

KNOWLEDGE FLOWS WITHIN MNCs: HOW WE MANAGE PEOPLE MATTERS

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ABSTRACT

This study examines the impact of high performance work systems (HPWSs) on knowledge flows within the U.S. multinational corporations (MNCs). We use organizational learning theory as the theoretical basis to argue how the implementation of HPWSs would impact the direction of knowledge flows. The study enriches the literature by exploring both knowledge inflows and knowledge outflows and both the effects of individual HR practices and the complementary effect of HPWSs when applied as a mutually reinforcing system.

INTRODUCTION

It is widely acknowledged that knowledge and learning are at the root of understanding how multinational corporations (MNCs) gain and sustain competitive advantage. The ability to create and transfer knowledge internally is imperative for MNCs to survive rapidly changing global competition [21]. In recent years, knowledge transfer within MNCs has been given much attention by both knowledge management and international management researchers, e.g. [10] [12] [13]. Among these studies, many organizational characteristics have been demonstrated as having significant impact on knowledge transfer within MNCs, including entry mode, autonomy, formalization, subsidiary size, global responsibility, and authority. However, human resource management (HRM) as an important organizational function has been examined less extensively. Knowledge as invisible asset is embodied in people, HR policies are critical to organizational learning as HRM plays an important role in facilitating employees' absorption, transfer, sharing and creation of knowledge [19] [34]. Organizations should design the HR system in ways that allow it to exploit knowledge-based resources and enable employees to use the knowledge to gain the competitive advantage through HR [20]. Furthermore, high performance work systems (HPWSs) emphasize selecting and developing high quality employees, attaching significant rewards to employee performance, and the empowerment of lower level employees, which are seen as beneficial in contemporary organizations that are increasingly knowledge-driven in environments characterized by intense competition and rapid change [25].

Organizational learning has been identified as one of the most important perspectives for understanding organizational knowledge transfer [13] [32]. Organizational learning theories describe how organizations change their knowledge or their behavior in response to experiences. Organizations learn how to create new knowledge and modify existing knowledge to make their knowledge base better in serving as a source of sustainable competitive advantage [8] [24]. Exploration and exploitation, as two types of learning capacities, have gained much attention in the field of organizational learning. As March states, explorative learning is captured by such terms as "search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation", while exploitative learning includes such things as "refinement, choice, production, efficiency, selection, implementation, execution" [29, p. 71]. These two different learning capabilities affect the amount and the type of subsidiary's knowledge stock,

which in turn can stimulate or constrain the knowledge flows between MNC units [29] [32]. Exploration generates new and unsettled knowledge, which is potentially relevant to other subsidiaries other than the one doing the exploration [32]. Subsidiaries with explorative learning capabilities have high potential to transfer their newly established knowledge to other units, which makes the outflows from that subsidiary possible. Exploitation utilizes existing knowledge and resources to generate incremental knowledge in order to reduce cost and enhance the certainty of return. Subsidiaries with exploitative learning capabilities tend to use the current available knowledge from other parts of the organization, which stimulate the inflows from outside of that subsidiary. Organizations have to learn how to manage the trade-off between exploration and exploitation.

People are seen as the main driver of knowledge management [5] [11] [30] [34]. HPWSs are viewed as strategic personnel management emphasizing acquisition, organization and motivation of human resources to facilitate the dissemination of learning and later, to take responsibility for coordinating the preparation of business plans to incorporate the outcome of the learning activity [1]. The daily tasks of HPWSs in building a learning organization are to assist employees in creating and using knowledge, establishing appropriate networks, and engaging in double-loop learning [9]. Based on the mechanism described above, this study is to draw heavily on organizational learning theory, e.g. [16] [23] [26] [32] and the resource-based view of the firm, e.g. [3] [7] [21] to explore the influence of HPWSs on knowledge flows within MNCs.

LITERATURE REVIEW AND HYPOTHESES

Knowledge Transfer within MNCs

MNCs gain their competitive advantage to a great extent through their ability to transfer and exploit knowledge effectively and efficiently among units and manage their intra-corporate knowledge flows [13] [28]. The understanding of knowledge flows varies somewhat in the literature. Some researchers have seen knowledge flows as the transfer of skills and technology among organizational subunits. For instance, [12] define intra-corporate knowledge flows as the transfer of either expertise, which refers to input processes (e.g., purchasing skills), throughput processes (e.g., product designs, process designs, and packaging designs), or output processes (e.g., marketing knowledge, distribution expertise); or external market data of strategic value, which refers to the transfer of globally relevant information about key customers, competitors, or suppliers. Other researchers have focused on the transfer of business practices inside the firm, in which practice refers to the organization's routine use of knowledge with a tacit component embedded partly in individual skills and partly in collaborative social arrangements, e.g. [6] [35]. However, most researchers believe that knowledge flows are multistage processes with multiple directions, therefore most effort has been put on more procedural types of knowledge, such as knowledge in the form of know-how, instead of declarative types of knowledge (e.g., monthly financial data) [12] [13] [15] [32] [35].

Consistent with the literature, we adopt a fairly broad notion of knowledge flows in this study to capture the overall amount of knowledge and technology transferred between MNCs' subunits. We define knowledge flows as the aggregate volume of know-how and information transmitted to (inflows) or from (outflows) the focal subsidiary, including the knowledge and technology related to research and development (R/D) of new products or services, production and operations, sales, promotion, distribution, and other aspects of marketing, and general management and administrative procedures.

HPWSs

HPWSs emphasize HR practices such as selective employment, competitive compensation, comprehensive training and development, and employee empowerment as a system, which are primarily compared to traditional bureaucratic work systems characterized by such practices as limited job assignments and training, high levels of standardization and managerial control, seniority-based pay, evaluation based on behaviors rather than outcomes. In this study, we take the HR programs approach and identify the best bundles of HR practices, e.g. [18]. The measures of HPWSs are consistent with the HR subsystems used by [2], which include staffing, training and development, and compensation. The scales are described in detail in method section.

As an important contribution to the literature and the first study testing the relationship between knowledge transfer and specific HR practices, [28] demonstrated that competence/performance appraisal and training are positively related to employee abilities; performance-based compensation and internal communication are positively related to employees' motivation; employee ability and motivation as absorptive capacity are needed to facilitate the transfer of knowledge from other parts of the MNC (knowledge inflows); and only the interaction between employees' ability and motivation increases the level of knowledge transfer to the subsidiary. In her more recent research, [27] further demonstrated that not only can individual HR practices enhance the ability and motivation of knowledge receivers which correspondingly facilitate the knowledge inflows to the subsidiary, but also these HR practices are expected to have a stronger effect on the degree of knowledge transfer when they are applied as a system of mutually reinforcing practices. This is consistent with the complementary or synergy argument of HPWSs such that HPWSs influence employees' skills and competencies through the development of the firm's human capital [17] and the effects of subsets of work practices are greater when they are implemented jointly [4]. Specifically, the staffing subsystem can facilitate hiring high quality employees, the training subsystem can enhance employees' ability to absorb knowledge from outside of the subsidiary and recombine them for immediate returns, and the reward system can motivate personnel to achieve an organization's goal of innovation and profitability. All of these HR practices under HPWSs can enhance a subsidiary's exploitative learning capabilities to absorb and utilize the current available knowledge from other parts of the organization efficiently, which stimulate knowledge inflows from outside of that subsidiary. Therefore, a positive relationship between HPWSs and knowledge inflows is expected. The system effect of complementary practices is larger than the sum of the marginal effects from each individual practices [18]. Thus, we hypothesize that

*H1: A higher degree of knowledge **inflows** to the subsidiary is expected when more HPWSs are implemented.*

*H2: An even higher degree of knowledge **inflows** to the subsidiary is expected when HPWSs are applied as a mutually reinforcing system.*

Both theoretical argument and empirical evidence support the link between HPWSs and knowledge inflows. However, the literature has paid little attention to knowledge outflows. Exploratory learning capability is associated with knowledge outflows, which includes the ability to create new knowledge or modify existing knowledge. Risk taking, flexibility, discovery, creativity and innovation are closely related to exploration [26]. Researchers have identified the role of HR practices in the organizational learning as fostering innovation and creativity. For instance, [14] investigate how different HR practices are related to creativity and innovation in which human resource planning is used to analyze and determine personnel needs so as to create effective innovation teams; performance appraisal is used to

appraise individual and team performance so that there is a link between individual innovativeness and company profitability; reward system is used to motivate personnel to achieve an organization's goal of productivity, innovation, and profitability; and career management is used to match employees' long term career goals with organizational goals through continuing education and training. [31] also argues that selection methods, compensation strategies, and career systems as HRM factors exert important influences on the development of innovations and knowledge flows. Again, not only individual HR practices are important to exploratory learning and knowledge outflows, HPWSs as a whole are also expected to affect innovation performance much more strongly. [22] argue that HR practices such as interdisciplinary workgroups, quality circles, systems for the collection of employee proposals, planned job rotation, delegation of responsibility, integration of functions, performance-related pay, and internal or external training are most conducive to employee's innovative ability and organization's innovation performance when adopted as a system of mutually reinforcing practices. Based on the argument above, we hypothesize that

*H3: A higher degree of knowledge **outflows** from the subsidiary is expected when more HPWSs are implemented.*

*H4: An even higher degree of knowledge **outflows** from the subsidiary is expected when HPWSs are applied as a mutually reinforcing system.*

METHODS

Data were collected through survey from six regions and 12 countries: East Asia (China, Korea, Japan, Taiwan), Southeast Asia (Thailand, Vietnam, Singapore), South Asia (India), Africa (Kenya), Western Europe (Germany, Italy), and Eastern Europe (Russia). The number of countries was limited effectively by the availability of time and resources to collect the data. The sampling frame was extended from the original S&P 100 to the S&P 500 in order to achieve a large sample of parent companies. Companies were randomly selected from the *Directory of American Firms Operating in Foreign Countries (2003)*, which lists all international subsidiaries of American MNCs.

Two different questionnaires were used. Management questionnaire and HR questionnaire were sent to managing director (or senior general manager) and HR manager (or senior HR person) correspondingly in each international subsidiary. The management questionnaire included the general information of the subsidiary's business and business context such as organizational background, business strategy, knowledge and technology transfer, relationships with parent company, local business and social environment, etc. The HR questionnaire was focused on the general characteristics of the subsidiary's workforce and a range of different HR practices: training, staffing, compensation etc. The reason for collecting separate information from a business manager and HR manager was based on the facts that an HR manager might not be fully familiar with the general management of the company and a single informant in each responding company could lead to common source variance problems. A general protocol for data collection was developed for collaborators in each country. Certain modifications were sometimes made to address the realities of collecting data across many different national contexts.

In general, our response rates were quite high in Asia (except Japan and China) and Africa, which were 50% or higher. This was mainly because the local collaborators and their institutions were well known in these countries and local collaborators personally requested the target subsidiaries' participation in the study. Response rates were lower (around 20%) in Japan and China and even lower in Europe (around only 10%) due to the limited time and effort involved in making contact with subsidiaries and doing follow ups. Excluding the critical missing data, the final data set for this study contains 198 cases.

Dependent Variables

Knowledge transfer measures the overall amount of knowledge and technology transferred between the focal subsidiary and its American parent company and/or other international affiliates of its parent company. Both ways of knowledge flows were measured: the knowledge transferred from its American parent company and/or the parent's other international affiliates to the focal subsidiary (knowledge inflows) and the knowledge transferred from the focal subsidiary to its American parent company and/or the parents other international affiliates (knowledge outflows). Four items were used for both knowledge inflows and knowledge outflows: knowledge transfer related to 1.research and development (R & D) and the development of new products and services; 2.production and operations; 3.sales, promotion, distribution, and other aspects of marketing; 4.general management and administrative procedures, which were similar to the measure from [13]. Respondents were asked to evaluate the degree of knowledge transfer using 5-point Likert scales where 1 indicates Little or None and 5 indicates Very Substantial. The Cronbach alpha for knowledge inflows is .758 and for knowledge outflows is .850.

Independent Variables

The measure of HPWSs was included in the HR questionnaire, which contained numerous items relating to the subsidiary's staffing, training, and compensation practices. The items for training included extensive orientation training, training to enhance interpersonal skills, use of job rotation, use of cross-training, extent of organizational resources committed to training, and the extent to which training was seen as a cost rather than investment (reversed item) etc. Cronbach alpha for training is .823. The items for staffing measured the extent to which the firm promoted from within, engaged in career planning for employees, used formal job descriptions, and used rigorous selection techniques etc. Cronbach alpha for staffing is .700. The items for compensation included comparable pay, performance-based pay, the use of job evaluation, and the role of seniority in compensation decisions (reversed item) etc. Cronbach alpha for compensation is .723. Respondents were asked to indicate the extent to which various practices or beliefs characterized their organizations. Again, 5-point Likert-type scales were used from 1 Strongly Disagree to 5 Strongly Agree. The higher value indicated HR activities more consistent with HPWSs, while the lower value indicated activities more likely to be found in control-based HR systems.

Control Variables

Previous studies have shown that the following variables have substantial influence on knowledge transfer, e.g. [13] [29]. 1.Entry mode: whether the firm was started by the parent firm as a greenfield site, and whether the firm is wholly owned by its American parent company or is a joint venture. Relative to greenfield subsidiaries, acquired and joint venture subsidiaries on average have a less duplicative knowledge stock and a larger pool of relevant knowledge to offer to the global network so that they engage in greater knowledge outflows to its American parent company and other subsidiaries than greenfield operations. 2.Subsidiary size: logarithm of the number of employees. Subsidiary size has a positive impact on the ability of the subsidiary to create and offer non-duplicative knowledge to the rest of the corporation. The larger the size, the greater the knowledge outflows from that subsidiary to its American parent company and other subsidiaries. 3.Industry. Knowledge intensity varies by industry. Industries characterized by greater degrees of knowledge intensities tend to be more global than other industries, which is another important factor to be considered. 4.Region. The location of a subsidiary also has an impact on knowledge flows due to the different economic, institutional, and cultural environment of the region. The knowledge stock of a subsidiary located in an economically more

advanced country is more valuable than that of a subsidiary located in a relatively less advanced country, which makes knowledge outflows more possible. In addition, business strategies have shown important impact on the knowledge management (KM) process. For instance, [33] have found that the fit between KM strategy and business strategy is significantly related to better knowledge management effectiveness in terms of process outcome, learning capability, and organizational outcomes. A differentiation strategy requires uniqueness to differentiate the firm from others. On the one hand subsidiaries need to exploit current available knowledge from the other parts of the organization such as investigating the current market for information on existing products or services and collecting resources from other parts of the MNC in order to develop new products or services, which stimulates the knowledge inflows from outside of that subsidiary. On the other hand, subsidiaries are required to develop their exploratory learning capability and explore new knowledge by themselves to create uniqueness (e.g. market research, quality materials, and customer service), which stimulates knowledge outflows. Subsidiaries pursuing a strategy of cost leadership seek to outperform rivals by providing customers with products or services at the prices substantially below those of most of their competitors, which requires reducing costs at every possible point. Subsidiaries pursuing cost leadership strategy tend to use exploitative capabilities without touching exploration to realize cost minimization, which stimulates the knowledge inflows from outside of that subsidiary. All above variables were included as control variables in the model.

RESULTS

There were high correlations among three HR practices and one of them was even higher than .5 (.609 for staffing and training), which indicated the possibility of multicollinearity. Therefore, a factor analysis was carried out to handle multicollinearity in regression using principal component approach. As expected, one factor (Factor 1) was extracted with eigenvalue > 1 (Cronbach alpha .684), which reflected HPWSs including staffing, training, and compensation HR practices.

Table 1
Regression Results for Knowledge Inflows

<i>Variables</i>	<i>Knowledge Inflows (Model 1)</i>		<i>Knowledge Inflows (Model 2)</i>		<i>Knowledge Inflows (Model 3)</i>	
	β	<i>S.E.</i>	β	<i>S.E.</i>	β	<i>S.E.</i>
<i>Factor 1</i>	.017	.054				
<i>Training</i>			.167	.143	.170	.144
<i>Staffing</i>			-.127	.180	-.101	.181
<i>Compensation</i>			-.029	.127	-.047	.128
<i>Training*Staffing</i>					-.268	.231
<i>Training*Compensation</i>					.296	.233
<i>Staffing*Compensation</i>					-.486	.317
<i>F-Ratio</i>	4.464****		4.046****		3.747****	
<i>Adjusted R²</i>	.230		.227		.235	

* p < 0.1; ** p < 0.05; *** p < 0.01; ****p < 0.001

Regression analyses of HPWSs on the degree of knowledge inflows were reported in Table 1. Model 1 represented the results of the regression analysis of Factor 1 on knowledge inflows. The overall equation was statistically significant at the .001 level with adjusted R-square .230. The effect of Factor 1 on

knowledge inflows was in the expected direction but insignificant. H1 is not supported. To test the impact of the mutually reinforcing system of HPWSs on knowledge inflows, the regression analysis of two-way interactions between three individual HR practices on knowledge inflows was carried out by controlling the main effect of individual HR practices, i.e. training, staffing, and compensation were entered first, then the impact of pair wise interactions between these three HR practices were tested (Model 2 and 3). Centered scores were used in this model in order to reduce multicollinearity. It turned out that both equations were statistically significant at the .001 level with adjusted R-square .227 for model 2 and .235 for model 3. However no significant interactions were found. H2 is not supported.

Table 2
Regression Results for Knowledge Outflows

<i>Variables</i>	<i>Knowledge Outflows (Model 4)</i>		<i>Knowledge Outflows (Model 5)</i>		<i>Knowledge Outflows (Model 6)</i>	
	<i>β</i>	<i>S.E.</i>	<i>β</i>	<i>S.E.</i>	<i>β</i>	<i>S.E.</i>
<i>Factor 1</i>	.133***	.047				
<i>Training</i>			.019	.123	-.018	.124
<i>Staffing</i>			.305**	.154	.343**	.155
<i>Compensation</i>			.107	.109	.085	.110
<i>Training*Staffing</i>					.411**	.198
<i>Training*Compensation</i>					-.077	.200
<i>Staffing*Compensation</i>					-.302	.272
<i>F-Ratio</i>	2.818****		2.587***		2.472****	
<i>Adjusted R²</i>	.136		.133		.141	

* p < 0.1; ** p < 0.05; *** p < 0.01; ****p < 0.001

Similarly, regression analyses of HPWSs on the degree of knowledge outflows were reported in Table 2. The overall fit of model 4 was statistically significant at the .01 level with adjusted R-square .136. As expected, we found strongly positive relationship between Factor 1 and knowledge outflows. Thus H3 is supported. The same procedure of the regression analysis was carried out to test the impact of mutually reinforcing system of HPWSs on knowledge outflows. Model 5 was statistically significant at the .01 level with adjusted R-square .133. Training, staffing, and compensation as individual HR practices all had positive impact on knowledge outflows, but only staffing had a significant impact at the .05 level. Model 6 was statistically significant at the .001 level with adjusted R-square .141. Only “training * staffing” two-way interaction had a significantly positive effect on knowledge outflows at .05 level. Therefore, training and staffing were significantly and mutually reinforcing and the effect of HPWSs, as a mutually reinforcing system, did outweigh individual component effects. Therefore, H4 is partially supported.

DISCUSSION

This study addresses the influences of HPWSs on the degree of knowledge flows within American MNCs. Organizational learning theory provides an important theoretical perspective that the subsidiary with explorative learning capacity has high potential to transfer knowledge from the focal subsidiary to the other parts of the MNCs, while the subsidiary with exploitative learning capacity has high potential to utilize the knowledge transferred from the other parts of the MNCs to the focal subsidiary.

The results of the study support the overall arguments that both individual HR practices and HPWSs as a system facilitate knowledge outflows from the focal subsidiary to its American parent company and the parents' other international affiliates. HPWSs exerted significant effects on knowledge outflows. The more a subsidiary adopts HPWSs, the more knowledge will be transferred from that subsidiary to the rest parts of MNCs. In addition, by using a multiple regression approach to test a full set of interactions of individual HR practices under HPWSs while controlling for their main effects, we found a stronger effect of HPWSs as a mutually reinforcing system on the degree of knowledge outflows. Especially the interaction between training and staffing exerted a significant impact on knowledge outflows. Subsidiaries who engage in the extensive staffing procedures including examination of the competencies, extensive recruitment and selection procedures are able to generate a pool of skilled candidates with a desired level of knowledge stock. Training can further enhance employees' ability, which is necessary to generate new knowledge in the future. These results complement the previous findings of [27] and [28] who found that HR practices are positively related to the degree of knowledge "inflows" within MNCs and the complementarity exists when HR practices are applied as a system of mutually reinforcing practices. However the current study did not find support for the link between HPWSs and knowledge inflows. Further exploration on this link is needed.

Among those control variables, computer as one category of industry always exerted strong positive impacts on knowledge outflows. It seems very relevant that this variable's effects were normally quite strong and always positive. We know that computer industry is very competitive and contains more stock of knowledge compared with more traditional industries. Thus, companies in computer industry have more abilities to create new knowledge and technologies so that they have high potential to transfer the relatively new knowledge and technologies to other areas, which makes the knowledge outflows more possible. Western Europe and Southeast Asia exerted consistent negative impacts on knowledge inflows. This is mainly due to the relatively advanced economic environment, which makes them more possible to be the knowledge providers rather than the knowledge receivers. As expected, cost leadership strategy had a very strong positive impact on knowledge inflows and differentiation strategy had a very strong positive impact on both knowledge inflows and knowledge outflows. It is important for subsidiaries to manage the fit between knowledge flows and business strategies to get better organizational effectiveness. All other control variables did not play any consistently strong role in shaping knowledge transfer among MNCs' subunits. (Due to space limit, results were not reported here.)

This study contributes to the literature by exploring a new perspective of organizational learning theory to understand the determinants of knowledge transfer within MNCs. Two specific learning capacities (exploration and exploitation) are used to explain the mechanisms. A large body of research on the link between HRM and knowledge transfer is focused on knowledge inflows, based on which, the current research further demonstrates the link in the other direction i.e. HR practices are also important in shaping knowledge outflows and HPWSs as a whole system has even stronger impact on knowledge outflows. It is important for both researchers and practitioners to know that learning capability, human resource management, and knowledge management as an organic system should be considered at the same time. Companies' executives should manage and balance this system in an effective way to get better organizational goals.

This study has several limitations as well. As the weakness in most international research, there were only two respondents per subsidiary and even only one person had completed both questionnaires for some cases. Future research should collect data from multiple respondents per subsidiary to minimize the risk of common method bias. This study emphasizes the important roles of exploration and exploitation as two types of learning capacities without testing their mediated effects. Future research

might test these two mediating variables in order to better understand the underlying mechanisms of organizational learning theory on knowledge transfer.

REFERENCES

- [1] Armstrong, M. 2000. The name has changed but has the game remained the same. *Employee Relations*, 22: 576-593.
- [2] Bae, J., Chen, S. J., & Lawler J. 1998. Variations in human resource management in Asian countries: MNC home-country and host-country effects. *International Journal of Human Resource Management*, 9(4): 653-679.
- [3] Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99-120.
- [4] Capelli, P. & Neumark, D. 2001. Do 'high-performance' work practices improve establishment-level outcomes? *Industrial and Labor Relations Review*, 54: 737-775.
- [5] Civi, E. 2000. Knowledge management as a competitive asset: A review. *Marketing Intelligence & Planning*, 18: 166-174.
- [6] Darr, E. D., Argote, L. & Epple, D. 1995. The acquisition, transfer and depreciation of knowledge in service organizations: Productivity in franchises. *Management Science*, 41: 1750-1762.
- [7] Dickson, P. R. 1992. Toward a general theory of competitive rationality. *Journal of Marketing*, 56: 69-83.
- [8] Dierickx, I. & Cool, K. 1989. Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35: 1504-1510.
- [9] Garavan, T. N., Gunnigle, P. & Morley, M. 2000. Contemporary HRD research: A triarchy of theoretical perspectives and their prescriptions for HRD. *Journal of European Industrial Training*, 24: 65-93.
- [10] Ghoshal, S., Korine, H. & Szulanski, G. 1994. Interunit communication in multinational corporations. *Management Science*, 40: 96-110.
- [11] Gooijer, F. D. 2000. Designing a knowledge management performance framework. *Journal of Knowledge Management*, 4: 303-310.
- [12] Gupta, A. K. & Govindarajan, V. 1991. Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review*, 16: 768-792.
- [13] Gupta, A. K. & Govindarajan, V. 2000. Knowledge flows within multinational corporations. *Strategic Management Journal*, 21: 473-496.
- [14] Gupta, A. K. & Singhal, A. 1993. Managing human resources for innovation and creativity. *Research Technology Management*, 36: 41-48.
- [15] Hansen, M. 1999. The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44: 82-111.
- [16] Huber, G. P. 1991. Organizational learning: The contributing processes and the literatures. *Organization Science*, 2: 88-115.
- [17] Huselid, M. A. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. *The Academy of Management Journal*, 38: 635-672.
- [18] 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*, June: 291-313.
- [19] Jaw, B.S. & Liu, W. (2003), "Promoting organizational learning and self-renewal in Taiwanese companies: the role of HRM", *Human Resources Management*, Vol. 42 No. 3, pp. 223-41.

- [20] Khandekar, A. & Sharma, A. (2006), "Organizational learning and performance: understanding Indian scenario in present global context", *Education + Training*, Vol. 48 No. 8/9, pp. 682-92.
- [21] Kogut, B. & Zander, U. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3: 383-397.
- [22] Laursen, K. & Foss, N. 2003. New HRM practices, complementarities, and the impact on innovation performance. *Cambridge Journal of Economics*, 27: 243-263.
- [23] Levitt, B. & March, J. G. 1988. Organizational learning. *Annual Review of Sociology*, 14: 319-340.
- [24] Lippman, S. A. & Rumelt, R. P. 1982. Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13: 418-438.
- [25] Lepak, D., Liao, H., Chung, Y., & Harden, E. (2006). A conceptual review of human resource management systems in strategic human resource management research. *Research in Personnel and Human Resources Management*, 25: 217-227.
- [26] March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization Science*, 2: 71-87.
- [27] Minbaeva, D. 2005. HRM practices and MNC knowledge transfer. *Personnel Review*, 34: 125-144.
- [28] Minbaeva, D., Pedersen, T., Bjorkman, L, Fey, C. & Park, H. 2003. MNC knowledge transfer subsidiary absorptive capacity and knowledge transfer. *Journal of International Business Studies*, 34: 586-599.
- [29] Ozsomer, A. & Gencturk, E. 2002. A resource-based model of market learning in the subsidiary: The capabilities of exploration and exploitation. *Journal of International Market*, 11: 1-29.
- [30] Robertson, M. & Hammersley, G. M. 2000. Knowledge management practices within a knowledge-intensive firm: the significance of the people management dimension. *Journal of European Industrial Training*, 24: 241-253.
- [31] Scarbrough, H. 2003. Knowledge management, HRM and the innovation process. *International Journal of Manpower*, 24: 501-516.
- [32] Schulz, M. 2001. The uncertain relevance of newness: Organizational learning and knowledge flows. *Academy of Management Journal*, 44: 661-681.
- [33] Shih, H. A. & Chiang, Y. H. 2005. Strategy alignment between HRM, KM, and corporate development. *International Journal of Manpower*, 26: 582-605.
- [34] Soliman, F. & Spooner, K. 2000. Strategies for knowledge management: Role of human resources management. *Journal of Knowledge Management*, 4: 337-345.
- [35] Szulanski, G. 1996. Exploring internal stickiness: Impediments to the transfer of best practices within the firm. *Strategic Management Journal*, 17: 27-44.