



Exploring the Relationships between the Employee Creativity and Economic Development in Taiwan

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I. INTRODUCTION

As the world approaches an era characterized by global production and marketing as well as expertise-based management, the time for successful strategies borne of adventurousness and sheer sweat is fading. In the context of the rapidly changing global economy, in which the economies of nearby countries are becoming increasingly integrated, and the emergence of a modern society characterized by global warming and the maturation of many new enterprises, entrepreneurs are facing severe challenges.

Thus, entrepreneurs in Taiwan must identify and explore the sources of their core competitiveness. They should increase the added value of products through originality to occupy a small niche in the global market and to accomplish their objectives. Originality is the wellspring of entrepreneurial development. Creative organizations can provide an environment in which members are cooperative rather than competitive; this open atmosphere and mutual feedback about work renders members responsible for one another, resulting in enhanced individual contributions to work (Sheppard, 1967). A productive work environment acknowledges the value and need of risk and change as well as of prolonged study and teamwork, thereby stimulating originality and creativity (Mumford & Simonton, 1997). Yong (1994) suggested that enterprises could promote originality in three ways: by understanding

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the general process whereby originality emerges, by identifying members with originality, and by encouraging a creative working atmosphere.

Professor Hame of London Business College and Professor Prahalad from the University of Michigan noted in *Competing for the Future* that the leading industries in the early 1980s could barely maintain their equilibrium after 10 years, indicating that enterprises without the core competitiveness deriving from originality will soon be replaced. In addition, the operating style that was used previously in the domestic market is not equipped to deal with the global market, especially now that Taiwan has joined the World Trade Organization. As land and labor costs increase in Taiwan, core competitiveness deriving from originality will be crucial if traditional enterprises want to accomplish their business goals.

The magazine *Global View* published a survey of the international company UPS that showed that entrepreneurs in Taiwanese SMEs were worried about perceptions of their competitive strength. The survey addressed 14 indices, including originality and information technology, and found that 90% of the entrepreneurs reported deficiencies with regard to these competitive factors. Thus, traditional SMEs in Taiwan face the need to reorganize traditional enterprises. Because the industrial structure of Taiwan is facing severe challenges and is primarily maintaining an appearance of productiveness, originality represents the only approach to increasing profits and long-term development.

In the context of this situation, this research attempts to understand the characteristics of SMEs in Taiwan and examines the relationship between creative behaviour and organizational creative climate. We hope that our results provide information that is useful for SMEs. The research goals are as follows:

1. To understand the organizational creative climate in SMEs in Taiwan; and
2. To investigate the relationships between creative behavior and organizational creative climate in SMEs in Taiwan.

II. Literature Review

Employee Creativity

The study of creativity has generated a wide range of definitions of this concept. Indeed, more than 225 ways to define and measure creativity exist (Cropley, 2000; Runco, 2007). Several concepts define creativity as a characteristic of a person and

others identify it as a process (Amabile, 1988). For example, Kirton (1976) included ideas of adaptation, improvement, and application. Rogers (1983) operationally defined a creative individual as the one who initially performs creative work. In her definition of creativity, Amabile (1983) included the idea of group interaction that produced novel and useful ideas. Kanter (1988) described creativity as a multistep procedure, only one step of which involved the generation of new ideas. Woodman, Sawyer and Griffin et al. (1993) defined creativity as the generation of available and useful new products or services, the process by which ideas are developed, and the process by which individuals work together in a complex social system. Therefore, most contemporary researchers and theorists have adopted a definition that focuses on the product or the outcome of a product-development process (Amabile, 1983, 1988; Shalley, 1991; Woodman et al., 1993; Zaltman, Duncan, & Holbek, 1973).

However, employee creativity can also be defined as the generation of novel and useful ideas or solutions concerning products, services, processes, and procedures (Amabile, 1988, 1996; Chen & Chang, 2005; Ford, 1995; Oldham & Cummings, 1996; Peterson & Seligman, 2004; Shalley, 1991; Wuchty, Jones, & Uzzi, 2007; Zhou & George, 2001, 2003). This definition can include creative solutions to business problems, creative business strategies, or creative changes in job processes, instruments, and organizing structures, and accommodates variance in the degree to which a new idea reflects an incremental or a radical departure from the status quo (Mumford & Gustafson, 1988; Shalley & Gilson, 2004). Using this definition, research has examined creative solutions to business problems, creative business strategies, and creative changes in job processes (Ford & Gioia, 2000; Taggar, 2002; West & Anderson, 1996). Creative outcomes can range from minor adaptations in workflow or products to major breakthroughs and the development of new products or processes (Mumford & Gustafson, 1988).

In short, employee creativity involves useful novelty. For both specificity and integration of previous research, this study will operationally define employee creativity as the development of ideas about products, services, practices, processes, and procedures that are judged to be original and novel, as well as appropriate and potentially useful (Amabile, 1996; Oldham & Cummings, 1996; Robinson & Stern, 1998; Shalley, 1991; Shalley & Gilson, 2004; Woodman, et al., 1993; Zhou & George, 2001; Zhou & Shalley, 2003).

Organizational Creative Climate

Originality is the wellspring of continuing development and improvement. According to previous research, creative organizations commit to providing an environment in which members are cooperative but not competitive. This open atmosphere and feedback about work produces mutual responsibility and enhances work effort (Sheppard, 1967). An organizational culture that values risk and change as well as long-term study and teamwork will stimulate creativity (Mumford & Simonton, 1997). The creative climate of an organization has a great impact on the creativity of members because it contains elements that can stimulate or inhibit creativity. Stimulating factors include the degree of teamwork, the inspirational nature of management, the quality of work materials, and the extent of autonomy, whereas inhibiting factors include the rigidity and control within the work environment (Amabile, Conti, Coon, Lazenby & Herron, 1996). Litwin and Stringer (1968) regarded an organization's climate as its work environment and the associated multidimensional experiences of members. Different persons may feel differently and hold different opinions; these will affect their motivations and attitudes toward work.

One type of creative organizational climate entails using existing policies, practices, and procedures to develop new products, services, and methods. (Tesluk, Farr, & Klein, 1997) In addition, organizational climate also includes the intrapersonal residues of interpersonal interactions among members of the organization. When the external climate is positive, members enjoy themselves and work efficiently. When the climate is negative, the motivation of members decreases. Thus, organizational climate is closely related to organizational efficiency, and it behooves organizations to create and maintain positive climates to increase efficiency.

III. METHODOLOGY

Research Hypothesis

Based on the literature review and the research design, we hypothesized the following:

H: There is significant correlation between organizational creative climate and employee creative of entrepreneurs in Taiwan.

Data Collection

This research explored the relationships between organizational creative climate, and core competitiveness among traditional SME entrepreneurs in Taiwan. We used random sampling to distribute 1,000 questionnaires; and obtained 546 completed surveys via telephone, mail, or fax within a period of 4 weeks (March 2010). A total of 515 questionnaires were valid, representing a return rate of 51.5%.

Measurement of Independent Variables

Employee Creativity Scale

This research is consistent with that of Kleysen and Street (2001) and many other scholars in its multidimensional definition of employee creativity. We used the modified Employee Creativity Scale to measure creative behavior; the original reliability (Cronbach's alpha) of this measure was .945. Twelve items could be divided into two factors: producing the creative hypothesis and implementing the creative hypothesis. We used a 5-point Likert scale, where 1 = *strongly disagree* and 5 = *strongly agree*.

Organizational Creative Climate Scale

We studied organizational creative climate by examining both subjective perceptions and external objective events. The original reliability (Cronbach's alpha) was .970, and the reliability of subsections of the scale ranged from .85 to .95, indicating that the scale was characterized by good internal consistency. The 35 total items were reduced to 28 items that were then classified into five categories according to substantive domain: organizational support, work and environmental independence, effectiveness of leadership, study, and teamwork. We used a 5-point Likert scale, where 1 = *strongly disagree* and 5 = *strongly agree*.

Background Characteristics of Individuals and Organizations

We divided entrepreneurs according to gender, educational level, working life, and title and divided the enterprises according to number of employees, industry, longevity, and average annual business income.

Results

The sample was composed of 270 men (52.43%) and 245 women (47.57%); 45.63% had completed undergraduate work and 36.89% had completed vocational school; 44.66% had been working for 1 to 5 years and 39.81% had been working for 5 to 10 years; and 43.69% held more senior leadership positions (e.g., managers, deputy

managers, chairmen) and 13.59% were section supervisors or deputy section supervisors. 65.04% of the enterprises employed 50 or fewer people, and 17.48% employed 200 or more. Most businesses (37.86%) were in the livelihood industry, whereas 17.48% were in the metal and machinery industry and 28.16% were in other industries. In addition, 40.78% of the enterprises had been in business for 6 to 10 years, 24.27% had been in business for 16 years or more, 20.04% had been in business for 5 years or fewer, and 14.56% had been in business for 11 to 15 years. In terms of average annual business income, 59.22% reported incomes of 10 million, and 14.56% each reported incomes of 100 to 500 million and 500 million or more.

Reliability Analysis

Cronbach's alpha coefficient shows the stability of the data, which indicates reliability. Cronbach's alpha was .8245 for creative behaviour, and .9455 for organizational creative climate. The values for all tables are within the range indicating uniform stability and relatedness. The CR values of all items exceed the standard for statistical significance by a factor of 3, indicating that the results are highly significant ($p < .001$) and that all items have good discriminability.

The Current Status of Employee Creativity and Organizational Creative Climate in entrepreneurs in Taiwan

One can understand the current status of creative behavior, and organizational creative climates in entrepreneurs in Taiwan from an analysis of the descriptive statistics. Creative behavior was divided into two aspects (12 items); the general mean value was 3.64 ($SD = 3.64$), the mean value for producing creative hypotheses was 3.67 ($SD = 3.67$), and the mean value for implementing creative hypotheses was 3.57 ($SD = 3.57$). The general mean value was on the high side. The organizational creative climate was divided into five aspects (28 items); the general mean value was 3.85 ($SD = 3.85$), with the highest mean value emerging with regard to teamwork, 4.06 ($SD = 4.06$), and the lowest with regard to organizational support, 3.55 ($SD = 3.55$). The general mean value was on the high side.

Hypothesis Testing

Correlation of Creative Behavior and Organizational Creative Climate

Table 1 shows that creative behavior was positively related to the study aspect of organizational creative climate (.2580; $p < .05$), showing that creative behaviors are produced in conjunction with study. Thus, this hypothesis was supported.

Table 1

Correlation of Creative Behavior and Organizational Creative Climate ($N = 515$)

	Organizational Support	Work Independence	Effectiveness of Leadership	Study	Teamwork
Production of Creative Behaviour	.2158	.1785	.1095	.2580*	.1001
Practice of Creative Behaviour	.2216	.1346	.0831	.2414	-.0048
Relaxation	-.1980	-.0841	-.2339	-.2173	-.2166
Enjoyment	.0873	.0728	.1435	.2132	.1138
Problem Solving	.0273	.0682	-.0048	.1051	-.0333
Fun and Interesting	-.0392	-.0528	-.0611	-.0907	-.0622
Active Accomplishment	.0902	-.0954	-.0108	.1550	.0528

* $p < .05$

IV. Discussion

The results show Creative behaviour is common. The production of creative behavior is more common than the practice of creative behaviour. The general mean values for all five aspects of organizational creative climate were rather high, with the highest value emerging with regard to teamwork and the lowest value with regard to organizational support. The production of creative behavior is positively correlated with the study aspect of the organizational creative climate.

Qiu (2002) conducted research on the organizational creative climate of schools and the creative practices of teachers and found that the factor of personal knowledge affects creative behavior. The opportunities for and emphasis placed on studying represent one of the most important factors in the development of an organization's creative climate. Moreover, the opportunities for studying provided by an organization

constitute training for the production of creative ideas and behaviors. Leaders in enterprises play leadership roles insofar as they lead workers. This research shows that creative ideas emerge from study. Thus, entrepreneurs in Taiwan should study continuously to generate creative hypotheses.

V. Conclusions

The goals of the present research were to understand the tendencies of enterprises in Taiwan with regard to creative behavior; to examine the current status of organizational creative climates in enterprises; and to discuss the relationships between employee creativity, and organizational creative climate in these institutions.

Given the research goals and data, we conclude the following:

1. The mean values of employee creativity in enterprises in Taiwan were moderately high, and the mean value of the organizational creative climate was on the high side.
2. Employee creativity has two aspects. The mean value with regard to the production of employee creativity was higher than that with regard to the practice of employee creativity; the general mean value of employee creativity was moderately high. Organizational creative climate can be divided into five aspects: organizational support, work and environmental independence, effectiveness of leadership, study, and teamwork. Teamwork showed the highest mean value and organizational support showed the lowest mean value. The general mean value of organizational creative climate was on the high side.
3. The production of employee creativity is positively correlated with the study aspect of the organizational creative climate.

References

- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology*, 43, 997–1013.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 10, pp. 123–167). Greenwich, CT: JAI Press.
- Amabile, T. M., & Gryskiewicz, N. (1989). The creative environment scales: The Work Environment Inventory. *Creativity Research Journal*, 2, 231–254.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154–1184.

- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The Work Preference Inventory: Assessing intrinsic and extrinsic motivational orientation. *Journal of Personality and Social Psychology*, 66, 950–967.
- Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 313–318). New York: Cambridge University Press.
- Gardner, D. G. (1986). Activation theory and task design: An empirical test of several new predictions. *Journal of Applied Psychology*, 71, 411–418.
- Glynn, M. A. (1988). *The perceptual structuring of tasks: A cognitive approach to understanding task attitudes and behavior*. Unpublished doctoral dissertation, Columbia University, New York, NY.
- Goodale, T., & Godbey, G. (1989). *The evolution of leisure*. State College, PA: Venture.
- Hurt, H., Joseph, K., & Cook, C. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4, 58–65.
- Insel, P. M., & Moos, R. H. (1975). *Work Environment Scale*. Palo Alto, CA: Consulting Psychologists Press.
- Kanter, R. (1983). *The change masters*. New York: Simon & Schuster.
- Kanter, R. (1988). When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 10, pp. 169–211). Greenwich, CT: JAI Press.
- Kirton, M. (1976). Adaptors and innovators: A description and measure. *Journal of Applied Psychology*, 61, 622–629.