

A Longitudinal Test of Two Competing Perspectives About the Effects of HR Systems on Firm Performance*

Hyuckseung Yang

Assistant professor, Department of Management,
The College of Business Administration, Yonsei University
(hyang@base.yonsei.ac.kr)

.....

This study was conducted to contribute to the human resource management (HRM) literature by testing the validities of two competing perspectives on configurational features of human resource (HR) systems: universalistic and fit perspectives. Propositions were set up based on the two competing perspectives. First, drawing on the universalistic perspective, it was expected that the effectiveness of an HR system would be proportional to the extent of use of a set of high-performance HR practices. Second, drawing on the fit perspective which takes into account the interactions among HR practices, it is expected that the effects of an HR system on firm performance would depend on the degree of fit among HR practices composing the HR system.

The hypotheses based on the first proposition were not supported, while the hypotheses based on the second proposition were supported. Two key features of this study are that it relies on a broad array of HR practices rather than a small set of high-performance HR practices to empirically derive HR systems and that it is a longitudinal study.

.....

1. Introduction

A resource-based view of the firm (Barney, 1991; Wernerfelt, 1984) argues that firms can develop sustained competitive advantage by managing firm resources that are valuable, rare, difficult-to-imitate, and non-substitutable. As the resource-based view began to catch people's attention, human resources became spotlighted as a key source

of sustained competitive advantage. Accordingly, researchers began to pay attention to the effects of human resource management (HRM) on firm-level performance as well as the role that the human resource (HR) function could play in the process of developing human resources as a strategic asset. There is a large and growing literature which shows that HRM matters in influencing the firms' bottom line (Becker & Gerhart, 1996; Ichniowski, Kochan, Levine,

논문 접수일 : 2002. 4 게재확정일 : 2002. 12

* The author thanks Paul R. Sackett for his valuable advices and Cheri Ostroff for her generous permission to use the first wave data used in this study. Also, he thanks two anonymous reviewers for their valuable comments and the Institute of Management Research at Yonsei University for financial support.

Olson, & Strauss, 1996).

Then, what do the existing studies tell us about configurational features of effective HR systems? Two competing theoretical perspectives could be quoted from the HRM literature: universalistic and fit perspectives.¹⁾ The former argues that the magnitude of an HR system's effects on firm performance is determined by how extensively so-called high-performance HR practices are used within the HR system, while the latter emphasizes the internal fit among HR practices as an important condition for the HR system to be effective. The assumption that the effects of HR practices are summed in an additive manner underlies the former (Becker & Gerhart, 1996), while the latter assumes that the effects of HR practices are summed in a non-additive manner. Although the two perspectives have different connotations about the configurational features of an effective HR system, they have not been contested explicitly against each other.

Judging from the empirical findings of existing studies, universalistic perspectives seem to be a winner, although the importance of the internal fit has been emphasized in a normative way. A group of

previous empirical studies showed that bundles of high-performance HR practices were found to have significant effects on firm performance in both plant and firm levels (Arthur, 1994; Huselid, 1995; Huselid & Becker, 1996; Ichniowski, Shaw, & Prenushi, 1997; Youndt, Snell, Dean, & Lepak, 1996). However, previous studies have some limitations. Among other things, the range of HR practices covered in those studies was limited. They included only a small set of high-performance HR practices such as work teams, job rotation, quality circles, TQM, contingent pay, employee participation, training, and so forth. Restrictive typologies of HR systems established on the basis of the extent to which those high-performance HR practices were implemented in bundle were used in those studies.

However, the holistic picture of HR system existing in real settings cannot be grasped if only high-performance HR practices are included in analyses. Two firms can be similar in their extent of use of the high-performance HR practices, but differ in their use of the traditional, control-oriented HR practices, which might interact with and thus influence the intended effectiveness of the high-

1) Although a configurational perspective quoted by Delery & Doty (1996) could be another candidate, it was not included in this study as a competing perspective to be tested. The configurational perspective which looks at the systems level of HRM as the basic unit of analysis is contrasted against the other two perspectives when the latter are operationalized at the level of individual HR practices as in Delery & Doty's (1996). However, analyses in this study are conducted at the systems level of HRM where the configurational assumptions are taken for granted

performance HR practices. Therefore, the term HR system used in the previous studies failed to reflect the totality of a firm's HR policies. Only a study that looks at the full array of HR practices would be able to pick this up. The validities of arguments based on universalistic perspectives need to be verified additionally in the context where the whole configurational features of HR systems are taken into account.

The current study was designed to test the two competing theoretical perspectives. In achieving the purpose, this study has two important features. First, the data set contains a full array of HR practices from traditional ones to innovative ones. The inclusiveness of the broad array of HR practices in identifying HR systems will make it possible for the HR systems to reflect the holistic picture of a firm's HR policies.

Second feature of this study is that longitudinal analyses with two-year-interval panel data in addition to cross-sectional analyses are performed to examine the relative effects of HR systems on firm performance. Cross-sectional data do not permit controls for unobservable firm-specific characteristics influencing firm performance differently, and therefore, result in biased estimates of the parameters of interest. In addition, the effects on firm performance

the change in HR systems over time would bring in are not captured from cross-sectional data. Longitudinal analyses with panel data will provide a way to overcome those limitations of cross-sectional analyses.

In the following section the two competing perspectives are discussed with corresponding propositions. Next, sample and measures used in this study are described and a set of HR systems is empirically derived. It is noted that empirical tests of the two competing perspectives will be conducted at the system's level rather than individual practice level of HRM in this study to reflect the totality of a firm's HR policies. Once HR systems have been identified, the propositions are translated into hypotheses incorporating the empirically derived HR systems. Then, empirical estimates are presented, and finally discussion and conclusions follow.

II. THEORETICAL PERSPECTIVES AND PROPOSITIONS

According to a universalistic perspective on HRM, some HR practices have positive effects on firm performance across organizations, and thus more extensive use of the so-called high-performance HR practices would always bring forth better firm

performance (Delery & Doty, 1996; Huselid, 1995; Osterman, 1994; Pfeffer, 1994). In line with this perspective, some HR practices have been identified as high-performance or best HR practices. For instance, Pfeffer (1994) argued that greater use of 16 management practices, such as participation, empowerment, incentive pay, employment security, training & skill development, and so forth, results in higher productivity and profit across organizations. Although clear consensus regarding which HR practices should be included in the category of high-performance HR practices has not been reached (Becker & Gerhart, 1996), ones which are expected to tap and develop employees' potential and competencies, link employees' contribution to rewards, facilitate employees' motivation and commitment to the organization, and facilitate employees' cooperation have been classified as high-performance HR practices. Such HR practices as work teams, quality circles, TQM, job enrichment, information sharing, employee participation, incentive pay, profit sharing, training & development, and so forth are those. They are argued to tap unleashed employees' capabilities by facilitating their participation and involvement, to make employees more informed of where their firm stands and what roles they should play in the context of the whole work flows, and to make employees more motivated to co-

operate with their co-workers in generating new ideas and also in solving problems (Ichniowski, et al., 1996).

Universalistic perspectives used in the HRM literature were originally introduced in association with organizations' contextual factors such as strategies. It was meant that the positive effects of high-performance HR practices on firm performance would be generalizable over diverse organizations with different contextual factors. However, the argument of the universalistic perspective can be straightforwardly extended to the configurational features of an HR system. Under what configurational conditions does an HR system produce positive effects on firm performance? One implication of the universalistic perspectives for the configuration of an effective HR system is that the more high-performance HR practices are utilized within the HR system, the higher firm performance is expected. In other words, the effects of an HR system are expected to depend on the extent to which high-performance HR practices are utilized within the HR system. Based on the universalistic perspective, the following proposition is posited:

Proposition 1: Following the universalistic perspective, it is expected that the effectiveness of an HR system would be propor-

tional to the extent of use of a set of high-performance HR practices.

Meanwhile, researchers emphasizing internal fit or complementarity among HR practices within an HR system take into account the interacting effects among HR practices. They argue that HR systems should consist of HR practices which are complementary among themselves for them to be effective (Milgrom & Roberts, 1995). Milgrom and Roberts presented a case to show how effectively various HR practices are working when they are complementary to each other in bringing forth intended effects. According to the advocates of these fit perspectives (Baird & Meshoulam, 1988; Lengnick-Hall & Lengnick-Hall, 1988; Milgrom & Roberts, 1995), the effects of an HR system depends on the degree of fit among HR practices comprising the HR system. Following these perspectives, a high level of firm performance could not be guaranteed only by the extensive use of high-performance HR practices within an HR system. Interactions between the high-performance HR practices and other HR practices which comprise the HR system altogether should be taken into account. The fit perspectives imply that high-performance HR practices can be effective only when other HR practices are supportive

of or at least not counteracting the positive effects of them. The positive effects of high-performance HR practices can be negated when counteracting bureaucratic HR practices are dominantly influential in workplace. Bureaucratic HR practices tend to foster rigidity of employee behaviors and at the same time discourage employee's involvement and behavioral flexibility. In this sense, the prediction of fit perspectives are contradictory to the prediction of universalistic perspectives. According to the fit perspectives, the following proposition could be posited:

Proposition 2: Following the fit perspectives, it is expected that the effects of an HR system on firm performance would depend on the degree of fit among HR practices composing the HR system.

III. SAMPLE AND HR PRACTICES

3.1 Sample

The data for this study are taken from three sources: two surveys and Standard and Poor's COMPUSTAT database, which contains information on publicly held and traded firms. The first survey regarding the

extent to which a wide variety of HR practices were used within firms was conducted at the end of 1994 (1994 survey hereafter). The survey questionnaire was administered to 3,402 firms in the COMPUSTAT database, and responses were obtained from 373 firms. Forty-one percent of the respondents were executive vice-presidents or vice-presidents, 43% were directors and 16% were managers or specialists.

A second survey (1997 survey hereafter) was mailed out in early 1997 to the 373 firms which responded to the first survey. In the 1997 survey, some items reflecting changes in organizational structure during the two-year interim period were added to the 1994 survey questionnaire. One hundred and five completed surveys were returned from the original set of 373 firms, resulting in a response rate of 28 percent. Forty-four percent of the respondents were executive vice-presidents or vice-presidents, 37% were directors and 19% were managers or specialists.

As for the representativeness of the 1994 and 1997 samples in terms of the industry composition, agriculture-mining-construction industry (4.2% and 4.5% in 1994 and 1997 sample data, respectively, as compared to 7.1% in the COMPUSTAT), finance-insurance-real estate (10.8% and 4.5% in 1994 and 1997 sample data, respectively, as compared

to 12.3% in the COMPUSTAT), and services industries (9.2% and 6.8% in 1994 and 1997 sample data, respectively, as compared to 13.9% in the COMPUSTAT) are underrepresented. On the other hand, manufacturing industry (54.6% and 58.0% in 1994 and 1997 sample data, respectively, as compared to 45.2% in the COMPUSTAT) is overrepresented.

Meanwhile, to test whether the sample are representative of the population in terms of revenue per employee, the ratio of market value to book value, number of employees and return on equity, a series of t-tests were conducted. The results indicated that there were no statistically significant difference between both samples and the population except that there was a statistically significant difference in the number of employees.

3.2 HR Practices

The items adopted in the surveys were designed to assess the extent to which a variety of HR practices were used in firms. For all items, respondents were asked to indicate the extent of use for each HR practice, using a six-point response format ranging from to a very great extent; applies to 80% or more of jobs/employees, 5, to no extent; not used for any jobs/employees, 0.

Recruitment, selection, and promotion. Six

items were included to assess the extensiveness of recruitment and selection. Items included examining recruiting sources, providing realistic job previews, hiring based on fit to job duties/requirements and fit to the organizational culture/value, and conducting regularly validation studies on hiring procedures used. One item assessed the extent to which promotion from within was used.

Job analysis. Job analysis was represented by three items. Items included the extent to which job analysis was conducted, the extent to which job analysis information was updated on a regular basis, and the extent to which systematic procedures were used to collect job analysis information.

Compensation and rewards. Eight items were adopted to measure various kinds of compensation policies. Job-based pay was measured with 3 items. The items included using formal job evaluation system, determining pay levels for each job or job category based on information about the going rate in the market, grouping jobs into pay grades. In addition, the extent of use of merit pay, lead pay, group-based pay, organization-based pay (e.g., profit sharing, ESOP), and skill-based pay was measured with one item, respectively. The degree of using benefits such as health and retirement insurance, the degree of assisting employees in understanding benefits, and the degree of

providing a flexible benefits package, and the extent of use of non-financial rewards such as recognition and praise were also measured.

Performance management and goal setting. Performance management was measured with four items. The items included conducting performance appraisals regularly, providing developmental performance feedback, training managers for conducting appraisals and giving employees feedback, and developing appraisal forms focusing on relevant job duties and specific skills. One item was used to assess the extent of use of goal setting practice in which specific, challenging performance goals or standards are defined for employees.

Training and career development. Six items assessed the extensiveness of training. Items included were training needs assessment, developing learning objectives, evaluation of training methods, skill-update training, support for transfer of training, and remedial or basic skill training. In addition, employee career development was measured with three items. The items included the degree of preparing employees for a variety of jobs in the firm by developing their skills, the degree of developing career plans and paths, and the degree of counseling for employees about their own career goals and realistic career options.

Employee participation. Employee participation was measured with five items. The items covered the degree of information sharing, the degree of employee participation in the design and administration of various HR policies, the degree of utilizing employee opinion and suggestion mechanisms, and the degree of employee involvement in major decisions that would directly affect their work processes.

Organization of work. Five practices focusing on work organization design were assessed. Job enrichment was measured by examining the degree to which employees were provided with a variety of tasks, autonomy and feedback. The extent to which work teams, quality circles (QC), total quality management (TQM), and flexible work schedule were used was assessed by one item for each.

Legal compliance and safety. The extent to which the firm regularly checked for compliance with laws was assessed with five items. Four items assessed the extent to which employee safety was attended to, such as maintaining accident record system, training employees in safe work practices, and conducting internal safety inspections. In addition, the extent of use of a formal grievance procedure and a due process in which employees are disciplined in successive steps was measured by one item for each.

Employee assistance. Employee assistance

was assessed with four items. These items included helping employees balance work and family concerns, helping employees with personal and job-related problems, providing outplacement services, and sponsoring fitness programs.

Workforce diversity. The extent to which firms promoted diversity was assessed with four items: efforts to increase promotion rates of members of protected classes, providing sensitivity training for employees to understand others from different backgrounds, adopting affirmative action plans, and conducting adverse impact analyses.

Temporary workforce. The degree of utilization of temporary workforce in three levels (e.g., workers, professionals, managers) was measured with three items, one for each level.

Intercorrelations among HR practices obtained from the 1994 sample are shown in Table 1. Traditional HR practices such as compliance with laws, grievance procedure, due process, job-based pay, basic benefits, recruitment and selection, and performance management are extensively implemented over the firms. Means of those practices indicate that they are implemented to over 40% of employees on average. On the other hand, the non-traditional HR practices such as work teams, pay leader, skill-based pay, flexible benefits, flexible work schedule, employee involvement, and utilization of

(TABLE 1) Means and Standard Deviations of and Intercorrelations among HR practices

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28										
1. Selectivity	2.79	1.02	0.72																																					
2. Promotion from within	3.99	1.08	0.35	0.35																																				
3. Job analysis	2.87	1.44	0.47	0.33	0.84																																			
4. Equity pay	3.71	1.35	0.29	0.27	0.54	0.75																																		
5. Performance management	3.83	1.11	0.34	0.21	0.34	0.37	0.83																																	
6. Benefits	4.64	0.69	0.23	0.22	0.21	0.30	0.32	0.82																																
7. Merit pay	3.55	1.47	0.24	0.17	0.33	0.28	0.43	0.21	0.75																															
8. Training	2.67	1.07	0.46	0.30	0.38	0.38	0.36	0.23	0.24	0.82																														
9. Career development	2.08	1.15	0.41	0.27	0.28	0.28	0.33	0.16	0.29	0.63	0.75																													
10. Lead pay	1.86	1.80	0.24	0.13	0.22	0.26	0.07	0.15	0.14	0.29	0.26	0.82																												
11. Group-based pay	2.15	1.66	0.13	0.03	0.09	0.11	0.14	0.06	0.29	0.23	0.28	0.19	0.82																											
12. Organizational pay	3.03	1.79	0.18	0.13	0.19	0.18	0.15	0.15	0.26	0.21	0.22	0.17	0.36	0.75																										
13. Skill pay	1.65	1.41	0.17	0.06	0.11	0.06	0.06	0.09	0.06	0.15	0.17	0.20	0.20	0.13	0.82																									
14. Nonfinancial rewards	3.64	1.31	0.33	0.24	0.29	0.29	0.36	0.25	0.22	0.38	0.34	0.10	0.10	0.12	0.09	0.82																								
15. Goal setting	2.87	1.51	0.36	0.22	0.38	0.39	0.42	0.18	0.33	0.47	0.42	0.37	0.28	0.28	0.16	0.25	0.82																							
16. Job enrichment	2.30	1.52	0.41	0.19	0.29	0.18	0.27	0.17	0.26	0.39	0.44	0.27	0.14	0.19	0.19	0.32	0.36	0.82																						
17. Team-based work	1.35	1.41	0.23	0.06	0.21	0.23	0.10	0.05	0.12	0.28	0.32	0.29	0.25	0.21	0.25	0.16	0.31	0.27	0.82																					
18. Quality circle	2.17	1.74	0.19	0.13	0.25	0.26	0.16	0.08	0.09	0.44	0.34	0.19	0.15	0.22	0.15	0.26	0.36	0.35	0.43	0.82																				
19. TQM	2.24	1.89	0.20	0.16	0.20	0.24	0.07	0.09	0.06	0.43	0.29	0.25	0.13	0.25	0.18	0.14	0.35	0.27	0.47	0.58	0.82																			
20. Employee participation	2.66	1.07	0.43	0.31	0.37	0.37	0.36	0.27	0.25	0.54	0.45	0.29	0.23	0.23	0.16	0.38	0.43	0.39	0.30	0.42	0.39	0.70																		
21. Grievance procedures	3.25	2.07	0.29	0.23	0.22	0.24	0.11	0.10	0.01	0.24	0.16	0.12	0.04	0.11	0.03	0.21	0.09	0.12	0.16	0.13	0.14	0.30	0.82																	
22. Due process	4.18	1.25	0.22	0.24	0.18	0.19	0.18	0.17	0.00	0.20	0.11	0.03	-0.01	0.04	0.09	0.22	0.14	0.15	0.00	0.16	0.10	0.24	0.28	0.82																
23. Compliance with laws	4.24	0.99	0.36	0.21	0.31	0.27	0.23	0.23	0.22	0.26	0.18	0.12	0.05	0.14	0.07	0.25	0.24	0.19	0.12	0.16	0.16	0.32	0.29	0.12	0.85															
24. Safety	3.87	1.34	0.25	0.22	0.23	0.26	0.17	0.20	0.05	0.30	0.17	0.17	0.09	0.09	0.06	0.26	0.25	0.14	0.19	0.27	0.32	0.26	0.31	0.19	0.63	0.89														
25. Flexible work schedule	1.85	1.58	0.14	0.03	0.06	0.15	0.05	0.13	0.26	0.23	0.13	0.05	0.01	0.23	0.14	0.22	0.19	0.17	0.09	0.25	0.03	-0.08	0.05	0.03	0.85	0.89														
26. Temporary workforce	1.45	1.07	0.05	0.00	0.02	0.06	0.10	0.09	0.14	0.14	0.16	0.16	0.07	0.01	0.05	0.10	0.08	0.05	0.15	0.12	0.11	0.08	0.08	0.05	0.05	0.88	0.66													
27. Diversity	2.16	1.38	0.37	0.26	0.32	0.30	0.18	0.23	0.18	0.41	0.33	0.21	0.10	0.16	0.12	0.26	0.30	0.22	0.24	0.29	0.28	0.35	0.26	0.18	0.33	0.30	0.15	0.26	0.77											
28. Employee assistance	2.44	1.33	0.25	0.19	0.27	0.32	0.15	0.32	0.16	0.41	0.33	0.30	0.08	0.13	0.00	0.22	0.27	0.18	0.23	0.25	0.25	0.41	0.24	0.15	0.19	0.18	0.28	0.26	0.45	0.64										
29. Flexible benefits	1.93	2.23	0.09	0.00	0.07	0.13	0.07	0.14	0.07	0.06	0.08	0.06	0.06	0.03	0.06	0.02	0.03	0.06	0.16	0.08	0.10	0.09	0.05	0.10	0.00	0.02	0.12	0.09	0.17	0.30										

Note:

Numbers in bold on the diagonal are Cronbach's alpha.

temporary workforce for managers and professionals are not widely adopted. These practices are implemented to less than 20% of employees, on average.

Second, functionally conducted HR practices associated with job analysis, selection, and training are fairly broadly correlated with other HR practices except for some HR practices focusing on flexibility and quality of worker's life (e.g., flexible work schedule, temporary workforce, flexible benefits, work-family balance, employee assistance programs, fitness program), and a couple of compensation practices (e.g., group-based incentives, skill-based pay).

IV. HR SYSTEMS IDENTIFIED

HR systems need to be identified for this study, since the two competing perspectives are supposed to be contested at the system's level of HRM to reflect the totality of HR policies of firms. In the research field of HRM, some classifications of HR systems have emerged in the literature. However, the typology of HR systems varies from researcher to researcher. Some researchers differentiated among HR systems in accordance with production systems or business strategies (McDuffie, 1995; Miles & Snow, 1984; Schuler & Jackson, 1987). Other re-

searchers differentiated in accordance with the historical trends of HRM paradigm, from traditional or control-oriented HR system to innovative or involvement-oriented HR system (Arthur, 1994; Ichniowski, et al., 1997; Youndt, et al., 1996).

However, one critical limitation of the previous studies is that they relied on a limited set of high-performance or innovative HR practices. HR systems based on the limited set of HR practices could not reflect the totality of a firm's HR policies. Due to the limitation and the lack of consensus about the typology of HR systems in the research field, an empirically derived typology of HR systems reflecting a comprehensive set of HR practices was adopted in the current study. To do so, an exploratory multi-step approach was taken to derive a typology of HR systems as follows: (1) factor analyzing HR practices to identify factor structures of the HR practices, and (2) conducting a cluster analysis using factor scores obtained above as input to identify HR systems.

4.1 Factor Structure

An exploratory factor analysis was used to transform the original HR practices into a reduced number of HR system factors. Scree plots, residual correlations, and interpretability of factor structures implied that a

four-factor solution with varimax rotation was appropriate. Eigenvalues dropped dramatically up to the fourth factor, after which rate of decrease leveled off. The examination of the residual correlation matrix of the four-factor solution indicated that only 4.6% of the total correlations exceeded .12, the critical value for statistical significance at the significance level of .05. Table 2 shows the factor pattern matrix.

HR practices which are mainly loaded on factor 1 are ones relevant to employee training and career development, compensation programs facilitating employee motivation and commitment, cooperation and skill development, work organization toward increased employees' responsibility and autonomy, and HR practices encouraging employee participation. Since these practices can be viewed as involvement-oriented HR practices, Factor 1 is named involvement factor in this study.

HR practices which are mainly loaded on factor 2 are traditionally conducted ones emphasizing employee performance in narrowly defined jobs. Standardized job analysis, duty-based hiring, emphasis on employee orientation, tracking turnover/absenteeism, promotion from within, performance management, job-based pay, and basic employee benefits are included in this group. Factor 2 is named job-based-control factor. This job-based-control factor represents the extent to

which a firm standardizes employee behaviors to fit its rules, norms, and job requirements.

HR practices relevant to compliance with employment-related laws are mainly loaded on factor 3. In addition, due process, grievance procedures, record keeping of accidents, training on safety, and safety inspection are included in this group. Factor 3 is named legality factor.

HR practices reinforcing the quality of workers' life, the openness toward diversity, flexibility, and temporary workforce are mainly loaded on factor 4. Factor 4 is named openness factor. The openness factor represents the extent to which a firm actively goes out to find diverse work force. A firm emphasizing this factor is supposed to adjust its rules and norms to meet the needs of the prospective work force outside the firm. The firm emphasizing the openness factor is expected to be tolerant to diversity and heterogeneity among employees.

4.2 HR System Profiles

Next, factor scores on the four factors drawn above were calculated for individual firms, and then Ward's method for cluster formation was applied to the factor scores to identify distinguishable types of HR systems. In the Ward's method, observations are grouped in such a way as to minimize the error sum of squares within each cluster.

(TABLE 2) Factor Pattern Matrix with Varimax Rotation

	Factor 1	Factor 2	Factor 3	Factor 4
Job enrichment	0.52	0.31	0.05	0.01
Quality circle	0.58	0.05	0.19	0.17
Teams	0.53	0.00	0.11	0.17
TQM	0.59	-0.05	0.26	0.15
Needs assessment	0.58	0.26	-0.02	0.26
Clarify training objectives	0.52	0.29	0.07	0.22
Evaluation of training methods	0.53	0.22	0.11	0.24
Skill-update training	0.51	0.32	0.06	0.28
Support transfer	0.58	0.13	0.10	0.17
Remedial training	0.57	-0.03	0.16	0.12
Development	0.61	0.08	0.10	0.22
Career plans	0.55	0.26	-0.06	0.18
Counseling career development	0.46	0.36	-0.07	0.21
Pay leader	0.39	0.10	0.10	0.21
Incentives	0.55	0.11	0.08	-0.07
Group-based incentives	0.44	0.09	-0.05	-0.03
Org-based incentives	0.35	0.20	0.05	-0.04
Skill-based pay	0.36	0.00	0.04	-0.03
Goal-setting	0.49	0.43	0.10	0.10
Evaluation of goal achievement	0.46	0.02	0.41	-0.07
Employee involvement	0.36	0.18	-0.01	0.22
Employee participation	0.60	0.20	0.13	0.04
Opinion survey	0.35	0.22	0.13	0.27
Information sharing	0.38	0.43	0.13	0.12
Suggestion mechanism	0.27	0.33	0.27	-0.03
Promotion from within	0.19	0.34	0.24	0.07
Realistic job preview	0.20	0.39	0.19	-0.14
Job analysis	0.16	0.58	0.20	0.07
Update job analysis	0.19	0.56	0.20	0.04
Standardized job analysis	0.25	0.52	0.19	0.18
Validation	0.25	0.22	0.19	0.19
Duty-based hiring	0.27	0.43	0.13	-0.01
Culture-based hiring	0.28	0.32	0.20	-0.06
Orientation	0.22	0.43	0.19	0.04
Performance appraisal	-0.02	0.70	-0.05	-0.05
Performance feedback	0.09	0.69	-0.05	0.01

(TABLE 2) Factor Pattern Matrix with Varimax Rotation(con'd)

	Factor 1	Factor 2	Factor 3	Factor 4
Systematic performance appraisal	0.09	0.70	-0.04	0.02
Training mgrs on perf. appraisal	0.15	0.65	0.09	0.16
Job evaluation system	0.17	0.46	0.14	0.29
Going rate	0.09	0.56	0.12	0.19
Pay structure	0.15	0.42	0.20	0.22
Merit pay	0.13	0.56	-0.06	0.09
Non-financial rewards	0.26	0.41	0.19	0.13
Tracking turnover/absenteeism	0.26	0.31	0.15	0.13
Mix (pay & benefit)	0.26	0.39	0.15	<i>0.34</i>
Basic benefits	-0.07	0.31	0.08	0.13
Explain benefits	0.02	0.42	0.20	0.23
Law (Title VII)	0.01	0.36	0.61	0.11
Law (compensation)	-0.03	0.34	0.62	0.04
Law (safety)	0.07	0.12	0.79	0.05
Law (employee rights)	0.04	0.22	0.63	-0.06
Accident records	0.13	-0.00	0.72	0.03
Training on safety	0.20	0.03	0.74	0.11
Safety inspection	0.15	0.10	0.76	0.10
Grievance procedure	0.16	0.12	0.40	0.18
Due process	0.11	0.20	0.24	0.10
Adverse impact analyses	0.12	0.24	0.33	0.40
Flexible work schedule	0.20	0.14	-0.13	0.35
Flexible benefits	0.02	0.05	-0.03	0.36
Work-family balance	0.11	0.14	0.07	0.44
Assistance programs	0.21	0.12	0.20	0.44
Fitness programs	0.24	0.08	0.04	0.47
Outplacement services	0.07	0.18	0.01	0.59
Temporary managers	0.02	-0.09	0.03	0.47
Temporary professionals	0.03	0.01	-0.08	0.58
Temporary workers	-0.06	0.03	-0.01	0.48
Sensitivity training	0.29	0.15	0.16	0.52
Minority promotion	0.20	0.05	0.27	0.52
Affirmative action	0.17	0.05	0.27	0.54

This procedure was chosen because it has been shown to reasonably represent the true underlying groupings and it has been found to produce results that are more easily interpretable than results produced by other procedures (Aldenderfer & Blashfield, 1984). The results of the cluster analysis indicated that the four-cluster solution was appropriate.

Figure 1 graphically presents profiles of the four HR systems in terms of factor scores. Table 3 contains the comparison among the four HR systems in terms of factor scores. It should be noted that when interpreting the profiles of the HR systems as shown in Figure 1, the extent of use of four factors should be viewed in relative sense rather than absolute sense, because the factor scores were standardized.

The first HR system is a control-oriented HR system. The control-oriented HR system is characterized by a heavy use of the traditionally implemented job-based-control practices designed to control employee job behaviors and comply with employment-related laws. Firms in this system tend to have an extensive use of a well-developed internal labor market with an entry port in lower levels, compliance with work rules and laws, job-based hiring, and hierarchically structured job-based pay. But, little flexibility and autonomy of employees and little employee involvement are emphasized. Employees' behaviors are molded to fit the job

requirements, organizational norms and culture, and thus homogeneity among employees is facilitated.

The second HR system is an openness-oriented HR system. The openness-oriented HR system is characterized by moderate levels of the first three factors and a relatively high level of the openness factor. Firms with this HR system implement modest levels of both the involvement-oriented and traditional HR practices. At the same time, however, they have open doors for temporary and diverse work force to enter into various hierarchical levels. These open doors can be a channel through which fresh ideas and heterogeneity among workers can instill into firms (Parker & Hall, 1993).

The third HR system is a start-up HR system. The start-up HR system is featured by low investment in HR practices, which is indicated by its below-average levels of each of the four factors. However, it uses the involvement-oriented HR practices more extensively than the control-oriented HR system, while the traditionally implemented HR practices related to the second and third factors are least used.

The fourth HR system is an involvement-oriented HR system. The involvement-oriented HR system is characterized by relatively heavy use of involvement-oriented HR practices (e.g., training, TQM, QC, work teams,

〈TABLE 3〉 Comparison of Four HR Systems in terms of Factor Scores

	System1	System2	System3	System4	Bonferroni t-tests of differences between cluster means								
	(49)	(75)	(137)	(107)	S1 vs S2	S1 vs S3	S1 vs S4	S2 vs S3	S2 vs S4	S3 vs S4	S2 vs S3	S2 vs S4	S3 vs S4
Involvement factor	-1.29	0.14	-0.14	0.66	***	***	***	*	***	***	***	***	***
Job-based-control factor	0.49	0.10	-0.49	0.36	***	***	***	***	***	**	***	***	***
Legality factor	0.69	0.15	-0.72	0.51	***	***	***	***	***	***	***	***	***
Openness factor	-0.21	1.37	-0.19	-0.63	***	***	***	***	***	***	***	***	***

The numbers in the parentheses indicate the number of firms belonging to each HR system.

System1 (S1): Control-oriented HR system

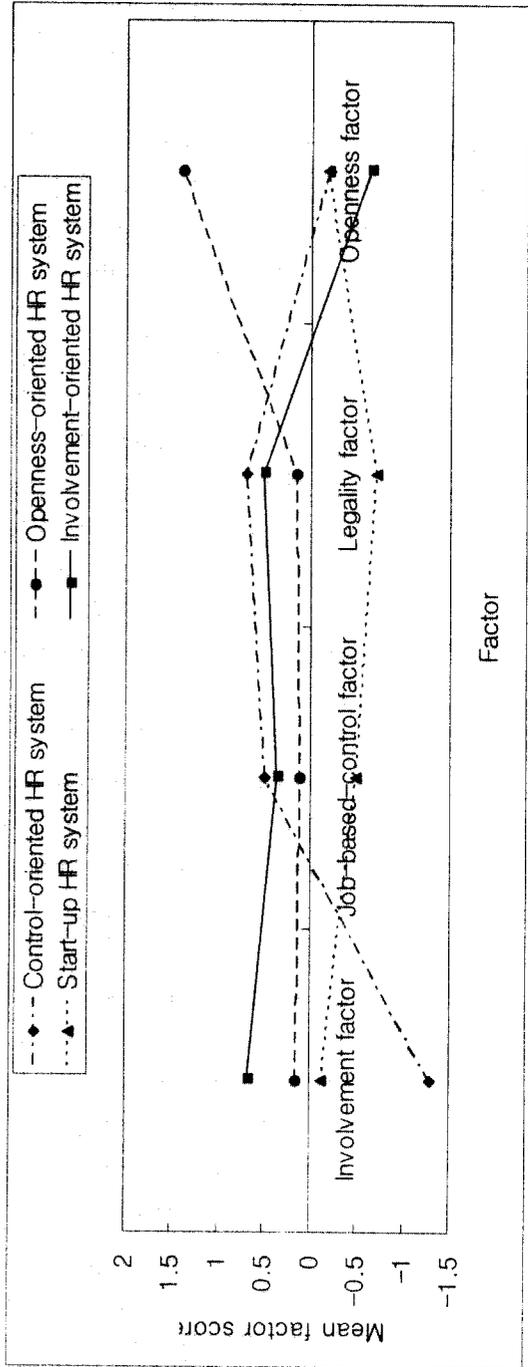
System2 (S2): Openness-oriented HR system

System3 (S3): Start-up HR system

System4 (S4): Involvement-oriented HR system

* < 0.10, ** < 0.05, *** < 0.01.

〈FIGURE 1〉 The Profiles of Four Types of HR Systems



employee participation, lead pay, profit sharing, job enrichment) and little use of openness HR practices (e.g., flexible work schedule, temporary workforce, diversity-promotion programs, work-family balance service). It heavily relies on permanent workforce with an emphasis on promotion from within, and also heavily uses other traditional job-based-control practices (e.g., job analysis, job-based selection, job-based pay, performance appraisal, compliance with regulations). It is quite a plausible scenario that firms having largely relied on a traditional job-based-control practices turned into firms with the involvement-oriented HR system by adopting the newly developed involvement-oriented HR practices to cope with changing business environment.

In regard to the distribution of the four HR systems, 16% of the firms in the 1994 sample were identified as the control-oriented HR system, 19% as the openness-oriented HR system, 35% as the start-up HR system, and 30% as the involvement-oriented HR system.

After all the firms in the 1994 sample had been classified into the four types of HR systems, a discriminant analysis was adopted to extract discriminant functions which would be used to classify the firms in the 1997 sample into the four types of HR systems. Discriminant analysis is a statistical technique for classifying objects into mutually

exclusive and exhaustive groups on the basis of a set of independent variables. It involves deriving linear combinations (i.e., discriminant functions) of the independent variables that will discriminate among the predefined groups in such a way that the misclassification error rates are minimized. The discriminant analysis was applied to the 1994 sample, which now included an HR system variable identified previously. The HR system variable was used as dependent variable and the four HR system factors were used as predictor variables. According to the cross-validation of the discriminant analysis, the error rate of the discriminant functions in assigning firms to the four types of HR systems was 9.7%. In terms of the composition of different HR systems in 1997 sample, 16% of the firms were identified as the control-oriented HR system, 26% as the openness-oriented HR system, 30% as the start-up HR system, and 28% as the involvement-oriented HR system.

4.3 Hypotheses

As mentioned in Proposition 1, the universalistic perspective predicts that the more extensively an HR system uses high-performance HR practices, the more effective it is likely to be. To rephrase this proposition into more specific hypotheses which

reflect the empirically derived HR systems above, the four HR systems were compared with respect to the extent of use of involvement-oriented HR practices.

In terms of standardized factor scores on involvement HR factor as shown in Table 3, the involvement-oriented HR system, the openness-oriented HR system, and the start-up HR system was found to be all superior to and statistically distinguished from the control-oriented HR system at the significance level of 0.01. In addition, the involvement-oriented and openness-oriented HR systems turned out to be distinguished from the start-up HR system in the factor scores of involvement HR factor at 0.01 and 0.1, respectively. Finally, the involvement-oriented HR system was found to have higher score on involvement HR factor than the openness-oriented HR system.

Based on the comparison among HR systems with respect to the extent of use of involvement-oriented HR practices, the Proposition 1 could be translated into the following hypotheses which pertain to the relative effects of the four HR systems on firm performance:

H1: Firms with an involvement-oriented HR system, openness-oriented HR system, or a start-up HR system are expected to outperform those with a control-oriented HR system.

H2: Firms with an involvement-oriented HR system or an openness-oriented HR system are expected to outperform those with a start-up HR system.

H3: Firms with an involvement-oriented HR system are expected to outperform those with an openness-oriented HR system.

Meanwhile, the fit perspective predicts that the effectiveness of an HR system utilizing a set of high-performance HR practices would depend on the nature of other HR practices implemented within the same HR system. The effects of a set of involvement-oriented HR practices composing an HR system would decrease when they are implemented in the context where control-oriented HR practices are rooted deeply, while the effects of them would increase when they are implemented with a set of supportive HR practices. To translate this proposition into more specific hypotheses reflecting the four HR systems identified above, HR practices mainly loaded on job-based-control factor, legality factor, and openness factor, respectively, need to be evaluated in the light of the degree of complementarity with those HR practices mainly loaded on the involvement factor first.

HR practices mainly loaded on the openness factor are likely to be complementary with

involvement-oriented HR practices. Firms that have high scores on openness factor are likely to create more positive climate for employees' behavioral flexibility, which are encouraged by involvement-oriented HR practices, than those having low scores on it. Helping employees to manage transitions between their work and home or to express their full repertoire of ideas and skills can increase their psychological availability for the work at hand (Parker & Hall, 1993). Further, people from different racial, ethnic, and family backgrounds bring different ideas, perspectives, and worldviews and thus achieve flexibility of employee behaviors (Parker & Hall, 1993).

Following the fit perspective along with the argument for the complementarity between openness-oriented and involvement-oriented HR practices, the openness-oriented HR system is expected to be more effective than the involvement-oriented HR system. In the openness-oriented HR system, involvement-oriented HR practices, even if they are less extensively used than in the involvement-oriented HR system, are implemented in a more favorable environment as compared to the involvement-oriented HR system. They are implemented together with a high level of openness-oriented HR practices. In the involvement-oriented HR system, however, involvement-oriented HR practices are implemented in an unfavorable environment in

that they are mingled with an extensive level of bureaucratic HR practices but a low level of openness-oriented HR practices. Therefore, the following hypothesis is posited in relation to the Proposition 2:

H4: Firms with an openness-oriented HR system are expected to outperform those with an involvement-oriented HR system.

Meanwhile, the job-based-control and legality factors represent traditional, bureaucratic HRM where jobs are narrowly and specifically defined, major HR functions are operated centering around job requirements, and compliance with rigid regulations put lots of constraints on management's discretionary decisions about human resources. Therefore, it is expected that HR practices mainly loaded on these two factors cannot be complementary with involvement-oriented HR practices and go further to counteract the positive effects of those.

In this respect, the involvement-oriented and start-up HR systems can be compared to each other to examine the Proposition 2. The involvement-oriented HR system is characterized by an extensive use of traditional, bureaucratic HR practices as well as involvement-oriented HR practices, while the start-up HR system is characterized by a moderate use of involvement-oriented HR

practices in the non-bureaucratic context. Therefore, the comparison between the involvement-oriented HR system and the start-up one is adopted here as another appropriate comparison to test the Proposition 2. In terms of the degree of misfit between involvement-oriented HR practices and bureaucratic HR practices, the start-up HR system is evaluated to be in a better condition than the involvement-oriented HR system. Thus, the following hypothesis is posited:

- H5: Firms with a start-up HR system are expected to outperform those with an involvement-oriented HR system.

V. ESTIMATION

In the current study, the logarithm of net sales per employee, market/book ratio and return on equity (ROE) were adopted to represent the firm performance. The net sales per employee represents a current assessment of how much each employee contributes to the firm's revenue, whereas the market/book ratio gives an indication of how investors regard the value of the company in the capital market. The former represents the efficiency aspect of the firm, while the latter represents the risk-adjusted

future profitability of it. Meanwhile, the return on equity is the ratio of net income after taxes to common equity and thus represents the rate of return on the stockholders' investment (Brigham, 1989).

Drawing on the literature (Freeman & Medoff, 1984; Hambrick, 1983; Hansen & Wernerfelt, 1989; White & Hamermesh, 1981), economic and organizational variables which were expected to influence firm performance were controlled for in the estimation. The control variables included prior 5-year average growth rate, capital per employee, union density, industry, business strategy, and organizational structure. Data on the net sale per employee, growth rate, capital per employee, industry were obtained from the COMPUSTAT database. The business strategy was obtained through one question which was included in both surveys. Respondents were presented four types of business strategies (i.e., cost leader, innovator, mixed of cost leader and innovator, and quality leader) and solicited to choose one which described their strategy best. Three features of organization structure (i.e., hierarchy, formalization, centralization) were measured in the 1997 survey.

Table 4 presents means and standard deviations of major variables by HR system in the 1994 data set. The openness-oriented HR system is distinguished by its largest mean values for net sales per employee and

the number of employees. As for the number of employees, a couple of very large firms who employ over 100,000 belong to the openness-oriented HR system, which makes the mean and standard deviation of the openness-oriented HR system much larger relative to the other HR systems. The fact that the openness-oriented HR system is likely to be adopted in large firms is consistent with Parker and Hall's (1993) survey report indicating that firms with more flexible work practices tended to be

larger. Firms with the start-up HR system have the highest mean and standard deviation for the prior 5-year growth rate, which implies that large proportion of them might be start-up firms. Because the base net-sales-per-employee of start-up firms are quite small relative to established firms, their growth rates tend to be large. Comparison of capital per employee implies that physical capital is well accumulated in firms with the openness-oriented and the control-oriented HR systems.

(TABLE 4) Group Means of Dependent and Control Variables by HR System

HR system	Variable	Mean	SD
Control-oriented HR system	Net sale per employee	\$178,428	\$96,484
	Number of employees	6.937	18.320
	Prior 5-year growth rate	0.09	0.13
	Capital per employee	\$151,481	\$266,340
	Union density	1.25	1.80
Openness-oriented HR system	Net sale per employee	\$268,507	\$209,228
	Number of employees	27,571	36,089
	Prior 5-year growth rate	0.09	0.19
	Capital per employee	\$151,135	\$224,261
	Union density	1.68	1.93
Start-up HR system	Net sale per employee	\$169,188	\$157,982
	Number of employees	8,827	13,150
	Prior 5-year growth rate	0.64	3.29
	Capital per employee	\$62,739	\$102,720
	Union density	0.89	1.37
Involvement-oriented HR system	Net sale per employee	\$194,918	\$236,131
	Number of employees	8,917	14,669
	Prior 5-year growth rate	0.20	0.48
	Capital per employee	\$74,197	\$110,306
	Union density	1.12	1.77

5.1 Cross-sectional Estimates of the Effects of Different HR Systems

To estimate the relative effects of different HR systems on firm performance, firm performance was regressed on prior-5-year growth rate, capital per employee, union density, industry dummies, business strategy dummies, and HR system dummies. The effective observations used in the regression analyses were 213 in the 1994 sample and 80 in the 1997. Table 5 contains the estimates of the effects of HR systems on

firm performance from the 1994 and 1997 samples.

To test whether adding HR system dummies to the restricted models accounts for a significant portion of variance of firm performance beyond that explained by the control variables included in the restricted models, joint F-tests were conducted. A restricted model included only control variables, while in an unrestricted model three types of HR systems were added with the involvement-oriented HR system being used as a reference dummy. As for the first

(TABLE 5) The Effects of HR Systems on Firm Performance

	NSPE ^a		MV/BV ^b		ROE ^c	
	1994	1997	1994	1997	1994	1997
HR Systems superscript						
Control-oriented HR system	0.31	0.30	-3.05*	-0.25	-0.07	-0.05
Openness-oriented HR system	0.52***	0.54***	-0.44	0.71	-0.10	-0.06
Start-up HR system	0.21	0.34*	-1.34	1.01	0.07	0.03
Overall F	3.13***	4.37***	1.03	3.28***	0.79	1.82**
Joint F	3.14**	2.33*	1.74	1.45	0.59	1.10
S2 vs. S3						
S2 vs. S4	S2*	S2***				
S3 vs. S4	S2***	S3*				

^a NSPE represents 'Net Sales Per Employee'.

^b MV/BV represents the 'Market/Book Value'.

^c ROE represents 'Return On Equity'.

^d Involvement-oriented HR system was used as reference for the HR system.

S1: Control-oriented HR system

S2: Openness-oriented HR system

S3: Start-up HR system

S4: Involvement-oriented HR system

* < 0.10, ** < 0.05, *** < 0.01.

model in which the logarithm of the net sales per employee was used as the dependent variable, F values for the change in R-square were 3.14 for the 1994 sample and 2.33 for the 1997 sample, respectively, both of which are statistically significant at .05 and .1 levels, respectively. The results indicate that the HR systems matter in explaining the variation among firms in the net sales per employee.

However, as for the remaining two regression models in which market/book ratio and return on equity were used as the dependent variable, respectively, adding the HR systems to the independent variables was not found to improve the model in explaining the variation among firms in the respective dependent variable. Therefore, further analyses based on the last two models were not conducted hereafter.

To compare the relative effects of pairs of HR systems, t-tests were conducted. The results show that the involvement-oriented, openness-oriented, and start-up HR systems were not found to be more effective than the control-oriented HR system. In addition, the involvement-oriented HR system was not found to be more effective than the openness-oriented HR system or the start-up one. These results do not support Hypothesis 1, Hypothesis 2, and Hypothesis 3, which were posited on the basis of the universalistic perspective.

On the other hand, the openness-oriented HR system was found to be more effective than the involvement-oriented HR system in both 1994 and 1997 samples. Statistical difference between the involvement-oriented HR system and the openness-oriented one was found to be significant at 0.01 in both samples. These results are consistent with the expectation expressed in Hypothesis 4. Meanwhile, the results indicate that the start-up HR system is more effective than the involvement-oriented HR system in 1997 sample, but not in 1994 sample. This result partially supports the Hypothesis 5.

5.2 Longitudinal Estimates of the Effects of Different HR Systems

In estimating the effects of the HR systems on firm performance using cross-sectional data, some bias can arise, because all relevant variables might not be exhaustively included in the cross-sectional regression analyses. The most likely scenario is that firms with an innovative HR system might have different intangible firm-specific characteristics such as management capabilities from those with a control-oriented HR system. If a regression model does not adequately incorporate the firm-specific characteristics that are correlated with choice of HR systems and also affect firm performance differently, estimate of the effects of HR

systems will be biased. Longitudinal data provide a way to deal with the potential source of bias by canceling off the firm-specific characteristics which are assumed to remain the same over time in a fixed-effects model. In a fixed-effects model only the information on the changes in variables is used in the regression analysis.

The control variables used in the fixed-effects model included change in growth rate, change in capital per employee, change in union density, and change in the business strategy dummies. In addition, considering that other relevant factors that changed over time within firms could be the true causes of the change in firm performance, the changes in organizational structure variables were included. On the other hand, industry dummies were dropped, since industry variable was fairly stable over the two-year period.

The second column of Table 6 contains estimates of the fixed-effects model. A joint

F-test (joint $F=1.61$) indicates that the addition of HR systems does not account for a significant portion of variance in firm performance beyond that explained by the control variables. However, it is quite plausible that this result is mainly due to the small sample size of 80, which leads to the lack of statistical power to detect the true effects.

The pattern of relative performance of the different HR systems obtained from the longitudinal analyses are consistent with those obtained from the cross-sectional analyses, although the statistical significance were not found probably due to small sample size. First of all, no statistically significant difference in the effects between the control-oriented HR system and the other three HR systems was found. In addition, a series of t-tests for comparison of the effects of pairs of HR systems revealed that the involvement-oriented HR system was not found to be more effective than the

(TABLE 6) A Longitudinal Analysis about the Effects of HR Systems on the Logarithm of Net Sales Per Employee

	Estimate	SE	p-value
HR Systems ^a			
Control-oriented HR system	0.29	0.20	.15
Openness-oriented HR system	0.34	0.23	.13
Start-up HR system	0.24	0.17	.16
Joint F	1.61		

^a Involvement-oriented HR system was used as reference for the HR system.

openness-oriented HR system or the start-up one and that the openness-oriented HR system was not found to be more effective than the start-up one. These results indicate that Hypothesis 1, Hypothesis 2, and Hypothesis 3, which were posited on the basis of the universalistic perspective, are not supported. Instead, the openness-oriented and start-up HR systems turned out to outperform the involvement-oriented HR system, if not at the conventional significance level, at $p=0.13$ and 0.16 , respectively. These results imply that there is a good possibility that Hypothesis 4 and Hypothesis 5 based on the fit perspective would be supported, if it were tested with a larger sample size.

In sum, although the statistically significant results were restrictively found only in the model where the logarithm of net sales per employee was used as a dependent variable, the results from cross-sectional and longitudinal regression analyses did not support Hypothesis 1, 2, and 3 posited along the universalistic perspective. On the other hand, Hypothesis 4 and Hypothesis 5 posited based on the fit perspective were partially supported across cross-sectional and longitudinal analyses.

VI. DISCUSSION AND CONCLUSIONS

The results together favor the fit perspective against the universalistic perspective. These results imply that the adoption of involvement-oriented HR practices itself without taking into account other HR practices which interact with them does not guarantee the improved effects of the HR system. When the totality of an HR system in terms of the coverage of HR practices was incorporated in the analyses, the effectiveness of involvement-oriented HR practices was found to depend on how supportive or complementary to them other HR practices were rather than how extensively the involvement-oriented HR practices were used. The involvement-oriented HR practices were found to be less effective in an HR system where they were implemented with counteracting control-oriented HR practices than in another HR system where some complementary practices were implemented. This might be because control-oriented HR practices create a bureaucratic organizational climate which would keep the involvement-oriented HR system from being effectively working when they are deeply rooted in a firm.

The results also imply that it is important to take into account a full array of HR practices, rather than a subset of HR

practices (e.g., involvement-oriented HR practices), to look at the relationship between the HR system and firm performance. Inclusion of a full array of HR practices produced a different typology of HR systems as shown in Figure 1 from those established only based on the extent of use of involvement-oriented HR practices as in previous studies. Further, it produced a different picture about the relative effects of different HR systems. Because HR practices interact among themselves, the omission of some relevant HR practices in figuring out HR systems might mislead the conclusion.

But, the results of this study should not be taken as a full support for the fit perspective. The current study did not test hypotheses using the elaborate measurement of the degree of the fit among component HR practices within each HR system. Up until now, there is no comprehensive picture about which practices are complementary to each other. More theoretical research regarding fit or complementarity among HR practices is needed. At the same time, how to measure the degree of the fit among HR practices within a certain HR system need to be developed in the future research.

Some limitations of this study are noted. First, only the efficiency aspect of firm performance was found to be influenced by HR systems. Considering, however, that organization performance is multi-dimensional

(Rogers & Wright, 1998), the conclusion that the fit perspective, not the universalistic perspective, is supported is so restrictive to be confined to the efficiency aspect of firm performance.

Second, this study was conducted at the firm level. While such studies provide the most generalizable, direct tests of the relationship between HRM and firm performance, HR systems at the firm level may not reflect those at other levels of analysis such as the plant level or business unit level well (Becker & Gerhart, 1996). There may exist several different HR systems across different business units or different parts within a given firm. Therefore, there is a good possibility that an HR system which looks seemingly mixed up with counteracting HR practices as in an involvement-oriented HR system at the firm level is actually composed of more than two different HR systems each of which is working effectively in a separate business unit. In addition, firm-level studies are also more vulnerable to measurement error. Measurement errors are more likely to be larger in a firm-level study than a sub-unit-level study (Ichniowski, et. al., 1996).

Third, the longitudinal data used in this study has only a two-year time interval. It is assumed in the fixed-effects model that the change in HR system takes effect shortly after the implementation of new HR

system. If indeed there is a lag between the implementation of a newly adopted HR system and any subsequent change in firm performance, the true effects of the changes in HR systems on firm performance might not be captured fully from a two-year interval longitudinal data set (Huselid & Becker, 1996).

Fourth, the scale attempted to assess the percentage of jobs/employees affected by the practices. Unfortunately, the simultaneous reference to jobs and employees presents a potential response confound to the executives since a HR practice might apply, for instance, to 10% of the jobs which account for 40% of employees. Also, the scale did not differentiate employees/jobs in accordance with the degree of potential influences on firm performance.

Fifth, hypotheses were set up with empirically derived HR systems. It was somewhat inevitable in the sense that a priori typology of HR systems reflecting a broad array of HR practices was not established in the literature, and that the analyses needed to be conducted at the system's level of HRM to reflect the totality of HR policies. Notwithstanding, it brings the plausibility that the results capitalize on the specificity of the sample used in this study.

REFERENCES

- Aldenderfer, M.S., & Blashfield, R.K. (1984), *Cluster Analysis*. Beverly Hills, CA: Sage.
- Arthur, J. B. (1994), Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37, 670-687.
- Baird, L., & Meshoulam, I. (1988). Managing two fits of strategic human resource management. *Academy of Management Review*, 13, 116-128.
- Barney, J. (1991), Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Becker, B., & Gerhart, B. (1996), The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39, 779-801.
- Brigham, E. F. (1989). *Fundamentals of Financial Management*. Chicago, IL: Dryden Press.
- Delery, J., & Doty, D.H. (1996), Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39, 802-835
- Hambrick, D. C. (1983), Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of Management Journal*, 26, 5-26.
- Hambrick, D. C. (1984), Taxonomic approaches to studying strategy: Some conceptual and methodological issues. *Journal of Management*, 10, 27-41.
- Hansen, G. S., & Wernerfelt, B. (1989), Determinants of firm performance: The relative importance of economic and organizational factors. *Strategic Management Journal*, 10, 399-411.
- Huselid, M. A. (1995), The impact of human resource management practices on turnover, productivity,

- and corporate financial performance. *Academy of Management Journal*, 38, 635-672.
- Huselid, M. A., & Becker, B. E. (1996), Methodological issues in cross-sectional and panel estimates of the human resource-firm performance link, *Industrial Relations*, 35, 400-422.
- Ichniowski, C., Kochan, T. A., Levine, D., Olson, C., & Strauss, G. (1996), What works at work: Overview and assessment. *Industrial Relations*, 35, 299-333.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997), The effects of human resource management practices on productivity: A study of steel finishing lines, *The American Economic Review*, 87, 291-314.
- Lengnick-Hall, C. A., & Lengnick-Hall, M. L. (1988). Strategic human resources management: A review of the literature and a proposed typology. *Academy of Management Review*, 13, 454-470.
- MacDuffie, J. P. (1995), Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48, 197-221.
- Miles, R. E. and Snow, C. C. (1984), Designing strategic human resources systems. *Organizational Dynamics*, Summer, 36-52.
- Milgrom, P., & Roberts, J. (1995), Complementarities and fit: Strategy, structure and organizational change in manufacturing. *Journal of Accounting and Economics*, 19, 179-208.
- Miller, D. (1981), Toward a new contingency approach: The search for organizational gestalts. *Journal of Management*, 18, 1-26.
- Osterman, P. (1994), How common is workplace transformation and who adopts it? *Industrial and Labor Relations Review*, 47, 173-188.
- Ostroff, C. (1996), *Human resource management and firm performance: practices, systems, and contingencies*. manuscript.
- Parker, V. & Hall, D. T. (1993), Workplace flexibility: Faddish or fundamentals? In Philip H. Mirvis (ed.), *Building the Competitive Workplace: Investing in human capital for corporate success*, New York, NY: John Wiley & Sons, Inc.
- Pfeffer, J. (1994), *Competitive Advantage through People: Unleashing the power of the work force*. Boston, MA: Harvard Business School Press.
- Pil, F. K., & MacDuffie, J. P. (1996), The adoption of high-involvement work practices, *Industrial Relations*, 35, 423-455.
- Rogers, E. W., & Wright, P. M. (1998), Measuring organizational performance in strategic human resource management: Problems, prospects, and performance information markets. *Human Resource Management Review*, 8, 311-331.
- Schuler, R. S., & Jackson, S. E. (1987), Linking competitive strategies with human resource management practices. *The Academy of Management Executive*, 1, 207-219.
- U.S. Department of Labor. (1993), *High Performance Work Practices and Firm Performance*. Washington, DC: U.S. Government.
- von Hippel, C., Mangum, S. L., Greenberger, D. B., Heneman, R. L., & Skoglund, J. D. (1997), Temporary employment: Can organizations and employees both win? *Academy of Management Executive*, 11, 93-104.
- Walton, R. E. (1985). From control to commitment in the workplace. *Harvard Business Review*, March-April. pp. 77-84.
- Wernerfelt, B. (1984), A resource-based view of the firm, *Strategic Management Journal*, 5, 171-180.
- White, R. E., & Hamermesh, R. G. (1981), Toward a model of business unit performance: An integrative approach. *Academy of Management*

Review, 6, 213-223.

Wright, P. M., & Snell, S. A. (1998), Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of Management Review*, 23, 756-772.

Youndt, M. A., Snell, S., Dean, J. W. Jr., Lepak, D. P. (1996), Human resource management, manufacturing strategy, and firm performance, *Academy of Management Journal*, 39, 836-866.

인적자원관리 시스템이 조직성과에 미치는 영향: 두 경쟁 관점에 관한 종단검정

양혁승*

요약

본 연구는 조직의 성과에 영향을 미치는 인적자원관리 시스템의 구성적 (configurational) 특성에 관하여 경쟁적 위치를 점하고 있는 두 가지 관점-보편주의적 관점과 적합성 관점-에 기초하여 명제와 가설을 설정하고 이를 실증적으로 검정하였다. 우선, 보편주의적 관점에 따르면 인적자원관리 시스템이 조직성과에 미치는 효과는 해당 시스템 내에서 고성능 인적자원관리 제도가 활용되는 정도에 비례한다고 볼 수 있다. 반면, 개별 인적자원관리 제도들간 상호작용을 고려하는 적합성 관점에 따르면 인적자원관리 시스템이 조직성과에 미치는 효과는 해당 시스템을 구성하고 있는 개별 인적자원관리 제도들간 적합성 정도에 따라 달라진다고 볼 수 있다.

실증검정 결과는 보편주의적 관점에 기초하여 설정된 가설들은 지지를 받지 못한 반면, 적합성 관점에 기초하여 설정된 가설들은 실증적으로 지지를 받았다. 본 연구가 기존의 연구와 다른 두드러진 특징은 인적자원관리 시스템을 분류함에 있어 소수의 고성능 인적자원관리 제도들만을 분석에 포함시키기보다는 광범위한 인적자원관리 제도들을 분석에 포함시켰다는 점과 두 시점에서 데이터를 수집하여 종단분석을 시도하였다는 점이다.

주요 단어: 인적자원관리, 인적자원관리 시스템, 보편주의적 관점, 적합성 관점.

* 연세대학교 경영대학 경영학과 조교수