

Full Length Research Paper

Employee innovation, supervisory leadership, organizational justice, and organizational culture in Taiwan's manufacturing industry

Chih-Yang Chao, Yong-Shun Lin, Yu-Lin Cheng* and Yi-Chiao Tseng

Department of Industrial Education and Technology, National Chunghua University of Education, Bao-Shan Campus, No.2, Shi-Da Road, Changhua City, Taiwan, Republic of China.

Accepted 15 December, 2010

The main purpose of this study was to investigate the influence of the supervisor leadership on employee innovative behavior in manufacturing industry, the interference of the organizational justice in the relation between supervisor leadership, employee innovative behavior, and the interference of organizational culture in the relation between supervisor leadership and employee innovative behavior. Finding of the research is that there is a positive influence of supervisor leadership on employee innovative behavior in manufacturing industry; in addition, the organizational justice of the manufacturing personnel can reinforce the part of influence of supervisor leadership on employee innovative behavior, and organizational culture could also reinforce part of the influence of supervisor leadership on employee innovative behavior as well. According to the results above, the industry should emphasize the system of supervisor leadership and the organizational justice, and construct good organizational culture to encourage innovative behavior of employees.

Key words: Supervisor leadership, innovative behavior, organizational justice, organizational culture

INTRODUCTION

As one of the "Four Asian Tigers," Taiwan takes a leading stance in Asia due to its exporting of manufactured goods despite the rising of countries such as India, Thailand, China, and Korea. To stay competitive, a corporate leader's strategies and personal traits are extremely important. Kouzes and Posner (2007) pointed out that honesty is the basis of leadership, followed by his or her vision. Therefore, managers' leadership is important and requires constant training in an enterprise.

Hamel (2009) points out that leader are no longer treated as extraordinary and brilliant visionaries, wise decision-makers, and tough rulers. Instead, the job of a leader is to create an environment that allows all employees to work together, innovate, and perform well. Therefore, a manager's leadership is the key to the future

development of an organization. In the "Leadership, Innovation, and Growth" course offered by General Electric (GE), employees are required to treat "innovation" and "growth" as the corporate belief and to incorporate innovation into the organization.

In addition, Hamel (2009) indicates most organizations rely too much on punishments in order to force their employees to conform, which reflects an organization's lack of faith in its employees. Only in a corporate culture where there is a high degree of trust and low degree of fear can an organization's adaptation and innovation continue to grow. Therefore, while an individual may have creativity, an organization is needed in order for creativity to become innovation. Further, innovation must also rely on an organization's culture, system, and belief.

Rhodes and Stelter (2009) pointed out Apple stayed profitable despite the global depression by launching the innovative iTunes music store in 2003 and products such as iPod in 2004, and the approach of cost-down during depression actually hinders competitiveness. Being

*Corresponding author .E-mail: yulin1101@gmail.com.Tel: 886-4-7232105 # 7231. Fax: 886-4-7119532.

hesitant in front of such investments could prove to be costly once the economy rebounds. As a result, innovation is still an area that a company must work on despite the economy, indicating how critical it is to the latter.

In this present study we examine Taiwanese manufacturers in order to discuss the influences of the types of managerial leadership on the behavior of innovation as well as how organizational justice and culture affect the type of managerial leadership and innovation.

Literature review

Theories and content of the supervisor leadership

Jacobs (1970) deems that "leadership" is a form of interpersonal interaction in which messages are provided through a certain method and people are made to believe that the results of an action could be improved as long as they follow a suggestion or expectation. Bass (1985) and Robbins and Decenzo (2001) have the same idea about leadership as an interpersonal interaction procedure through which a leader changes the subordinates, creates a vision of a feasible objective, and works towards a certain goal. Leadership is an interaction between an organizational manager and the organizational members during the pursuit of performance, and the behaviors of the latter are influenced by providing them with a new direction or order that meets the organizational objectives.

Scholars have proposed different types of leadership. Lewin et al. (1939) proposed three types of leadership: democratic, authoritarian, and laissez-fair. Under democratic leadership, major policies of an organization are decided through group discussions which allow everyone to understand the content and procedures of a decision, while the leader encourages and assists in the process. Under authoritarian leadership, an organization's primary decisions are made by the leader, whereas the subordinates can only follow the order without engaging in discussions or giving comments. Under laissez-fair leadership, employees or groups have complete decision-making authority. The leader stays out of decision-making as much as possible and only provides employees with information, and employees make decisions and thus take responsibilities at work.

Bass (1990) believes transactional leadership is an exchange that focuses on the transactional relationship, and it can be divided into the following:

Contingent reward: Under this performance-based rewarding system, the leader provides an employee with incentives after the latter meets the contract requirements;

Management by exception: The leader intervenes

appropriately and provides guidance when a subordinate fails to perform as required. Fields and Herold (1997) and Robbins et al. (2001) hold the same view on the purpose of transactional leadership is to clarify job requirements and verify the timing of rewards in order to guide and encourage subordinates.

Yukl (2002) divided leadership into task-oriented, relationship-oriented, and change-oriented.

Task-oriented: The focus is to complete a task, effectively utilize manpower and resources, and maintain order and smooth operation.

Relationship-oriented: The focus is to improve relationships, assist employees, and improve team-work and employee-satisfaction.

Change-oriented: The focus is to improve strategic decisions, adapt to environmental changes, increase flexibility, and promise innovation and changes.

Krause (2005) considers that transactional-leadership focuses on the relationship between performance and rewards as well as the relationship between the leader and the subordinate; transactional-leadership is also referred to as task-oriented leadership. Reform-oriented leadership focuses on the development of future strategies and encouraging employees to increase organizational revenue. McCann (2008) explained that the link between effective leader behavior and organizational performance must be determined to help firms compete in this challenging environment.

Leadership types represent how managers and employees interact with each other. Employees' innovation does not frequently occur within an organization, and managers play the important role of guiding employees' performance and innovation.

Organizational justice theory

The concept of organizational justice originated from the equity theory proposed by Adams (1965). Lind and Tyler (1988) divided procedural justice into the "self interest model" and "group-value model" as a way to demonstrate that the procedure of providing an individual a way to comment on a decision is more of justice than a procedure that does not allow one to do so. Dailey and Kirk (1992) found that procedural justice influences employees' trust in the organization and managers and their tendency to leave the company. Therefore, employees would feel being treated more fairly and in turn lower the tendency of conducting damaging, deviated behaviors against the organization and managers if justice is ensured in the process of resource-allocation and decision-making. Fortin (2008) proposes

that “distributive justice” is the perception of justice in the outcome of distribution, such as the perception of compensations or the decision of dismissal. It is perceived as being fair if the result of distribution is consistent with the distribution of the workload. Organizational justice represents the inside of an organization and whether there is justice in employees’ output and gains. This includes day-to-day behaviors that occur in an organization: decision-making, resource allocation, compensation, and bonuses. They have an effect on employees’ individual reputation and gains and thus must be handled fairly.

Greenberg (1982) and Niehoff and Moorman (1993) pointed out that organizational justice consisted of distributive justice and procedural justice. Distributive justice stresses on the justice in the ultimate result, whereas procedural justice stresses on the fairness in the process of reaching a goal. Greenberg (1996) and Seiders and Berry (1998) proposed the aspect of interactional justice and how the perception of interpersonal treatments should be acquired in the process. In their study, Rupp and Cropanzano (2002) divided justice into procedural justice and interactional justice. Procedural justice is mostly applied in the exchange between an individual and the organization by which he/she is hired, whereas interactional justice is generally deemed as having derived from the exchange between an individual and his/her manager.

Organizational justice focuses on whether the way an employee is treated in an organization matches what he/she expects, and procedural justice affects an employee trust in his/her organization and managers and tendency to stay with the company. If an employee perceives justice in organizational decisions and the distribution of resources/rewards, he/she will commit fewer negative actions against the organization. Therefore, in an organization, the presence of procedural justice and distributive justice help to increase organizational performance.

Organizational culture theory

A common ground for a group that is solving an organization’s issue of external adaptation and internal integration is how to perceive, think, and feel correctly when facing problems (Schein, 1989). Hodgetts and Luthans (1997) consider that organizational culture is about a corporation’s values and philosophy, and it is the principle of an organization’s conduct. Organizational culture is the value, belief, and behavioral principles shared by an organization’s members. Unique to each organization, organizational culture also binds the members together and increases their sense of responsibility. When the members are willing and guidance is provided, organizational objectives can be reached.

Harrison (1972) divided organizational culture into four categories.

Power orientation: Focuses on “control,” in this category it is thought that those in power always hold absolute control over the subordinates, and any opposition is to be suppressed.

Role orientation: This stresses the role’s expectation and regulation, and the wish is for the organization to operate under law and order, while the attention is on legality and responsibility.

Task orientation: The highest value is to reach organizational objectives, and one’s contribution towards the objectives is determined when evaluating the values of an organization’s structure, functions and actions.

People orientation: An organization is designed and built to suit the members’ needs and satisfy individual needs that cannot be achieved otherwise.

Based on organizational duties and attitude towards the environment, Wallach (1983) separated organizational structure and obligations clearly. Tasks are mostly standardized or fixed and are based on control and authority.

Innovative culture: Work is full of creativity and risks, and members are encouraged to accept challenges and innovate. Individual qualities are respected, and employees who are more like entrepreneurs and ambitious are more likely to succeed. Supportive culture: The environment is more open, harmony, and family-like. The organization highly supports and trusts the employees, values members’ participation, team-spirit and interpersonal relationship, and encourages collaborations.

Denison and Mishra (1995) addressed the competitive environment with flexibility and stability, and organizational culture can be divided into four categories depending on whether internal employees or external customers are the strategic focus.

Adaptability culture: Attention is paid to the external environment, customer demands are met through flexibility and changes, and organizations are encouraged to detect and respond to environmental changes immediately.

Clan culture: Employees are valued and looked after so that they would be committed to the organization and participate actively in a conservative atmosphere of support and trust.

Mission culture: Instead of frequent changes, the strategic focus is paying attention to external customers, and the organizational objective is to increase sales volume, profit, and/or market share.

Bureaucratic culture: Following a company’s internal

policies and regulations, the focus is on the high degree of integration and efficiency.

Organizational culture represents an organization's internal, invisible regulations which influence employees' behaviors, and organizational culture integrates individuals, groups, and the organization. Therefore, organizational culture has profound influences on employees' innovation.

The theory and content of employee innovative behavior

Kirton (1976) declares an individual is on a continuum, and the two ends of the continuum are "do things better" and "do things differently," indicating an individual itself is capable of innovation and adaptation. Gilson and Shalley (2004) further points out that innovation is about proposing useful new thoughts on a product or service. Innovation is about a new process, new product, new technique, new organizational culture, and new behavior. These activities ultimately have some sort of influences on organizational performance.

West and Anderson (1996) think that innovation is about proposing or applying new procedures/products/methods in a team, organization, or society to increase group benefits, including the continued improvement of economic indicators such as administrative efficiency, employee growth, satisfaction, team spirit, internal communication, and productivity. Innovative behavior is an organization's member using new knowledge to create a new product or service needed by a customer (Afuah, 1998). The idea is conceptualized through personal traits, characteristics, behaviors and output (Kleysen and Street, 2001). Therefore, innovative behavior is a process that unfolds outward; motives and thoughts are put into action, and new knowledge is utilized to provide new products and services.

Kanter (1988) divided individual innovative behavior into three stages: confirming questions, determining solutions and concepts, and creating an alliance that supports the concepts. Through which a prototype or model of innovation is created, which can then be expanded, mass produced, and applied to form an institutionalized practice that ultimately actualizes the innovation.

Scott and Burce (1994), Janssen (2000) and Zhou and George (2001) similarly thought individual innovative behavior must include the birth of an innovative concept: Clarifying questions or solutions is to allow an individual to come up with new ideas or concepts on a question.

Promotion of innovative thoughts: Seeking for sponsorship for the thought and support from all members in order to create a supporting alliance that helps colleagues or the organization to come up with innovative

activities or ideas.

The practice of innovative concepts: Through the innovative standards or model, innovative concepts are converted into practical or feasible practice that can be duplicated and expanded and utilized effectively by organizations or other people.

Kleysen and Street (2001) divided innovative behavior into the following.

Opportunity exploration: Extensive exploration into innovative opportunities in order to learn or discover more related knowledge.

Generativity: Behaviors that facilitate reforms are generated for the organization, members, products, work procedures, and services.

Formative investigation: Different concepts, solutions, and comments are compiled, surveyed, and tested.

Championing: This refers to different social and political behaviors in the innovation process.

Application: Innovation is turned into a part of an organization's daily routines.

Therefore, when pursuing innovation, we must first understand market demands before we develop new products. After a new product becomes popular among customers, organizational performance is also greatly improved. Therefore, innovative behavior is closely correlated with market changes.

Hypothesis

Bhal and Ansari (1996) discovered a positive correlation between manager-subordinate exchange, employees' job satisfaction, organizational commitment, and department efficiency. Scandura (1999) discovered a positive correlation between manager-subordinate exchange, job satisfaction, and productivity. And Scandura also discovered a negative correlation between the exchange and employee' turn-over/complain rate. Nerkar et al. (1996) indicate employee job satisfaction has influences on a team's innovation. Therefore, leadership style is positively correlated with employee job satisfaction. Further, job satisfaction is positively correlated with innovation. To sum up, leadership style affects not only employee job satisfaction but also organizational innovation. This research thus makes the Hypothesis 1 as follows:

H₁: Supervisor leadership has significant influences on employee innovative behavior.

The research of Colquitt et al. (2001) discovered that organizational justice can significantly predict

Table 1. Regression analysis of supervisor leadership on employee innovative behavior.

Independent variable	Employee innovative behavior
supervisor leadership style	0.36***
R ² (F value)	0.13(36.14***)

N=245 ***p<0.001

organizational behaviors such as job satisfaction, organizational commitment, trust, and organization's civil behaviors. Job satisfaction can be enhanced when the organization treats its employee fairly and rewards and punish them moderately. Moreover, Nerkar et al. (1996) explain that employee job satisfaction has influences on a team's innovation. Organizational justice is positively correlated with job satisfaction. Job satisfaction is positively correlated with the organization's innovation capacity. Consequently, when employees sense organizational justice by the supervisor in the company, job satisfaction and organizational innovation can be improved. This research thus makes the Hypothesis 2 as follows:

H₂: A higher degree of organizational justice has more significant influences on supervisor leadership and employee innovative behavior.

Nonaka and Takeuchi (1995) found that organizational culture regulates employees, increases organizational commitment and plays a key role in the process of innovation. Robbins (2005) stated that innovative culture is the variable of arousing organizational innovation. Organizational innovation can be furthered if innovative organization is open to innovative culture, encouraging experiments and successes as well as failures and mistakes. This also indicates that organizational culture has influences on its organizational innovation. Lafley (2009) asserts that when an enterprise promotes innovation, its organizational culture and leadership type will influence the degree of the organization's innovation. When an enterprise promotes innovation, its organizational culture will influence the degree of the organization's innovation. Besides, leadership type of the enterprise will also influence the nature of its organizational culture. This research thus makes the Hypothesis 3 as follows:

H₃: A higher degree of organizational culture has more significant influences on supervisor leadership and employee innovative behavior.

MATERIALS AND METHODS

In the "Top 1000 manufacturers" published by the Common Wealth Magazine, the employees of manufacturers are treated as the matrix. Five hundred copies of questionnaires were sent out, and 267 copies were retried, yielding a retrieval rate of 53%. After

excluding the incomplete or untruthfully answered copies, 245 valid copies were retrieved, yielding a valid retrieval rate of 49%.

Supervisor leadership

Adopting the scale proposed by McCann (2008), the scale is consisted of 11 question items. Cronbach's values of the original questionnaires were respectively 0.76, 0.79, and 0.77. After the confirmatory factor analysis, the range of factor load is 0.65~0.84, the validity of transformation leadership, transactional leadership, and laissez-faire leadership is respectively 0.76, 0.79, and 0.77.

Organizational justice

Adopting the scale proposed by Niehoff and Moorman (1993) consisted of distributive justice, procedural justice, and interactional justice, our questionnaire consisted of 11 question items, and the Cronbach's value of the original questionnaires are respectively 0.91, 0.81, and 0.87. Organizational justice is consisted of 12 question items, and the range of factor load is 0.65~0.89. The validity of distributive justice is 0.91, 0.81 for procedural justice, and 0.87 for interactional justice.

Organizational culture

We made reference to the organizational culture questionnaire formulated by Wallach (1983) and Cooke and Lafferty (1989). Of which, organizational culture covers 13 items, and the Cronbach's values of the original questionnaires are 0.72, 0.91, and 0.76. The range of factor load is 0.55~0.91, and the validity of the supportive culture, the bureaucratic culture, and the innovation culture are respectively 0.74, 0.91, and 0.74.

Employee innovative behavior

We adopted the scale developed by Janssen (2000) regarding innovative behavior as the basis. After a peer review, employee innovative behavior consisted of 9 question items, and Cronbach's value of the original questionnaires are respectively 0.87, 0.85, and 0.88, and the range of factor load is 0.79 to 0.89. The validity of the birth of innovative concepts, the promotion of innovative concepts, and the practice of innovative concepts are respectively 0.86, 0.85, and 0.88.

RESULTS

Relationship between supervisor leadership and innovative behavior

A regression analysis was conducted to analyze and discuss the main effects of supervisor leadership on employee innovative behavior. As shown in Table 1, the correlation between supervisor leadership and innovative behavior reaches the p<0.001 level of significance of explained variance is 0.13, and β value is 0.36. Thus H₁ is supported.

Correlation between supervisor leadership, organizational justice, and employee innovative behavior

Model 3 of Table 2 shows that in the relationship between

Table 2. Hierarchical regression analysis of the influences of organizational justice on leadership-types and employee innovative behavior.

Dependent variable	Employee innovative behavior		
	Model 1	Model 2	Model 3
Number of employees	-0.01	0.05	0.04
TLF		0.49***	0.10
DJ		0.19***	-0.53*
TLF x DJ			0.97**
R ² (F value)	0.00(0.04)	0.35***(45.73***)	0.37(37.04***)
Number of employees	-0.01	0.03	0.02
TLF		0.46***	-0.23
PJ		0.25***	-0.54*
TLF x PJ			1.29***
R ² (F value)	0.00(0.04)	.38(49.83***)	0.41(41.63***)
Number of employees	-0.01	.01	-0.01
TLF		.44***	-0.46*
IJ		.30***	-0.81***
TLF x IJ			1.74***
R ² (F value)	0.00(0.04)	0.40(54.28***)	0.44(49.86***)
Number of employees	-0.01	0.08	0.07
TLS		0.42***	-0.06
DJ		0.23***	-0.59
TLS x DJ			1.13
R ² (F value)	0.00(0.04)	0.31(36.30***)	0.34(30.55***)
Number of employees	-0.01	0.05	0.04
TLS		0.37***	-0.09
PJ		0.26***	-0.28
TLS x PJ			0.90*
R ² (F value)	0.00(0.04)	0.32(37.09***)	0.33(29.66***)
Number of employees	-0.01	0.03	0.03
TLS		0.34***	-0.06
IJ		0.31***	-0.15
TLS x IJ			0.77*
R ² (F value)	0.00(0.04)	0.33(39.79***)	0.35(31.61***)
Number of employees	-0.01	0.05	0.06
LFL		-0.20***	0.04
DJ		0.36***	0.55***
LFL x DJ			-0.27
R ² (F value)	0.00(0.04)	0.21(21.21***)	0.21(16.34***)
Number of employees	-0.01	0.02	0.03
LFL		-0.22***	0.22
PJ		0.43***	0.71***
LFL x PJ			-0.48*
R ² (F value)	0.00(0.04)	0.27(29.99***)	0.28(23.68***)
Number of employees	-0.01	-0.01	0.00

Table 2. Contd.

LFL		-0.17***	0.18
IJ		0.46***	0.70***
LFL x IJ			-0.37
R ² (F value)	0.00(0.04)	0.28(31.93***)	0.29(24.79***)

Note: TLF: Transformational Leadership; TLS: Transactional Leadership; LFL: Laissez-faire Leadership; DJ: Distributive Justice; PJ: Procedural Justice; IJ: Interactional Justice
N=245 *p<.05 ***p<0.001.

"transformation" leadership and "employee innovative behavior," the overall explained variances are respectively 0.37, 0.41, and 0.44; β values of the interaction are respectively 0.97, 1.29, and 1.74. In the relationship between "transactional" leadership and "employee innovative behavior," the overall explained variances are respectively 0.34, 0.33, and 0.35; β values of the interaction are respectively 1.13, 0.90 and 0.77. In that between "laissez-faire" leadership and "employee innovative behavior," the overall explained variance are respectively 0.21, 0.28 and 0.29; β values of the interaction are respectively -0.27, -0.48 and -0.37. This indicates that organizational justice has influences on supervisor leadership and employee innovative behavior, and a higher degree of organizational justice leads to higher "transformation," "transactional" leadership, and employee innovative behavior; in contrast, employee innovative behavior is weakened in "laissez-faire" leadership. Thus H₂ is supported.

Correlation between supervisor leadership, organizational culture, and employee innovative behavior

Model 3 in Table 3 indicates that in the relationship between "transformation" leadership and "employee innovative behavior," the explained variances are respectively 0.45, 0.42, and 0.57; β value are respectively 0.68, 1.1 and 1.56; the relationship between bureaucratic culture and the innovation culture and transformation and employee innovative behavior reaches the level of significance, indicating the bureaucratic culture and the innovation culture have significant interferences on transformation leadership and employee innovative behavior. The overall explained variance of "transactional" leadership and "employee innovative behavior" are respectively 0.37, 0.32 and 0.50; β value are respectively 0.60, 0.62 and 0.64; the supportive culture, the influences of bureaucratic culture and the innovation culture on transactional and employee innovative behavior have not reached the level of significance. The overall explained variance of "laissez-faire" leadership and "employee innovative behavior" are respectively 0.33, 0.21 and 0.46; β value of the interaction are respectively -0.25, -0.15 and -0.40; the supportive culture, the influences of bureaucratic culture and the innovation culture on

laissez-faire and employee innovative behavior have not reached the level of significance, indicating the supportive culture, the bureaucratic culture and the innovation culture have no significant interferences on laissez-faire and employee innovative behavior. This indicates that the higher level of bureaucratic and innovative organizational culture, the better the types of transformation leadership and employee innovative behavior. Thus H3 is partially supported.

DISCUSSION

Supervisor leadership has significant influences on employee innovative behavior

Transformation leadership and transactional leadership have positive influences on employee innovative behavior; in other words, a higher degree of supervisor leadership leads to a higher degree of employee innovative behavior. In contrast, laissez-faire leadership has negative influences on all aspects of employee innovative behavior. This finding is consistent with the finding of Jung et al. (2008) that discovered influences of supervisor leadership on organization innovative behavior. Further, organizational innovations and innovative products are initiated by a small group of highly creative individuals (Amabile et al., 1996; Mumford et al., 2002).

Makri and Scandura (2010) exploring new ideas, taking risks, and leveraging human and social capital as the dimensions of leadership that enhance a firm's competence in pursuing basic research agendas (science) which in turn can lead to more influential innovations (quality). Hamel (2009) explained that in order to encourage members to respond to changes, innovate, and get involved, managers must find ways to put in encouraging concepts in the seemingly dull business activities. Virtues such as reputation, integrity and righteousness have long encouraged people to make achievements. This goes beyond the discussion of management theory and practice.

A higher degree of organizational justice has more influences on supervisor leadership and innovative behavior

A higher degree of organizational justice in the manufacturing industry would significantly increase the innovative

Table 3. Hierarchical regression analysis of the influences of organizational culture on leadership-types and employee innovative behavior.

Dependent variable	employee innovative behavior		
	Model 1	Model 2	Model 3
Number of employees	-0.01	0.07	0.07
TLF		0.41***	0.09
SC		0.37***	-0.09
TLF x SC			0.68
R ² (F value)	0.00(0.04)	0.44(63.55***)	0.45(48.89***)
Number of employees	-0.01	-0.02	-0.02
TLF		0.51***	-0.09
BC		0.25***	-0.50*
TLF x BC			1.10***
R ² (F value)	0.00(0.04)	0.39(51.53***)	0.42***(42.59***)
Number of employees	-0.01	0.01	0.01
TLF		0.35***	-0.52*
IC		0.50***	-0.44
TLF x IC			1.56***
R ² (F value)	0.00(0.04)	0.54(93.12***)	0.57***(77.97***)
Number of employees	-0.01	0.09	0.09
TLS		0.29***	0.02
SC		0.38***	-0.01
TLS x SC			0.60
R ² (F value)	0.00(0.04)	0.36(45.07***)	0.37(34.57***)
Number of employees	-0.01	0.01	0.01
TLS		0.44***	0.10
BC		0.23***	-0.17
TLS x BC			0.62
R ² (F value)	0.00(0.04)	0.32(37.22***)	0.32(28.82***)
Number of employees	-0.01	0.03	0.03
TLS		0.27***	-0.09
IC		0.54***	0.16
TLS x IC			0.64
R ² (F value)	0.00(0.04)	0.49(78.73***)	0.50(60.22***)
Number of employees	-0.01	0.07	0.08
LFL		-0.13*	0.12
SC		0.52***	0.68***
LFL x SC			-0.25
R ² (F value)	0.00(0.04)	0.32(38.04***)	0.33(29.07***)
Number of employees	-0.01	-0.05	-0.05
LFL		-0.23***	-0.10
BC		0.35***	.44*
LFL x BC			-0.15
R ² (F value)	0.00(0.04)	0.21(21.11***)	0.21(15.85***)
Number of employees	-0.01	0.00	0.00

Table 3. Contd.

LFL		-0.13**	0.26
IC		0.63***	0.85***
LFL x IC			-0.40
R ² (F value)	0.00(0.04)	0.46(67.43***)	0.46(51.42***)

Note: TLF: Transformational Leadership; TLS: Transactional Leadership; LFL: Laissez-faire Leadership; SC: Supportive Culture; BC: Bureaucratic Culture; IC: Innovative Culture N=245 *p<.05 ***p<0.001

positive correlation between transformation leadership, transactional leadership and employee behavior. Tyler and De Cremer (2005) discovered that leaders act in procedurally fair ways, they are viewed as more legitimate and more competent, and employees are more accepting of organizational change. A higher degree of procedural justice would significantly lower the negative correlation between laissez-faire and employee innovative behavior. Walumbwa et al. (2008) explained that procedural justice climate perceptions and strength completely mediated the relationships between contingent reward leader behavior and followers' satisfaction with supervisor and levels of organizational commitment, and partially mediated the relationship between contingent reward leader behavior and supervisor rated organizational citizenship behavior. Therefore, the level of fairness in managers' policy-formulating would influence the depth of managers participating in decision-making and employee innovative behavior.

The bureaucratic culture and the innovation culture have interfering effects on transformation and employee innovative behavior

In the manufacturing industry, a higher level of the bureaucratic culture and the innovation culture would significantly strengthen the positive correlation between transformation and employee innovative behavior; in other words, if an organization's structure and obligations are clearly defined or the organization enjoys taking risks and encourages innovation, managers and employee innovative behavior would be facilitated. Estrin (2009) also mentioned that in larger enterprises, procedures become more bureaucratic, and it is difficult for a company to pursue innovation and expanding at the same time. However, it can be achieved as long as the company can determine which parts must focus on expanding while maintaining the pursuit of flexibility and reform.

Conclusion

Leadership style has influences on employee innovative behavior. Therefore, there is a correlation between the

innovative behavior of employees and the leadership style of the supervisors. Leadership is not inherent. Hamel (2009) explained that leaders need reflective learning, two-circled learning and systematic thinking, innovative solution and value-oriented thinking. McCann (2008) also explains that leaders inspire others to achieve through their own hard work, commitment to people, and commitment to the organization. Consequently, high-level supervisors have to cultivate these abilities to adjust management system and to raise the adaptability and innovation of the organization.

Innovative culture and bureaucratic culture have influences on leadership style and employee innovative behavior. Kefela (2010) pointed out that fostering a specific culture is likely to be crucial for eliciting a variety of employee behaviors ranging from high individual achievement to co operation and help, and from strict rule observance to innovation.

Organizational justice has influences on leadership style and employee innovative behavior to a certain extent. On procedural justice, Hamel (2009) stated that organization should set up new award system and focus on the long-term interested parties when making resources allocation and plans evaluation. Ponnu and Chuah (2010) when employees' perceptions of procedural and distributive justice were high, their organizational commitment was also high. Employees will be more committed to their present employer if they perceived higher fairness in the organization. An organization emphasizing procedural and distributive justice indicates that enterprise leaders listen willingly to the employees, reinforce procedural and distributive justice and care about the needs of employees, respect employees, and allow employees to ask questions. This helps to shorten the distance between supervisors and employees and promote innovation. Hence, employees are willing to make more efforts in innovation development.

Limitations

The target of the investigation of this research is the top 1000 manufacturers of Taiwan. The result needs to be further examined when applied to medium- and small-sized businesses. Moreover, most manufacturers of Taiwan are devoted to exports and OEM, which is

different from those of other countries

Recommendations for future research

In recent years, increasing organizational innovation plays a vital part for industries in gaining competitive advantages in the markets. This research only discusses leadership style, organizational justice and organizational culture, excluding other organizational innovation issues. We recommend that market orientation, organizational knowledge management and other topics be discussed, with the case study of famous businesses used to generate more organizational innovation strategies for the use of business.

REFERENCES

- Adams JS (1965). Inequity in social exchange. In Berkowitz L (Ed), *Advances in experimental social psychology* (vol. 2), 199-245. Academic Press, New York, NY.
- Afuah A (1998). *Innovation management: Strategies, implementation, and profits*. Oxford University Press, New York, NY.
- Amabile TM, Conti R, Coon H, Lazenby J, Herron M (1996). Assessing the work environment for creativity. *Acad. Manag. J.*, 39: 1154-1184.
- Bass BM (1985). *Leadership and performance beyond expectations*. Free Press, New York, NY.
- Bass BM (1990). *Bass & Stogdill's handbook of leadership: Theory, research and management applications* (3rd ed.). Free Press, New York, NY.
- Bhal KT, Ansari MA (1996). Measuring quality of interaction between leaders and members. *J. Appl. Soc. Psychol.*, 26: 945-972.
- Colquitt JA, Conlon DE, Wesson MJ, Porter COLH, Ng KY. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *J. Appl. Psychol.*, 86: 425-445.
- Cooke RA, Lafferty JC(1989). *Organizational Culture Inventory*. Human Synergetics, Plymouth, MI.
- Dailey RC, Kirk DJ (1992). Distributive and procedural justice as antecedent of job dissatisfaction and intent to turnover. *Hum. Rel.*, 45: 305-317.
- Denison DR, Mishra AK (1995). Toward a theory of organization culture and effectiveness. *Organ. Sci.*, 6(2): 204-223.
- Estrin J (2009). *Closing the innovation gap: Reigniting the spark of creativity in a global economy*. McGraw Hill, New York, NY.
- Fields DL, Herold DM (1997). Using the leadership practices inventory to measure transformational and transactional leadership. *Educ. Psychol. Meas.*, 57(4): 569-579.
- Fortin M (2008). Perspectives on organizational justice: Concept clarification, social context integration, time and links with morality. *Int. J. Manag. Rev.*, 10(2): 93-126.
- Gilson LL, Shalley CE (2004). A little creativity goes a long way: An examination of team's engagement in creative processes. *J. Manag.*, 30(4): 453-470.
- Greenberg J (1982). Approaching equity and avoiding inequity in groups and organizations. In Greenburg J, Cohen RL (Eds.), *Equity and justice in social behavior*, Academic Press, New York, NY. pp. 389-435.
- Greenberg J (1996). *The quest for justice on the job: Essays and experiments*. Sage, Thousand Oaks, CA.
- Hamel G (2009). Moon shots for management. *Harv. Bus. Rev.*, 87(2): 91-98.
- Harrison R (1972). Understanding your organization's character. *Harv. Bus. Rev.*, 50(3): 119-128.
- Hodgetts R, Luthans F (1997). *Managing organizational culture and diversity*. McGraw-Hill, New York, NY.
- Jacobs TO (1970). *Leadership and exchange in formal organizations*. Human Resources Research Organization, Alexandria, VA.
- Janssen O (2000). Job demands, perceptions of effort-reward fairness and innovative work behavior. *J. Occup. Organ. Psychol.*, 73(1): 287-302.
- Jung D, Wu A, Chow CW (2008). Towards understanding the direct and indirect effects of CEO's transformational leadership on firm innovation. *Leadership Quart.*, 19(5): 582-594.
- Kanter RM (1988). When a thousand flowers bloom: structural, collective, and social conditions for innovation in organizations. In Staw BM, Cumming LL (Eds.), 169-211, *Research in Organizational Behavior*. Greenwich, Connecticut: JAI Press.
- Kefela GT (2010). Understanding Organizational Culture and Leadership -Enhance Efficiency and Productivity. *PM World Today*, 12(1): 1-14.
- Kirton M (1976). Adaptors and innovators: A description and measure. *J. Appl. Psychol.*, 61(5): 622-629.
- Kleysen RF, Street CT (2001). Toward a multi-dimensional measure of individual innovative behavior. *J. Intel. Capital*, 2(3): 284-296.
- Kouzes JM, Posner BZ (2007). *The Leadership Challenge*(4th ed). John Wiley and Sons, San Francisco, CA.
- Krause TR (2005). *Leading with safety*. John Wiley and Sons, New York, NY.
- Lafley AG (2009). What Only the CEO Can Do. *Harv. Bus. Rev.*, 87(5): 54-62.
- Lewin K, Lippitt R, White RK (1939). Patterns of aggressive behavior in experimental created social climates. *J. Soc. Psychol.*, 10: 271-299.
- Lind EA, Tyler TR (1988). *The social psychology of procedural justice*. Plenum, New York, NY.
- Makri M, Scandura TA (2010). Exploring the effects of creative CEO leadership on innovation in high-technology firms. *Leadersh. Quart.*, 21(1): 75-88.
- McCann J (2008). Leadership in the apparel manufacturing environment: An analysis based on the multifactor leadership questionnaire. *SAM Adv. Manag. J.*, pp. 20-50.
- Mumford MD, Scott GM, Gaddis B, Strange JM (2002). Leading creative people: Orchestrating expertise and relationships. *Leadersh. Quart.*, 13(6): 705-750.
- Nerkar AA, McGrath RG, MacMillan IC (1996). Three facets of satisfaction and their influence on the performance of innovation teams. *J. Bus. Vent.*, 11(3): 167-188.
- Niehoff BP, Moorman RH (1993). Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behavior. *Acad. Manag. J.*, 36: 527-556.
- Nonaka I, Takeuchi H (1995). *The knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press, New York, NY.
- Ponnu CH, Chuah CC (2010). Organizational commitment, organizational justice and employee turnover in Malaysia. *Afr. J. Bus. Manag.*, 4(13): 2676-2692.
- Rhodes D, Stelter D (2009). Seize advantage in a downturn. *Harv. Bus. Rev.*, 87(2): 58-68.
- Robbins SP (2005). *Organizational behavior* (11th ed). Prentice Hall International, New Jersey, NJ.
- Robbins SP, DeCenzo DA (2001). *Fundamentals of management* (8th ed.). Prentice Hall, Englewood Cliffs, New Jersey, NJ.
- Rupp DE, Cropanzano R (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organ. Behav. Hum. Dec. Proc.*, 89(1): 925-946.
- Scandura TA (1999). Rethinking leader-member exchange: An organizational justice perspective. *Leadersh. Quart.* 10(1): 25-40.
- Schein EH (1989). How culture forms, develops, and changes. In Kilmann RH, Suxtion MJ, Serpa R (Eds.), 125-155, *Gaining control of the corporate culture*. Jossey-Bass, San Francisco.
- Scott SG, Burce RA (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Acad. Manag. J.*, 37(3): 580-607.
- Seiders K, Berry LL (1998). Service fairness: What it is and why it matters. *Acad. Manag. Exec.*, 12(2): 8-20.
- Tyler TR, De Cremer D (2005). Process-based leadership: Fair procedures and reactions to organizational change. *Leadersh. Quart.*, 16(4): 529-545.
- Wallach EJ (1983). *Individuals and organizations: The cultural match*.

- Train. Dev. J., 37(2): 29-36.
- Walumbwa FO, Wu C, Orwa B (2008). Contingent reward transactional leadership, work attitudes, and organizational citizenship behavior: The role of procedural justice climate perceptions and strength. *Leadersh. Quart.*, 19(3): 251-265.
- West MA, Anderson NR (1996). Innovation in top management teams. *J. Appl. Psychol.*, 81(6): 680-693.
- Yukl G (2002). *Leadership in organizations* (5th ed.). Prentice-Hall, Prentice-Hall, Saddle River, New Jersey, NJ.
- Zhou J, George JM (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Acad. Manag. J.*, 44(4): 682-696.