

The Relationship between Human Resource Practices and Organizational Performance in Chinese Construction Enterprises

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Abstract

Construction comprises a multitude of knowledge-driven activities within and amongst participating organizations. Given the dynamic environment and multi-project operations, construction organizations need to develop well-structured human resource practices to manage employees as well as to learn, innovate and change creative directions which are vital for organizational continuous improvement. Chinese construction enterprises have gained experience in various types of projects within the competitive environment over the 30 years of economic transformation to a market-based, socialist economy. This paper develops a framework to investigate the effects of human resource practices and organisational learning on the performance of Chinese construction enterprises. It is postulated that organizational learning exerts a mediating effect on the relationship of human resource practices and performance. This paper proposes a mixed method approach in which the qualitative study will contribute to the understanding of the current human resource practices and the barriers (if any) in implementing organizational learning practices in the Chinese construction state-owned enterprises; the quantitative analysis will examine the mediating effect of organizational learning on the relationship between human resource practices and organizational performance.

Keywords: human resource practices, organizational learning, performance.

1. Introduction

Throughout China's thirty years of economic reform, construction is one of the underpinning industries and Chinese construction companies have improved their performance and competence in terms of technology, financial ability, procurement management, project management, etc. There are 50 Chinese construction companies in the list of the top 225 international contractors (Engineering News Record 2009). However, according to their interview investigation with 12 high level managers from Chinese state-owned construction enterprises (Zhou, Fang and Chen 2009), a significant gap between Chinese construction companies and international counterparts still exists. Zhao and Shen (2008) recognize 'lack of well-trained human resources' as one of the weaknesses when Chinese

contractors compete in the international market. As previous studies have found a positive relationship between human resource practices and organisational performance (Wright, Gardner and Moynihan 2003), the human resource (HR) practices in the context of Chinese construction companies, including recruitment, training, rewards and appraisal plan and employees' participation, need to be investigated and addressed to enhance continuous improvement.

HR management is defined as “a managerial perspective, with theoretical and prescriptive dimensions, which argues for the need to establish an integrated series of personnel policies consistent with organization strategy, thus ensuring quality of working life, high commitment and performance from employees, and organizational effectiveness and competitive advantage” (Huczynski and Buchanan, 2001: 673). The positive effects of HR practices on organisational performance have been investigated in various sectors, such as manufacturing, services and information technology, and construction (Loosemore, Dainty and Lingard 2003). According to knowledge-based theories, the employment of HR practices improves organizational learning, which increases organisational capability and, in turn, improves organizational performance. Thus, it is postulated in this paper that there is a mediating effect of organizational learning on the relationship between HR practices and organizational performance in the context of Chinese construction enterprises.

2. Literature

A conceptual model, underpinned by general systems theory and resource-based theory, is proposed. General systems theory (Cleland and King 1983) explains an organisation (the construction enterprise) as a complex system of interdependent parts, including organizational strategy, structure, technology, HR management and decision-making within the environment of the Chinese construction industry. Resource-based theory, which focuses on the link between organizational strategy and the internal environment, analyzes the strategy formulation concerning the organization's resources. There are mainly three categories of resources, physical capital, human capital and organizational capital (Barney 1991), with characteristics of value, rarity, imperfect imitability and a lack of substitutes to achieve sustained competitive advantage. The conceptual model in this paper is discussed in its elements of 'human resource practices', 'organisational learning' and 'organisational performance'.

Human resource practices

Given the dynamic environment in a multi-project based culture, construction organizations need to develop well-structured HR practices to align management of employees with organizational strategy (Loosemore et al. 2003). HR practice is “the implementation and experience of an organization's HR programs by lower-level managers and employees” (Arthur and Boyles 2007) and HR practices can be classified into the four concepts of information sharing, knowledge/skill, power (decision making), and rewards (Lawler 1986).

Notions of HR management differ significantly between countries. Arthur (1994) argues that HR management has adopted either a resource-based or a control-based approach to the measurement of high-performance HR practices, and the adoption of HR management vary most from countries such as the USA and UK to others such as Iran, with an array between those extremes (Tayeb 2001).

Before the 1990s, HR management in China lacked emphasis/focus and, often, was no more than personnel management and administration (Ahlstrom et al. 2005). Usually, graduates were assigned to the enterprises which provided secured lifelong jobs. The task of each enterprise was to help solve social issues, e.g. housing, child education, and retirement. Following the economic transformation and foreign firms' investment in China, especially after entry to the World Trade Organization (WTO) in 2001, Chinese enterprises recognize the requirement to modernise their HR policies and practices to support the development of organizational strategy in a more competitive and dynamic environment. Current HR practices in China contribute an input to strategic decisions and include employee selection, staff training, job mobility, job security, employees' appraisal of their performance, rewards, clear and up-to-date job description, and employees' participation in decision making (Sun, et al. 2007; Warner 2008). Chinese enterprises now embrace the idea that HR practices can facilitate the development of competency, generate tacit organizational knowledge, and may contribute to the capacity of the organization to learn (Soliman and Spooner 2000).

Organisational learning

Organisational learning relates to the changes in organisational knowledge that are induced by information processing to enable the organisation to succeed and is defined as "a dynamic process of creation, acquisition and integration of knowledge aimed at developing the resources and capabilities that allow the organization to achieve better performance" (Lopez, et al. 2006: 217). There are two types of organization learning, single-loop and double-loop learning (Argyris 1977).

However, the terms knowledge and learning are often used interchangeably, which may lead to conceptual confusion (Bontis, et al. 2002; Spender 2008) and problems in measuring the concepts. Knowledge management is mainly used in the field of strategic management whereas organizational learning is investigated within the area of human resources (Chiva and Alegre 2005). Organizational knowledge can be considered as the key component of organizational learning, which is a process associated with the growth of and changes in knowledge (Chiva and Alegre 2005). Critically, Wang and Ahmed (2003) identify five foci of organizational learning as individual learning, process or system, culture or metaphor, knowledge management, and continuous improvement. Chinowsky and Carrillo (2007) bridge the link between knowledge management and learning organization based on the knowledge management steps and learning organization maturity models. The aim of organization learning is to improve performance through the development of organisational knowledge and capability. This paper adopts the above approach and focuses on the mediating role of organisational learning in influencing the effects of HR practices on organisational performance.

Organisational performance

Organizational performance is a complex and multi-dimensional construct; there is little agreement on how organizational performance should be measured (Neely, et al. 1995; Henri 2004). The main metrics to measure organizational performance include: Balanced Scorecard (Kaplan and Norton 1996), key performance indicators (KPIs), and the Excellence Model (EFQM 1999). Performance is defined by Mitchell (1983) as an aggregate of behaviour over time, tasks or people. According to Henri (2004), organizational performance reflects “a construct perspective in which the focus is on the definition of the concept in terms of assessment and conceptualization”. For example, Chakravarthy (1986) identifies the conceptions of assessment including profitability, financial-market, multi-stakeholder satisfaction, and quality of firm’s transformations.

Previous researches have studied the relationship between HR practices and organizational performance in the past 15 years (Huselid 1995). The process by which HR practices affect performance has not been answered (Becker and Gerhart 1996). In accordance with the resource-based view, Wright, Dunford and Snell (2001) propose that HR practices can improve the human capital pool (knowledge, skill and ability), employee relationships and behaviours (psychological contracts, job related/required behaviour, discretionary organisation citizenship behaviour). Integrating strategy and HR practices within the resource-based view, Wright, et al. (2001) explore the linkage between HR practices and a firm’s core competencies through the management of the firm’s knowledge stock (human, social and organization capital), knowledge flow (knowledge creation, transfer and integration), and dynamic capability.

3. Model development

From the resource-based view, human resource is a value-added source of sustainable competitive advantage, which will improve organizational performance (Wright et al. 2001; Huselid 1995). Among the studies on the relationship between HR practices and organizational performance, some attempt to demonstrate that a particular practice has effect on organizational performance (Shaw, Gupta and Delery 2001) while others focus on sets of HR practices (Huselid 1995; Delery and Doty 1996; Wright, et al. 2003;). The multiple HR practices as a system is also called a high performance work system (Huselid 1995) or HR practice configuration (Delery and Doty 1996).

According to Becker and Huselid (2000), seven elements can improve a firm’s performance: employability, selective recruitment, teamwork and decentralization, high remuneration, intensive training, eliminating inequalities and boosting team spirit, and extensive information sharing. For instance, performance is positively related to the HRM systems of recruitment and selection, manpower planning, job design, training and development, quality circles, and pay systems in the context of the Indian hotel industry (Chand and Katou 2007). Li, Zhao and Liu (2006) find that the positive relationship between employee training, motivation and technological innovation, is positively related with organizational performance in the context of China’s high-tech firms. Following Liu and Fang’s (2006) findings in the Chinese construction industry, it is postulated in this paper that motivation, in the context of Chinese construction employees, comprises mainly of

intrinsic rewards. Since HR practices help organization attract and retain human resource, which is essential to improve organizational performance, hypothesis1 is thus:

H1: HR practices, especially with regard to training and intrinsic rewards, relate positively to organizational performance.

HR practices play a significant role to achieve organizational learning (Soliman, and Spooner 2000) and organisational learning has a positive effect on performance (Bontis et al. 2002; Lopez et al. 2005). Minbaeva (2005) finds that the employment of HRM practices (staffing, training, promotion, compensation and appraisal) affect knowledge receivers' ability and motivation which, then, positively relate to the degree of knowledge transfer but the effect of corporate socialization mechanisms and flexible working practices is insignificant. Similarly, Lopez, et al. (2006) find positive relationships between selective hiring, training, employee participation and organization learning but, organizational learning is not influenced by reward systems.

Bontis et al. (2002) find a positive relationship between the stocks of learning at all levels and business performance, and the misalignment of stocks and flows in an overall organizational learning system is negatively associated with business performance. There is also a positive relationship between organizational learning and both innovation and competitiveness and economic/financial results (Lopez, et al. 2005). In the construction sector, Styhre, et al. (2004) examine six Swedish construction projects and find that learning capabilities in construction projects rely on informal and personal contacts rather than technical and formal systems.

HR configurations and organizational performance is mediated by human capital (employee's knowledge, skills and experience), organizational capital (institutionalized knowledge and codified experience) and social capital (knowledge resources embedded within, available through, and derived from networks of relationships) (Youndt and Snell 2004). This is supported by Collins and Smith's (2006) findings from 136 high-technology companies that HR practices affect social climate (trust, cooperation, shared codes and languages) which facilitate knowledge exchange and combination, and then enhance firm performance. Similarly, Liu, Hall and Ketchen (2006) perform meta-analysis to investigate how HR practices affect organizational performance and find that the relationship is mediated by employee's knowledge, skill and abilities, empowerment, motivation and social structure. According to Chen and Huang's (2009) investigation of 146 Chinese firms in Taiwan, strategic HR practices are positively related to knowledge management capacity which, in turn, has a positive effect on innovation performance. Hence, hypothesis2 is:

H2: Organisational learning mediates the relationship between HR practices and organizational performance.

Figure 1 depicts the conceptual model for testing the mediating effect of organisational learning on the relationship of HR practices and organisational performance in Chinese construction enterprises.

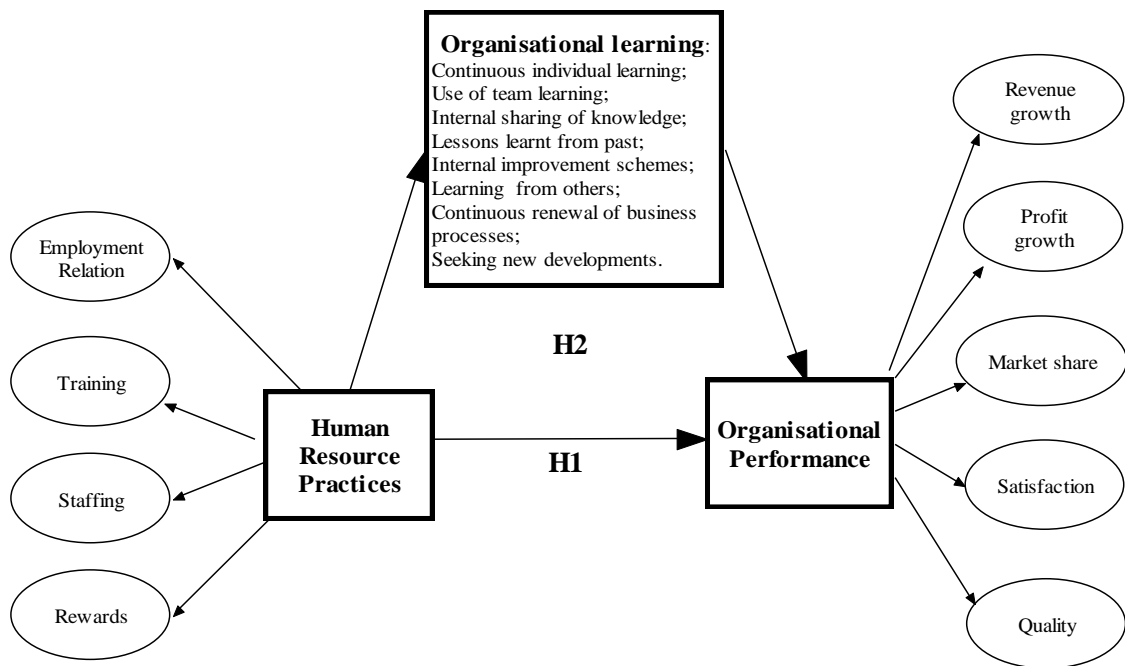


Figure 1 The proposed model.

4. Method

It is suggested that mixed methods (Quan - Qual) approach is to be adopted (e.g., see Creswell 2003). Generally, the quantitative approach typically uses random sampling, structured interviews to collect data, and analyzes data using statistical techniques; by contrast, the qualitative approach typically uses purposive sampling, semi-structured or interactive interviews to collect data, mainly relating to people's judgment, preferences, priorities, and/or perceptions about a subject, and analyzes data through sociological or anthropological techniques.

The methodological debate between qualitative and quantitative researchers in construction management proposes the possibility of methodological pluralism and paradigm diversity. The mixed method exploits the strengths and minimize the weaknesses of both in single research studies. Chau, et al. (1998, p.102) state that "the interpretative approaches used to investigate construction management provide useful information for identification and conceptualization of the problem, which subsequently may be theorized and subject to further investigation".

In this proposed model, the HR practices in China's construction enterprises can be analysed based on measurement constructs developed in previous research studies. Pilot study (using telephone interviews) will investigate the current HR practices and organizational learning practices in the Chinese construction state-owned enterprises (SOEs) to substantiate the question items in the quantitative stage. The interview questions will be developed from HR literature (e.g. Sun, et al. 2007; Loosemore, Dainty and Lingard 2003) and organizational leaning literature (e.g. Lopez, et al. 2006; Kululanga et al. 2002; Tan, et al. 2006) in consultation with Chinese academic researchers and industry experts.

Since the study seeks to investigate the relationships between the constructs, and representative information of HR practices in the context of Chinese construction enterprises is needed. A quantitative approach will be adopted to test the relationships between variables from a large population using a questionnaire sent to construction SOEs sampled from the Ministry of Housing and Urban Rural Development's(MOHURD) registered firms. According to 'Provisions on administration of qualification of construction enterprises (No.87)' issued by MOHURD, there are three categories of 'general contractors' which may construct the whole range of projects itself, 'specialized contractors' which may sign subcontracts with the general contractors to undertake the specialized project(e.g. electronic subcontractor), and 'labour subcontractors' which can provide labour service to the main contractor. General contractors, according to their personnel, total assets, equipment capacity, finance capacity, experience, etc., are classified into four groups of premier grade, 1st grade, 2nd grade, 3rd grade or under. Because the majority of premier and first grade of general contractors are SOEs, the population will comprise these two grades (in which some are international contractors). According to National Bureau of Statistics of China(2006), there are 174 general contractors in premier grade and 2445 in 1st grade. 20% of each group will be selected as the sample using the snowball method.

The measured items in HR practices shall include staffing, training, individual performance measurement, appraisal, participation, job description, job mobility and security. The organizational learning items include continuous individual learning, use of team learning, internal sharing of knowledge, lessons learnt from past experiences, integrating learning with collaborative work schemes, internal improvement schemes, learning from others, continuous renewal of business processes, seeking new developments in the business environment, and developing capability to respond to future business processes (Kululanga, Price and McCaffer 2002). Self-reported measurement of organizational performance is to be used (perceived organizational performance) based on variables adopted in Katou and Budhwar's (2008) study, e.g. effectiveness, efficiency, development, satisfaction, innovation and quality.

Structural equation modelling (SEM) which represents the hybrid of factor analysis and path analysis (Kaplan 2000) will be used to analyse the data by linking observed variables to latent variables via a confirmatory factor model and the latent variables to each other via systems of simultaneous equations. First, confirmatory factor analysis will develop a measurement model with an acceptable fit to the data. The second step in the analytical process is to form the structural model by specifying the causal relations in accordance with the hypotheses.

After the quantitative study, the general relationships among the main constructs can be established. Then, the qualitative method shall be adopted to capture the complexity and dynamism of the context of organisational settings to understand the complex situation between HR practices, organisational learning and organisational performance in the Chinese construction SOEs. System dynamic modelling methods will be applied in the qualitative study to capture the causal loops.

5. Conclusion

Previous research has suggested links between HR practices and organisational performance. The present study is aimed at extending this research by exploring a possible mediator between the links. Wright, Dunford and Snell (2001) develop a conceptual framework that people management practices (i.e. staffing, training, work design, participation, rewards and appraisal) create value to impact creation, transfer and integration of knowledge that form the basis of firm's core competencies (i.e. collective learning in the organisation to coordinate and integrate diverse skills and technologies). In order to maintain continuous improvement and to develop organisational performance, the construction firms need to emphasise learning from individual, team and organisation levels (Bontis, Crossan and Hulland 2002). Based on previous research (Soliman and Spooner 2000; Wright, *et al.* 2001), HR practices contribute to an organisation's learning and facilitate organisational knowledge development.

It is believed that construction companies need to have a system of committed HR practices to improve the individual's knowledge, skills and ability, stimulate knowledge sharing within projects and the company, learned from the external environment to facilitate the capture of organisational knowledge and learning. Hence, this paper proposes a positive relationship between HR practices (especially training and rewards) and organisational performance (financial indicators, effectiveness, efficiency, development, satisfaction of employees and client, innovation, and quality) in the context of Chinese construction SOEs. Thus, according to resource-based theories, the mediating effect of organisational learning on the relation of HR practices and organisational performance is postulated.

Although the quantitative (SEM) model may provide the general relationships among the main constructs, the model will not be able to adequately capture the complexity and dynamism of the context of organisational settings. In order to understand the complex situation between HR practices, organisational learning and organisational performance in the Chinese construction SOEs, inductive research needs to be investigated in a mixed method approach to unearth the details.

References

- Ahlstrom D, Foley S, Young M N and Chan E S (2005) "Human resource strategies in post-WTO China", *Thunderbird International Business Review* **47**(3): 263-385.
- Argyris C (1977) "Double-loop learning in organizations", *Harvard Business Review* **55**(5): 115-125.
- Arthur, J B (1994) 'Effects of human resource systems on manufacturing performance and turnover', *Academy of Management Journal*, **37**(3), 670-687
- Arthur J B and Boyles T (2007) "Validating the human resource system structure: a levels-based strategic HRM approach", *Human Resource Management Review* **6**(1): 77-92.

Barney J (1991) "Firm resources and sustained competitive advantage", *Journal of Management* **17**(1): 99-120.

Becker B and Gerhart B (1996) "The impact of human resource management on organizational performance: progress and prospects", *Academy of Management Journal* **39**(4): 779-801.

Becker B E and Huselid M A (2000) "Getting an edge through people", *Human Resource Management International Digest* **8**(3): 36-38.

Bontis N, Crossan M M and Hulland J (2002) "Managing an organizational learning system by aligning stocks and flows", *Journal of Management Studies* **39**(4): 437-469.

Chakravarthy B S (1986) "Measuring strategic performance", *Strategic Management Journal* **7**(5): 437-458.

Chand M and Katou A A (2007) "The impact of HRM practices on organizational performance in the India hotel industry", *Employee Relations* **29**(6): 576-594.

Chau, K W, Raftery, J and Walker, A (1998) "The baby and the bathwater: research methods in construction management", *Construction Management and Economics*, **16**(1), 99-104.

Chen C J and Huang J W (2009) "Strategic human resource practices and innovation performance – the mediating role of knowledge management capacity", *Journal of Business Research* **62**(1): 104-114.

Chinowsky P and Carrillo P (2007) "Knowledge management to learning organization connection", *Journal of Management in Engineering* **23**(3): 122-130.

Chiva R and Alegre J (2005) "Organizational learning and organizational knowledge: towards the integration of two approaches", *Management Learning* **36**(1): 49-68.

Creswell, J W (2003) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd Edi., London: Sage Publications

Cleland D I and King W R (1983) *Systems Analysis and Project Management*, 3rd edn, New York, McGraw-Hill.

Collins C J and Smith K G (2006) "Knowledge exchange and combination: the role of human resource practices in the performance of high technology firms", *Academy of Management Journal* **49**(3): 544-560.

Delery J E and Doty H D (1996) "Modes of theorizing in strategic human resource management: tests of universalistic, contingency, and configurational performance predictions", *Academy of Management Journal* **39**: 802-835.

EFQM (1999) *Introducing Excellence, European Foundation for Quality Management*, Brussels, Belgium.

Engineering News Record (2009) *The list of top 225 top international contractors*, (available online <http://enr.construction.com/toplists/InternationalContractors/001-100.asp> [accessed on 09/10/2009])

Henri J-F (2004) "Performance measurement and organizational effective: bridging the gap", *Managerial Finance* **30**(6): 93-123.

Huczynski A A and Buchanan D (2001) *Organizational Behaviour: An Introductory Text, 4th edn*, Essex, Pearson.

Huselid M A (1995) "The impact of human resource management practices on turnover, productivity, and corporate financial performance", *Academy of Management Review* **38**(3): 635-672.

Kaplan D (2000) *Structural Equation Modelling: Foundations and Extensions*, Calif., Sage Publications.

Kaplan R S and Norton D P (1996) "The balanced scorecard-measures that drive performance", *Harvard Business Review* **70**(1): 71-79.

Katou A A and Budhwar P S (2008) "The effect of business strategies and HRM policies on organizational performance: the Greek experience", *Global Business and Organizational Excellence* **27**(6): 40-57.

Kululanga G K, Price A D F, and McCaffer R (2002) "Empirical investigation of construction contractors' organizational learning", *Journal of Construction Engineering and Management* **128**(5): 385-391.

Lawler E E (1986) *High Involvement Management: Participative Strategies for Improving Organizational Performance*, San Francisco, Jossey-Bass.

Li Y, Zhao Y and Liu Y (2006) "The relationship between HRM, technology innovation and performance in China", *International Journal of Manpower* **27**(7): 679-697.

Liu A M M and Fang Z (2006), "A power-based leadership approach to project management", *Construction Management and Economics*. **24** (5): 497-508

Liu J C, Hall A and Ketchen D (2006) "How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance", *Personnel Psychology* **59**(3): 501-528.

Loosemore M, Dainty A and Lingard H (2003) *Human Resource Management in Construction Projects – Strategic and operational approaches*, London, Taylor & Francis.

Lopez S P, Peon J M M and Ordas C J V (2005) "Organizational learning as a determining factor in business performance", *The Learning Organization* **12**(3): 227-245.

Lopez S P, Peon J M M and Ordas C J V (2006) "Human resource management as a determining factor in organizational learning", *Management Learning* **37**(2): 215-239.

Minbaeva D B (2005) "HRM practices and MNC knowledge transfer", *Personnel Review* **34**(1): 125-144.

Mitchell T R (1983) "The effects of social, task and situational factors on motivation, performance and appraisal", In: J.J. Landy, S. Zedeck, J. Cleveland (eds) *Performance Measurement and Theory*, Hillsdale, Lawrence Erlbaum.

National Bureau of Statistics of China (2006) *China Statistical Yearbook on Construction*, Beijing.

Neely A, Gregory M and Platts K (1995) "Performance measurement system design: a literature review and research agenda", *International Journal of Operations & Production Management* **15**(4): 80-116.

Shaw J D, Gupta N and Delery J (2001) "Congruence between technology and compensation systems: implications for strategy implementation", *Strategic Management Journal* **22**: 379-386.

Soliman F and Spooner K (2000) "Strategies for implementing knowledge management: role of human resources management", *Journal of Knowledge Management* **4**(4): 337-345.

Spender J C (2008) "Organizational learning and knowledge management: whence and whither?", *Management Learning* **39**(2): 159-176.

Styhre A, Josephson P E and Knauseder I (2004) "Learning capabilities in organizational networks: case studies of six construction projects", *Construction Management and Economics* **22**(9): 957-966.

Sun L Y, Aryee S and Law K S (2007) "High-performance human resource practices, citizenship behavior, and organizational performance: a relational perspective", *Academy of Management Journal* **50**(3): 558-577.

Tan H C, Carrillo P, Anumba C, Kamara J M, Bouchlaghem D and Udejaja C (2006) "Live capture and reuse of project knowledge in construction organizations", *Knowledge Management Research & Practice* **4**(2): 149-161.

Tayeb M (2001) "Conducting research across cultures: overcoming drawbacks and obstacles", *International Journal of Cross Cultural Management* **1**(1): 91-108.

Wang C L and Ahmed P K (2003) "Organizational learning: a critical review", *The Learning Organization* **10**(1): 8-17.

Warner M (2008) “Reassessing human resource management ‘with Chinese characteristics’: an overview”, *The International Journal of Human Resource Management* **19**(5): 771-801.

Wright P M, Dunford B B and Snell S A (2001) “Human resources and the resource based view of the firm”, *Journal of Management* **27**(6): 701-721.

Wright P M, Gardner T M and Moynihan L M (2003) “The impact of HR practices on the performance of business units”, *Human Resource Management Journal* **13**(3): 21-36.

Youndt M A and Snell S A (2004) “Human resource configurations, intellectual capital, and organizational performance”, *Journal of Managerial Issues* **XVI**(3): 337-360.

Zhao Z Y and Shen L Y (2008) “Are Chinese contractors competitive in international markets?”, *Construction Management and Economics* **26**(3): 225-236.

Zhou J L, Fang D P and Chen C (2009) “Chinese state-owned construction enterprises in the international market: a gap analysis”, *Proceedings of International Conference on Global Innovation in Construction*, 13-16 September 2009, Loughborough University, UK.