



The Relationships between Personal Traits, Leadership Styles, and Innovative Operation

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Abstract

With increasing numbers of higher educational institutions in Taiwan, how to become more efficient through innovative operation has become a critical issue. This paper studies the “Big-5” personal traits, leadership styles, and their relationship to innovative operation. Conducted with a sample of universities in Taiwan, the study analyzes 194 professors and lecturers from three universities by means of a questionnaire. The dimensions are divided into three parts: personal traits, leadership styles, and innovative operations. The study utilizes factor analysis, variable analysis, and correlation analysis. The two main findings are, first, that traits of extraversion and agreeableness have a positive relationship to higher perception of innovative operation in the university. Second, transformational leadership should combine with transactional leadership without management-by-exception passive (active participant style) for more efficient innovative operation. A discussion of the key research findings and some suggested directions for future research are provided.

Keywords: “Big-5” personal traits; Leadership styles; Innovative operation

1. Introduction

Because of Taiwan’s joining the WTO and an increasing number of universities, innovative operations have become a crucial issue for survival in a competitive higher-education market. Extant research has indicated that organizational operations involve primarily top managers and their subordinates (Beng & Robert, 2004), although some studies have shown that institutions of higher education often fail to implement innovative operation (Glower & Hagon, 1998; Cuban, 1999) because of a lack of participation by teachers (McLaughlin, cited in Rudduck, 1991). Because of this finding, understanding the personal traits of teachers and managers’ leadership styles will be crucial for universities which seek innovative operation.

The literature has defined leadership styles in numerous ways but, currently, leadership style is described as the process that managers use to influence subordinates to work toward organizational goals. Wu (2006) indicated that the top manager is the helmsperson of the organization, but some top managers do not understand how to lead their teams to efficient and innovative operation (Shally & Gilson, 2004). Therefore, understanding the best leadership style for innovation will help top managers to lead the organization to innovative operation more easily and more successfully.

Personal traits refer to characteristics, enduring patterns of thought, emotions, and behaviors that are stable over time and across different situations (Funder, 2001).

Thus, understanding subordinates’ traits will be an important factor in gaining the participation in innovation from teachers that is necessary in universities in Taiwan today.

2. Literature Review

2.1 Leadership Styles

The literature has found and summarized many kinds of leadership styles (e.g., Davis, 2003; Spears & Lawrence, 2003; House et al., 2004; Hirtz, Murray, & Riordan, 2007). Transformational leadership is the most frequently researched (Judge & Bono, 2001) for increasing motivation (Charbonneau et al., 2001) and operational performance (Barling et al., 2002). Transformational leadership is marked by sympathy and creativity (Popper, Maysless & Castelnovo, 2000) and can be divided into four dimensions: idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation. Transformational leaders aim to respect subordinates’ abilities and need for rewards (Scott, 2003) and emphasize improving subordinates’ view of the value of their work in order to motivate them to accomplish higher performance (Sivanathan & Fekken, 2002; Miia, Nicole, Karlos, Jaakko, & Ali, 2006; Bass & Riggio, 2006). However, the leadership in universities in Taiwan is still unclear.

Some studies on educational institutions have shown that leadership styles have significant relationship to operational performance (Nidiffer, 2001; Davis, 2003). More than 30 percent of research studies on the relationship between transformational leadership and operational per-

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formance, using different analysis criteria and variables (e.g., Dvir, Eden, Avolio, & Shamir, 2002; Shin & Zhou, 2003; Pillai & Williams, 2004), have found that transformational leadership will result in high motivation, identification, high innovation, and high performance (Scott, 2003; Bass et al., 2003).

Transactional leadership in organizations plays an exchange role between managers and subordinates (Jung, 2001). The transactional leader will first confirm the relationship between performance and reward, and then exchange it for an appropriate response that encourages subordinates to improve performance (Scott, 2003). In this way, transactional leadership emphasizes reinforcement and exchange (Jung & Sosik, 2002; Gregory, 2006). Transactional leadership is divided into three dimensions: contingent reward, management-by-exception active, and management-by-exception passive. Some research has indicated that transactional leadership will not make subordinates work beyond established standards or innovations (Scott, 2003), but leaders always encourage innovation and high performance by reinforcement or reward (Jung & Sosik, 2002; Gregory, 2006). For the purpose of this study, the transactional and transformational leadership style is adopted in the Multifactor Leadership Questionnaire.

2.2 Personal Traits

There is a good deal of literature about the relationship between personal traits and performance (e.g., Barrick, Mitchell, & Stewart, 2003; Hough, 2003; Judge, Kristof-Brown, 2003). Evidence is accumulating which suggests that virtually all personality measures can be reduced or categorized under the umbrella of a 5-factor model of personality, which has been labeled the "Big Five" (Timothy, Chad, Carl, & Murry, 1999). The "Big-Five" personal traits model is divided into the five dimensions of extraversion, conscientiousness, agreeableness, neuroticism, and openness to experience, which are related to an organization's operational performance (Judge, Heller, & Mount, 2002).

The neurotic trait is marked by vulnerability to pressure and illness (Suls, Green, & Hills, 1998; Shifren, Furnham, & Bauserman, 2003) and is related to negative work performance (Barrick et al., 2001; Hogan & Holland, 2003). Neurotics tend to have negative emotions as a result of low work satisfaction (Judge & Locke, 1993) and negative work-related information (Necowitz & Roznowski, 1994). The extraversion trait is more sociable, active, and impulsive and less dysphonic (Watson & Clark, 1997) and has a positive relationship to operational performance (Tokar & Subich, 1997; Hogan & Holland, 2003). The conscientiousness trait has a positive relationship to high performance (Timothy, Chad, Carl, & Murry, 1999) and those who have this trait tend toward achievement orientation, dependability, and orderliness (Hogan &

Hollang, 2003). The conscientiousness trait is also related to accelerated promotion to a more complicated or high-prestige job (Jones & Whitmore, 1995) and to work performance and academic accomplishment (Gray & Watson, 2002; Heaven, Mark, Barry, & Ciarrochi, 2002). The trait of openness to experience is often shown in intelligence, unconventionality, and work innovation in the organization (Barrick et al., 2001; George & Zhou, 2001). Finally, the agreeableness trait has characteristics of cooperation and likeability, along with a positive relationship to operational performance (Mount, Barrick, & Stewart, 1998; Timothy, Chad, Carl, & Murray, 1999; Hogan & Hollang, 2003). In assessing the relationship between personal traits and innovative operation in universities, the present study adopts the personal traits questionnaire made by Costa & McCrae (1986).

2.3 Innovative Operation

Innovative operation is defined as the ability to produce creativity or ideas (O'Sullivan, 2003) and focus on rising profits and competitiveness (Lo, 2004). Recent studies on innovative operation are numerous (Miia, Nicole, Karlos, Jaakko, & Ali, 2006) and have indicated that top managers' leadership styles have a relationship to high operational performance (Ireland et al., 2001). The personal traits of subordinates, educational level (Wiersema & Bantel, 1992), background, the role of managers, and age (Tihanyi et al., 2000; Kilduff et al., 2000) have significant relationships to innovative operational performance (Canella et al., 2001; Tsai, Kao, Ting, & Huang, 2002; Schmit, Kihm, & Robie, 2004; Tierney, & Farmer, 2004).

Educational institutions' innovative operation is defined as a serious of innovative behaviors which fit the inner or outer needs of the institution (Bossidy & Charan, 2002; Cormican & O'Sullivan, 2003; Yen & Chang, 2005; Tsai, 2005). Innovative performance in educational institutions may take the form of inner motivation such as altruism (Hannan, English, & Silver, 1999), or outer motivation, such as promotion or merit rewards (Smart, Kelly, & Conant, 1999; Wagener, & Shumanis, 2000, as cited in Nancy, Robert, & Penelope, 2001). Hung and Wang (2005) found that the top manager's leadership plays an acceleration role in the innovative operations of educational institutions. In addition, some empirical studies have given four dimensions to the research of innovative operation: administrative management, course teaching, resource equipment, and culture forming (Wu & Lin, 2003; Chin & Pu, 2006; Lin, Wang & Yen, 2006).

3. Methodology

For the purpose of exploring the relationship between leadership style, personal traits, and innovative operation, this study was conducted with a sample of 194 professors from universities in Taiwan. A total of 485 questionnaires were sent by electronic mail, and 216 were returned. After

Table 1. Demographic Information

	Innovative operation	Total N	Pearson Correlation	Significant
Big Five Personal Traits	Conscientiousness	194	-.015	.832
	Agreeableness		.214**	.003
	Neuroticism		-.047	.511
	Openness to Experience		-.031	.671
	Extraversion		.183*	.010
Leadership Style	Active participant Style		.723***	.000

22 questionnaires were discarded for statistical reasons, the overall response rate was 40% or a total of 194 questionnaires for analysis. Demographic data from the sample are provided in Table 1.

Eighty-three percent of the respondents were male; just under half (49%) of the respondents were above age 45, and 37% were between 35 and 45 years old; 38% of the respondents were professors and about 26% were associate professors; most (92%) of respondents had reached the doctorate level; and about 60% of respondents had served in the profession for 11-20 years.

The study's questionnaire adopted the 5-point Likert scale. Factory analysis was used to find major factors of the three dimensions in this study, i.e., leadership style, personal traits, and innovative operation. Correlation analysis was used to confirm the relationship of leadership style and personal traits to innovative operation.

Before proceeding with the factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was used to calculate .807 for personal traits, .898 for leadership style, and .778 for innovative operation. The results of the Bartlett test of sphericity are shown in Table 2. Major factor analysis was also conducted with orthogonal rotation, and the results are provided in Table 3. Generally, the overall Cronbach's α should be above .7 and each dimension's Cronbach's α should be above .6; the study's inner and outer Cronbach's α were above this standard (as Table 4 showed), which suggests that the sampling results were reliable.

Table 2. Bartlett TEST

Dimension	Approx. Chi-Square	Sig
Personal Traits	1781.783***	.000
Leadership Styles	806.129***	.000
Innovative Operation	300.380***	.000

***: $p < .001$

Table 3. Factor Analysis

	Factors' Name	Eigenvalue	Variance explained (%)	Total variance explained (%)
"Big-Five" Personal Traits	Conscientiousness	2.921	14.607	66.715
	Agreeableness	2.810	14.049	
	Neuroticism	2.680	13.402	
	Openness to Experience	2.565	12.824	
	Extraversion	2.366	11.832	
Leadership Style	Active participant Style	4.466	63.789	63.789
Innovative operation	Innovative operation	2.690	67.243	67.243

Table 4. Reliability Analysis

Dimension	Cronbach's α
Conscientiousness	.826
Agreeableness	.829
Neuroticism	.807
Openness to Experience	.808
Extraversion	.772
Active participant Style	.903
Innovative operation	.836
Total	.843

The analysis of variables is intended to examine which background variables of the respondents will have an effect on attitudes toward innovative operation. In this study, only the gender variable reached significance. The results of the analysis are provided in Tables 5 and 6.

Table 5. Sex Variable Analysis on Innovative Operation

	Innovative Operation				
	N	F	t	Df	Sig
Male	161	4.103*	.529	57.556	.044
Female	33				
Total	194				

*: $p < .05$

Table 6. Sex Variable Analysis on Leadership Style

	Leadership Style				
	N	F	t	Df	Sig
Male	161	6.918**	.182	62.192	.009
Female	33				
Total	194				

** : $p < .01$

Table 7. Correlation Analysis Result

	Innovative operation	Total N	Pearson Correlation	Significant
Big Five Personal Traits	Conscientiousness	194	-.015	.832
	Agreeableness		.214**	.003
	Neuroticism		-.047	.511
	Openness to Experience		-.031	.671
	Extraversion		.183*	.010
Leader-ship Style	Active participant Style		.723***	.000

*: $p < .05$; **: $p < .01$; ***: $p < .001$

The Pearson Correlation is shown in Table 7. A correlation above .05 is significant as an explanation for a dimension.

4. Conclusion

Higher educational institutions in Taiwan are places where students are initiated into professional knowledge. There were few such places 20 years ago, so neither institutional leadership nor staff had to worry about using innovative operation to survive. However, after Taiwan joined the WTO, there was a drastic increase in the number domestic universities, and the higher education market became extremely competitive. As a result, leaders of universities in Taiwan began searching for the way to innovations that would make their operations more efficient in the future.

The results of the present study show that leadership style has a significant relationship to innovative operation. In addition, some of the teachers' personal traits have a significant positive relationship to innovative operation. The results also indicate that whether the respondent is male or female affects their perceptions toward innovative operation and leadership styles. However, this finding results from unbalanced male-female samples.

Suggestions from the present study can be summarized as follows:

(1) When goal-setting is begun, leadership style ought not to be limited to the transformational style, but should combine with transactional leadership without management-by-exception passive to increase motivational factors. All in all, leader's full range participation plays an important role in success innovative operation.

(2) To make future innovative operations easier, hiring preference should be given to employees who have the traits of agreeableness and extraversion. Thus, resistance to innovative operation will be decreasing in the proceeding.

(3) For the employees with the neurotic trait, leader-

ship should provide more inspirational motivation to lower their anxiety toward innovative operation. Employees with the conscientiousness trait can be inspired with more complex jobs or prestige. Members who have the trait of openness to experience would improve their innovative motivation by giving more chances to make decisions or analysis more solution projects.

5. Limitation of the Study and Future Studies

This paper studies the relationship of personality traits of university staff and the leadership style of universities' top management to innovative operation in universities in Taiwan. Beside, sex of samples in this study is not balance enough. Hence, studies about the relationship between innovative operation in the higher educational institution and its performance could be conducted in future.

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