

“Climate for Innovation” in mainland China

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Abstract

The research topic involves “climate for innovation” has become very popular in the corporate management research field in mainland China. Following the current research situation, more than 30 related research achievements published in the important management academic journals in China between 2013 and 2015 were selected. These achievements were used to construct a literature review with the aim of sharing knowledge and providing a picture of the recent research situation in China.

Keywords : Climate for innovation, Creativity, Innovative behaviour

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“บรรยากาศสร้างสรรค์” ในประเทศจีนแผ่นดินใหญ่

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บทคัดย่อ

การศึกษาวิจัยในเรื่องบรรยากาศสร้างสรรค์ในองค์กรเป็นประเด็นวิจัยที่ได้รับความนิยมเป็นอย่างมากในแวดวงการศึกษาด้านการจัดการองค์กรในประเทศจีน เพื่อเป็นการตามกระแสสถานการณ์การวิจัยในประเด็นดังกล่าวนี้ ผู้วิจัยได้ทำคัดเลือกผลงานวิจัยที่เกี่ยวข้องจากวารสารวิชาการที่สำคัญในด้านการจัดการในประเทศจีน ที่ได้รับการตีพิมพ์ในช่วงระหว่างปี ค.ศ. 2013 ถึง ค.ศ. 2015 จำนวนกว่า 30 ผลงาน ซึ่งงานวิจัยดังกล่าวนี้ได้ถูกใช้ในการจัดทำบทวิจารณ์วรรณกรรม โดยมีจุดประสงค์เพื่อเป็นการแบ่งปันความรู้และนำเสนอภาพรวมของสถานการณ์การศึกษาวิจัยในปัจจุบันของประเด็นดังกล่าวในประเทศจีน

คำสำคัญ : บรรยากาศสร้างสรรค์, ความสร้างสรรค์, พฤติกรรมสร้างสรรค์

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Introduction

Thailand, as one of the members of the Asian Economic Community, which will be officially established at the end of 2015, is a developing country that is in a hurry to acquire its own competitive advantage so that it can compete effectively with the other countries in the international market. In order to acquire a competitive advantage, the people in Thailand, as well as business firms, are required to be creative. Creativity is an important source of competitive advantage. On the other hand, China is one of the most powerful countries in the world in terms of rapid growth in economic and technological development. Thus, research about the organisational climate for innovation in China is an interesting topic for study. This paper has summarised the current research achievements in the field of “Climate for Innovation” in China between the years 2013-2015, with the aim of providing readers with a picture of the relevant research situation in China.

Research achievements related to the topic of climate for innovation in China during the years from 2013 to 2015 can be divided into 3 different categories based on the research purpose of the articles, including 1) The researches that focus on studying the core components of climate for innovation; 2) The researches that focus on the influence factors and the influence effect of climate for innovation; and 3) The researches that focus on the effect of psychological factors in employees.

1. Different dimensions of Innovation climate

Yang Baiyin and team developed an instrument for measuring the Chinese organisational climate for innovation in order to identify the dimensions of innovative climate in Chinese organisations. The researchers selected 493 employees from 24 companies in China as the target and conducted the survey using open-ended questionnaires,

an inductive method, sample and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The research result indicated that Chinese organisational climate for innovation consisted of 8 dimensions: 1) Value avocation; 2) Market orientation; 3) Appraisal and motivation; 4) Training and learning; 5) Communication and cooperation; 6) Resources ensuring; 7) Example demonstration; 8) Empowerment and support (Yang Baiyinet al., 2013). In the same year, Sun Bing and Zhao Jin used the factor analysis method to identify the main components of innovation climate for the industrial enterprises in Heilongjiang Province of China. The result showed that the main components of innovation climate were 1) Innovative awareness; 2) Innovative pressure; 3) Innovative barriers; and 4) Innovation degree of freedom (Sun Bing, 2013). The research result also identified the influence factors of innovation climate, which were: 1) The management motive; 2) Group power; 3) Control; and 4) Market motive (Sun Bing, 2013).

In 2014, Wu Sanqing and Wang Jing studied the relationship between organisational learning, innovation climate and innovation performance. They found that the organisational innovation climate, which consisted of 1) Team support; 2) Supervisor support; 3) Organisation philosophy; 4) Resources; and 5) Task characteristic, positively moderated the positive relationship between organisational learning and innovation performance (Wu Sanqing, 2014). In the same year, Wang Yanping and team conducted research to discover the relationship between HR practices, HR system strength and innovation climate. They used 116 enterprises in Shaanxi Province of China as the research target, finding that HR practices indirectly influence innovation climate through the mediation effect of the HR system strength. In the other words, HR practices use the consensus and consistence dimensions of HR system strength to influence the construction of innovation climate in enterprises (Wang Yanpinget al., 2014).

2. Climate for innovation and its influence factors

Although knowledge about the construction process and the core components of organisational innovation climate are undoubtedly very important, several researchers also put forth effort in determining the influence factors of innovation climate in order to further improve the quality of the climate. Employees' innovative behaviours are some of the most important factors that determine the whole enterprises' innovative level. In other words, employees are the main innovative force in enterprises. One of the key factors that have a major impact on employees' innovative potentials and behaviours is the leadership style.

Recently, researchers have attempted to provide some explanation to the question: "Which type of leadership style can help increase the creativity and innovative behaviours of employees?" As a result, research involving different leadership styles and innovation climate has been conducted.

The inclusive leadership style requires the leader to be able to demonstrate the ability to accept and appreciate members' words and behaviours, as well as work together with them to accomplish the goal (Yao Minghui et al., 2014). In 2014, one of the research achievements of Yao Minghui and team found that the inclusive leadership style (which consists of 4 different aspects: openness, affinity, tolerance, and support), has a positive direct impact on the atmosphere of organisational innovation and continually has a constructive impact on employees' innovative behaviours as a result (Yao Minghui et al., 2014).

The transformational leadership style requires the leader to emphasise innovation within the organisation. The leader should encourage employees to develop their ability to actively express and share their opinions while trying to innovate knowledge (Wang Xiaohong et al., 2014). Wang Xiaohong and team found that the

transformational leadership style positively relates to knowledge sharing behaviour among employees. For example, the transformational leadership style can positively mediate the affiliation climate and fairness climate in the organisation. The perception of affiliation climate helps facilitates knowledge sharing within the organisation (Wang Xiaohong et al., 2014). In addition, Zhang Haitao and Long Lirong found that transformational leadership has significant positive effects on the prospector organisational strategy and defender organisational strategy. The prospector organisational strategy has partially positive mediate effect on the organisational innovation climate (Zhang Haitao, 2015).

The ethical leadership style requires a leader to act as a role model for employees. In other words, the leader should demonstrate normative and appropriate behaviours through one's personal behaviours and interpersonal relationships, encouraging followers to do the same through the use of two-way communication, consolidation and decision making (Zhou Fei, 2015). The ethical leadership style has a positive direct impact on employees' informal sharing behaviours, which improves the atmosphere of innovation and organisational innovation management practice (Zhou Fei, 2015).

In addition, Dang Xinghua and Wang Fang conducted research on the impact of different orientations of leadership style on the network innovation performance and found that relation-oriented, change-oriented and task-oriented leadership styles have a significant positive impact on innovation climate. Innovation climate has a complete mediate effect on the relationship between relation-oriented, change-oriented leadership styles and network innovation performance (Dang Xinghua, 2014). In the same year, the researchers conducted another research on the inter-relationship between leadership styles and innovation climate, finding that the contextual

leadership style and transformational leadership style have a positive effect on the perception of innovation support of employees. Further, both leadership styles have remarkable positive influences on firms' innovation encourage and participative safety (Wang Fang, 2014).

Another research emphasised the impact of leadership: Liu Hui and Zhang Liang (2013) conducted research about the relationship between team leadership and job satisfaction. They found that both transformational and transactional leadership styles have a direct influence on team work satisfaction. In addition, team climate for innovation plays an important mediate role in the relationship between leadership and job satisfaction. The transformational leadership style and team climate for innovation are positively correlated, but the transactional leadership style and team climate for innovation are negatively correlated (Liu Hui, 2013).

From the recent research achievements involved in leadership, we can draw a model of the influencing effects of leadership on the behaviour of employees as follows:

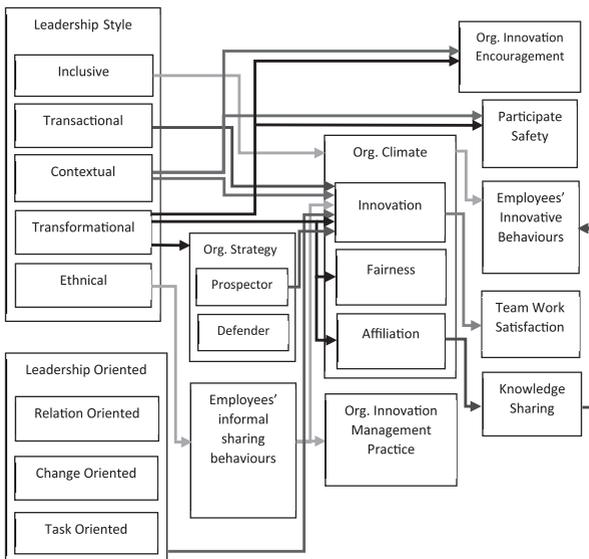


Figure 1: The influencing effect of the leadership on the behaviour of the employees

***All the relationships in the model are positively connected, except for the relationship of the transactional leadership style and the organisational innovation climate, which is negatively connected.

From the above model, we know that “Leadership style” is one of the important influence factors of innovation climate, but it is not the only influence factor. Some researchers have tried to identify other factors that can interact with organisational innovation climate. Knowledge about the influencing mechanism of climate for innovation can lead to a better understanding of the overall influencing process and the construction of innovation climate within the organisation. It will eventually guide management in being able to improve the quality of the innovation climate in an organisation.

“Intellectual property” is one of the important capitals of enterprises. Researchers have conducted studies about intellectual property and climate for innovation, finding that the protection ability of intellectual property has a positive direct effect on innovation climate and innovation climate has a positive influence effect on technology innovation of the enterprise. In other words, innovation climate plays a full mediate role in the relationship between the protection ability of intellectual property and technology innovation of the enterprises (Yuan Bo et al., 2014). Yuan Lin and team found that the organisational innovation climate positively influences the enterprise patent creating ability, while the organisation learning ability mediates the relationship between the innovation climate and the patent creating ability of the enterprise (Yuan Lin et al., 2015). Cai Li and Mei Qiang conducted research on the relationship between the innovation value of intellectual capital and regional

innovation climate. They found that the intelligence capital innovation force of a small micro group is the main support for forming regional innovation climate (Cai Li, 2015).

“Organisational strategy” is another important factor that can determine the level of innovation climate in an organisation. The perception and interpretation of organisation strategy for employees can be both an encouragement and an obstacle to the innovative behaviours of employees. The level of the innovative behaviour depends on how the employees perceive and interpret the orientation of the strategy. Sun Rui conducted research focusing on the influence effect of strategic human resource management on the organisational climate for innovation. The research result indicated that strategic human resource management (Focusing on performance; providing reasonable authority; conducting extensive training; promoting career development; participating in decision-making; and providing supporting wages and benefit) will influence on climate for innovation. In turn, climate for innovation will act as a mediate factor to continue to influence R & D personnel innovation (Sun Rui, 2014). Zhang Haitao and team conducted a study on the relationships of Chinese enterprise’s strategy and organisational innovation climate. They found that the prospector strategy has a positive direct effect on climate for innovation. In contrast, the defender strategy has a negative direct impact on innovation climate (Zhang Haitao et al., 2013). They also found that the intellectual property protection capacity of the enterprise plays an important moderate effect on the relationship between organisational strategy and organisational climate for innovation (Zhang Haitao et al., 2013). Later in 2014, Zhang Haitao summarised the influential factors of organisational innovation climate and categorised them into 2 groups: a group of factors that influence the subjective innovation climate and a group of factors that influence the objective

innovation climate. The latter group consists of only one factor: Organisational resources, while the previous group consists of several factors, including: 1) Organisational resources; 2) Organisational culture; 3) Leadership style; 4) Organisational strategy; 5) Organisational structure; 6) Management practice; and 7) Information sharing (Zhang Haitao et al., 2014).

Another topic that attracts attention from researchers is “Knowledge innovation” and “Knowledge sharing” in the organisation. Some researchers have tried to reveal the relationship between organisational innovation climate and knowledge sharing. Ma Guoyong and team used the PLS-SEM algorithm to identify the influence factors of the absorption ability of high-technology enterprises. They found that organisational innovation climate has a positive influence on the absolute absorption ability of enterprises. In other words, a strong level of organisational innovation climate can lead to a strong level of organisational innovation management competency, which will lead to knowledge interchange and knowledge sharing within high-technology enterprises (Ma Guoyong et al., 2014). Wang Xiaohong and team conducted research based on the ternary interaction theory and the system dynamics theory. They found that organisational innovation climate and trust relationship have a positive influence effect on individual knowledge innovation (Wang Xiaohong et al., 2014).

Social responsibility of the organisation can also be an interesting topic for study. Some researchers have studied the influence of social responsibility on enterprises’ technology innovation ability. They found that the social responsibility of enterprises has positive influence effects on the level of organisational commitment, scientific and technological innovation awareness, and the innovative competence of knowledge-based staff. In addition, the result indicated that innovation climate has positive influences on the

willingness and motivation to be innovative by knowledge-based staff. Thus, it will continuously improve the innovative competence of the enterprise as a whole (Zhang Xinguo, 2014).

The relationship between “Innovation climate” and “Innovation performance” is another interesting topic that many researchers have attempted to discover. XieXuemei and Xu Maoyuan used the multiple regressions method to identify the influence mechanism of collaborative network, collaborative innovation mechanism, and collaborative innovation climate on innovation performance. The research result indicated that collaborative network, collaborative innovation mechanism and collaborative innovation climate are positively related to innovation performance. While the collaborative network completely mediates the relationship between collaborative innovation mechanism and innovation climate, it also partially mediates the relationship between innovation climate and innovation performance (Xie Xuemei, 2014). He Jianhong and team conducted research on innovative enterprises, finding that all the dimensions of network competence (network visioning competence, network construction competence, relation management competence, and relation control competence) have a significant effect on the innovative enterprises, while the strategic technology-oriented played a moderate role between the relationship of the network competence and innovative enterprises (He Jianhong et al., 2014). Long Jing and Cheng Dejun conducted a survey on 42 high-technology enterprises in Jiangsu Province. They used the regression method and structure equation model to discover that the cognitive consistency of professional skills among members in a knowledge-based team has a positive effect on innovation climate and innovation performance. The members’ perception of distributive justice plays a mediating role in both the relationship between cognitive consistency and innovation climate, as well as the relationship between cognitive

consistency and innovation performance (Long Jing, 2015).

While most researchers put their interest in discovering the core components and influence factors of business firms' innovation climate, Chang Yaping and team selected postgraduate students at Chinese universities as the research target. They conducted research with the aim of identifying the influence factors of innovation climate in the university context. The research result indicated that tutor charm and tutor-student relationship have a positive influence effect on participation safety and innovation support. The result also indicated that tutor innovativeness, tutor charm, student maturity and team identity all have significant positive effects on the vision goal (Chang Yaping et al., 2013).

3. Employee's psychological factors and creative behaviours.

While some researchers put the research focus on the influence factors of the organisation innovation climate, some other researchers have bended their research interest on to the employees' psychological factors that can influence their own creative behaviours. Based on the kriton adaptation theory, Luo Jianliang and team found that the employees' innovative cognitive style, the task characteristics and the support of supervisors have a significant positive relationship with employee creativity. However, the resourceful condition has a negative impact on the creativity of employees (Luo Jianlianget al., 2013). Wang Shihong and team put their interest in the medium role of knowledge-sharing willingness in the relationship between organisational climate perception and employees' innovative behaviour. They found that a friendly relationship climate and innovation climate both have a positive direct effect on employees' innovation behaviours, while knowledge-sharing willingness partially mediates the relationship between innovation climate and innovation behaviour (Wang Shihong et al., 2013). In 2015, Zhang

Zhengang and team also conducted research focusing on the mediate effect of knowledge-sharing willingness of employees, finding that psychological capital, innovation climate perception and knowledge-sharing willingness of employees all have a positive relationship with the creative behaviour of employees. Further, knowledge-sharing willingness plays a mediate role in the relationship between psychological capital, innovation climate perception and creative behaviour of the employee (Zhang Zhenganganget al., 2015). This research achievement supports the conclusion of previous research achievements about the positive relationship between psychological capital and creative behaviour (Chen Bihuiet al., 2013).

Based on the social exchange theory, Yu Mingchuan and team found that employees' psychological ownership mediates the relationship of the employee-organisation relationship and innovative behaviours. Additionally, innovation climate moderates the influencing effect of employees' psychological ownership on innovative behaviours (Yu Mingchuanet al., 2014). In other words, the high quality of the organisation-employee exchange will improve the level of employees' self-efficacy, sense of belonging, perceived insider status, and sense of responsibility, which will eventually improve the innovative behaviours of employees (Yu Mingchuanet al., 2014; Yu Mingchuanet al., 2013). Other research about employee self-efficacy was conducted on R&D staff in the high-technology companies of Nanjing Province. GuYuangong and team conducted a survey in order to discover the effect of organisational creativity climate, perceived success and failure experience on R&D staff's creative self-efficacy. They found that an organisational creative climate positively influences the staff's creative self-efficacy. Perceived success experience also positively influences the staff's creative self-efficacy, while perceived failure experience

negatively influences the staff's creative self-efficacy (GuYuandonget al., 2014).

Finally, Lian Xin and team conducted a survey on 493 employees from 24 companies around China. The result confirmed that an organisational innovative climate positively influences individual creative behaviours, with the intrinsic motivation of employees acting as a positive mediate factor between the relationship of innovative climate and creative behaviours. This research result also indicated that task-routineness negatively moderated the influence effect of innovative climate on individual creative behaviours (Lian Xin et al., 2013).

Summary and Discussion

From the above contents, it is undeniable that the research topic of "Climate for innovation" has become an important research topic in the field of management. In recent years, research achievements have mostly discussed the relationship between climate for innovation and other factors. Some have discussed the mediate effect and moderate effect of innovation climate on the other factors or on the relationship of other factors, such as the relationship between different leadership styles and organisational innovation climate, the mediate effect of climate for innovation on the relationship between leadership style and the innovative behaviour of the employees, etc. In addition, some of the research results discussed the effect of employees' psychological factors and how they can influence the innovation behaviours of employees, such as the effect of the employee's knowledge sharing willingness on the innovation behaviours, the effect of employees' innovative cognitive style on their creative behaviours, etc. Lastly, some researchers have placed their research focus on discovering the different dimensions and components of climate for innovation. It is notable that several

researchers began to bend their interest to study climate for innovation in non-profit organisations, such as innovation climate in universities, rather than focus solely on climate for innovation in enterprises. This is very important for every organisation to try to improve its own climate for innovation.

It is vital for Thai people, especially in the business firms of Thailand, to study the core components of climate for innovation, as well as its effect and influence factors. Knowledge of climate for innovation can help firms to acquire a competitive advantage over competitors. By balancing and improving the quality of climate for innovation and its influence factors through various perspectives, as well as using the effect of positive influence factors (positive direct effect; positive mediate effect and positive moderate effect), firms will eventually be able to create a suitable climate for innovation within the organisation, which can maximise employees' innovative willingness, innovative self-efficacy, and innovation behaviours. The end result is the improvement of the firms' innovative performance level as a whole.

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