

**INTERNATIONAL INDUSTRIAL RELATIONS ASSOCIATION  
HUMAN RESOURCE MANAGEMENT STUDY GROUP**

**IIRA HRM Study Group Working  
Papers in Human Resource Management**

No. 10

**High Performance Work Systems and Organisational  
Performance: A Six-Country Study**

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September 2004



ISSN 1810-6897

## ABSTRACT

While numerous studies show the benefits derived from specific human resource management (HRM) practices, there is growing interest in HRM as a package of complementary practices, not only because theory suggests the impact is greater, but because firms in reality implement a variety of practices. This approach has been termed High Performance Work Systems in the United States, where evidence of its economic impact on the firm is accumulating. Much interest has also been generated outside the U.S., but existing empirical studies has focused on one country at a time, making direct comparisons difficult. Covering six countries with different cultures, this study shows that a high and a low HPWS cluster can be differentiated in each country, but the characteristics accounting for the differentiation vary across countries, and that the two clusters do not differ in organisational performance once the effect of HRM on employee performance and satisfaction is removed.

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# HIGH PERFORMANCE WORK SYSTEMS AND ORGANISATIONAL PERFORMANCE: A SIX-COUNTRY STUDY

Maria Carmen Galang <sup>a</sup>

## 1. INTRODUCTION

Traditional resources, such as product and process technology, protected or regulated markets, access to financial resources, and economies of scale, have been losing their capacity to provide competitive advantage to firms (Pfeffer, 1995). Thus, human resources are being viewed as an alternative to meet the increasing competitive pressures brought on by globalisation. While there have been studies showing the benefits that firms derive from specific human resource management (HRM) practices, there is a growing interest to investigate HRM as a package, not only because theory suggests that the impact is greater, but because firms in reality implement a variety of practices (Becker & Gerhart, 1996; Becker & Huselid, 1998; Yeung, 1997).

Barney's (1991) resource-based view of organisations posits that a resource, to be a source of competitive advantage, must add value, be rare, inimitable, and non-substitutable. Wright, McMahan and McWilliams (1994) argue that human resources (HR), both in terms of the people who comprise the firm (i.e., employees) and the way that employees are managed (i.e., HRM), meets these criteria. Additionally, HRM needs to be applied as a set of complementary practices (internal fit) aimed at developing employee skills and motivation towards the attainment of the firm's goals and strategies (external fit). Apart from avoiding contradictory practices that may confuse and result in negative outcomes such as lower motivation and productivity, the set of complementary practices is argued to have a synergistic effect that is greater than the sum of effects from practices that are applied independently from each other (Becker & Huselid, 1998). Further, the criteria of rarity and inimitability are met because of the difficulty of implementing all practices at once that also is embedded in the firm's goals, strategies, history and culture.

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This approach to the management of employees has been termed High Performance Work Systems (HPWS) in the United States, where evidence of its economic impact on the firm has been accumulating (Becker & Huselid, 1998). Gains of US\$14,000 to US\$73,000 in firm market value per employee from a one-standard deviation increase in HPWS have been estimated (Huselid, 1995; Huselid & Becker, 1995, 1996). While these gains are certainly impressive, Becker and Huselid (1998) point out that because little empirical evidence is available about how HPWS affects firm financial performance, more proximal or intermediate-level variables should be incorporated in research in order to understand the linkage. One such intermediate-level variable is employee performance and satisfaction.

While most of the studies linking HRM and firm performance are largely of firms in the U.S., the concept of HPWS as a set of complementary practices has generated much interest among researchers outside of the U.S., specifically, Canada (Godard, 1991, 2001), Great Britain (Wood and colleagues, 1995, 1996, 1998), New Zealand (Guthrie, 2001), Singapore (Barnard & Rodgers, 2000), and South Korea (Bae & Lawler, 2001). Taken together, these studies suggest that one must be cautious when transferring the concept in practice or in research, but because they focused only on a single country at a time, it is difficult to make more direct comparisons. The present study addresses both shortcomings.

The data set used in this study came from the Best Practices Consortium, which has collected data from at least nine countries using a common survey instrument (Geringer, Frayne & Milliman, 2002). The involvement of researchers from different countries not only allows for conceptual and translation equivalence but also inclusion of practices that may be as important or customary in countries other than the country of origin. The countries selected from the data set included the U.S., considered as the country of origin, a culturally similar country (Canada), and culturally distinct countries from Asia. The four Asian countries are themselves distinct from each other, with two countries whose cultures are predominantly influenced by Confucianism (China and South Korea), and the other two with a Malay culture (Indonesia and Philippines). Culture has been recognized as a salient factor in how people are managed, and how they react to how they are managed (Hofstede, 2001; Trompenaars, 1993).

## 2. EMPIRICAL ANALYSIS

### 2.1 Variables

The survey was sent to the HR Manager of the organisation, who was asked about their organization's HRM practices in hiring, training, performance appraisal and compensation [1]. At the end of each list of practices in these four HRM functions, the respondent was then asked, on a five-point scale, the extent to which these practices are effective in having high-performing employees, in having employees who are satisfied with their jobs, and in making a positive contribution to the overall effectiveness of the organisation. The average responses to these three items constituted the HRM effectiveness scale (see Table 1 for internal reliabilities). Organisational performance was measured using four items on a five-point scale: produces high quality goods, has a promising future, is flexible enough to change, and is seen as a leader in industry.

(Table 1 about here)

### 2.2 Data analysis

Consistent with the concept of HPWS as a set of complementary practices, a composite measure was used. While empirical research has not yet resolved the exact way such a composite measure is to be calculated, conceptually the best measure of a set of complementary practices (i.e., internal fit) is cluster analysis (Venkatraman, 1989). Cluster analysis enables the identification of homogeneous cases on the basis of selected attributes for each country. Unlike the more common approach of summing or averaging, this analytical approach does not assume uniform levels (whether consistently high or consistently low) across all HRM functions, and thus, is more appropriate in cross-cultural study. In the present study, average scores were computed for each of the four HR functions (see Table 1 for internal reliabilities). These four averages served as the four characteristics for non-hierarchical cluster analysis (Dillon & Goldstein, 1984). To differentiate between high and low HPWS, a two-cluster solution was attempted for each country.

To test whether the means of each of the four characteristics used to form the clusters differ, discriminant analysis was used (Dillon & Goldstein, 1984). With discriminant analysis, a statistical test of significance of the between-group differences in mean score profiles can be conducted. In addition, stepwise

discriminant analysis allows the determination of the contribution of each of the characteristics utilized to generate the two clusters or groups.

Once the sample for the country had been clustered and tested, analysis of covariance (ANCOVA) was conducted to determine whether clusters differed in terms of organisational performance, after the effect of HRM effectiveness as a covariate was removed.

## 2.3 Results

The results of the two-cluster analysis for each country sample are shown in Table 2.

(Table 2 about here)

Each country sample could be differentiated into two clusters that can clearly be identified or labelled as either high or low HPWS: that is, all HRM functions were either consistently high or low. There are however differences across the countries. Discriminant analysis shows that only for China and South Korea did all four functions contribute significantly to discriminating between the two clusters. For the U.S., Canada, Indonesia and the Philippines, hiring was not a significant coefficient. Based on the magnitude of the coefficients also, the countries differ in terms of which of the functions with significant contribution was relatively more important: compensation was the most important for the U.S., Indonesia, and South Korea, and for the Philippines and China, it was appraisal. Compensation, appraisal and training were more or less equally important in Canada.

T-test shows that the low and high clusters in each of the countries differ in terms of organisational performance, and in the expected direction (see the last row in Table 2). However, when HRM effectiveness was incorporated as a covariate, the clusters were no longer different in terms of organisational performance (see Table 3). This suggests that it is not so much what particular HRM practices are being implemented or to what extent, but rather whether or not these practices are viewed as effective in improving the performance and job satisfaction of employees.

(Table 3 about here)

### 3. DISCUSSION

The differences found in terms of which HRM function accounts in distinguishing the clusters across the six countries need to be explained. At this time, one can only speculate on the possible explanations as to why hiring is a significant attribute only in China and South Korea. For instance, a country-level difference such as culture may account for the difference in hiring as a significant factor. While Hofstede (2001) and Trompenaars (1993) have provided comparative data on cultural values that may influence management practices, these are not sufficient information. For one, data is not available for all the countries included in this data set -- for example, Hofstede does not have any data for China. Secondly, examination of the relative rankings of the countries indicate no clear direction -- for example, collectivism is a potential cultural value that suggests the importance of hiring, but South Korea and Indonesia are both relatively high in collectivism, while the U.S. and Canada are low. Culture certainly is just one of the influences, and one would need to look into other factors such as legal and economic explanations that encourage firms to adopt what may be considered as best practices in HRM found in the advanced industrialised countries. Adoption of some of these practices, such as in terms of hiring, may be more pervasive in the Philippines and Indonesia that they can no longer distinguish firms. Thirdly, the cultural data may simply be outdated.

Other explanations could lie in the differences in country samples that are not captured in this study. For instance, the criterion of non-substitutability in Barney's (1991) theory suggests that the ability of HPWS or HRM to provide firms with competitive advantage may be dependent on the type of industry, where a more cost-effective resource that can replace the knowledge, skills and abilities that people bring is available, or where reliance on people is low relative to other resources. This criterion also supports the external-fit aspect of HPWS that so far has not been given much attention. The few studies that are available in the U.S. show either weak or inconsistent results (Becker & Huselid, 1998; Dyer & Reeves, 1995).

With respect to the effect of HRM on organisational outcomes, it must be noted that the measures used are perceptual and come from one respondent only, who may be biased in portraying a more positive picture of the company, whether in terms of the HRM practices that are thought to be best practices, the performance of the organisation, and the assessment of effectiveness of HRM in improving employee performance and satisfaction. In terms of bias in reporting HRM practice, the survey also asked what the respondents think what extent should the practice be conducted. As the comparison between the "is now" and "should be" shows that across the six

countries, respondents felt that the practice should be at a higher level, there may be limited bias with respect to HRM practice, but certainly not in terms of HRM effectiveness or organisational performance. Ideally of course, more objective measures need to be utilized, or information about perceptions need to be gathered from more than one source in the company, but in practice, these are difficult to realize. Nonetheless, since the variance explained in organisational performance ranges from 22 to 32% (except for China at 47%), one must acknowledge that other factors are more, if not equally as, important than HRM.

## NOTES

[1] The list of practices can be found in the appendix of Geringer, J.M., Frayne, C.A., & Milliman, J.F. (2002). In search of “best practices” in international human resource management: Research design and methodology. *Human Resource Management*, 41(1), 5-30.

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TABLE 1. DESCRIPTIVE STATISTICS OF SCALES

Country	HRM Effectiveness No. of items = 3			Organisational Performance No. of items = 4			Hiring No. of items = 10			Training No. of items = 10			Appraisal No. of items = 11			Compensation No. of items = 9		
	X	s.d.	$\alpha$	X	s.d.	$\alpha$	X	s.d.	$\alpha$	X	s.d.	$\alpha$	X	s.d.	$\alpha$	X	s.d.	$\alpha$
USA	2.89	.66	.80	2.89	.57	.58	3.14	.45	.52	2.71	.65	.83	3.09	.69	.86	2.59	.61	.72
Canada	3.26	.66	.83	3.93	.70	.78	3.16	.42	.56	2.89	.70	.87	3.16	.76	.92	2.43	.60	.80
Philippines	3.53	.72	.86	3.92	.70	.79	3.41	.48	.67	3.26	.76	.90	3.33	.85	.93	2.80	.68	.84
Indonesia	3.28	.72	.85	3.67	.64	.67	3.06	.49	.66	2.88	.62	.87	3.05	.65	.91	2.83	.66	.81
China	3.20	.77	.92	3.61	.85	.82	2.99	.50	.74	2.92	.65	.89	2.94	.72	.93	3.00	.61	.84
South Korea	2.81	.75	.86	3.43	.68	.72	2.96	.53	.73	2.99	.61	.83	2.70	.63	.85	2.59	.69	.83

TABLE 2. RESULTS OF 2-CLUSTER ANALYSIS<sup>1</sup>

Attributes	USA			Canada			Philippines			Indonesia			China			South Korea		
	Low N=57 (46%)	High N=66 (54%)	Value <sup>2</sup>	Low N=58 (53%)	High N=51 (47%)	Value <sup>2</sup>	Low N=57 (40%)	High N=87 (60%)	Value <sup>2</sup>	Low N=93 (55%)	High N=75 (45%)	Value <sup>2</sup>	Low N=79 (50%)	High N=79 (50%)	Value <sup>2</sup>	Low N=99 (49%)	High N=103 (51%)	Value <sup>2</sup>
	X	X		X	X		X	X		X	X		X	X		X	X	
Hiring	3.03	3.25	n.s.	2.98	3.32	n.s.	3.20	3.52	n.s.	2.90	3.30	n.s.	2.73	3.30	.24***	2.68	3.28	.34***
Training	2.29	3.14	.58***	2.42	3.43	.54***	2.72	3.67	.45***	2.56	3.33	.40***	2.54	3.34	.30***	2.68	3.36	.45***
Appraisal	2.66	3.46	.52***	2.81	3.69	.53***	2.57	3.84	.64***	2.65	3.44	.44***	2.44	3.43	.55***	2.37	3.11	.29***
Compensation	2.21	2.96	.66***	2.12	2.82	.52***	2.34	3.14	.33***	2.47	3.30	.55***	2.61	3.36	.29***	2.18	3.06	.51***
Org. Perf.	3.59	3.92	2.57*	3.71	4.22	4.15***	3.62	4.14	4.60***	3.54	3.90	3.77***	3.16	4.09	8.09***	3.20	3.69	6.06***

n.s. = not significant

\*  $p < .05$

\*\*\*  $p < .001$

<sup>1</sup> The labels, “low” and “high”, were assigned after examination of the results of the cluster analysis. Note: only the first four attributes (hiring, training, appraising, compensation) were used in the cluster analysis.

<sup>2</sup> For hiring, training, appraising, compensation, value shown is standardized canonical discriminant function coefficients. For Org. Perf. (organisational performance), value shown is t value.

TABLE 3. RESULTS OF ANCOVA (F values)

Factor	USA	Canada	Philippines	Indonesia	China	South Korea
	Low=32 High=47	Low=57 High=49	Low=55 High=86	Low=86 High=73	Low=69 High=72	Low=96 High=98
HRM Effectiveness	14.63***	15.61***	41.93***	39.27***	37.72***	52.46***
Cluster	.158	.235	.009	1.308	.029	.036
Cluster X HRM Effectiveness	.232	.140	.002	1.467	.268	.002
Adjusted R <sup>2</sup>	8.30***	13.14***	23.09***	18.88***	44.41***	31.78***
	Adj R <sup>2</sup> = .217	Adj R <sup>2</sup> = .258	Adj R <sup>2</sup> = .321	Adj R <sup>2</sup> = .252	Adj R <sup>2</sup> = .471	Adj R <sup>2</sup> = .321

\*\*\* p < .001

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