Will the strategic fit between business and HRM strategy influence HRM effectiveness and organizational performance?

Dan-Shang Wang and Chi-Lih Shyu
Department of Industrial Education and Technology,
National Changhua University of Education, Taichung City, Taiwan

Abstract

Purpose – The purpose of this research is to examine how the fit between the strategy of business and HRM would affect HRM effectiveness and organizational performance. The paper aimed to find whether a better fit between firm's strategy and HRM strategy would strengthen HRM effectiveness and organizational performance.

Design/methodology/approach – The literature was reviewed from both the theoretical and empirical perspectives. Four hypotheses were formulated. Top 1,000 manufacturing companies in Taiwan were sampled, yielding valid questionnaire data and objective performance indexes from 181 firms. Multiple regressions and LISREL was employed to test the four hypotheses empirically.

Findings – The main findings were: the strategy fit between a firm's business and HRM strategy has a positive and direct impact on HRM effectiveness and labor productivity after analyzing by hierarchical multiple regression. HRM effectiveness could directly increase labor productivity while strategy fit strengthened the relationship between HRM effectiveness and labor productivity.

Practical implications – This study found that the alignment between the business and HRM strategy was the key factor of success for organizations. When the HRM strategy and business strategy were aligned, the effectiveness of HR practices and organizational performance were better than "that of not aligned" by contingency perspective. This study also estimated the practical significance through calculating the impact of HRM effectiveness and strategy fit on labor productivity by each standard deviation increase, respectively.

Originality/value – This study confirmed that a firm's competitive advantage can be enhanced by HRM practices and strategy fit. Strategy fit could also moderate the relationship between HRM effectiveness and labor productivity.

Keywords Human resource management, Management strategy, Human resource strategies, Organizational performance

Paper type Research paper

Introduction

In recent years, human resource management (HRM) has been integrated as the process of strategic management, through the development of a new discipline denominated strategic HRM (Wright and McMahan, 1992). Linking HRM to organizational strategy was accentuated with the rise of resource-based view of the firm currently (Amit and Schoemaker, 1993; Barney, 1995; Grant, 1991; Peteraf, 1993). The growing interest produced in this domain was owing to the idea that human resource should be considered as a strategic factor, not only for the role it plays in putting managerial strategy into effect, but also for the potentiality it becomes a source

of sustainable competitive advantage. So, there was a growing consensus about the idea that HRM strategy operated appropriately could increase organizational performance significantly.

The impact of HRM strategy and practices on organizational performance was an important topic in the field of HRM, industrial relations, and industrial and organizational psychology (Boudreau, 1991; Jones and Wright, 1992; Kleiner, 1990). Human resource management practices can help to crate a source of sustained competitive advantage, especially when they aligned with organization's competitive strategy (Begin, 1991; Butler *et al.*, 1991; Cappelli and Singh, 1992; Jackson and Schuler, 1995). While organizational human resource strategy is properly configured, it will provide a direct and economically significant contribution to organization performance.

The aim of this study was to examine the impact of strategy fit between firm's business and HRM strategy on HRM effectiveness and organizational performance. Simultaneously, the impact of interaction of HRM effectiveness and strategy fit on organizational performance was also examined.

Literature review
Wright and McMahan (1992) defined strategic human resource management (SHRM) as "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals". SHRM studies had focused on explicating the strategic role that HR could play in enhancing organizational effectiveness. Therefore, fit and integration were the important issues in SHRM. The concept of fit had received considerable attention in the field of strategy.

Strategy fit and HRM
The concept of strategy fit began with the research of Skinner (1969). He suggested that companies should tailor their production systems to perform the tasks that were vital to corporate success and consistent with the corporate strategy. A variety of authors had claimed that consistency between business strategy and HRM practices was an important component in the success of organization (Buffa, 1984; Fine and Hax, 1985; Kotha and Orne, 1989; Miller and Roth, 1994; Wheelwright, 1984).

Competitive strategy implies a series of systematic and related decisions that gives a business a competitive advantage relative to other businesses (Schuler and Jackson, 1987). The concept of business competitive strategy was derived primarily from Porter's (1985) classifications of generic strategies: cost leadership, differentiation, and focus. However, Bird and Beechler (1995) borrowed the name and ideas from the viewpoint of Miles and Snow (1984). They classified the business strategies as the following three types: defender, prospector, and analyzer. In the perspective of Bird and Beechler (1995), defenders cerate a secure market share with moderate, steady growth, narrowed its product-market domains, and limit their search for new opportunities and, instead, focus on internal ways to enhance organizational effectiveness. Given a narrow product market domain and an orientation toward efficiency, organizational requirements gravitate in favor of maintaining stability and focusing on internal operation. As a consequence, central control, high degrees of formalization, and elaborate control systems are hypothesized to promote organizational effectiveness (Bird and Beechler, 1995). Basic strategies have been aggressively maintained prominence within its chosen market segment, and ignored developments outside of this domain, not penetrated

deeper into current markets, and growth occur cautiously and incrementally. Therefore, these firms tend to focus on cost leadership.

The second strategy is the prospector. Firms employing this type of strategy are characterized by rapid growth and continue resource deployment/redeployment, particularly of management and technical personnel. These firms almost continually search for market opportunities, and they regularly experiment with potential responses to emerging environmental trends. They often are the creators of change and uncertainty. Constant product-market innovation reflects a response to this dynamic domain, requiring the capacity to closely monitor external events (Bird and Beechler, 1995). Additionally, the ability to develop new products and enter new markets requires creativity. Decentralized control system and rapid deployment of resources further characterize firms employing Prospector strategies. Hence, these firms focus on innovation and the introduction of new products and services.

The third strategy is the analyzer. Firms with this strategy can compete not only in the early phase of product development when the emphasis in on uniqueness, but later on as well, when efficient mass production becomes necessary to be competitive. In the stable domains, they operate routinely and efficiently through using formalized structures and processes. Consequently, these firms must identify and pursue new product-market opportunities while simultaneously maintaining a presence in existing domains. The pursuit of effectiveness in both areas necessitates an ability to be efficient yet flexible in production technologies. Accommodation of both stable and dynamic areas of operations requires similar differentiation with regard to human resources (Bird and Beechler, 1995). Finally, these firms tend to share characteristics of both prospectors and defenders.

Since the 1980s, HRM strategy has become an increasingly important HRM topic (Terpstra and Rozell, 1993) because it provides a means by which firms could enhance their competitiveness and promote managerial efficiency (Dyer, 1984). Effective HRM strategy systematically coordinate all individual HRM measures and implement them so as to directly influence employee attitude and behavior in a way that help a business to achieve its operational goal. Dowling and Schuler (1990) integrated the HRM strategies as utilization, facilitation, and accumulation. Dyer (1984) reclassified them as inducement, investment, and involvement, respectively. Firms adopt the accumulation strategy have been found to fill their job vacancies internally, to adopt multiple methods for promotion, and to offer a broader career path. Furthermore, they pay careful attention to employee training and all-around development, stress internal pay equity, and provide many types of employee incentives. On the other hand, firms adopt the utilization strategy have been found to assess performance on a short-term and individual basis, and to provide lower base pay and poorer job security. As for companies adopt the facilitation strategies, their HRM practices are mostly midway between those of firms adopting a utilization strategy and those of firms pursuing an accumulation strategy.

In the field of strategy fit, Bird and Beechler (1995) combined business strategy of Miles and Snow (1984) and HRM strategy of Dowling and Schuler (1990) and Dyer (1984), they indicated business should combine its competitiveness and HRM strategy to increase operational performance. In their paper, they suggested the appropriate match between business strategy and HRM strategy type as: prospector business strategy with utilizer HRM strategy, defender business strategy with accumulator HRM strategy, and analyzer business strategy with facilitator HRM strategy.

In the SHRM field, one major issue concerns whether HRM practices were universally superior to traditional, bureaucratic practices or if, rather, the employment system should be contingent upon organizational operating strategy or other contextual conditions (Huselid, 1995). The universalism perspective has taken a "best practices", the central argument is the contemporary environment confronting most organizations is turbulent and uncertain. As a consequence, such a highly competitive, globalize marketplace and rapidly changing technologies make the contributions of motivated and empowered employees at all levels of the firm critical to its ability to cope with environment hostility. In contrast, the contingency perspective argued that it was important that there would be an appropriate fit between HRM strategy and the external environment in which the organization operated. The absence of external fit would lead, in this perspective, to sub-optimal performance. In order to manage human resources effectively, firms nurture the type of employee behavior that was essential to the success of their competitive strategy (Dowling and Schuler, 1990; Grundy, 1998; Schuler, 1987; Schuler and Jackson, 1987). HRM strategy facilitated the development of a work force that meets the requirements of business strategy, so that organizational goals and missions would be achieved (Guest, 1987).

In addition, another theoretical model, the "behavioral perspective" (Jackson *et al.*, 1989) also supports the contingency perspective linking competitive strategy and HRM. It believes that behaviors of employee role are the fundamental to the effective implementation of competitive strategy. Firm's business strategy must be matched with the specific HR policies and practices, which will elicit particular sets of employee attitudes and behaviors to foster success. For example, organizations attempt to be more innovative than their competitors in the marketplace. Their employees must be willing to experiment with new ideas and take risk. Hence, the innovative organizations would be expected to own necessary personnel practices to supply the required behavioral styles. No wonder Guthrie *et al.* (2002) indicated that business strategy had a significantly impact on HRM practices. Besides Jackson *et al.* (1989) explored the relation between business strategy and HRM practices. They found that firms pursuing an innovation strategy tended to use compensation practices consistent with these needs (e.g., less reliance on incentives, more employment security) for the hourly employees, although no significant finding for their managerial employees.

Besides, Arthur (1992) explored the relation between business strategy and workplace industrial relation system in a sample of American steel minimills. He found that the type of industrial relations system adopted by the mill is related to the mill's business strategy. Consistent with the strategic choice perspective, these results suggest that understanding diversity in industrial relations practices and outcomes requires a broader and deeper understanding of business strategy in firms. The type of industrial relations policies and practices in place is strongly related to the business strategy choices made by different minimills. He also indicated that strategy fit between firm's business strategy and industrial relations policies would increase its operation performance.

In addition, the results suggest how unions in the steel industry and elsewhere that have bargained for influence over some aspects of these business strategy choices might use this influence to encourage the type of business strategy that fits with their membership's interest in increased shop-floor discretion, participation, training, and relatively high wages.

According to contingency theory (Miles and Snow, 1984; Porter, 1985; Schuler and Jackson, 1987) and behavioral perspective (Jackson *et al.*, 1989), HRM strategies must be combined with specific business competitive strategies, if they were then this alignment will enhance organizational performance or HRM effectiveness. The concept of the strategic fit refers mainly to the close linkage between HRM and business strategy will help retain and motivate employees. As stated previously, we used the contingency approach to obtain our first hypothesis:

H1. The better fit between a firm's competitive strategy and HRM strategy would increase the firm's HRM effectiveness.

HRM and organizational performance

Many studies had discussed the relationship of HRM effectiveness and organizational performance (Arthur, 1994; Dalton, 2005; Datta *et al.*, 2005; Gollan, 2005; Huselid, 1995; Whicker and Andrews, 2004). They discovered that HRM could be a source of sustained competitive advantage. HRM influences employee skills through the acquisition, development of a firm's human capital, and contributes to the achievement of business objectives. Thus, the second hypothesis is:

H2. HRM effectiveness had a positive and direct impact on organizational performance.

Strategy fit and organizational performance

A firm's HRM practices encouraged employees' behavior consistent with its business strategy was able to achieve superior performance (Delery and Doty, 1996). Moreover, application of the strategic fit concept help firms to manage their resources more efficiently, so that they can reduce operational costs as well as respond effectively to environmental threats and new opportunities (Bird and Beechler, 1995). In addition, Guthrie *et al.* (2002) based on behavioral perspective to examine the different organizational performance impact on the differentiation competitive strategy aligned with greater use of high involvement work practices (HIWPs) and misalignment. They found a moderate association between an orientation toward competing on a differentiation basis and the use of HIWPs. They also indicated that utilizing higher levels of HIWIPs was particularly beneficial to firms pursuing a differentiation strategy and less so far firms competing more on the basis of cost and a strong association between HIWPs and firm performance for the differentiators and no such relationship for the cost leadership group. It means strategy fit between business and HRM strategy could affect organizational performance. Consequently, according to contingency theory and behavioral perspective, effective linkage between business strategies and HRM strategies may enhance organizational performance. Thus, the third hypothesis is:

H3. The better fit between a firm's competitive strategy and HRM strategy would increase the firm's performance.

The result of effective HRM activities in achieving a competitive edge was broadly argued in the past (Arthur, 1994; Becker and Huselid, 1998; Gollan, 2005; Huang, 2001; Huselid, 1995). Scholars of contingency had found both organizational performance and HRM effectiveness would increase significantly while a firm's HRM strategy

aligned with its competitive strategy (Guest and Hoque, 1994; Hoque, 1999; Huang, 2001; Rodriguez and Ventura, 2003). However, very few studies had explored the interactive effect of strategy fit and HRM effectiveness on organizational performance. Hence, we tried to submit the hypothesis as follows:

H4. The better fit between a firm's competitive and HRM strategy would strengthen the relationship between HRM effectiveness and organizational performance.

The conceptual model of this study could be shown as Figure 1.

Methods
Sample and data collection
In order to test the above four hypotheses, top 1000 manufacturing companies in Taiwan were sampled. The questionnaires were answered by firm's HRM executives in 2003. Finally, 181 valid questionnaires had returned, the response rate was 18.1 percent. Becker and Huselid (1998) reviewed studies showed that response rates ranged from 6 to 28 percent with an average of 17.4 percent, our response rate was acceptable in the survey-based HRM studies. Besides, labor productivity in 2003/2002 and other organizational characteristics were obtained from the secondary data set by the *Magazine of Common Wealth* in 2004 and 2003.

Measurement
Labor productivity. While a number of outcome measures (e.g., turnover, absenteeism, profits) have been used to ascertain the effectiveness of HRM, we focused on labor productivity for a number of reasons. First, labor productivity was a crucial organizational outcome. At a general level, labor productivity, defined as total output divided by labor inputs (Samuelson and Nordhaus, 1989), indicated the extent to which a firm's labor force was efficiently creating output. Second, because connections between human capital and productivity – especially labor productivity – were relatively direct, the face validity of this measure of firm success was also relatively high (Dyer and Reeves, 1995). Finally, productivity has been the most frequently used outcome variable in a large body of work in the SHRM literature. We measured labor productivity as the logarithm of the ratio of firm sales to number of employees. In order to measure labor productivity in 2003, data had been obtained from the *Magazine of Common Wealth* in Taiwan in 2004. Besides, in order to increase the accuracy of inferring the impact of strategy fit on HRM effectiveness and labor productivity, we controlled their last year (2002) labor productivity in the analytic procedures.
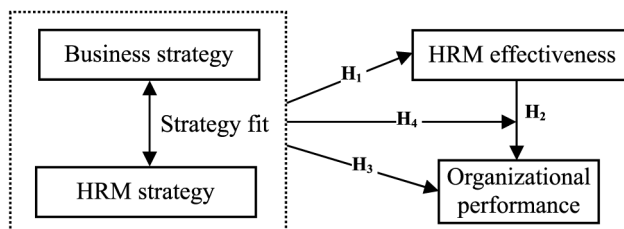
Figure 1.
Conceptual model

Business strategy. Based on the classification of Bird and Beechler (1995), we divided competitive strategy into three types: defender, prospector, and analyzer. We used it to measure responder's business strategy and classify them into nominal categories. HRM executives read brief descriptions of strategy types and were asked to identify the one that closely resembled their firm's strategy. The descriptive analysis results revealed that "analyzer strategy" businesses (104 firms, 57.5 percent) accounted for a majority of our samples. The second largest group was the "defender strategy" (42 firms, 23.2 percent). "Prospector strategy" occupied only 16.6 percent (30 firms) of the respondents.

HRM strategy. This study adopts the theoretical definitions of Dowling and Schuler (1990), Huang (2001), Schuler (1989), and Schuler and Jackson (1987). This scale includes 13 items designed to assess the nature of human resource practices followed by surveyed firms. They included the degree of participation of employees in HRM planning, content of job descriptions, resources of recruit, the status of employee's promotion, the orientation of performance appraisal (focused on individual or team), the standard of performance appraisal (short-term or log-term), the foundation of performance appraisal (process or result perspective), the rate of bonus, the tendency of compensation design (internal or external equity), the orientation of employees training and development, the rate of employees training, the degree of job security, and labor relation. Respondents answered this on five-point Likert-type scales ranging from $1 =$ "very much disagree" to $5 =$ "very much agree". The higher score is more tended to the HRM strategy of accumulation, and lower score is closer to the HRM strategy of utilization.

Then, we applied the K-means cluster method to classify the responding firms into different HRM strategy groups. Next, discrimination analysis was employed to examine the results of the classification. The cluster analysis results indicated that the HRM strategy of accumulation (92 firms, 50.8 percent) accounted for a majority of the samples. The second largest group was the HRM strategy of utilization (52 firms, 28.7 percent), "HRM strategy of facilitation" accounted just 17.1 percent (31 firms) of the respondents. The results from discrimination analysis revealed that 13 HRM practices were significantly different across the three strategies (Wilks' Λ values among 0.395 to 0.920), and the correct discrimination rate was 93.1 percent (163/176). It means our classification had a sufficient discriminative effect.

Strategy fit. Strategy fit had occurred when firm's HRM strategy aligned with its competitive strategy. According to the theoretical model of Bird and Beechler (1995), when a firm adopts a prospector competitive strategy and HRM strategy of utilization, a defender competitive strategy and HRM strategy of accumulation, or a analyzer competitive strategy and HRM strategy of facilitation, firm's HRM strategy and competitive strategy were consistent (the above 3 strategy matches were strategic fit, other matches were not fit). The results indicated that 40.6 percent (71 firms) of the firms were strategic fit, and 59.4 percent of firms were not fit. We also found "defender competitive strategy vs. HRM strategy of accumulation" accounted for a majority of the strategy fit firms (32 firms, 45.07 percent), "analyzer competitive strategy v. HRM strategy of facilitation" accounted for second largest group (25 firms, 35.21 percent). "Prospector competitive strategy v. HRM strategy of utilization" firms occupied just 19.72 percent (14 firms) of the respondents.

HRM effectiveness. Based on intellectual capital perspective, HRM effectiveness was recognized as organizational intellectual capital management practices in this study.

After reviewing the relevant literature, we concluded structural capital and relation capital as two dimensions of intellectual capital. The 23-item scale was developed and revised by Huselid *et al.* (1997), Huang (2001), Lee (1999), Wang and Gau (2004). The structural capital of HRM effectiveness was measured by 14 items to assess the effectiveness of performance appraisal, employee skill, training and development of employee, job performance, status of HRM rule, the design of team corporation, the degree of endowment, HRM activities, management development, job rotation, job descriptions and rules, the design of employee appeal, information management of HRM, and the control mechanism of the labor cost that facilitate to build up human capital of the organization. And the relation capital of HRM effectiveness (9 items) measured the procedure of recruitment and selection, labor relation management, career development of employee, job environment, compensation and incentives management, the degree of jib security, employee benefit, job orientation, and training and development of employee that facilitate to remain and increase human capital of the organization. All items of HRME were used five-point Likert-type scales. The composite reliabilities of this scale were 0.94 and 0.90 in two dimensions which were estimated based on confirmatory factor analysis (CFA). According to the standard of Wortzel (1979) and Fornell and Larcker (1981), the internal consistent within these two dimensions were acceptable.

In order to assess the convergent and discriminate validity, we also performed CFA on these scales. The results of CFA indicated that value of the χ^2/df, goodness of fit index (GFI), comparative fit index (CFI), and the root mean square error of approximation (RMSEA) were 2.53, 0.92, 0.94, and 0.65, respectively. They were fit and consistent with the standard of Bollen (1989), Browne and Cudeck (1993), Joreskog and Sorbom (1993), and Medsker *et al.* (1994). Factor loading of each item were above 0.50. The t values of factor loading of each item were above 2 and greater than twice its standard error. Thus, the convergent validity of HRM effectiveness was very sound. Besides, we also assessed the discriminate validity by testing the χ^2 difference for the constrained (estimated correlation parameter was constrained to 1.0) and unconstrained (correlation parameter was estimated free) model (Anderson and Gerbing, 1988). The results indicated that χ^2 difference between 2 models was significant ($\triangle\chi^2 = 177.64$, $\triangle$df $= 1$, $p < 0.001$). Moreover, the confidence interval (± 2 standard errors) around the estimated correlation was not included 1.0 (between 0.49 and 0.61). Thus, the discriminate validity of this scale was good enough.

Control variables. Reviewing the previous studies, we used firm's age, firm's capital, scale of firm, number of employees in HR department, industrial sector, and market competitive degree as control variables in our analysis. Firm's age was measured as the number of years the firm had operated. Firm's capital was measured by the logarithm of the firm's total capital. Firm scale was measured by the logarithm of the total employees. Besides, we used dummy variables to treat both variables of industrial sector and market competition. We classified our sample into traditional sector (as the reference group) and high tech sector; the lower and middle market competitive degree (as the reference group), high, and very high degree of competitive market.

Analyses and results

Table I presents the means, standard deviations and zero-order correlations among all variables in this study. Hierarchical generally least squares (GLS) regression analysis

Variable	Mean	SD.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Productivity	5.94	0.65														
2. AHRMS	0.51	0.50	0.25													
3. FHRMS	0.17	0.38	0.27	−0.03												
4. PBS	0.19	0.39	−0.03	−0.07	0.12											
5. ABS	0.58	0.49	0.07	0.05	0.13	−0.18										
6. DBS	0.23	0.42	−0.05	0.11	−0.15	−0.26	−0.24									
7. Strategy fit	0.41	0.50	0.29	0.06	0.04	0.05	0.04	0.05								
8. HRME	3.37	0.57	0.26	0.26	0.03	0.04	0.13	−0.09	0.25							
9. Firm's age	25.49	15.37	0.13	0.07	−0.03	0.00	0.08	0.10	0.14	0.04						
10. Firm's capital	2.85	1.42	0.09	0.08	−0.16	−0.02	0.03	0.05	0.08	0.09	0.05					
11. Firm size	7.08	3.25	0.09	0.08	0.07	−0.07	0.06	0.12	0.03	0.08	0.07	0.10				
12. HR number	7.19	14.50	0.05	0.17	0.09	0.06	0.09	0.05	0.03	0.07	0.02	0.35	0.16			
13. High tech industry	0.49	0.50	0.20	0.11	0.05	0.01	0.04	0.01	0.12	0.19	0.04	0.04	0.07	0.01		
14. High competitive	0.57	0.50	0.18	0.14	0.06	0.01	0.07	−0.07	0.02	0.17	0.06	0.06	0.05	0.07	0.12	
15. Very high competitive	0.23	0.42	0.19	0.17	0.07	0.00	0.17	−0.20	0.00	0.17	−0.06	0.08	0.06	0.06	0.20	0.04

Notes: Correlations greater than 0.15 are significant at $p < 0.10$; those greater than 0.18 are significant at $p < 0.05$; and those greater than 0.24 are significant at $p < 0.01$; two-tailed tests; natural logarithm of revenue (in thousands NTD) per employee; natural logarithm of firm capital; natural logarithm of total number of employees; AHRMS: accumulation HRM strategy; FHRMS: facilitation HRM strategy; PBS: prospector business strategy; ABS: analyzer business strategy; DBS: defender business strategy; HRME: HRM effectiveness

Table I.
Mean, standard deviation
and correlation matrix

was used to test 4 hypotheses mentioned previously. Table II presents the analyzing results. In the analysis, strategy fit was dummy-coded as 1 for fit and 0 for not fit. The dependent variable was HRM effectiveness in model 1 and 2, and was 2003 labor productivity in model 3-6. Because HRM effectiveness, strategy fit, and labor productivity might exist relationships causally. We tested these causal relationships by analyzing the impact of HRM effectiveness and strategy fit on labor productivity in 2002. Findings indicated that HRM effectiveness, strategy fit, and interaction between HRM effectiveness and strategy fit had no significant impacts on labor productivity. Thus, we controlled 2002 labor productivity in model 3-6, while not controlled it in model 1 and 2.

In model 1, which included the control variables, explained nearly 12 percent of the variance in HRM effectiveness ($p < 0.01$). We added the strategy fit into model 2. Consistently with the past research (e.g., Bird and Beechler, 1995; Porter, 1985; Schuler and Jackson, 1987), results indicated that strategy fit had a positive and direct impact on HRM effectiveness ($t = 4.41$, $p < 0.001$). This has supported our first hypothesis. The variable of strategy fit variable could explain an additional 11.9 percent of the variance in HRM effectiveness. In model 3-6 (dependent was labor productivity in 2003), we found control variables explained nearly 14 percent of the variance in labor productivity ($p < 0.001$). The strategy fit variable could explain an additional 12.9 percent; HRM effectiveness variable would explain an additional 9.9 percent of the variance in labor productivity ($p < 0.001$). We also found both the strategy fit and HRM effectiveness had positive and direct impact on labor productivity ($t = 4.89, 3.47$; $p < 0.001$). This provided strong support for the hypothesis 2 and 3.

We used moderated multiple regression to test for the expected interaction between strategy fit and HRM effectiveness. The effect of interaction was plotted by separate equations for the high and low (1 SD) conditions of HRM effectiveness, as recommended by Aiken and West (1991) and showed in Figure 2. To test for statistical significance, we examined both the beta weight of the interaction term and the $\triangle R^2$ of the cumulative mod suggested by Aiken and West (1991). To address the issue of multicollinearity arising from the interactive terms being highly correlated with its original variables. Thus, we assessed whether multicollinearity was a problem by computing the variance inflation factors (VIFs). None of the VIFs in this study approached the threshold value of 10 suggested by Myers (1990). So there is no serious multicollinearity problem for the study data.

As indicated in Table II, the beta weight for the interaction of strategy fit and HRM effectiveness was significant in the regression model ($t = 2.11, p < 0.05$), the $\triangle R^2$ was also significantly ($t = 2.01$, $p < 0.05$). It suggested that strategy fit moderated the relationship between HRM effectiveness and labor productivity. Firm's HRM strategy aligned with business strategy would strengthen the relationship between HRM effectiveness and labor productivity, which support our fourth hypothesis.

Conclusions and discussion
In this study, our findings have also supported by the previous research findings which suggested that firm's competitiveness can be enhanced by HRM practices (Arthur, 1994; Bracken, 2006; Dalton, 2005; Datta et al., 2005; Gollan, 2005; Guthrie, 2001; Huselid, 1995; Ozcelik and Ferman, 2006; Whicker and Andrews, 2004). Although there were few studies explored the impact of strategy fit between firm's business and HRM strategy on HRM

Table II.
Results of HRM effectiveness and labor productivity by multiple regression

Variables	HRM effectiveness			Labor productivity		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	3.523****	2.904****	3.408*****	1.812***	1.989****	1.925*****
Firm's age	0.006	0.007	−0.014	−0.001	−0.003	−0.001
Firm's capital	0.005	0.002	0.002	0.004	0.005	0.004
Firm size	0.010	0.009	0.009	0.010	0.010	0.012
Number of employees in HR department	0.006	0.008	0.008	0.007	0.007	0.006
High tech industry	0.249*****	0.191*****	0.121***	0.110***	0.129***	0.101***
High market competitive	0.205***	0.133**	0.158***	0.132***	0.132***	0.113**
Very high market competitive	0.183***	0.110**	0.123**	0.112**	0.129***	0.110**
Labor productivity (last year)			0.087*	0.093*	0.089*	0.091*
Strategy fit		0.414*****		0.294*****	0.290*****	0.281*****
HRM effectiveness					0.218**	0.209***
HRM effectiveness * Strategy fit			0.143*****			0.160*
R^2	0.117***	0.236*****	0.143*****	0.272*****	0.371*****	0.383*****
$\triangle R^2$		0.119*****		0.129*****	0.099*****	0.012**
F for $\triangle R^2$		16.242*****		23.985*****	14.374*****	5.152**

Notes: Unstandardized coefficients are reported; $n = 175$ for all models; in model 1-2, dependent variable was HRM effectiveness; in model 3-5, dependent variable was labor productivity in 2003 that was published in 2004; labor productivity (last year): labor productivity in 2002 that was published in 2003; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$; one-tailed tests; in model 2, 4 and 5, the dummy variables were used (strategy not fit served as the reference group, so that dummy variable representing strategy fit)

Labor productivity
(in thousands)
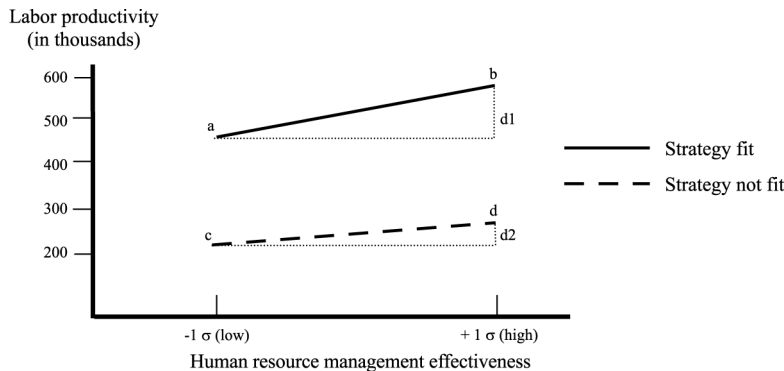
Note: [a] labor productivity =$450,370 NTD per employee   [b] labor productivity = $545,032 NTD per employee

[c] labor productivity =$231,943 NTD per employee   [d] labor productivity = $257,439 NTD per employee

[d1] difference of labor productivity from $\pm 1 \sigma$ HRM effectiveness (strategy fit) = $94,662 NTD per employee

[d2] difference of labor productivity from $\pm 1 \sigma$ HRM effectiveness (not fit) = $25,496 NTD per employee

1USD $\cong$ 33-34NTD during 2002 and 2003

effectiveness and organizational performance. And, most often, previous researches explored the fit effect might be in one out of six or eight different analyses in a study. The impacts of strategy fit on HRM effectiveness and organizational performance were ambiguously. We tried to examine this effect based on contingency perspective. We found strategic fit would increase both the HRM effectiveness and organizational performance that consistent with the previous findings as summarized in Table III. We have also found the impact of strategy fit on labor productivity was higher than the impact of HRM effectiveness on labor productivity.

In Table III, we found the previous researches had confirmed the contingency effect of strategic fit and organizational performance through both direct and interactive effects. Adopting interactive approach, most research had examined the interactive effect between HR practices and business strategy on organizational performance. This approach tended to examine the moderation effect among HR practices, business strategy, and organizational performance (moderation perspective). They often divide HR practices and business strategies into n categories before examining the effect of fit.

Therefore, the approach also analyzed the significant difference between business strategy and organizational performance across HR practices. They would hardly examine the impact of fit (match effect) on the organizational performance. Same as Delery and Doty (1996), Guest and Hoque (1994), Smith and Reece (1999), our study assessed the direct effect that organizations took the appropriate HRM strategy for their business strategy (match perspective). We examined the actual impact of fit between HRM strategy and business strategy on organizational performance. Besides, we also found a significant contingency effect, the strategy fit between a firm's business and HRM strategy would moderately increase the relationship between HRM effectiveness and labor productivity.

Following the advice of the previous SHRM scholars (e.g., Becker and Gerhart, 1996; Huselid, 1995), we estimated the practical significance of our results by calculating the impact of one standard deviation (1σ) increase in HRM effectiveness on labor

Table III.
Summary of the linkage between HRM and organizational performance

Study	Unit of analysis	Sample	Measure of HR practices	Measure of HR system	Measure of business strategy	Outcome/performance variables	Fit examine
Becker and Huselid (1998)	Company	702 publicly quoted USA firms with more than 100 employees from 3,840 firms	21 HRM practices	Aggregate index of 21 items and divide into 4 clusters	Cost leadership, differentiation, and focus strategy from Porter's perspective (5 items)	Market value[a, b]	Interaction between HR system and implementation alignment test (moderation perspective)
Delery and Doty (1996)	Company	1,050 USA banks (senior HR manager)	7 HRM practices	3 ideal types: market, middle of road, internal	Miles and Snow's prospector, analyzer and defender strategy (13 items)	Return on assets[a, b] Return on equity[a, b]	Assess the degree of firm's HR practice align with their business strategy (match perspective)
Guest and Hoque (1994)	Workplace	390 UK Greenfield sites mainly manufacturing	21 HRM practices	4 groups on basis of median of aggregation of 21 practices and measure of whether have HR strategy	Quality enhancers and cost leadership strategy (2 items)	Turnover a Productivity[a, b]	Based on a single item asking "HRM strategy formally endorsed/align with business strategy" (match perspective)
Huang (2001)	Workplace	209 hotels in the UK with 25 or more employees	22 high commitment practices	3-fold classification of HRM – based on practices	Cost leadership, differentiation, and focus strategy (3 items)	Productivity[a] inancial performance[a, b]	Relationship between HRM and performance across 3 groups (moderation perspective)
Huang (2001)	Company	315 firms of Chinese HRM association and HRD Association of Republic of China	13 HRM strategy by Dowling and Schuler	3 groups – utilization, facilitation, and accumulation — based on cluster analysis from 13 items	Cost leadership, differentiation, and focus strategy from Porter's perspective (8 items)	8 subjective performance[b]	Interaction between HRM strategy and business strategy (moderation perspective)

(*continued*)

Study	Unit of analysis	Sample	Measure of HR practices	Measure of HR system	Measure of business strategy	Outcome/performance variables	Fit examine
Huselid (1995)	Company	968 publicly quoted USA firms with more than 100 employees from 3,452 firms (senior HR manager)	21 HRM practices—factor analysis revealed 2 factor—skills/motivation	2 scales from factor analysis	Strategic integration measure used to validate scale	Turnover Productivity[a, b] Financial performance Tobin's q [a]	Interaction between HR system and business strategy (moderation perspective)
Rodriguez and Ventura (2003)	Company	120 Spanish manufacturing plants with 100 or more workers from 2,225 plants	15 HR practices falling under 2 factors — development and compensation practices	2 scales based on factors	Miles and Snow's prospector, analyzer and defender strategy (1 item)	Turnover Productivity[a, b] Subjective performance[a]	Interaction between HR system and business strategy (moderation perspective)
Smith and Reece (1999)	Company	30 USA firms in specialty insulation and acoustics (SIA) from 489 firms	5 HR practices		Differentiation, and focus strategy from Porter's perspective (8 items)	Return on capital employed[b] Productivity[a]	Assess the extent that business strategy aligned with operation elements (match perspective)
Youndt et al. (1996)	Workplace	97 manufacturing plants in the metal-working industry from 512 plants in USA	9 HR practices for HCS	Aggregate index of HCS based on 9 practices	Quality, delivery flexibility and cost strategy (31 items)	Machine efficiency[a, b] Productivity[a, b]	Interaction between HR system and manufacturing Strategy (moderation perspective)
Our study	Company	181 firms from top 1,000 manufacturing companies in Taiwan	3 groups – utilization, facilitation, and accumulation – based on cluster analysis	3 groups – utilization, facilitation, and accumulation – based on cluster analysis	Miles and Snow's prospector, analyzer and defender strategy (1 item)	Labor productivity[a, b]	Based on "HRM strategy formally aligned with business strategy"(match perspective)

Notes: [a] HRM practices or system significantly related outcome; [b] fit significantly related outcome

Table III.

productivity. Holding all controlled variables as their means, the estimated main effects showed that each 1σ increase in HRM effectiveness is associated with 27,772 NTD productivity increase per employee. This represents there is 7.31 percent gain in labor productivity over the average productivity per employee (379,931 NTD). Compared with the calculations reported by Huselid (1995) and Becker and Huselid (1998), their gains were 16 and 4.8 percent, respectively. Thus, our estimation was reasonable. For the average sized firm in our sample, the effect of HRM effectiveness on labor productivity would generate an additional 32.85 million NTD in total revenue. We also found the strategic fit could influence the relationship between HRM effectiveness and labor productivity. While the strategy between HRM and business were fit, each 1σ increase in HRM effectiveness will increase 47,331 NTD productivity per employee. This means there is 9.51 percent gain over the average productivity per employee of 497,701 NTD (it increases an additional 55.99 million NTD in total revenue). In contrast, while the strategy between HRM and business were not aligned, each 1σ increase in HRM effectiveness will increase just 12,748 NTD productivity per employee. This tells us that 5.21 percent gain over the average productivity per employee of 244,691 NTD (it would increase an additional 15.08 million NTD in total revenue).

A variety of researches had indicated that the alignment between a firm's business and HRM strategy was the key factor of success for organizations. HRM practices could provide a source of sustainable competitive advantage. HRM research has generally ignored the influence of strategy fit on the relationship between a firm's HRM effectiveness and labor productivity. Although we have confirmed when a firm's HRM strategy and business strategy were aligned, the effectiveness of HR practices and organizational performance were better than "that of not aligned" by contingency perspective. But, we examined the fit effect accord to Bird and Beechler (1995) theoretic model. Our fit model is not a general and unique way to do the strategy fit between business and HRM strategies. Further studies might be able to identify and confirm the robustness of our strategic fit findings. Whenever the enterprises want to promote their organizational performance, they would better adopt the suitable operating strategy based on the conditions of their organization structure, environmental, and context firstly. Then, align their competitive strategy with HRM strategy secondly. Finally, this better strategic fit will enhance not only HRM effectiveness but also organizational performance.

References

Aiken, L.S. and West, S.G. (1991), *Multiple regression: Testing and interpreting interactions*, Sage, Newbury Park, CA.

Amit, R. and Schoemaker, P.J.H. (1993), "Strategic asserts and organizational rent", *Strategic Management Journal*, Vol. 14 No. 1, pp. 33-46.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-23.

Arthur, J.B. (1992), "The link between business strategy and industrial relations systems in American steel minimills", *Industrial and Labor Relations Review*, Vol. 45, pp. 488-506.

Arthur, J.B. (1994), "Effects of human resource systems on manufacturing performance and turnover", *Academy of Management Journal*, Vol. 37 No. 3, pp. 670-87.

Barney, J.B. (1995), "Looking inside for competitive advantage", *Academy of Management Executive*, Vol. 9 No. 4, pp. 49-61.

Becker, B.E. and Gerhart, B. (1996), "Human resources and organizational performance: progress and prospects", *Academy of Management Journal*, Vol. 39 No. 4, pp. 779-801.

Becker, B.E. and Huselid, M.A. (1998), "High performance work systems and managerial implications", in Rowland, K.M. and Ferris, G.R. (Eds), *Research in Personnel and Human Resource Management*, JAI Press, Greenwich, CT, pp. 53-101.

Begin, J.P. (1991), *Strategic Employee Policy: An Organizational Systems Perspective*, Prentice-Hall, Englewood Cliffs, NJ.

Bird, A. and Beechler, S. (1995), "Links between business and transnational human resource management strategy in US based Japanese subsidiaries: an empirical investigation", *Journal of International Business Studies*, Vol. 26 No. 1, pp. 23-46.

Bollen, K.A. (1989), *Structural Equations with Latent Variables*, Wiley, New York, NY.

Boudreau, J.W. (1991), "Utility analysis in human resource management decision", in Dunnette, M.D. and Hough, L.M. (Eds), *Handbook of Industrial and Organizational Psychology*, 2nd ed., Vol. 2, Consulting Psychologists Press, Palo Alto, CA, pp. 621-745.

Bracken, D.W. (2006), "The workforce scorecard: managing human capital to execute strategy", *Personnel Psychology*, Vol. 59 No. 1, pp. 243-6.

Browne, M.W. and Cudeck, R. (1993), "Alternative ways of assessing model fit", in Bollen, K.A. and Long, J.S. (Eds), *Testing Structural Equation Models*, Sage, Newbury Park, CA.

Buffa, E.S. (1984), "Making American manufacturing competitive", *California Management Review*, Vol. 26 No. 3, pp. 29-46.

Butler, J.E., Ferris, G.R. and Napier, N.K. (1991), *Strategy and Human Resources Management*, South-Western, Cincinnati, OH.

Cappelli, P. and Singh, H. (1992), "Integrating strategic human resources and strategic management", in Lewin, D., Mitchell, O.S. and Sherer, P. (Eds), *Research Frontiers in Industrial Relations and Human Resources*, Industrial Relations Research Association, Madison, WI.

Dalton, C.M. (2005), "Human resource management in a global environment: keys for personal and organizational success: an interview with Eliza Hermann", *Business Horizons*, Vol. 48 No. 3, pp. 193-204.

Datta, D.K., Guthrie, J.P. and Wright, P.M. (2005), "Human resources management and labor productivity: does industry matter?", *Academy of Management Journal*, Vol. 48 No. 1, pp. 135-47.

Delery, J.E. and Doty, D.H. (1996), "Modes of theorizing in strategic human resource management: tests of universalistic, contingency, and configurational performance predictions", *Academy of Management Journal*, Vol. 39 No. 4, pp. 802-35.

Dowling, P. and Schuler, R. (1990), "Human resource management", in Blanpian, R. (Ed.), *Comparative Labor Law and Industrial Relations in Industrialized Market Economics*, Boston Kluwer Law and Taxation Publishers, Deventer, pp. 125-49.

Dyer, L. (1984), "Studying human resource strategy: an approach and an agenda", *Industrial Relations*, Vol. 23 No. 2, pp. 156-69.

Dyer, L. and Reeves, T. (1995), "Human resource strategies and firm performance: what do we know and where to we need to go?", *International Journal of Human Resource Management*, Vol. 6 No. 3, pp. 656-70.

Fine, C.H. and Hax, A.C. (1985), "Manufacturing strategy: a methodology and an illustration", *Interfaces*, Vol. 15 No. 6, pp. 28-46.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Gollan, P.J. (2005), "High involvement management and human resource sustainability: the challenges and opportunities", *Asia Pacific Journal of Human Resources*, Vol. 43 No. 1, pp. 18-33.

Grant, R.M. (1991), "The resource-based theory of competitive advantage: Implications for strategy formulation", *California Management Review*, Vol. 33 No. 3, pp. 114-35.

Grundy, T. (1998), "How are corporate strategy and human resources strategy linked?", *Journal of General Management*, Vol. 23 No. 3, pp. 49-72.

Guest, D.E. (1987), "Human resource management and industrial relations", *Journal of Management Studies*, Vol. 24 No. 5, pp. 503-21.

Guest, D.E. and Hoque, K. (1994), "The good, the bad and the ugly: employee relations in new non-union workplaces", *Human Resource Management Journal*, Vol. 5 No. 1, pp. 1-14.

Guthrie, J.P. (2001), "High-involvement work practices, turnover, and productivity: evidence from New Zealand", *Academy of Management Journal*, Vol. 44 No. 1, pp. 180-90.

Guthrie, J.P., Spell, C. and Nyamori, R.O. (2002), "Correlates and consequences of high involvement management: the role of competitive strategy", *The International Journal of Human Resource Management*, Vol. 13 No. 1, pp. 183-97.

Hoque, K. (1999), "Human resource management and performance in the UK hotel industry", *British Journal of Industrial Relationship*, Vol. 37 No. 3, pp. 419-43.

Huang, T.C. (2001), "The effects of linkage between business and human resource management strategies", *Personnel Review*, Vol. 30 No. 2, pp. 132-51.

Huselid, M.A. (1995), "The impact of human resource management practices on turnover, productivity, and corporate financial performance", *Academy of Management Journal*, Vol. 38 No. 3, pp. 635-72.

Huselid, M.A., Jackson, S.E. and Schuler, R.S. (1997), "Technical and strategic human resource management effectiveness as determinants of firm performance", *Academy of Management Journal*, Vol. 40 No. 1, pp. 171-88.

Jackson, S.E. and Schuler, R.S. (1995), "Understanding human resource management in the context of organizations and their environments", *Annual Review of Psychology*, Vol. 46 No. 1, pp. 237-64.

Jackson, S.E., Schuler, R.S. and Rivero, J.C. (1989), "Organizational characteristics as predictors of personnel practices", *Personnel Psychology*, Vol. 42 No. 4, pp. 727-86.

Jones, G.R. and Wright, P.M. (1992), "An economic approach to conceptualizing the utility of human resource management practices", in Rowland, K. and Ferris, G. (Eds), *Research in Personnel and Human Resources Management*, Vol. 10, JAI Press, Greenwich, CT, pp. 271-99.

Joreskog, K.G. and Sorbom, D. (1993), *New Features in LISREL 8*, Scientific Software International, Chicago, IL.

Kleiner, M.M. (1990), "The role of industrial relations in firm performance", *Employee and Labor Relations*, BNA Press, Washington, DC.

Kotha, S. and Orne, D. (1989), "Generic manufacturing strategies: a conceptual synthesis", *Strategic Management Journal*, Vol. 10 No. 3, pp. 211-31.

Lee, Y-D. (1999), "An exploratory study of measuring human resource management effectiveness for high-tech businesses in Taiwan", *Journal of Chang Jung Christian University*, Vol. 3 No. 2, pp. 35-49.

Medsker, G.J., Williams, L.J. and Holahan, P.J. (1994), "A review of current practice for evaluation causal models in organizational behavior and human resources management research", *Journal of Management*, Vol. 20 No. 2, pp. 439-64.

Miles, R.E. and Snow, C.C. (1984), "Designing strategic human resource systems", *Organization Dynamics*, Vol. 13 No. 1, pp. 36-52.

Miller, J.G. and Roth, A.V. (1994), "A taxonomy of manufacturing strategies", *Management Science*, Vol. 40 No. 3, pp. 285-304.

Myers, R. (1990), *Classical and Modern Regression with Applications*, 2nd ed., Duxbury Press, Boston, MA.

Ozcelik, G. and Ferman, M. (2006), "Competency approach to human resources management: outcome and contributions in a Turkish cultural context", *Human Resource Development Review*, Vol. 5 No. 1, pp. 72-91.

Peteraf, M.A. (1993), "The cornerstones of competitive advantage: a resource-based view", *Strategic Management Journal*, Vol. 14 No. 3, pp. 179-91.

Porter, M.E. (1985), *Competitive Advantage: Creation and Sustaining Superior Performance*, Free Press, New York, NY.

Rodriguez, J.M. and Ventura, J. (2003), "Human resource management systems and organizational performance: an analysis of the Spanish manufacturing industry", *International Journal of Human Resource Management*, Vol. 14 No. 7, pp. 1206-26.

Samuelson, P.A. and Nordhaus, W.D. (1989), *Economics*, 13th ed., McGraw-Hill, New York, NY.

Schuler, R.S. (1987), "Human resource management practices choices", *Human Resource Planning*, Vol. 10 No. 2, pp. 1-19.

Schuler, R.S. (1989), "Strategic human resource management and industrial relation", *Human Relations*, Vol. 42 No. 2, pp. 157-84.

Schuler, R.S. and Jackson, S.E. (1987), "Organizational strategy and organization level as determinants of human resource management practices", *Human Resource Planning*, Vol. 10 No. 3, pp. 125-42.

Skinner, W. (1969), "Manufacturing – missing link in corporate strategy", *Harvard Business Review*, Vol. 47 No. 3, pp. 136-45.

Smith, T.M. and Reece, J.S. (1999), "The relationship of strategy, fit, productivity, and business performance in a services setting", *Journal of Operation Management*, Vol. 17, pp. 145-61.

Terpstra, D.E. and Rozell, E.J. (1993), "The relationship of staffing practices to organizational level measures of performance", *Personnel Psychology*, Vol. 46 No. 1, pp. 27-48.

Wang, D-S. and Gau, Y-W. (2004), "The impact of human resource management strategy and capability on human resource management effectiveness", unpublished paper presented at the 2004 Innovation and Change Conference of Human Resource, Human Resource Development Association of ROC.

Wheelwright, S.C. (1984), "Manufacturing strategy: defining the missing link", *Strategy Management Journal*, Vol. 5 No. 1, pp. 77-91.

Whicker, L.M. and Andrews, K.M. (2004), "HRM in the knowledge economy realising the potential", *Asia Pacific Journal of Human Resources*, Vol. 42 No. 2, pp. 156-66.

Wortzel, R. (1979), "New life style determinants of woman's food shopping behavior", *Journal of Marking*, Vol. 43, pp. 28-9.

Wright, P.M. and McMahan, G.C. (1992), "Theoretical perspectives for strategic human resource management", *Journal of Management*, Vol. 18 No. 2, pp. 295-320.

Youndt, M.A., Snell, S.A., Dean, J.W. and Lepak, D.W. (1996), "Human resource management, manufacturing strategy, and firm performance", *Academy of Management Journal*, Vol. 39 No. 4, pp. 836-65.

Further reading

Boudreau, J.W. and Ramstad, P.M. (1997), "Measuring intellectual capital: learning from financial history", *Human Resource Management*, Vol. 36 No. 3, pp. 343-56.

Delaney, J.T. and Huselid, M.A. (1996), "The impact of human resource management practices on perceptions of organizational performance", *Academy of Management Journal*, Vol. 39 No. 4, pp. 949-69.

About the authors

Dan-Shang Wang is a professor in the Department of Industrial Education and Technology, National Changhua University of Education, Taiwan. He received his PhD from the Pennsylvania State University. His major was Economics of Vocational Education and Training. Recently, he focused his research on human resource management, knowledge management, and labor economics. He also serves as the consultant for some private enterprise in the area of human resource development. He is the corresponding author and can be contacted at: wds3295@ms51.hinet.net

Chi-Lih Shyu is a doctoral student in the group of Human Resource Management, Department of Industrial Education and Technology, National Changhua University of Education, Taiwan. His research focuses on knowledge management, performance management, and strategic human resource management.

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