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# RESEARCH AND PRACTICE IN HUMAN RESOURCE MANAGEMENT

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## Scale of Operations, Human Resource Systems and Firm Performance in East and Southeast Asia

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### Abstract

**Small and medium-sized firms are attracting considerable attention in East and Southeast Asia as they seem to be quite flexible and adaptive in seemingly ever more turbulent environments. The 1997 Asian financial crisis seemed to affect particular countries characterized by larger scale firms. Downsizing and restructuring is now underway in companies in many parts of Asia. Another mechanism by which firms might achieve greater flexibility is through the introduction of high performance work systems (HPWSs). This study assesses the impact of HPWSs on firm financial performance, examining in particular if smaller scale operations might be an alternative to HPWSs. Data used were collected in Thailand, Taiwan, and Korea. Results suggest HPWSs enhance firm performance regardless of firm size.**

The rapid economic growth that had been enjoyed throughout much of eastern Asian for twenty years or more was seen by many to be sustainable for years to come. But 1997 brought economic crisis from Korea to Indonesia. Those who questioned the long-term viability of the "Asian miracle" (Krugman, 1994) seemed justified. What had been lauded as a fundamental cultural strength—a complex network of social relationships often rooted in Confucian values—was ruefully dismissed, at least in the West, as "crony capitalism." Although the financial crisis was widespread, there were pockets of resistance—economies that experienced reduced growth but continued to prosper. Taiwan and Singapore are two places that certainly fall into this category.

There are many reasons forwarded to explain the resistance of these two economies to regional problems. Neither country suffered from current account deficits associated with massive debt elsewhere in the region. Taiwan's huge cash reserves, for example, made it virtually immune from the speculative maneuvers of foreign exchange traders that undermined the currencies of Thailand, Korea, Malaysia, and Indonesia. Both Singapore and Taiwan have governments that pursue disciplined economic policies and are places where the "rule of law" in business matters has strong institutional support.

One of the most significant differences, however, is to be found in the nature of business organization in Taiwan and Singapore versus the countries that were hardest hit by the financial crisis. Singapore has promoted investment in cutting-edge, high-technology industries. Taiwan is particularly noted for its small and medium-sized firms, both in the high-technology sector and in more traditional industries. One advantage of being small is that such organizations can be highly flexible and thus much more responsive to rapidly shifting and unpredictable economic conditions. The dominant indigenous businesses of Korea, Thailand, and Indonesia—the countries most adversely affected by the 1997 crisis—are quite often fairly large-scale companies, often with interests in multiple industries. Examples include the Korea's chaebols, companies such as Siam Cement and the CP Group in Thailand, and the Lippo Group in Indonesia. Industrial restructuring is underway in much of the region, perhaps most notably in Korea, where the government pressing for divestitures and downsizing in many of the countries top-heavy chaebols (Ungson, Steers and Fark, 1997). That smaller scale businesses might enhance the Asian competitiveness in the same way as "downsizing" promoted recovery of the American economy in the 1980s is an intriguing if as of yet unresolved issue.

If Asian firms are going to move increasingly in the direction of smaller-scale operations, then we need to consider the human resource management implications of such changes. The purpose of this study is to examine the impact of a firm's human resource (HR) system on organizational performance, with particular attention paid to the interaction of scale of operations and HR system. Data are drawn from companies in Thailand, Korea, and Taiwan. We focus specifically on the impact of high performance work systems (HPWSs), which have proven to be quite effective in Western economies and, like smaller-scale operations, can serve to enhance organizational flexibility. We address the following questions:

- To what extent are HPWSs transferable to East and Southeast Asian economies?

- If workable in East and Southeast Asia, do HPWSs have different effects on firm performance in small and medium-sized versus large firms? That is, if small and medium-sized firms are the wave of the future, are HPWSs as important to the success of these firms as might be the case in large firms?
- Are similarities or differences in the impact of HPWSs on firm performance different in the case of indigenous firms than in the case of firms in general (i.e. both foreign-owned and indigenous firms)?

## Human Resource Systems in a Globalized Economy

Human resource systems in East and Southeast Asian region have tended to be fairly hierarchical and non-participative. Collectivism as a dominant cultural value has often promoted a tendency toward conformity on the part of workers and reluctance to take initiative to solve problems and move the firm in new directions. Such systems are well suited to settings in which firms strive to be low-cost producers of well-established products, where efficiency is a more significant consideration than flexibility. And in the world market of the 1970s and 1980s that supported Asian economic expansion, this style of management provided an important source of competitive advantage for the export-oriented development strategies common throughout the region. But global market forces may now render the traditional Asian HR system obsolete, at least in many economic sectors. Though transition to flexible systems that empower workers, often at the lowest level of the organization, is culturally problematic, this approach may well be necessary to assure competitiveness in a fast changing global marketplace.

## Globalization, Dynamic Environments, and High-Performance Work Systems

The literature on HPWSs is indeed extensive and our purpose here to motivate an understanding of its relevance to the East and Southeast Asian context rather than explore this literature in great depth. Osterman (1994) has examined this topic as thoroughly as any writer in the field. He contrasts the traditional employment system, with considerable emphasis on centralized control, numerous rules, narrowly defined employee skills, limited employee involvement in decision making, and low-levels of employee commitment to the firm, to “transformational” systems, with team-based production, employee empowerment, relatively few rules, broadly defined skills, high-commitment to the organization, and extensive and on-going training.

There are probably many factors at work that make the time ripe for HPWSs, but we will mention only a few of the leading contenders. These are rooted largely in the environments in which firms must operate and all lead to more dynamic and unpredictable environmental textures. First, and perhaps of greatest significance for this paper, would be the emergence of highly integrated global markets on both factor and product sides. Globalization has clearly enhanced competitiveness, as firms that once enjoyed large and stable market shares in home markets must compete internationally to generate high returns; even if they do not leave their traditional markets, new competitors from just about anywhere else in the world may enter these markets.<sup>1</sup> The implication here is that higher-level managers may often lack the information necessary to exert top-down control in anything approaching an optimal manner. Rapid response is a key element in organization success, and this pushes the effective locus of decision making to lower levels in the organization. HPWSs become a way of effectively implementing decentralization of coordination and control.

Another factor promoting enhanced competitiveness internationally is a general trend toward deregulation. Excessive government intervention in the regulation of business activities is seen as anti-competitive and having a deleterious impact on consumer welfare. Closely related in many countries, including several of the eastern Asian countries considered here, is the process of privatizing state-owned enterprises. Both forces lead to greater market competition and favor firm adoption of HPWSs for many of the same reasons as globalization.

Finally, rapid technological change means that a large number of industries face much shorter operating cycles for products and production techniques. Staying ahead technologically is now much more critical to success. This may involve sophisticated research and development activities by the firm, but even if it does not, firms must continually upgrade production capabilities, acquire new technical information, and transfer in new technologies. Again, greater reliance on lower-level employees in accomplishing these requirements favors HPWS implementation.

Much of the initial research on linkages between HRM practices and organizational performance focuses on the impact of individual practices on various organizational outcomes (Lawler, Anderson and Buckles, 1995). This piecemeal approach has been increasingly supplanted by a more holistic approach as researchers have examined the joint effects of complexes of HRM practices that collectively define a firm’s HR strategy or system. Although the conceptual literature on HR strategy dates back to mid-1980s (Dyer, 1985; Fombrum, Tichy, and Devanna, 1984), it has only been in the past several years that there has been a proliferation of empirical studies of the effectiveness of HR systems.

There is division among authors as to the viability of contingency, universalistic, and configurational perspectives in analyzing the impact of HR systems on firm performance (Delery & Doty, 1996). The universalistic perspective takes the position that a set of “best practices” can be identified that is equally applicable regardless of organizational setting. This research can be traced to conceptual work by authors such as Pfeffer (1994), who maintain that certain employment practices, including internal career ladders, extensive training, worker discretion, extensive training, generally contribute to high levels of organizational performance. The contingency

perspective holds that the effectiveness of employment practices is moderated by external factors, most usually the organization's business strategy. For example, human relations training might be more effective under what Porter (1980) terms a differentiator, as opposed to a cost-leadership, strategy. The differentiator relies heavily on innovation and teamwork, so that the returns to human relations training could be conjectured to be greater under such circumstances. Finally, the configurational perspective holds that, what is really important is the interplay among a set of HRM practices and that synergy created by mutually compatible HRM practices is what generates value for firms (Arthur, 1994). Configurational researchers look at the impact of bundles of HRM practices as a whole, rather than individual components, on firm performance. This is sometimes characterized as "internal fit" (or complementarity among the components of the HR system), while the contingency versus universalistic debate relates to the need for "external fit" (or complementarity between organizational conditions and the HR system). In fact, the configurational perspective is consistent with either the universalistic or contingency perspectives.

The contingency perspective has considerable theoretical appeal rooted in the Western literature dealing with organizational design and management (Thompson, 1967). In the case of HR systems, Schuler (1988) lays out a range of behavioral repertoires he suggests to be mandated by organizational strategic needs (e.g., risk taking versus risk avoidance, cooperation versus independent action, rule adherence versus innovation); these in turn are achieved through the selection of appropriate HRM practices from menus of options in such areas as staffing, assessment, training and development, and compensation. Begin (1997) offers an analogous framework, though one intended to understand organizational HR systems cross nationally. Here we see a multi-tiered set of system outcomes, ranging from employee competence to system integration and financial flexibility—all of which ultimately determine organizational performance—driving the selection of HRM system components (again arrayed in a menu-like framework similar to Schuler's).

Despite the intellectual appeal of a tightly woven framework where optimal fit between organizational and HR system is the motivating force, much of what is written these days questions the veracity of the conventional contingency perspective. Critics of the contingency viewpoint maintain that most organizations, and certainly those highly active in the global marketplace, require flexibility and that this overrides other concerns, such as external fit. Such a viewpoint supports the general adoption of HPWSs, either in a piecemeal manner or as a unified system. For one thing, HPWSs promote the competence and commitment of employees and this readies firms to adapt to frequent change (Lado & Wilson, 1994; Ulrich, 1998; Ulrich & Lake, 1990). HPWSs promote viewing the world in more complex and varied ways, so that employees can make greater sense out of changing circumstances and respond appropriately (Lado & Wilson, 1994; Snell et al., 1996). HPWSs also put firms in a position to have a self-renewal process and thus adapt more adequately to turbulent environments (Nonaka, 1988; Teece, Pisano, & Shuen, 1997). Huselid (1995) also holds that turbulent environments require firms to rely increasingly on the discretionary contributions of their employees, including those in lower-level occupations. To this end, he maintains that HPWSs motivate workers in this direction by rewarding effective discretionary effort and help the firm to recruit and retain employees capable of acting autonomously. Finally, Wright and Snell (1998) provide a synthesis of the contingency and universalistic perspectives that emphasizes the importance of flexible, responsive work systems.

There is an extensive body of empirical literature that examines the impact of HPWSs on firm performance. Delery and Doty (1996) test both the universalistic and contingency perspectives, finding that while the former has considerable explanatory value, the addition of interaction effects implied by the latter do not significantly improve the fit of the model. In particular, Delery and Doty found that firms utilizing HRM practices consistent with HPWSs generally outperform more traditional HR systems and this occurs regardless of business strategy. Other research in this area has tended to generate similar findings, with much of this work supporting a configurational view (e.g., Arthur, 1994; Becker and Gerhart, 1996; Delaney & Huselid, 1996; Huselid, 1995; Huselid, Jackson, & Schuler, 1997; Youndt, Snell, Dean, and Lepak, 1996; Chadwick & Cappelli, 1998; Ichniowski, Shaw, & Prensushu, 1993; MacDuffie, 1995). Thus, in general there is strong evidence supporting the efficacy of HPWSs in many if not most organizational contexts. However, further work is necessary to discern the extent to which contingency factors might moderate the HPWS-firm performance relationship.

## **High Performance Work Systems in Asia**

Granted that HPWSs are effective in Western contexts in promoting organizational performance, it does not necessarily follow that they will be all that workable in the very different cultural settings of East and Southeast Asia. Work by Kirkman and Shapiro (1997) discusses cultural factors that might impact the effectiveness of self-managed teams, often a central feature of HPWSs. Applying Kirkman's and Shapiro's framework, the collectivist nature of Asian cultures would certainly increase the receptivity of workers in the region to the team aspect of HPWSs. However, the self-management aspect is another issue. The hierarchical nature of Asian cultures, in which those of lower status often tend naturally to defer to those of higher status, and in which higher status individuals expect such deference, would seem to militate against the effectiveness of these types of systems. Managers are apt to be disinclined to share power and subordinates may be disinclined to accept it.

Harmonious relationships are another cornerstone of East and Southeast Asian culture. But HPWSs require innovation and change, factors that might well promote at least significant degrees of short-term conflict. Thus workers might be quite uncomfortable with systems that require team members to raise questions about the wisdom of one another's proposals for solving a problem, which raises the possibility of loss of face for someone. One might note that group problem solving has long been a part of Japanese employment systems. However, as

Morishima (1998) observes, the Japanese system is really designed to generate what he terms “incremental knowledge,” -knowledge necessary to solve fairly immediate problems within a limited domain. HPWSs often lead to the creation of “innovative knowledge,” which may move the organization into entirely new directions or which at least deviates very substantially from the status quo. Conventional Japanese consensual decision making systems, Morishima argues, are ill-suited to this task as they require consensus that may take considerable time to generate. Consensus is not always an aspect of HPWSs, as a team or group leader may make decisions after hearing various perspectives, even if there are highly divergent viewpoints within the group.

Despite these limitations on the workability of HPWSs seemingly endemic to Asian culture, there is a reasonable amount of empirical work suggesting that HPWSs are potentially as effective in Asia as in the West. In Korea, for example, the industrial restructuring that began even before the 1997 financial crisis has led to the adoption of various elements of HPWSs in many Korean firms (Bae, 1997), which Bae and Lawler (forthcoming) found increased firm performance. They argued in part that this might be linked to cultural change in Korea, that with economic growth and exposure to Western cultures, Korean workers (at least the younger ones) are more individualistic and less deferential to authority, leading to a culture that has been termed “dynamic collectivism.” This seems likely to be a force in other East and Southeast Asian cultures that have undergone rapid growth in the past couple of decades. Other empirical studies have similarly shown HPWSs to be effective in Asian settings, including work in Japan by Morishima (1998), in Korea by Lee and Johnson (1998), in Taiwan by Uen (1998), in Hong Kong by Ngo, Turban, Lau, and Lui (1998), and in India by Sivasubramaniam and Venkata Ratnam (1998). Some of the Asian studies find a contingency relationship between business strategy and HR system, while others only find a positive relationship between use of HPWSs and firm performance.

Despite cultural constraints, it appears that HPWSs have promise in Asia as a means enhancing firm effectiveness and thus promote economic recovery and further growth. However, to date, cross-national research on this topic in Asia has not taken place (i.e., all studies of the HPWS-firm performance relationship have been conducted in individual countries). Our work looks at this across three different countries, all of which have experienced high rates of economic growth but are very different in other respects. Korea and Taiwan have reached high levels of economic development, while Thailand is at a much lower level. Korean firms tend to be large-scale operations, while Taiwanese companies are often small and medium-sized; Thailand has a mixture of both types of companies. The high technology sectors are well developed in Korea and Taiwan, but much less so in Thailand. And these countries differ substantially geographically and in many ways culturally (e.g., a significant proportion of Koreans, including the business elite, are Christian, the Taiwanese generally follow traditional Chinese religious practices (Daoism and Mahayana Buddhism), while the Thais are mainly Theravada Buddhists. Finally, we examine HPWSs as implemented among lower-level (non-managerial) employees, as it is here that issues of empowerment and worker autonomy are most critical if an organization is really going to build what is truly a high performance work system. We thus have a varied sample to test the hypothesis that emerges from the previous discussion:

**Hypothesis 1:** Utilization of high performance work systems implemented among lower level (non-managerial) employees *will increase* firm performance.

A related issue is whether any relationship between HPWSs and firm performance is moderated by firm business strategy. In particular, we might anticipate that HPWSs are better suited to differentiation strategies and more traditional HR systems are better suited to cost leadership strategies. We examine this possibility in our empirical work as we test Hypothesis 1.

Granted that HPWSs impact performance in Asian firms, there is the role that scale of operations might also play as a moderator of the importance of HPWSs. A lot of what has been written about HPWSs has been concerned with the ways in which such an approach can serve to make larger firms with bureaucratic control systems more responsive to turbulent environments. However, this might not be all that helpful in guiding policies in smaller scale operations. Redding (1995) describes some of the characteristics of the prototypical small and medium-sized Chinese enterprise: family owned and managed, centralized decision making with a dominant chief executive, paternalistic organizational environment, cost consciousness and a concern with efficiency, and extensive strategic adaptability resulting from a dominant decision maker. Thus, such organizations would seem to combine certain features necessary to function effectively in today’s environment. As they are smaller scale, it is easier to institute change. Family management naturally leads to identification with the firm’s goals on the part of the management group and a paternalistic stance toward employees in general, with employees offering loyalty and hard work in return, helping to make the organization operate as a unified whole. Unlike Japanese firms, where consensual decision making is a central process, the Chinese enterprises have a centralized decision maker who can quickly initiate change without a prolonged consideration of issues and options.

In such organizations, HPWSs might not add much value, since mechanisms are already in place to promote flexibility. Yet there are other considerations. Increasingly rapid change, both as result of globalization pressures and rapid technological change, may require technical expertise that is beyond the understanding of the family patriarch. Management has become increasingly professionalized within Asia as MBA programs have become commonplace. So more junior family members with professional training, as well as professional managers hired from outside the family, often resent their inability to influence decisions and the firm is denied their expertise. And lower level employees may have much to offer with regard to enhancing efficiency and resolving problems associated with major organizational changes. Finally, many of the newer small and medium-size firms being established in areas such as the high-technology sector are not conventional family enterprises. They are professionally management organizations in which the need for input from all levels is important and recognized. These competing arguments suggest the following hypothesis:

**Hypothesis 2:** The relationship between firm performance and utilization of high performance work systems among lower level (non-managerial) employees *will be weaker* in small and medium sized firms than in large firms.

## RESEARCH METHODS

The questionnaire developed for this survey assessed the various components of a firm's HR system, firm size, organizational strategy, firm performance, and other organizational characteristics (e.g., characteristics of the HRM subunit and the firm's geographical location). The questions focused on HRM practices with respect only to non-managerial employees. The questionnaires, which had been translated into Korean, Thai, and Chinese, were administered to individuals with principal responsibility for HRM in a random sample of firms in South Korea, Thailand, and Taiwan. The sample consists of a total of 506 firms. These were randomly selected from leading business directories in each country and consisted of both indigenous and foreign-owned firms. Indigenous firms are defined as those wholly owned by nationals of the focal country or joint ventures with foreign firms that are controlled by nationals of the focal country.

The dependent variable used in this study is the firm's financial performance. We use a subjective measure of performance derived from a scale developed by Khandwalla (1977). Likert-items measured perceived financial strength, profitability, growth rate, and market share. The reliability (coefficient alpha) for the scale, composed of four items, is .77. Although objective measures of performance, such as return on investment based on accounting data, would seem a more appropriate measure, its use is problematic. First, the study involves companies in three different countries with distinct accounting standards, so there are comparability problems. Second, many companies in Asia are reluctant to disclose financial data, so the necessary information is often not available.

The principal independent variable in our study is the firm's HR system. This is based on four distinct scales: HR flow, work system, reward system, and employee upward influence. These have been described in detail elsewhere (Bae, Chen, and Lawler, 1998) and will thus be only briefly described here. Various Likert-items were used to measure HRM practices argued to reflect these underlying dimensions. In some instances, questions developed by other researchers were used, while some items were developed by the authors (see Bae Chen, and Lawler (1998) for a description of the components of the scale). Firms that are high on the HR flow scale utilize extensive selection and training procedures and have relatively high job security. The scale is composed of six items with a reliability (alpha coefficient) of .71. The work systems scale covers job design and control types. Firms at the upper end of this scale tend to use broadly defined jobs with enriched designs, team-based work organization, and employee autonomy. Narrowly defined jobs and a greater presence of rules and formal controls characterize firms at the lower end of the scale (four items and alpha of .68). The reward system scale reflects the degree of the linkage of performance and pay level and the presence of employee ownership programs. Firms at the high end of the scale emphasize pay for performance, gain sharing, and/or profit sharing (six items and alpha of .70). The employee influence scale measures the extent to which employees as stakeholders are involved in decision making in job-related and organizational issues. High values represent high employee involvement and autonomy (four item and alpha of .71).

In all of these scales, high values represent aspects of HPWSs, while low values represent more traditional, bureaucratic employment systems. Not surprisingly, then, scales are highly intercorrelated and may, in fact, reduce to a single dimension (Bae and Lawler, forthcoming). Thus, we have also generated a composite index of the HRM system as a whole that is constructed by summing all four HRM policy area scales. This index ranges along a continuum from the traditional work system at the lower end to HPWS at the higher end. This composite index (i.e., the sum of the four subscales) has an alpha coefficient of .81.

Another important independent variable in the study is the firm's organizational strategy. This is measured in the same way as described by Bae and Lawler (forthcoming). Likert items are used to measure the extent to which the firm pursues a business strategy of differentiation (Porter, 1980). The scale consists of eight items with an coefficient alpha of .88.

Other control variables include firm age, firm size (number of employees), union status (a dummy variable that is coded 1 when the firm is unionized, 0 otherwise), and dummy variables indicating the firm's home country (Taiwan served as the reference group, so that dummy variables representing Thailand and Korea appear in the regression analysis). Finally, data for this study were collected over several years, starting in 1996 and ending in 1999. Since we are analyzing firm performance, we might anticipate decreased firm performance after the 1997 Asian financial crisis. Therefore, a dummy variable is included indicated if the data for a case were collected prior to or after the onset of the crisis. Descriptive statistics for all of these variables appear in Table 1, along with the matrix of inter-correlations among the variables.

TABLE 1  
DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Firm Performance	4.36	0.83	1.000								
2. High Performance Work	4.13	0.68	0.358	1.000							

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
System											
3. Differentiation	5.42	0.96	0.422	0.534	1.000						
4. Unionized Firm	0.35	0.48	0.019	-0.004	-0.046	1.000					
5. Firm Age	21.39	15.02	-0.091	0.072	0.051	0.226	1.000				
6. Pre-Crisis	0.38	0.48	0.029	-0.239	-0.331	0.239	-0.120	1.000			
7. Korea	0.27	0.45	0.064	-0.312	-0.341	0.252	-0.066	0.790	1.000		
8. Thailand	0.10	0.31	-0.012	0.078	-0.184	-0.128	-0.047	-0.265	-0.209	1.000	
9. Employees	947.41	2983.41	0.092	0.010	0.003	0.241	0.290	0.141	0.153	-0.037	1.000

## DATA ANALYSIS

We use the conventional definition of small and medium-sized firms as those with 500 employees or less. Approximately 66% of the firms in this study fell into the “small and medium” category using this criterion. Firms in the study ranged in size from thirteen employees to 46,000 employees. Taking the set of firms studied as a whole (foreign and indigenous), the proportion of small and medium-sized firms was about the same in each of the three countries. However, the distribution was quite different in the case of indigenous firms. As might be anticipated, only a small proportion of the forty indigenous Korean firms in this study (25%) fell into the “small and medium sized” category and, just as expectedly, a substantial proportion of the 215 indigenous Taiwanese firms (61%) fell into this category. However, Thailand had the largest proportion of small and medium-size firms (70% of the 29 indigenous Thai firms).

## Differences in HR Systems

Our first task is to determine whether and to what extent firms differ in terms of their utilization of HPWS-related HR methods across the three countries studied here and as a function of the size of the firm. Small and medium sized Taiwanese firms become the reference group here as we are concerned with the extent to which HR system differ in Korea and Thailand from those typical of what are presumed to be the most flexible and responsive of firms (i.e., the small and medium-size Taiwan companies).

A series of t-tests indicates something about the differences in HR systems between groups of cases. When we compare all large to all small and medium-sized firms, we find that the large firms have a generally higher score on the HR systems scale (4.22 vs. 4.08;  $t=2.18$ ;  $p<.05$ ).<sup>2</sup> This is somewhat surprising, since one might expect smaller firms to utilize less structured HR systems, although the greater informality available in small and medium-sized firms may substitute for the purposeful design of such systems. Indigenous firms across all three countries tend to rely to a greater extent on HPWSs than MNC subsidiaries (4.18 vs. 4.05;  $t=2.05$ ;  $p<.05$ ). If we look only at indigenous firms, large firms are no more likely to use HPWSs than small and medium-sized firms (4.19 vs. 4.17;  $t=.274$ ; no significant difference). However, indigenous Taiwanese firms tend to rely much more heavily on HPWSs than either indigenous Thai or indigenous Korean firms (4.25 for Taiwanese versus 4.00 for pooled Thai-Korean;  $t=2.83$ ,  $p<.01$ ).

## Regression Analysis

Our concern here is to determine the extent to which small and medium-sized firms differ from large firms in terms of the role the organization’s HR system might play in determining firm performance. In addressing this issue, we can gain insight into differences in HR system requirements needed by Asian firms, especially as smaller and more flexible firms play more significant roles in the regional economy. Results presented in Table 2 relate to this issue.

TABLE 2  
REGRESSION RESULTS

	Small-Medium Firms		Large Firms		Small-Medium Indigenous Firms		Large Indigenous Firms	
	B	t-value	B	t-value	B	t-value	B	t-value
Constant	1.494	5.141 <sup>a</sup>	.639	1.037	1.757	4.177 <sup>a</sup>	.183	.235
High Performance Work System	.267	3.973 <sup>a</sup>	.276	2.088/	.215	1.994 <sup>b</sup>	.362	2.005 <sup>b</sup>
Differentiation	.339	6.591 <sup>a</sup>	.446	4.817 <sup>a</sup>	.355	4.259 <sup>a</sup>	.453	3.588 <sup>a</sup>
Unionized Firm	-.139	-1.499	4.542E-02	.308	-2.936E-02	-.176	.116	.637
Firm Age	-8.704E-03	-2.437 <sup>b</sup>	-6.665E-03	-1.869 <sup>c</sup>	-1.152E-02	-2.435 <sup>b</sup>	-6.803E-03	-1.695 <sup>c</sup>
Pre-Crisis	-.360	-2.430 <sup>b</sup>	.409	1.982 <sup>b</sup>	-.332	-1.404	.421	1.573

	Small-Medium Firms		Large Firms		Small-Medium Indigenous Firms		Large Indigenous Firms	
	B	t-value	B	t-value	B	t-value	B	t-value
Constant	1.494	5.141 <sup>a</sup>	.639	1.037	1.757	4.177 <sup>a</sup>	.183	.235
Korea	.822	5.425 <sup>a</sup>	.192	.837	.605	1.942 <sup>b</sup>	.237	.801
Thailand	.141	1.045	.614	2.334 <sup>b</sup>	-1.407E-02	-.072	.643	1.875 <sup>c</sup>
Employees	1.186E-04	.353	2.017E-05	1.430	-5.862E-05	-.113	1.843E-05	1.165
Adjusted R <sup>2</sup>	.326		.254		.303		.245	
F-Ratio	18.846		6.998 <sup>a</sup>		8.432 <sup>a</sup>		5.268	
N	295		141		137		105	
a	=	significant		at		.01		level;
b	=	significant		at		.05		level;
c = significant at .10 level.								

We first regressed firm performance against the set of independent variables described above using the entire set of cases in the sample. These cases were broken down into two groups: small and medium-sized and large firms. This set of cases thus includes both foreign-owned and indigenous firms in all three countries in the study. The first column in Table 2 contains the results for the small and medium-sized firms, while the second contains the results for the large firms. In both instances, the overall analyses are statistically significant and explain reasonably high proportions of the variance in firm performance (given the cross-sectional and subjective nature of the data). The model explains about one-third of the variance in firm performance for the small and medium-sized firms and about one-quarter of the variance in the case of the large firms.

In both instances, both the composite HR system scale, which measures the extent to which a firm utilizes HPWS techniques, and the organizational strategy scale, which measures the firm's pursuit of a differentiation strategy, are significant and positive, as would be expected. The firm's age is also important in both cases, with older firms generally doing less well than newer firms. Again, the age relation would be expected, as new firms are presumably responding to high-growth market opportunities and older firms may be further along in a product's life cycle. One variable that did not seem to matter is the firm's size. Of course, the sample is broken down roughly by size, but this result suggests that within the two size categories, variations in firm size per se do not seem to matter. Although not reported here in detail, a separate analysis with the large and the small and medium-sized firms pooled showed similar results for the HPWS and organizational strategy variable, although firm size was positively related to firm performance. Yet a second size variable, controlling for the large vs. small and medium split, was not significant (even when the size variable was deleted). Thus being in one versus the other major size category did not seem to matter all that much with regard to firm performance.

This first analysis, containing both indigenous and foreign firms, suggests there is no difference between the two groups in terms of the importance of utilizing HPWSs to improve firm performance. In fact, the HPWS coefficients are virtually identical for both groups. In the case of large firms, reliance on an organizational strategy of differentiation has a somewhat stronger impact on firm performance than for small and medium-sized firms. However, this difference is not statistically significant (applying a t-test).

A more fundamental policy issue relates to the appropriate use of HPWSs in indigenous firms. That is, if indigenous East and Southeast Asian companies are more likely to "downsize," and if start-up firms are more likely to be smaller, more flexible organizations, and if there is something about these companies that distinguishes them from MNC subsidiaries (a reasonable assumption), then we should also examine these processes within the context of indigenous firms only. The third and fourth columns of Table 2 report results for the regression analysis utilizing only the indigenous firms.

The results here are somewhat different from the analysis done with the pooled data, though the differences are not all that substantial. Again, organizational differentiation strategy and reliance on a HPWS approach are positively and significantly related to firm performance. The HPWS coefficient is lower in the case of small and medium-sized firms and higher in the case of large firms than in the pooled sample. Thus, we might initially conclude that use of HPWSs is a relatively more important source of organizational effectiveness in large firms than in small and medium-sized firms, as posited in Hypothesis 2. However, the difference here is not statistically significant (applying a t-test) and the same holds in the case of the organizational strategy scale.

Finally, we did additional regression analysis in which an organizational business strategy-HPWS interaction effect was included to test the contingency perspective. The interaction effect was not found to be statistically significant under any of various model specifications. Thus, the results here are consistent with the universalistic perspective.

## CONCLUSIONS AND IMPLICATIONS

This study evaluated two principal hypotheses. Hypothesis 1 posited that HPWSs should increase firm performance and the empirical analysis provides strong support for that position. This is true despite the fact that culture barriers exist to the introduction of HPWSs based on stereotypical notions of East and Southeast Asian culture. Furthermore, we found no support for a contingency relationship involving firm performance, HPWSs, and



organizational business strategy. Thus, in general, companies need to pursue both business strategies emphasizing differentiation and implement HPWSs. Hypothesis 2 posited that HPWSs should have a weaker impact on firm performance in presumably more naturally flexible small and medium-sized firms, but that was not found to be the case in the empirical work (the estimated HPWS effect was weaker in the case of small and medium-sized indigenous firms, but this relationship was not significant).

Clearly, this study is only a start and work in other settings with more refined measures is in order. Also, research might focus on the effects of HPWSs on firm performance in other geographical settings. If HPWSs can serve to promote firm performance and do this as substantially as the results of this study indicate, then perhaps it would be useful to initiate the process of change in other countries and regions where economic development trails East and Southeast Asia. Of course, work is necessary to evaluate whether HPWS would transfer readily to such areas.

Our main findings, then, are that HPWSs seem to work well in promoting firm performance in East and Southeast Asia, that the relationship is not moderated by firm business strategy, and that the relationship does not depend on firm size. Thus, simply keeping a firm small, as in many traditional Chinese family enterprises, is in and of itself not a particularly effective source of organizational flexibility. While it might traditionally have been the case that a business-savvy family patriarch had the necessary skills and knowledge to guide a small or medium-sized firm through perilous waters, the continuing pressures of globalization and rapid technological change, coupled with secondary pressures such as deregulation of the marketplace, renders this model generally obsolete.

These results hold in the case of indigenous firms, so that this work has implications as a guide for local companies and for public policy makers interested in promoting the competitiveness of their respective countries' indigenous companies. Continuing pressures associated with globalization, technological change, and market deregulation suggest a continuing need for firms to utilize HPWSs in some form or the other. This applies equally in larger and smaller-scale operations. Small and medium-sized firms may become more common throughout Asia in future years, but the traditional study of management in this type of Asian firm, in which a single leader makes most important decisions, will likely need to give way to systems in which there is more employee participation from the bottom on up.

<sup>1</sup> Granted, many countries still have trade barriers but these are rapidly eroding.

<sup>2</sup> The composite HR system scale ranges in value from 1 to 6, with higher values indicating a greater tendency to utilize a HPWS.

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