, while there are various factors in team performance in real life for the environmental service companies. Future researchers therefore could discuss other variables to enhance the completeness of the model. Finally, questionnaire design and cross-sectional research are utilized in this study. The future research could trace team members' attitude or behavior changes with longitudinal research for acquiring deeper data.

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