



Research Article

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## The empirical study on influence mechanism of positive, negative leadership behavior on team innovation performance-based on the contingency model of team emotional atmosphere

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### ABSTRACT

The team is an important organization form of enterprise innovation, The team leadership play a key role in the team innovation performance. The paper is based on matched data of 96 team leaders and 540 team members, through the statistical analysis finds that: When the team emotional atmosphere is positive, authentic leadership and team innovation performance is directly related, abusive supervision and team innovation performance is negatively related ;When the team emotional atmosphere is negative, authentic leadership and team innovation performance is negatively related, abusive supervision and team innovation performance is directly related. Finally, through discussing the results of the study, using the western positive, negative leadership behavior theory, for the development of enterprise team innovation performance during the period of China economic transition and the constructing relationship between the leader and the subordinate, it provides some related practical suggestions and look forward to the future's study.

**Key words:** authentic Leadership; abusive supervision; team emotional atmosphere; team innovation performance

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### INTRODUCTION

#### 1.1 Theoretical Basis

In order to make the organization structure more flexible, and hope the great utility in human resources have produced through cooperation, The modern enterprises have begun a large number of use of the "team" work style. However, not all teams can play the highest efficiency. In all the factors affecting team efficiency, team leader is proved to be an important key factor .But the past research is not much, but only for transactional, transformational and other traditional concept of leadership behavior. In recent years, the incidents of SARS, financial tsunami , Foxconn's employee falling off a building all tests the people for the leader's confidence. Innovation is thought as the key to obtain and keep the competitive advantage in dynamic and changeful environment ,the team is regarded as the basic organization unit Under the new situation, and it is an important executor of innovation strategy. The team innovation performance and its influence mechanism has caused more and more attention of the experts and scholars.

Although research shows that, team innovation performance is affected by many factors, but the leader as an important factor influencing the team innovation begins to be paid close attention to (MUMFORD M D, LICUANAN B., 2004) in recent years. The research approach of leadership can be divided into two factions: one faction from the positive perspective, it studies the effective leadership behavior in organizations and its positive influence on subordinates, teams and organizations. Another from the opposite perspective, researches negative leadership behavior in organization and its negative effect on subordinates, teams and organizations. At present,

negative leadership behavior research has made some achievements, also it has a rapid development and expansion of the trend in this field(Liu Shishun, Ling Wen Quan, Fang Liluo, 2008; Tepper,2007).

It discusses team innovation performance effects of the positive, negative leadership behavior in detail , and further enriches and perfects the related research achievement. Based on Chinese organizational context ,the research of the positive, negative leadership behavior is necessary (Ling Wenquan, 2009; Zheng Boxun, 2010).The internal connection between The positive, negative leadership behavior and team innovation performance may be complex, and thus its internal mechanism should be further examined .

### 1.2 Research Hypothesis

In the related research on traditional team , "input - process - output " model (short for IPO model) which McGrath (1964) proposed ,The framework is the most commonly used , among them the input is refers to the factors which affects team effectiveness, the process refers to the process of interaction between team members, the output is the team efficiency. In this model, the team process is considered to be an important mechanism which connected team input variables and team output variables (Hackman J R., 2002) .In recent years, the related research on team has extended beyond the view of traditional simple study of team process , The team state which concept of is reflecting the team cognition, motivation or emotion , and also is drawn into the mechanism research on team input and team output , thus extends IPO model of team.

In the Cohen and Bailey's (1997) heuristic model of team effectiveness, the model includes the important four teams' levels variables except the external environment. The four teams' levels variables are respectively: (1) task design of the team (including the independence and interdependence of the task of the team etc.), structure (including the size of the team and the period of building the team etc.) and situations (including leadership and reward etc.); (2) the process of the team (including conflicts and communications of the team etc.); (3) psychological characteristics (it was defined later as the state of the team by Marks, Mathieu and Zaccaro (1997), including the shared mental model and group norms etc.); (4) the team effectiveness (such as performance etc.) [1-3].

The group affective tone includes "the consistent or homogeneous affective response of the group."(George, 1990) the group affective tone refers to the affective response caused by the members' emotional interaction and interpersonal relationships of the group. From the perspective of the researchers' construction level at home and abroad comprehensively, the group affective tone was divided into positive and negative aspects by most of people. The meaning of the group affective tone was divided into "the positive group affective tone" and "the negative affective tone" aspects in this research. Meanwhile, the emotion of the group was discussed in this research, which was analyzed and interpreted in table 1.

**Table1 Analysis of the Group Affective Tone Level**

Level	Explanation
(the Positive Affective Tone)	It includes the excellent group affective tone. It brings the common sense among members of the team together. It creates the harmony and sense of security etc. the members have sense of identity and belonging for the team.
(the Negative Affective Tone)	It includes the bad group affective tone. It can't bring the common sense of the team together. There are conflicts and sense of helplessness etc. among the teams. The members don't have sense of identity and belonging for the team.

On the basis of the heuristic model of team effectiveness put forward by Cohen and Bailey (1997), the author thinks that the group affective tone is the important adjusting variable connecting the positive and negative leadership behavior with the creative performance of the team. By combining it with the relevant research results at home and abroad, the following research hypotheses are put forward in this research[4-7]:

Hypothesis 1: the negative correlation between the improper supervision and the creative performance of the team.  
Hypothesis 2: the positive correlation between the sincere leadership and the creative performance of the team.  
Hypothesis 3: the correlations between the improper supervision and the creative performance are affected by adjusting the group affective tone. The positive affective tone of the team can reduce the correlations between them.  
Hypothesis 4: the correlations between the sincere leadership and the creative performance of the team are affected by adjusting the group affective tone. The negative affective tone of the team can strengthen the correlations between them.

## EXPERIMENTAL SECTION

This research was an empirical research, which was carried out by adopting questionnaire and statistical analysis.

The data were processed and hypothesis model was verified by adopting SPSS17.0.

## 2.1 Research Objects

540 team members of 96 teams from the different 20 organizations were selected to take part in this survey in this research. To guarantee the preciseness of the research, the research objects through questionnaire of the research were divided into the team leader and team members. To reduce the common method variance caused by the same source data, the variable data were regarded as the different collected sources in this research (the team leader and team members). Meanwhile, the data were collected within the range of 3 to 5 months intervals in twice (T1 and T2).

Matching method was adopted in this questionnaire, which were the questionnaire for the team leader and the questionnaire for the team members. During the process of the first survey (T1), the contents of the questionnaire for the team leader mainly included the background information of the leader and team members. The contents of the questionnaire for the team members mainly included the personal background information and the team leader's authentic leadership and the improper supervising behavior. However, during the process of the second survey (T2), the contents of the questionnaire for the team leader mainly included the personal and the team background information and the team innovation performance. The contents of the questionnaire for the team members mainly included the personal background information and the team emotional atmosphere. After filling in the questionnaire, the questionnaires were enclosed into the envelopes by the respondents, which were sent to researchers directly by the respondents or human resource department of each company.

592 questionnaires for the members of the team were collected after finishing surveying in total. 96 questionnaires are those for the leader of the team. The number of questionnaires for the leader and members of the team was 688 in total. There were 540 valid questionnaires for the members of the team and 96 valid questionnaires for the leader of the team except for the incomplete and careless invalid questionnaires. The total valid rate was 92.44%.

Among 85 teams, the female team leader was 22.90%. The male team leader was 77.10%. The average age of the leaders of the team was 38.86. The leaders of the team having the high-school degree and under occupied 7.64%. The leaders of the team having the associate degree occupied 32.23%. The leaders of the team having the bachelor degree occupied 52.42%. The leaders of the team having the graduate degree and above occupied 7.71%. From the organization situation of the team, the private enterprises occupied 11.76%. The state-owned enterprises occupied 45.88%. The government institution or public institution occupied 42.36%. From the type of the team, the marketing team occupied 9.41%. The research team occupied 2.35%. The management team occupied 41.18%. The service team occupied 18.82%. The producing team occupied 28.24%.

## 2.2 Research Measuring Tool

(1) The sincere leadership: Kemis pointed out the sincerity including the following four aspects in the research in 2003: self-recognition, non-partial information processing or the balanced processing, the sincere behavior and sincere and transparent relations. On the basis of Kemis's research, Ilies etc. discussed the sincere leadership model from the structure aspect, of which research results were similar with the Kemis' research results.

Fred0.Walumbwa developed the sincere leadership measurement scale on the basis of this kind of classification. Therefore, Fred0.Walumbwa's measurement scale was adopted to measure the sincere leadership in this research[8]. Meanwhile, this research was reported by the members of the team, including 8 items in total. Each dimension had 2 items. Linkert scale was adopted in this research. "1" refers to "strongly disagree"; "6" refers to "strongly agree". The positive score was adopted for all the items. The higher the scores were, the higher consistency the scores had with the sincere leadership behavior. Coefficient of reliability of the internal consistency of the scale was 0.89.

(2) The improper supervision: it was reported by the members of the team. Chinese version improper supervision scale adopted by Aryee (2007) etc. including 10 items was adopted in this research, which was on the basis of Aryee's understanding of Chinese culture situation and formed by selecting 10 culturally neutral items from the improper supervision scale including 15 items developed by Tepper (2000), which included the leader's ridicule, unconcerned attitude, embarrassing the staff behavior, privacy infringement, lack of trust, deception, anger and rude behavior and the negative treatment etc. in the working process[9]. The coefficient of the internal consistency of the scale was 0.92.

(3) Team Emotional Atmosphere: The scale reported by team members and developed from LIU and so on has four topics, of which the higher the score is the more positive the team emotional atmosphere is. For example, /in the team, we find it very motivated for us to work ;/in the team, everyone is full of youthful spicity[10] . The internal consistency reliability coefficient of the scale is 0.81.

(4) Team Innovation Performance: Since it is difficult to measure the team innovation performance by objective financial indicators, BARRICK and so on suggest to measure it by subjective judgment. Measurement of team innovation performance of the research is reported by the team leader by using a scale developed by LOVELACE and so on from the perspective of innovation outcome and from the aspects of product innovativeness, quantity of originality or idea, overall technical performance, adaptability to change and so on. There are four topics in total. For instance, the outcome of the team's work is very novel ;/ the team produced a lot of creative ideas or new ideas [11].the internal consistency reliability coefficient of the scale is 0.87.

Previous studies have shown that leader's background variables composed of gender, age and level of education and team background variables composed of team organization type and team type may have an effect on team status and performance (Chen G, Kirkman B L, Kanfer R, Allen D, Rosen B., 2007). As a result, gender, age and level of education of the leader, team organization type and team type will be taken as control variables in the research.

All measuring tools adopt Five Point Likert Scale. As abusive supervision, authentic leadership and team emotional atmosphere are evaluated by many members of the team through calculating Rwg, F statistical magnitude and ICC (intra - class correlation), or even ICC (1) and ICC(2) to determine whether the data can be gathered to the team level. Please refer to Table 1.

**Table 2 Test Result of Variable Data Gathering**

Variables	Rwg	ICC( 1)	ICC( 2)	F
Abusive Supervision	0.88	0.28	0.75	3.96***
Authentic Leadership	0.86	0.30	0.77	4.35***
Team Emotional Atmosphere	0.92	0.26	0.73	3.70***

Note: \*\*\* indicates  $p < 0.001$ , the same below.

First of all, internal consistency Rwg of variables is valued and displays a result that the average Rwg coefficients of abusive supervision, authentic leadership and team emotional atmosphere are respectively 0.88, 0.86 and 0.92 and exceed the critical standard of 0.70, which indicating the capability of satisfying the requirement of team internal consistency. Second, between-group differences are inspected through analysis of variance and analyses of ICC (1) and ICC (2). From table 2, all the three variables' F statistical magnitudes through analysis of variance is greater than 1 and their  $p < 0.001$  level is significant; ICC (1) and ICC (2) of the three variables are greater than empirical criterion, namely ICC (1)  $> 0.05$  and ICC (2)  $> 0.50$ [12]. Consequently, data of abusive supervision, authentic leadership and team emotional atmosphere of individual level can be gathered to team level for statistic analysis. And the gathered data will be used in the following data analysis.

## DADA ANALYSIS AND RESULTS

The average value, standard deviation, coefficient of correlation and coefficient of internal consistency of all the main variables in the research refer to Table 3. Hierarchical regression method is mainly adopted in the research for testing of hypothesis with the analysis results shown in Table 4.

**Table 3 the Mean Value of Each Major Variable and Standard Deviation and Correlation Coefficient among the Variables**

variable	Mean value	standard deviation	1	2	3	4
1. Improper supervision	3.34	0.54	(0.89)			
2. Authentic Leadership	3.82	0.52	0.69**	(0.92)		
3. Team emotion atmosphere	3.73	0.55	0.48**	0.70**	(0.81)	
4. Team innovation performance	3.82	0.70	0.17	0.11	0.22*	(0.87)

Comments: \*\* , respectively shows  $p < 0.01$  ,  $p < 0.05$  the same below; the numbers in the bracket means reliability coefficient A .

Table 4 Hierarchical Regression Statistical Results N = 96

Predictive variable	Team innovation performance			
	Model 1	Model 2	Model 3	Model 4
Pattern of organization- privatization	- 0. 15	- 0. 18	- 0. 17	- 0. 10
Pattern of organization- state-owned	0. 02	- 0. 06	- 0. 06	- 0. 03
The team leader's sex	0. 19	0. 19+	0. 20+	0. 25*
Control the team leader's age	0. 17	0. 18	0. 18	0. 10
The team leader's education status	0. 00	-0. 02	- 0. 02	0. 09
Variables team pattern-sales team	0. 08	0. 03	0. 02	0. 02
Team pattern-group for research and development	- 0. 15	- 0. 18	- 0. 18	- 0. 29*
Team pattern- management team	0. 09	0. 03	0. 02	0. 05
Team pattern--service team	0. 00	- 0. 06	- 0. 06	- 0. 09
Independent abusive supervision		0. 20	0. 20	0. 22
Variables authentic leadership		- 0. 13	- 0. 14	- 0. 08
Adjusted variables team emotion atmosphere			0. 03	- 0. 10
Abusive supervision x				
Interaction Team emotion atmosphere				- 0. 39*
Authentic leadership				
Team emotion				0. 42*
R2	0. 39	0. 42	0. 42	0. 47
F	2. 62**	2. 43**	2. 24*	2. 46**
ΔR2	0. 39	0. 02	0	0. 06
ΔF	2. 62*	*0. 68	0. 02	2. 92

Comment: +means  $p < 0. 10$ .

Hierarchical regression follows the following steps:

Step 1: Add the control variable, such as the sex, age and education status of the team leader. As these control variables are all categorical variables, their various variable are respectively disposed as dummy variable. Step 2: Add the team leadership style of independent variable, that is, the authentic leadership and abusive supervision. Step 3: Add regulated variable and improve the team emotion atmosphere. Step 4: Add interaction between independent variable and regulated variable. During the period of testing the interaction effect, this research has centralized all the major variables in the models, so as to lessen the multiple mutual linear problems among the variables. The result indicates that after control variable is added, there is no distinguished relationship between the authentic leadership, abusive supervision and innovative performance. From this, hypothesis 1 and hypothesis 2 get no support, while the interaction between the group of the authentic leadership and the team emotion atmosphere and the group of abusive supervision and team emotion atmosphere exert appreciable impact on the team innovation performance ( $B = - 0. 39, p < 0. 05$ ;  $B = 0. 42, p < 0. 05$ ). Thus, hypothesis 3 and hypothesis 4 have been validated. When the team emotion atmosphere tends to be positive, the authentic leadership and team innovative management tend to be positive correlation; the abusive supervision and team innovative management tend to be negative correlation. While the team emotion atmosphere tends to be negative, there exists negative correlation between the authentic leadership and innovative management; there exists positive correlation between abusive supervision and team innovative management. In accordance with the methods recommended by AIKEN etc have drawn the influence model of the interaction between abusive supervision and the authentic leadership. These indicate being higher than the mean value by a unit of a standard deviation (Mean+ 1SD) and "low " indicates being lower than the mean value by a standard deviation (Mean-1SD).

## DISCUSSION

(1) This research studies influencing mechanism which positive and negative leadership behaviors exert on the

team innovation management at the team level. Compared with the research on the individual level, the influence which the leader behavior of positive and negative exerts on the result variable of the team level have not got enough attention. Up to now, few related research achievements have been published[13-15]. This research expands the influence that the positive and negative leadership behaviors exert on the outcome variable to the team level. By investigating the function of team emotion atmosphere, which serves as a team contextual variable, as well as substitute factor in the leadership style, a more overall and systematic acquaintance have been formed, which positively contributes to the research on both deepening the effect on the team emotion atmosphere and the effective factors of the team in team innovation management.

(2) The study expanded the research field in feelings of organization. The relations between positive and negative leadership behaviors and team innovation performances may be complicated so we should make a further examination for their inner team innovation performance (Liu Jun, Wu Longzeng; 2008). We took the heuristic model of team effectiveness as our foundation and considered team course and team situation all this will help us understand the inner course of our leaders actions. we took the heuristic model of team effectiveness as our foundation which was presented by Cohen and Bailey (1997) and considered the feeling of team may play regulative roles between positive and negative leadership behaviors and team innovation performances.

From the view of feelings of team, the study provided a new perspective for us to understand team innovation performances. And it enriched our team innovation study.

(3) the study verified and deepen the contingencies of sincere leading and abusive supervision further which existed in our country. Considering the peculiarity of our culture such as: high power distance, collectivism, High uncertainty avoidance, the long-term orientation(Hofstede etc., 1988)and relationship(Farhetc., 2004)it is necessary for us to make the study of positive and negative leadership behaviors under our county(Ling Wenquan, 2009; Zheng Boxun, 2010). Based on the situation of our county, the study took more reasonable method to explore the conducts of abusive supervision and sincere leading, to explore the affection of team innovation performances and they are sustained efforts to the study of past leadership contingency theory. By the study we found in the courses of influence of team innovation performances from leaders, the main effects to team innovation performances from both sincere leading and abusive supervision were not obvious. And all above show that the influences from sincere leading and abusive supervision were varying and it was influenced by leading substituted factor- feelings of team to some extent it can explain why the research results about the influences to subordinate and team innovation performances from sincere leading and abusive supervision in past study were inconsistent. Team emotional atmosphere are different so in some teams sincere leading and abusive supervision have positive influences to team innovation performances and in other teams leading and abusive supervision have negative influences to team innovation performances so we can not study separately and we should take the functioning situation- team emotional atmosphere into consideration.

(4) This study showed team emotional atmosphere as leadership substitutes and offset elements plays an important role. To be specific, when improper supervision behaviors influenced the team, emotional atmospheres as a leadership offset element topped or weakened the influence which was brought by improper supervisors; when sincere leading influenced the team, emotional atmospheres as a leadership substitutes element can provide guidance, recognition, motivation and stimulation for its subordinates and can promote its members to take innovation activities. And it also supported research results of BASU and [43] to some extent that is sincere leading had negative influences to the innovation of subordinate and it may stop innovation in some specific situation. So it is not out of style for improper supervision behaviors and sincere leading is not fit for all things. Such opinion has important meaning and practical management values to the study of sincere leading and the theory of no supervisor. The study is more strictly in its study design. Such as it took the study design of longitudinal tracking and data capture method of multiple resources (the intervals of investigations were three to five months, and team leaders and members evaluated the different variates respectively), so problems of common method variances were avoided efficiently and we can reveal causal relationships among those variates more easily and.

#### **4. 2 study limitation and future research direction**

The study exist some limitations inevitably: teams of the research came from different groups and different types of organizations; the work is different and we can not measure team innovation performances by objective indicator of innovation performances so the evaluations of team innovation performances were subjective assessments which made by team leaders; for the statistic analysis of multiple regression, sample sizes for research were still less, for the numbers of teams which had their own characteristics, they didn't meet the requirements of large samples investigation. The scales which used by the research were all had good reliabilities and validities in the past research and in research of this time but after the measure of multidimensional concept of sincere leading and improper supervision behaviors, the significance of the researches may change and it may be one of the reason why the main

effects were not distinct in the research results. In feature research, we can take objective indicators of innovation performances to measure sincere leading and improper supervision behaviors more fully and verify the conclusion of the research.

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