

## Traits or Training? The Effects of Traits and Training on Managerial Competency and Effectiveness of Medical Directors

Fu Chen Kuo<sup>1</sup> and Shang-Pao Yeh<sup>2\*</sup>

<sup>1</sup>*Graduate Institute of Public Health, Kaohsiung Medical University, Kaohsiung, Taiwan,  
Department of Gynecology and Obstetrics, E-Da Hospital, Kaohsiung, Taiwan  
School of Medicine, College of Medicine, I-Shou University, Kaohsiung, Taiwan*  
<sup>2</sup>*Department of Tourism, College of Tourism and Hospitality I-Shou University, Kaohsiung,  
Taiwan, ROC*  
*E-mail: <sup>2</sup><shangpao@isu.edu.tw>*

**KEYWORDS** Medical Director. Traits. Locus of Control. Managerial Training. Managerial Competency. Managerial Effectiveness

**ABSTRACT** In light of the lack of studies on the related field to the medical directors in Taiwan, this research tended to explore the effects of personality traits and managerial training on managerial competency and managerial effectiveness of medical directors. The data were collected from 604 valid respondents covering 16 hospitals in the Great Kaohsiung Area. Among these respondents, 69 were medical directors and 535 were their immediate subordinates. The data were statistically analyzed via factor analysis, reliability test, Pearson correlation, and hierarchical regression analysis. The results indicated (1) significant and positive correlations between internal locus of control and managerial competency, (2) positive correlations between internal locus of control and managerial training of medical directors, and (3) positive correlations between managerial competency and managerial effectiveness. Although managerial competency was found to have no significant effects on either resistance or compliance of the subordinates' attitudes, managerial competency was, however, significantly and positively related with the commitment of the subordinates. Such findings might imply that managerial competency strengthened the more active subordinate's attitudes, such as commitment.

### INTRODUCTION

Human resource management in medical institutes is slightly different from its counterparts in general enterprises, as it characterizes high specialty of personnel, work mode of team cooperation, intensive labor, and high personnel costs. According to the statistics of United States Department of Labor, there are up to 260 types of specialties in hospitals; in spite of the scale of the professional field, they present professional techniques or knowledge; besides, the specialties reveal non-substitutability, with high specialties. The management and negotiation among the departments in medical institutes are therefore complex and difficult. To have such professionals really actively contribute to the organization, traditional instructional jobs do not work

in the professional medical field. Medical services feature the medical behaviors of diagnoses, therapy, treatment, operation, and healthcare that instruments cannot replace manual operation. The personnel costs in hospitals therefore are high, which become the major operating costs, generally about 45-55%, and even up to 60% in some institutes (Zhang 2004). For this reason, managerial effectiveness of managers in hospitals becomes a primary issue for effective management.

The role of managers has been definitely defined in the past research on management (Fayol 1949; Drucker 1954, 1974; Mintzberg 1973; Quinn 1988); however, the structure (Mintzberg 1983) and task objectives (profit-making vs. non-profit making) of medical sectors are different from general enterprises. Willcocks (1995) considered that clinical directors were essentially physicians as well. It was a new innovation, as physicians seldom took charge of management, nor were responsible for any managerial explanations about the personal behaviors. Nonetheless, Willcocks's ideas were based on the effective management

---

*Address for correspondence:*  
Dr. Shang-Pao Yeh  
Department of Tourism, College of Tourism and  
Hospitality I-Shou  
University, Kaohsiung, Taiwan, ROC  
*E-mail:* shangpao@isu.edu.tw

of a clinical director. Practically, clinical directors did not receive systematic managerial training from the medical institutes that the effective management relied on the traits and self-managerial training.

Accordingly, the correlations among managerial competency, personality traits, managerial training, and managerial effectiveness of a clinical director are analyzed through empirical research in order to understand the managerial competency being from the nature characteristics or managerial training and the importance for the managerial competency. It tends to provide the organization with assistance in clinical directors so as to achieve the requested efficiency or effectiveness.

## Literature Review and Hypotheses

### *Personality Traits*

Scott (1975) regarded personality traits as the psychological development and growth of humans. Gatewood and Field (1998) considered traits as a permanent dimension (such as sociality, independence, and achievement demands) being used for explaining the consistency of human behaviors in various situations. Individual behaviors reflected the unique personality characteristics, such as shyness, aggressiveness, compliance, laziness, loyalty, or timidity. Such characteristics continuously appearing in distinct situations were called personality traits. Consequently, personality traits were the stable and key factors in a person's life (Costa and McCrae 1992).

In spite that personality traits could be explained and measured from various dimensions, internal/external locus of control is apparently a mainstream research (Judge et al. 2001; Spector 1987). Spector (1987) compared the differences between internal locus of control and external locus of control and found out that the ones with external locus of control, who were comparatively more compliant than the others with internal locus of control, were likely to accept the leadership of an organization; the ones with internal locus of control believed that success was resulted from hard-working, while failure was individual responsibility; and, the ones with external locus of control did not believe in the correlations between success or failure and individual abilities or efforts (Kren 1992). Regarding

the fit of tasks, the ones with internal locus of control were more suitable for tasks with higher complexity, such as managerial and professional work, because such work required the capability of dealing with complex information and high learning abilities. Moreover, the ones with internal locus of control were capable of creative and independent work, while the others with external locus of control were more compliant that they were suitable for high routine work or tasks with high specifications and standardization (Robbins 2001).

### *Managerial Training*

Milkovich (1997) considered that management skills training, which was closely combined with managerial career development, was especially for managers. In many large-scale organizations, managerial training provided managers with the requirements for developing the competency. For senior managers, training and development of management skills were not simply the responsibilities of managers, but the demands for practice. Drucker (1977) regarded managerial competency development as the promotion activities in an organization that the ultimate objective was to develop the potential of managers and enhance organizational performance. Nevertheless, the effectiveness of managerial training relied on the attitudes and correct awareness of entrepreneurs and managers. In spite of the contribution of managerial training to organizational effectiveness, similar results seemed not to appear in non-profit and governmental institutes (House and Aditya 1997). Longest et al. (1998) pointed out personality being the key factor in a successful manager's competency; complete and necessary managerial competency could be established with experiences, continuous education, and long-term development plans.

Although on-the-job training and orientation could assist in selecting managers, reinforcing doctor-patient relationship, promoting instruction and research, and coping with market change in a hospital, there are not systematic trainings for professional physicians with administrative posts in Taiwan that self-training is the major managerial training, in which an individual is involved, according to the demands. Current cultivation models for a physician becoming a manager in a hospital are concluded as (1) master-apprentice pass-on, (2) self-learning, (3) govern-

ing by doing nothing, and (4) managerial education in the hospital (Yen 2003).

### *Managerial Competency*

Jennings and Beaver (1997) proposed that managerial competency could be defined as the competency to effectively develop the professional skills and knowledge at work. On one hand, it was the qualification of a manager; while on the other hand, it was the competency of a manager practicing the obligation. Both Miborrow (1988) and Constable (1988) studied managerial competency, but presented different definitions. Miborrow (1988) defined managerial competency as the mix of experiences, responsibilities, knowledge, and skills. On one hand, it was the criteria and conditions to evaluate the qualification of a manager; on the other hand, it referred to the competency of a manager practicing the job. Constable (1988) defined managerial competency as the competency to apply knowledge and skills for effectively playing the managerial role, in which the skills were the performance of a manager presenting sequential and systematic behaviors on achieving the performance target. Ivancevich et al. (1989) indicated that a manager should present the competency of technology, computer, analysis, decision-making, interpersonal relationship, and communication. Moulton (1993) pointed out the competency of environmental perception, leadership, general management, interpersonal relationship, and work completeness as the required managerial competency of a manager. Sandwith (1993) discussed the cultivation of managerial competency and organized five managerial competencies of a manager. Longest (1998) mentioned that, in integrated delivery systems (IDSs), a senior director's work tended to organizational integration that 6 definite managerial competencies were proposed, namely conceptual, technological managerial/clinical, interpersonal/cooperative, political, commercial, and managerial competency. Willcocks (1992) indicated that clinical directors still expected traditional work of planning, setting objectives, leading, utilizing and controlling resources, and achieving the production. Disken (1990) suggested that a better clinical management should contain rapid decision-making, larger flexibility, better plans, stricter budget control, clarified objectives, and responsive management. Furthermore, it was mentioned that a director's effec-

tiveness covered motives, role perception, and the competency of managing pressure and unexplained situations.

### *Managerial Effectiveness*

Many theorists have integrated management and leadership to the discussion, as leadership is one of the functions and one of the multiple roles in management (Mintzberg 1979); besides, management and leadership are regarded as two sides of a coin, or they are even deduced as the same topic (Alimo-Metcalf and Lawler 2001). According to the research on leadership effectiveness and the researcher's opinions about leadership, Leadership Result or Effectiveness is often regarded as the indicator because of the broad coverage, including the achievement of team objective, performance of team work, satisfaction of subordinates with leaders, and leaders' status in a group (Yukl 2002). Kelman (1958) explained personal attitudes being changed by the others' intentions through (1) compliance or exchange, (2) identification or affiliation, and (3) internalization or value congruence. Based on Kelman's (1958) theory, Yukl (1998) developed three characters of a leader's power affecting the subordinates' attitudes, including commitment, compliance, and resistance. Commitment referred to being obedient to the leader and willing to contribute the greatest competency and develop the highest effectiveness to the leader. Compliance referred to a subordinate practicing the tasks requested by the leader, but lack of enthusiasm and competency contribution. Resistance referred to a subordinate resisting the leader's requests with excuses, persuasion, high-level resistance, delay, slow-down, and resistance.

To sum up the theories of Kelman (1958) and Yukl (1998), a subordinate accepting the influence of the leader's power appears on (1) resistance, (2) compliance (based on reward and punishment), and (3) commitment (including identification and internalization).

## **RESEARCH HYPOTHESIS**

### **Correlations between Personality Traits and Managerial Competency**

Spencer and Spencer (2002) considered that applying activeness to dealing with risks could result in immediate mastery and rapid and effective management. Deliberately reviewing inter-

national and domestic research on internal/external locus of control, the ones with internal locus of control were more active (Wu 1980; Hammer and Vardi 1981; Robbins 2001), were competent with creative and independent work (Robbins 2001), showed less anxiety and pressure, considered external obstacles being able to overcome and control, and it could effectively acquire and apply information (Spector 1987), and revealed higher self-esteem (Wen 1984), interpersonal relationship (Wu 1984; Chang 1991), better negotiation strategies (Cheng 2011), and self-fulfillment and development (Chang 1991). Hyper-dimensional Classification of Managerial Competency is utilized for measuring managerial competency in this study, and the following hypothesis is then proposed.

**Hypothesis 1: The more personality traits approach internal locus of control, the higher managerial competency is presented**

*Correlations Between Managerial Training and Managerial Competency*

Milkovich (1997) mentioned the development of a director's competency being based on managerial training. Drucker (1977) pointed out the ultimate purpose of managerial competency development as to induce a director's potential and enhance organizational performance. McLennan (1967) indicated that the management skills and knowledge could be acquired through on-the-job education and the experiences learned in practical managerial posts. Chung (1998) regarded that internally formal managerial training and the accumulation of work experiences were the primary channels to develop a director's managerial competency in hi-tech industry, followed by expatriation or temporarily oversea managerial training. Chang (1991) analyzed that the training of interviewing counselors, managerial training plans, JST (Jinjiin Supervisory Training), and TWI (Training Within Industry for Supervisors) could enhance an employee's learning of managerial and technological competency. Martin (1979) mentioned that most directors would doubt whether they could learn to change the basic competency in seminars; however, they discovered the surprising effectiveness when setting targets and receiving instantly objective feedback. Accordingly, the following hypothesis is proposed.

**Hypothesis 2: The higher frequency of managerial training is shown, the managerial competency is revealed**

*Correlations between Personality Traits and Managerial Training*

In regard to the effects of internal/external locus of control on managerial training, the ones with internal locus of control are likely to apply constructive reaction when encountering frustration, are suitable for dealing with and learning complex information work (Spector 1987), are good at learning (Wolk and DuCette 1974), could effectively acquire and apply information, are wild about looking for information (Wu 1984), would actively look for information related to work, and apparently present self-actualization and development (Chang 1991). As a result, the following hypothesis is proposed.

**Hypothesis 3: The more personality traits approach internal locus of control, the higher managerial training is shown**

Tett (2000) mentioned that a director could revise or expand the skills to approach to the image in the training simulation and the real management situations, where they did not need to change the basic personality, but merely changed the behaviors in the process. Tett (2000) argued that competency was not general characters, but could be trained. The following hypothesis therefore is proposed.

**Hypothesis 4: The frequency of managerial training would affect the correlations between personality traits and managerial competency**

*Correlations Between Managerial Competency and Managerial Effectiveness*

Aiming at physicians and senior directors in the NHS trusted hospital, Willcocks (1995) confirmed the ideally essential conditions for effective clinical directors as the competency of developing team cooperation, the problem perception, decision-making, and team establishment in traditional functions of Clinical physicians with knowledge, maturity, experiences, and understanding of the organization, Clinical physicians' skills, internal or external communication characters, decision-making, and problem confirmation and prediction, and Hyper-dimensional Clas-

sification of Managerial Competency, the professionalism in reliability, communication, and the familiarity of skills and the realization of the organizational structure in occupational keenness and concern. Based on problem perception in traditional functions, political sensitivity and development of oneself and others in role orientation in Hyper-dimensional Classification of Managerial Competency, proposed by Tett et al. (2000), and the development and training of political insight and judgment, the cultivation of detecting the power in an organization dependent on people, affairs, and objects, the promotion of organizational development, and the importance of learning emphasized by Willcocks (1998) for managerial effectiveness, the following hypothesis is proposed.

**Hypothesis 5: The higher managerial competency is presented, the higher managerial effectiveness is revealed.**

## RESEARCH METHODS

### Sample and Sampling

Having received the agreement of the clinical directors in 16 hospitals in Kaohsiung and Pingtung areas, the subordinates of such directors were distributed the questionnaires. Total 735 copies of questionnaires were distributed, and 661 copies were retrieved, including 604 valid ones, in which 87 copies of questionnaire were distributed to clinical directors, and the valid copies were 69, with the retrieval rate 90%; and, 648 copies were distributed to the subordinates, and the valid copies were 535, with the retrieval rate 90%.

The average score of all subordinates of a clinical director was regarded as the scores of the director's personality traits, managerial competency, and managerial effectiveness. Total 69 clinical directors were measured.

### Measurement

**Personality Traits:** By revising Spector's (1987) questionnaire and having relevant professionals modify the sentences, the questions in the questionnaire could conform to the job characteristics of professional medical managers. The Cronbach's  $\alpha$  of the questionnaire appeared .6524.

**Managerial Training:** Based on the specialty of managerial training in medical industry, 5 clinical

directors were interviewed and 10 different clinical directors confirmed the questions for the expert validity. With repeated inspection and factor analysis, all questions for managerial training were concluded in the same factor to conform to the design intention. The Cronbach's  $\alpha$  showed .9155.

**Managerial Competency:** The managerial competency scale, developed by Tett et al. (2000), was applied to measuring managerial competency. Such scale was developed by three expert reviews. The Cronbach's  $\alpha$  revealed .9014.

**Managerial Effectiveness:** According to subordinates' acceptance attitudes, proposed by Kelman (1958) and Yukl (1998), the questionnaire was self-developed. With factor analysis, the covariance explained achieved 60.403%, and the three factors contained compliance ( $\alpha=.6620$ ), commitment ( $\alpha=.5959$ ), and resistance ( $\alpha=.6209$ ).

## RESULTS

### Correlations among Internal/External Locus of Control, Managerial Training, and Managerial Competency

Hierarchical Regression Analysis was utilized for testing  $H1$ ,  $H2$ , and  $H3$  (Table 1). Demographic variables were input in the first step, and then independent variables were input to predict the dependent variables. From the table, a director's internal/external locus of control, under the control of demographic variables, could significantly predict competency ( $\Delta R^2=.535, p<.01$ ) and managerial training ( $\Delta R^2=.064, p<.05$ ) that  $H1$  and  $H3$  were supported. A director's internal/external locus of control showed remarkably positive correlations with managerial competency ( $\beta=.743, p<.01$ ), presenting that the more a director's personality traits approached internal locus of control, the managerial competency could be more easily established. Furthermore, a director's internal/external locus of control appeared notably positive correlations with managerial training ( $\beta=.256, p<.05$ ), implying that the more a director's personality traits approached internal locus of control, the managerial training could be more easily affected. Nonetheless, under the control of a director's managerial training with demographic variables, the predication of managerial competency reached the significance ( $R^2=.018$ ) that  $H2$  was not supported.

**Table 1: Regression analyses among internal/external locus of control, managerial training, and managerial competency**

Predictor	Managerial competency			Managerial training		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
Step 1						
Demographic variables		.066			.139	
Step 2						
Internal/external locus of control (H1, H3)	.743**	.600	.535**	.256*	.203	.064*
Managerial training (H2)	.146	.084	.018			

a. N=69, demographic variables contain gender, age, marital status, educational background, service department, and service seniority.

\* $p < .05$ , \*\* $p < .01$

### Moderating Effects of Managerial Training on the Correlations Between Internal/External Locus of Control and Managerial Competency

According to Baron and Kenny's (1986) suggestions on hierarchical regression analysis of moderating effects, demographic variables were first input in the first step, then independent variables (internal/external locus of control personality traits) and the moderator (managerial training), and then the interaction between independent variables and the moderator. From Table 2, a director's managerial training did not reveal moderating effects ( $\Delta R^2 = .000$ ) on the correlations between personality traits and managerial competency that *H4* was not supported.

### Correlation Analysis of Managerial Competency and Managerial Effectiveness

Managerial effectiveness was divided into three dimensions of acceptance attitude-resistance, acceptance attitude-compliance, and acceptance attitude-commitment in this study. From Table 3, a director's managerial competency could not significantly predict acceptance attitude-resistance ( $\Delta R^2 = .014$ ) and acceptance attitude-compliance ( $\Delta R^2 = .034$ ), under the control of demographic variables. A director's managerial competency appeared negative correlations with acceptance attitude-resistance ( $\beta = -.122$ ) and acceptance attitude-compliance ( $\beta = -.192$ ), but not achieving the significance, implying that a director with higher managerial competency could restrain the subordinates' resistance and passive compliance. Moreover, Table 3 also showed that a director's managerial competency presented remarkably positive correlations with acceptance

attitude-commitment ( $\beta = .715$ ,  $p < .01$ ), revealing that a director with higher managerial competency would easily establish the subordinates' commitment. In short, *H5* was partially supported.

### CONCLUSION

Regarding to the prediction of managerial competency with personality traits, it is found that personality traits of clinical directors appear significantly positive correlations with managerial competency. Such a result supports the past research on internal/external locus that the ones with internal locus of control were suitable for managerial and professional work, a director's internal locus of control showed positive correlations on managerial competency, and a director's training were based on the requirement for the competency. However, clinical directors' mana-

**Table 2: Regression analysis<sup>a</sup> of the moderating effects of managerial training on the correlations between internal/external locus of control personality traits and managerial competency**

Analysis of moderating effects	Managerial competency		
	$\beta$	$R^2$	$\Delta R^2$
Step 1			
Demographic variables		.066	
Step 2			
Internal/external locus of control	.743**	.600	.535**
Step 3			
Managerial training	-.073	.605	.004
Step 4			
Internal/external locus of control $\times$ Managerial training	-.013	.605	.000

**Table 3: Regression analysis<sup>a</sup> of managerial competency and managerial effectiveness**

Predictor	Acceptance attitude-resistance			Acceptance attitude-compliance			Acceptance attitude-commitment		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
Step 1									
Demographic variables		.082			.095			.040	
Step 2									
Managerial competency	-.122	.096	.014	-.192	.130	.034	.715**	.518	478**

gerial training and managerial competency do not reach the significance in this study.

In regard to the prediction of managerial training with personality traits, clinical directors' personality traits and managerial training reveal remarkably positive correlations. Such a result also highly associates with the past research that the ones with internal locus of control would more actively look for information related to work, could effectively acquire and apply information, and presented more significant self-actualization and development.

Clinical directors' managerial competency appears partially notable correlations with managerial effectiveness. Managerial competency shows negative correlations on the predication of resistance and compliance in the managerial effectiveness evaluation, without achieving the significance, but presents notably positive correlations on the prediction of commitment. It reveals that managerial competency could reinforce more active commitment as well as restrain passive behaviors of resistance and compliance.

In the evaluation of commitment, a clinical director's managerial competency shows moderating effects between internal locus of control and managerial effectiveness, revealing that a director with internal locus of control could effectively predict commitment in the managerial effectiveness evaluation through managerial competency. A clinical director's managerial competency appears moderating effects on resistance and compliance in the evaluation of internal locus of control and managerial effectiveness. Such results suggest the directly effects on personality traits and managerial effectiveness in the past research, but a director's managerial competency should be regarded as an important moderator between personality traits and managerial effectiveness. It reveals that both personality traits and managerial competency could explain and

predict managerial effectiveness; therefore, both personality traits and managerial competency are important for achieving managerial effectiveness. A part of personality traits could achieve managerial effectiveness through managerial competency that the higher managerial competency could assist it more.

**RECOMMENDATIONS**

Based on relevant research or literatures, it could be rationally deducted that managerial training could affect managerial effectiveness through managerial competency, the interaction between personality traits and managerial training would affect managerial competency or managerial effectiveness, and the effects should be more obvious than such two variables separately affecting managerial competency or managerial effectiveness. The cultivation models of a physician becoming a manager in a hospital contain master-apprentice, self-learning, governing by doing nothing, and managerial education in the hospital; merely few physicians accept formal managerial education in the hospital and participate in continuous courses related to hospital management; while most clinical directors would train themselves or ignore managerial trainings because of insufficient systematic on-the-job management trainings.

As a result, the role of a clinical director's managerial training seems not to be as important as expected in managerial competency and managerial effectiveness. Nonetheless, such a result conflicts with international and domestic research on human resource management. In this case, the serious gap is worth considerations. Although managerial training does not reveal positive correlations with managerial competency and managerial effectiveness as expected, the positive correlations between internal locus of

control and managerial training still encourage researchers to look for the factors in insignificant correlations between a clinical director's managerial training and managerial competency. It is expected to enhance a clinical director's managerial competency and managerial effectiveness with managerial training.

## REFERENCES

- Alimo-Metcalfe B, Lawler J 2001. Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS? *Journal of Management in Medicine*, 15(5): 387-404.
- Baron R M, Kenny DA 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical consideration. *Journal of Personality and Social Psychology*, 51(6): 1173-1182.
- Chang Wen-yi 1991. *A Study on the Motivators of Multi-level Marketing Companies*. Thesis, Unpublished. Taipei, Taiwan: Department of Business Administration, Soochow University.
- Cheng Chen-may 2001. *A Research on Locus of Control, Job Characteristics, and Job Performance-Take Taiwan's High-Tech Industry Employees for Example*. Thesis, Unpublished. Chung-Li, Taiwan: Graduate Institutes of Human Resource Management, National Central University.
- Chung Po-tang 1998. *Source of a Director's Managerial Competency in Hi-tech Industry-A Case Study on Industrial Technology Research Institute*. Thesis, Unpublished. Chung-Li, Taiwan: Graduate Institutes of Human Resource Management, National Central University.
- Constable J 1988. *The Making of Managers*. New York: Longman.
- Costa PT Jr, McCrae RR 1992. *Professional Manual for the NEO PI-R and NEO-FFI*. Odessa, FL, USA: Psychological Assessment Resources, Inc.
- Disken S, Dixon M, Halpon S, Shocket G 1990. *Models of Clinical Management*. London: IHSM.
- Drucker FP 1954. *The Practice of Management*. New York: Harpert Row Publishing Co.
- Drucker Peter F 1977. *An Introductory View of Management*. New York: Harper's College Press.
- Fayol H 1949. *General and Industrial Management*. London: Pitman Publish.
- Gatewood R D, Field H S 1998. *Human Resource Selection*. 4th Edition. New York: Dryden Press, Harcourt Brace College Publishers.
- House R J, Aditya R N 1997. The social scientific study of leadership: Quo vadis? *Journal of Management*, 23(3): 409-473.
- Hammer TH, Vardi Y 1981. Locus of control and career self-management among non-supervisory employees in industrial settings. *Journal of Vocational Behavior*, 18: 13-29.
- Ivancevich J M, Donnely James H, Gibson JL 1989. *Management: Principles and Function*. Boston, MA: Richard D. Irwin, Inc.
- Jennings PA, Beaver G 1997. The performance and competitive advantage of small firms: A management perspective. *International Small Business Journal*, 15(2): 63-75.
- Judge Timothy A, Joyce E, Bono 2001. Relationship of core self-evaluation – self-esteem, generalized self-efficacy, locus of control, and emotional stability – with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86(1): 80-92.
- Kelman HC 1958. Compliance, identification, and internalization: Three process of attitude change. *Journal of Conflict Resolution*, 2: 51-56.
- Kren L 1992. The moderating effects of locus of control on performance incentives and participation. *Human Relations*, 45(9): 991-1012.
- Longest Beaufort B. Jr., Brooks Daniel H 1998. Managerial competence at senior levels of intergrated delivery systems. *Journal of Healthcare Management*, 43(2): 115-135.
- McLennan Kenneth 1967. Education and training for managerial jobs. *American Journal of Economics and Sociology*, 423-436.
- Miborrow G 1988. Crafty management. *Management Today*, 322-351.
- Milkovich GT, Boudreau J W 1997. *Personnel/Human Resource Management: A Diagnostic Approach*. 8th Edition. Homewood, IL: Richard Irwin, Inc.
- Mintzberg H 1973. *The Nature of Managerial Work*. New York: Harper and Row.
- Mintzberg H 1979. The manager's job: Folklore and fact. *Harvard Business Review*, 53(4): 49-61.
- Mintzberg H 1983. *Structure in Fives- Designing Effective Organizations*. Englewood Cliffs, N.J.: Prentice Hall.
- Moulton HW 1993. *Executive Development: Preparing for the 21st Century*. New York: Oxford University Press.
- Quinn RE, Camerson K 1988. *Paradox and Transformation: Toward a Framework of Change in Organization and Management*. Cambridge, Mass: Ballinger.
- Robbins S P 2001. *Organization Behavior*. 9th Edition. New Jersey: Prentice Hall Inc.
- Sandwith P 1993. A hierarchy of management training requirements: The competency domain model. *Public Personnel Management*, 22(1): 33-45.
- Scott Robert C 1975. Productivity improvement through better management of human resources. *Cost and Management*, 49(1): 14-24.
- Spector PE 1987. Behavior in organizations as a function of employee's locus of control. *Psychological Bulletin*, 91: 482-497.
- Spencer Lyle M, Spencer Signe M 2002. *Competence at Work: Models for Superior Performance*. N.Y.: John Wiley and Sons, Inc.
- Tett Robert P, Guterman Hal A, Bleier Angela, Murphy Patrick J 2000. Development and content validation of a "hyperdimensional" taxonomy of managerial competence. *Human Performance*, 13(3): 205-251.
- Wen Shu-yuan 1984. The values and life style of college students in northern Taiwan. *Journal of Education and Psychology*, 6: 95-116.
- Wolk S, DuCette J 1974. Intentional performance and incidental learning as a function of personality and task dimensions. *Journal of Personality and Social Psychology*, 29: 90-101.
- Willcocks SG 1992. Managerial effectiveness and the public sector: A health service example. *International Journal of Public Sector Management*, 5(5): 4-10.



- Willcocks Stephen 1995. Managerial effectiveness in the NHS: A possible framework for considering the effectiveness of the clinical director. *Journal of Managerial Psychology*, 10(1): 16–21.
- Willcocks Stephen G 1998. Managerial effectiveness in an NHS Hospital Trust. *International Journal of Public Sector Management*, 11(2/3): 130-138.
- Wu Bing-en 1984. *Relationship between Managerial Competency Development and Practice Effectiveness*. Thesis, Unpublished. Taipei, Taiwan: Department of Business Administration, National Cheng Chi University.
- Wu Chin-chi, Pan Yang-yuan, Ding Hsing-hsiang 1980. Relationship between internal/external locus of control and job satisfaction and performance. *Journal of National Cheng Chi University*, 3(3):139-146.
- Yukl GA 1998. *Leadership in Organizations*. 2<sup>nd</sup> Edition. Englewood Cliffs, NJ: Prentice-Hall.
- Yukl GA 2002. *Leadership in Organizations*. 5<sup>th</sup> Edition. Englewood Cliffs, New York: Prentice-Hall.
- Zhang Yi-chou, Huang Tsung-che 2004. *Human Resource Management in Medical Institutes*. Taipei: Farseeing Publishing Group.