

# Organization Climates and Individual Innovation

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## Abstract

The study aimed to explore organizational climates that support individual innovation and to investigate the correlation between organizational climates and individual innovation. The quantitative approach was used to gather the data and the questionnaire was designed on the basis of a thorough literature review that consisted of organizational characteristics section and five-scale organizational climates, and individual innovation measurement section. To validate organizational climates, factor analysis yield three factors that were strategy, structure and leader, and individual innovation was composed of idea generation and idea implementation. The finding revealed that most company set clear innovation strategy, but not set innovation department. Meanwhile, each department has a key individual to responsible for innovation. Furthermore, all factors of organizational climates were significant correlated with individual innovation, and the companies emphasized on structure more than leader and strategy.

**JEL classification numbers:** M10

**Keywords:** Organizational Climate, Innovation, Individual Innovation, Innovative Organization, Innovative Behavior, Organizational Environment

## 1 Introduction

To gaining competitive advantage, most organization attempt to enhance effectiveness and efficiency; such as reducing operation cost, improving productivity, and increasing customer satisfaction [1], thus innovation became the popular strategy to obtain the wealthy and property [2].

Nowadays, several companies pay attention to innovation, but few companies understand what innovation is and have misunderstood about innovation and improvement. Actually, innovation differ from improvement and invention, it mean the incremental improving exist thing and rapid change to develop new one that add more value and gain beneficial to organization, including influence the routine work and people lifestyle. Almost

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previous research studied innovation management at organizational level and categorized innovation as product and process, or degree of change; radical and incremental innovation [3], but less study pay attention to study innovative behavior of individual that the individual ideas is the origin of innovation [4].

For this paper, Individual innovation is innovative behavior that consist of ideas generation and ideas implementation [5][6], and individual innovation will be affected group innovation and organizational innovation [7]. Thereby, organizations need to provide infrastructure and environment for encouraging and managing idea flow, because the climate is bad, an idea implementing system would be worse [8], as well as Desmond [9] noted that organization need to create an innovation system that encourage creativity of employees at all levels by support physical environment and social environment.

The study aimed to explorer organizational climate that support individual innovation base on previous empirical research findings, and to investigate the correlation between organizational climates and individual innovation. The paper is divided into five sections: the first part is the introduction, the second part is the literature review, the third part concerns methodology, the fourth part reports the findings, and the last part is the conclusion and a discussion of the limitations of the study.

## **2 Literature Review**

### **2.1 Innovation**

Definitions of innovation are varying and changing every day, including depends on context of fields. For business domain, the definition of innovation vary by the context of industry; service industry, manufacturing industry, and trading industry, and organizational characteristics, such as size of firm, corporate culture, organization goals, etc. However, the general definitions of innovation have referred to improve existing ting and develop new ones that would be utilized and commercialized, in term of new product or new process. New product might be tangible product or intangible services, and new process might be production process or supportive organizational process [10]. Furthermore, innovations also associate with novelty and change level [11], but Jain [7] had another perspective and divided innovation in three levels by organizational behavior theory as follow:

1. Individual innovation – generally focused on individual work roles; such propose new idea to improve their own work that contributed new value to department and organization. Moreover, the proposed idea should beneficial and widely impact work process and can be implementing in reality.

2. Group innovation – has received less attention when compares with individual and organizational innovation. Although, innovations in the organization are developed, modified, adapted, and utilized by work group. Frequently, innovation team or new product development team need the people who came from multi-disciplinary to share idea and knowledge together, these will lead to new idea and innovation. For example, operation unit need new technology from research and development unit, and research and development unit need customer behavior from marketing unit.

3. Organizational innovation – referred to all parts of the organization that encourage and support innovation, such as system, device, policy, process, program, product or service.

The relationship between three levels of innovation begins with individual innovation. Employees would recognize the problems and then generated new idea and solution. For the next step, individual seek sponsorships and attempts to build a coalition of supporters for an idea, or gather the data from teamwork to support the idea. Finally, ideas would be implementing in reality, the organization have to support budgeting and allocate resources. Thus, innovation is multistage processes that have different activities and individual behaviors at each stage, and is the result from the interaction of four components; individual, leader, work group, and climate for innovation [5].

However, introducing individual innovation at work is comprised of four factors: (1) individual's perception about changing in routine work; (2) individual's perception about changing is possible successful implementation; (3) individual's perception about positive outcome that result from change; (4) individual's ability to generate new and useful ideas. Though, individual innovation is not the sum of the four factors, but the combination of the four factors influences the degree of innovation and the individual's motivation.

Actually, individual's knowledge and creative skills are important dimensions for implementing individual innovation, including social factors; such as feedback from others, information systems, leadership styles, and organizational systems, and reward systems also influence the individual's efforts to innovate [7].

Considering employees in an organization, they can be categorized into three type, which are the top (or strategic) management level, the middle (or administrative) management level and lower (operation) level management. Each level of the hierarchy is deemed to be involved in different way in an organization's innovative activities. Top managers would be involved in making strategic decision and usually take higher degree of responsibility for innovation activities in organization. Middle management are seen as the lynchpin of the organization's overall innovation process, they may perceive their innovative activities as originating from others at the top or lower level. In this case employees in the middle management are involved with the coordination of innovative ideas within the organizing among employees from different levels. For lower (operation) level, individuals play an important role in the generation and implementation of innovation in an organization, therefore innovation derived from employees at this level may be limited to on the job innovative ideas; because innovation is viewed as threat to the security of their jobs, and may come not from employee initiative, but through the various innovation programs put forth by the upper level [6].

## **2.2 Organizational Climate for Individual Innovation**

In the competitive environment, the management would be faced critical challenging, for example, how to stimulate continuous change, how to adopt innovative approaches to organizing, and how to attract and retain people's know-how. Thereby, organization needs the supportive climate because if the climate is already bad, an idea managing system will simply make it worse [8].

In addition to model of climate for creativity, Amabile [12] identified five environments components that affect creativity as follow:

1. Encourage of creativity – which encompass open information flow and support for new ideas at all level of the organization, from top management through immediate supervisors to work group.
2. Autonomy or freedom –refer to autonomy in day to day conduct of work, a sense of individual ownership of and control over work.

3. Resource – the materials, information and general resources available for work.
4. Pressure –including both positive challenge and negative work load pressure.
5. Organizational impediments to creativity – including conservatism and internal strife.

The organization cannot force people to be more creative and innovative, but have to inspire them to be, because it relies much more on intrinsic motivation, being enthusiastic, inspired and knowledgeable. However, creative people and innovative people were different that need different organization system. Creative organizations have to emphasis on encouraged people to think differently by giving time and making new connection. For innovative organization, its need to find ways of reconciling the tension that lies in the juxtaposition of creativity and implement [13]

As previous mention, the climate for innovation in each of the organization must concentrate on how to encourage people to think and dare to implement, including its would be had the same general characteristics as follow [14].

1. Organization should understand the meaning of innovation and innovation changing. Innovation is not a science or technology, but is the values that influence the society, and focus on commercialization to maximize the business profit. The emergence of innovation forms are not fixed, so that innovation cannot be predicted precisely, sometimes the innovation is successful or failure, it also depends on the length of time.

2. Organization determined the organizational goals, objectives, strategy and the measurement which relate to innovation. Innovative strategies should focus on creating new business rather than creating new products or adding new production lines, as well as maximize the organizational performance rather than process improvement. Financial management for innovation is different from the normal operation due to the innovation is uncertain, the failure of the invention can be occurring anytime, and the profit is loss in the first period.

3. Leaders focus and commit to innovation, give employee a chance to express their opinions and listen to them, always ask and follow-up the work progress of employees. Therefore, organizations need to improve the relationship between the leader and all the members in organization, including establishes a working atmosphere for learning continuously. For example, the organization should create the suggestion system, reward system, and recognize the employee participation.

4. The structure – organization should have innovation department that responsible for innovation that separate from research and development unit or other functions, have the authority to decide independently from the regular management. The structure must emphasis on teamwork and decentralization. The compensation should balance between individual payment and group payment according to the innovation success does not happen from one person, but by a collaborating team. Moreover, the incentive should also motivate work behavior and create a sense of ownership, such as reward by stock and special bonus.

Fairtlough [15] Organization have to understand the nature of innovation that come from the flow of new ideas. Thus, the less control and open communication will encourage the operators to start and express opinion and share information. Moreover, the organization should concern the factor of innovative organization as follow:

1. Structure – should be loose structure, this will facilitate coordinating and sharing information between departments, or should be matrix structure that is formed for special projects, including should be flat organization that the employee can report their performance directly.

2. System – The organization must be prepared the information system to support the management activities.

3. Planning - The plan must be adjusted according to business environment and feasibility.

4. People – The Innovative organization should have five key people that are idea generator, entrepreneur of champion, project leader, gatekeeper, and sponsor/coach. The organization needs to attract these people, continuously develop, reward, and empowerment.

5. Skill – Organizations need to develop a learning organization and focus on shared value, systematic thinking, communication, teamwork, and technical skills.

6. Culture – refer to open culture, trust and risk taking. The leaders should be the role model who can encourage and inspiring subordinates.

7. Coordination – The organization must be coordinated closely, especially, among research and development unit, production department and marketing department.

Pavitt [16] the successful innovative organization focus on open communication that affect the information transferring among individuals, team and professionals, and creating the external network with users and external experts. Furthermore, the organizations have to concern the balancing between centralization and decentralization. Emphasizing centralize management, employee may be not have creativity. In contrast, focusing on decentralization, organizations are not in the disciplines. Besides, organizations have to develop the employees, concern the feedbacks system, and identify the clear strategy; market leader versus market follower, or product development versus process development.

Rothwell [17] identified the key factors of successful innovation that were good internal and external communication, effective functional integration, committing resource and appraisal, work development and high quality production, strong market orientation, service to customer, key individual – champion and gatekeeper, and high quality management. Furthermore, the organization had to recognize the sustainable strategy and top management commitment that identified long-term strategy focus on organizational growth.

Galbraith [18] noted that organization need to organize the structure and processes to response the creating innovation and should consider factors; structure, process, reward system and people, affect the innovation creation and application:

1. Structure – The Structure of the innovative organization consists of several roles that different people play and working together to be successful; idea champion, sponsor and leader of organization. Moreover, the innovation unit should be separate from current operation due to the nature of innovation that take a long time and may face failure. There are four ways which can be used to separate: physical, structural, funding and control system.

2. Process – These processes fall under the labels of funding and idea acquisition and blending

3. Reward System – Innovators should be motivated as well as operators, thus the organization must balance the reward to be fair.

4. People – Organization have to find, attract, select and develop talents, it will improve its chance to implement radical innovation.

### 3 Methodology

#### 3.1 Research Design

For this study, the quantitative was used to gather the data for empirical analysis. The population was 2,057 top managers in Thai manufacturing companies that were in the list of Federation of Thai Industry database. The 587 sample size was calculated by using Taro Yamane Function and the electronic mailing was used to collect data and the total number of returns was 408. The respondents were mainly managers in large companies and were in joint venture companies that the companies had aged between 11-15 years as show in Table 1.

#### 3.2 Measurement

The questionnaire was designed on the basis of a thorough literature review that consisted of organizational characteristics section, and another was organizational climates and individual innovation that were five-point Likert scale ranging from 1 to 5 (strongly disagree to strongly agree). A brief description of final scale items as follow;

Table 1: Sample Distribution

Sample size Characteristics	Frequencies	Percentages
Firm Size		
Medium	119	29.20
Large	289	70.80
Ownership		
Thai Company	180	44.10
Joint Venture Company	228	55.90
Firm Age		
3-5 years	25	6.10
6-10 years	137	33.60
11-15 years	168	41.20

2.1 Organizational climates –refer to the workplace environments that would be affected the employee perception and attitude toward working. As the organizational climates literature review above, the authors summarize the organizational climates that would be supported innovation and socialize employee behavior as show in Table 2.

2.2 Individual innovation– according to definition of individual innovation that consists of idea generation and idea implementation, the dependent variable is adapted from Ong, Wan and Chng [6]. The six items were summed up to give a summated scores that consisted of (1) new working methods or technique, (2) New information or recording system, (3) new targets or objective, (4) new method to achieve work targets, (5) new product or product improvement, and (6) other aspects of work.

## 4 Results

The analysis of data is most appropriately undertaken by employing mean, standard deviation, exploratory factor analysis and Pearson’ product moment correlation *coefficient* (*r*) to describe the current organizational climates that support the individual innovation.

Table 2: Organization climates

Organizational climates	Reference
1. Long-term Orientation	Fairtlough (1994: 325-335), Rothwell (1994: 33-53)
2. Clear Direction	Pavitt (1994: 357-365), Drucker (2007)
3. Highlight on Creating New Ones rather than Improving	Drucker (2007)
4. Less Control and Decentralization	Fairtlough (1994: 325-335), Pavitt (1994: 357-365), Drucker (2007)
5. Cross-Functional Team	Fairtlough (1994: 325-335), Pavitt (1994: 357-365),
6. Information Sharing	Fairtlough (1994: 325-335), Pavitt (1994: 357-365), Rothwell (1994: 33-53),
7. Open Communication	Pavitt (1994: 357-365), Drucker (2007)
8. Innovation Department	Galbraith (1999), Drucker (2007)
9. Teamwork Orientation	Pavitt (1994: 357-365), Drucker (2007)
10. Creating External Networking	Pavitt (1994: 357-365), Rothwell (1994: 33-53), Galbraith (1999)
11. Key Individuals	Pavitt (1994: 357-365), Rothwell (1994: 33-53), Pavitt (1994: 357-365), Rothwell (1994: 33-53), Galbraith (1999)
12. Innovation Commitment and Support of Leader	Pavitt (1994: 357-365), Rothwell (1994: 33-53), Drucker (2007)
13. Risk-Taking	Pavitt (1994: 357-365), Drucker (2007)
14. Openness and Listen to Employee Opinion	Rothwell (1994: 33-53), Drucker (2007)

### 4.1 Factor Loading

Table 3 reports the result of the factor analysis and reliability of organization climate. A factor analysis yielded three factors with Eigen-values greater than one, and each item load over 0.40 at all factors. Factor 1 (3 items) was named strategy; it measure long-term orientation, clear direction, and creating new ones rather than improving. Factors 2 (6 items) was named structure; it measure less control and decentralization, cross-functional team, information sharing, open communication, innovation department, and creating external networking. Finally, Factor 3 (4 items) was named leader; it measure key individuals, innovation commitment and support of leader, risk-taking, openness and listen to employee opinion. Moreover, all reliabilities reach the acceptable validity level. Cronbach’s alpha for strategy subscale was 0.77, for Structure subscale was 0.83, and for leader subscale was 0.72.

Table 3: Factor loadings of the organization climate items

	Strategy	Structure	Leader
Item 1	0.86		
Item 2	0.80		
Item 3	0.81		
Item 4		0.78	
Item 5		0.76	
Item 6		0.74	
Item 7		0.85	
Item 8		0.84	
Item 9		0.83	
Item 10		0.75	
Item 11			0.80
Item 12			0.82
Item 13			0.79
Item 14			0.77
Eigen-values	10.12	6.95	3.46
Cronbach's Alpha	0.77	0.83	0.72

## 4.2 Descriptive Statistic

Table 4 revealed the current organizational characteristics that associate with organizational innovation. The result found most companies set clear innovation strategy, but not set innovation department. Meanwhile, the companies which set innovation department, they set innovation department as a part of every unit. Moreover, most companies identified key individuals who responsible for innovation, and key individual not only responsible for innovation, but also routine work. In addition to team-oriented, most companies work as cross-functional team that the members come from same business unit, and cross function



Table 4: Organizational characteristics

organization characteristics	Frequencies	Percentages
<b>Innovation Strategy</b>		
Set clearly	211	51.70
Not set	197	48.30
<b>Innovation Department</b>		
Set	165	40.40
Not set	243	59.60
<b>Characteristic of Innovation Department</b>		
Innovation department is separate unit.	19	4.70
Innovation department is a part of R&D unit.	152	37.30
Innovation department is part of every unit.	169	41.40
Others	68	16.70
<b>Key Individuals</b>		
Set	226	55.40
Not set	182	44.60
<b>Duties of Key Individuals</b>		
Responsible for innovation only	12	2.90
Responsible for innovation and routine work	295	72.30
Others	101	24.80
<b>Number of Key Individuals per Department</b>		
1 position	193	47.30
2-3 positions	54	13.20
More than 3 position	86	21.10
Others	75	18.40
<b>Cross-Functional Team</b>		
Set	229	56.10
Not set	179	43.90
<b>Characteristic of Cross-Functional Team</b>		
Cross Business Unit, Cross Function	71	17.40
Cross Business Unit, Same Function	67	16.40
Same Business Unit, Cross Function	142	34.80
Same Business Unit, Same Function	40	9.80
Others	88	21.60
<b>Total</b>	<b>408</b>	<b>100</b>

Considering about the company external networking creation, Table 5 reported company external networking. For the 3 highest ranking, most Thai companies cooperated with suppliers (n=231), users (n=229) and university and academic institutes (n= 201) to create innovation.

Table 5: Company external networking

External Networking	Frequencies	Percentages
Suppliers	231	56.60
Distributors	105	25.70
Users	229	56.10
Financial agencies	6	1.50
Government agencies	18	4.40
Associations	13	3.20
University and academic institutes	201	49.30

Note: (select more than 1item), (n=408)

As the employee opportunities to comment or suggest the new ideas and improvement suggestion, most companies permitted employee to express their opinion directly to supervisor (n=208), including express their opinion in meeting (n=187), suggestion box (n=145), and special event and idea contest (n=111) as show in Table 6.

Table 6: Employee Opportunities to Comment

Employee Opportunities to comment	Frequencies	Percentages
Annual Meeting	7	1.70
Meeting	187	45.80
Directly to supervisor	208	51.00
Suggestion Box	145	35.50
Special Event and Idea contest	111	27.20

Note: (select more than 1item), (n=408)

Regarding the mean of organizational climates, the companies emphasized on structure ( $\bar{x} = 4.13$ ) more than leader ( $\bar{x} = 3.73$ ) and strategy ( $\bar{x} = 3.51$ ) as show in Table 7.

Table 7: Mean and Standard Deviation of Organization Climate

Organization Climate	Mean	Standard Deviation
Strategy	3.51	0.74
Structure	4.13	1.02
Leader	3.73	1.01

### 4.3 Correlation

Table 8 revealed the correlations among the variables, all factors of organizational climates were significant correlated with idea generation and idea implementation. The variable most closely relate to idea generation was structure ( $r = 0.75$ ,  $p \leq 0.01$ ), and the variable most closely relate to idea implementation was strategy ( $r = 0.51$ ,  $p \leq 0.01$ ).

Table 8: Correlation between organization climate and individual innovation

Organization climate	Idea generation	Idea implementation
Strategy	0.38*	0.51*
Structure	0.75*	0.44*
Leader	0.54*	0.42*

Note: \* $p \leq 0.01$

## 5 Conclusion and Discussion

The study aimed to explore organizational climates to support individual innovation and to investigate the correlation between organizational climates and individual innovation. For this study, the quantitative was used to gather the data for empirical analysis. The sample size was 587 top managers in Thai manufacturing companies that were in the list of Federation of Thai Industry database. The electronic mailing was used to collect data and the total number of return was 408. The respondents were mainly managers in large companies and were in joint venture companies that the companies had aged between 11-15 years.

To measure organizational climates and individual innovation, the questionnaire was designed on the basis of a thorough literature review. The organizational climates variable was comprised of 3 factors that strategy, structure, and leader, and individual innovation variable measure the sum of ideas generation and ideas implementation.

The revealed that all factors of organizational climates were significant correlated with idea generation and idea implementation, and the structure most closely relate to idea generation, including strategy most closely relate to idea implementation was strategy. Thus, the organizations which promoting individual innovations need to focus on open communication that affects the information transferring among individuals, team and professionals. Furthermore, the organizations have to concern the balancing between centralization and decentralization [15][16], including authorized employees to conduct their work and less control [12][15], as well as, the leaders should give employees a chance to express their opinions and listen to them, always ask and follow-up the work progress of employees [14].

Actually, the organization should have innovation department that responsible for innovation and separate from research and development unit or other functions, because innovation cannot be predicted precisely, sometimes the innovation is successful or failure, it also depends on the length of time [14][18]. Thereby, innovation department must have the authority to decide independently from the regular management.

Finally, the organizations have to identify the clear goals, objectives, and strategy [14][16], due to the clear strategy will be shared values that lead to employee commitment. Further, innovative strategies should focus on creating new business rather than creating new products or adding new production lines, as well as maximize the organizational performance rather than process improvement [14].

The limitation of this research is to emphasize general manufacturing company and attempt to give the current situation of innovation management in Thailand. Thus, for further research, the qualitative approach should employ to gather the data, such in-depth interview the successful innovative organization, both national company and multinational company, or study about group innovation level according to previous research have less attention, it might be shown the different useful result.

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