

A FRAMEWORK FOR INVESTIGATING THE RELATIONSHIP OF HUMAN RESOURCE PRACTICES AND PERFORMANCE OF THE CHINESE CONSTRUCTION ENTERPRISES

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Construction is complex and comprises a multitude of knowledge-driven activities and business interests from participating organisations with human capital accustomed to different organisational and disciplinary practices. Such human capital is fundamental to success because of human capability in learning, innovating and changing creative directions which can be vital to long term development of organisations. This paper proposes a framework to investigate the relationship between human resource practices and performance of Chinese construction enterprises and how organisational learning exerts a mediating effect on this relationship. Since human resource management aims to support the organisational learning process in developing firm-specific knowledge and skills, organisations motivate their staff using a number of interdependent human resource policies and practices. Practices are changing rapidly in line with China's economic development which includes the way people behave in performance of their roles and functional tasks. Their behaviours, in-role and extra-role, may have an impact on organisational learning process in terms of knowledge acquisition, sharing and usage, which, ultimately, affect performance in organisations. Hence, this paper also proposes the mediating effects of employees' behaviours on the relationship between human resource practices and performance of Chinese construction enterprises.

Keywords: extra-role behaviours, human resource practices, organisational learning.

INTRODUCTION

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. Currently, there are 49 Chinese construction enterprises on the list of top 225 international contractors (2007 Engineering News Record http://enr.ecnext.com/coms2/summary_0271-43964_ITM accessed 1st May 2009). However, they still face barriers in developing their performance (Zhao and Shen 2008), for instance, how to create competitive advantage through human resource (HR) practices, e.g. attracting, training, motivating and developing employees with critical skills and aptitudes (Pfeffer 1994; Wright, Gardner, and Moynihan 2003). Warner (2008) reassesses the development of HR management with Chinese characteristics, from static personnel management to contractual HR management. Begin the paper with statements introducing the general area and the

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reason that this work is important. Explain what was important about the particular approach and how this work relates to previous work in the field.

Human resource management has positive effects on organisational performance in various sectors, e.g. manufacturing, service (Huselid 1997; Wright, *et al.* 2003). Huczynski and Buchanan (2001: 673) define HR management as “a managerial perspective, with theoretical and prescriptive dimensions, which argues for the need to establish an integrated series of personnel policies consistent with organisation strategy, thus ensuring quality of working life, high commitment and performance from employees, and organisational effectiveness and competitive advantage”.

The construction industry has project-based characteristics. The construction enterprise needs to deploy qualified staff (project manager, various engineers, financial employees, foreman, etc.) from different departments during project realisation; HR management is vital for project success and organisational performance (Loosemore, Dainty and Lingard 2003).

However, few studies (Chow, *et al.* 2008; Cunningham and Rowley 2007; Ahlstrom *et al.* 2005) have addressed the relationship between human resource management and organisational performance in China and some argue that there still exists a black box between HR practices and organisational performance (e.g. Purcell, *et al.* 2003). According to knowledge-based theory (Grant 1996), the employment of human resource management improves organisational learning, which will increase organisational capability and, in turn, may improve organisational performance.

Individual employees who possess the intangible knowledge to achieve the project goals are the essential resource of the Chinese construction enterprises. HR practices can influence and shape these individuals' skills, attitudes, and behaviours in task performance to enhance experience and organisational capability. Hence, it is postulated that there are mediating effects of organisational learning and individual behaviour on the relationship between HR practices and organisational performance in the context of the Chinese construction enterprises.

LITERATURE REVIEW

The research framework is underpinned by general systems theory, resource-based theory and role behaviour theory. General systems theory (Bertalanffy 1969; Cleland and King 1983; Walker 2002) is applied to explain an organisation (the construction enterprise) as a complex system of interdependent parts, including organisational strategy, structure, technology, HR management, decision-making, within the environment of the Chinese construction industry. Resource-based theory, which focuses on the link between organisational strategy and the internal environment, is adopted to analyse the strategy formulation concerning the organisation's resources (Wernerfelt 1995). Barney (1991) summarises three categories of resources as physical capital, human capital and organisational capital, with characteristics of value, rarity, imperfect imitability and a lack of substitutes to achieve sustained competitive advantage. Katz and Kahn (1978) focus on roles as the linking pin between the individual and the organisational levels of research and theory where role behaviours are developed from task requirements in a given functional relationship.

Human Resource Practices

Given the dynamic environment and multi-project based culture, construction organisations need to develop well-established HR practices to manage the employees in alignment with organisational strategy (Druker, *et al.* 1996; Loosemore *et al.* 2003;

Raiden, Dainty and Neale 2008). Generally, HR practices can be classified into four concepts, information sharing, knowledge/skill, power (decision making), and rewards (Lawler 1986). Arthur and Boyles (2007) define HR practice as “the implementation and experience of an organisation’s HR programs by lower-level managers and employees”. Bamberger and Meshoulam (2000) argue that HR management has adopted either a resource-based or a control-based approach to the measurement of high-performance HR practices. HR practices can facilitate the development of competency, generate tacit organisational knowledge, and may contribute to the capacity of the organisation 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 organisation to achieve better performance” (Lopez, *et al.* 2006: 217). There are two types of organisation 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 their measuring concepts. Knowledge management is mainly used in the field of strategic management whereas organisational learning is investigated within the area of human resources (Chiva and Alegre 2005). Organisational knowledge can be considered as the key component of organisational 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 organisational learning as individual learning, process, culture, knowledge management, and continuous improvement. Chinowsky and Carrillo (2007) bridge the link between knowledge management and learning organisation based on the knowledge management steps and learning organisation maturity models.

The aim of organisation learning is to improve performance through the development of organisational knowledge and capability.

Organisational Performance

Organisational performance is a complex and multi-dimensional construct; there is little agreement on how organisational performance should be measured (Neely, *et al.* 1995; Gomes, *et al.* 2004; Henri 2004). The main metrics to measure organisational 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), organisational performance reflects “a construct perspective in which the focus is on the definition of the concept in terms of assessment and conceptualisation”. For example, Chakravarthy (1986) identifies the conceptions of assessment including profitability, financial-market, multi-stakeholder satisfaction, and quality of firm’s transformations. Organisational performance is determined by various factors (e.g. environment forces, organisational structure, technology) and achieved through the aggregation of individual performances.

In-role and extra-role behaviours

Individual's role behaviours in the organisation have two perspectives: in-role and extra-role. Williams and Anderson (1991) define in-role behaviours as "the behaviours that are recognised by formal reward systems and are part of the requirements as described in job descriptions." Somech and Drach-Zahavy (2000: 650) define extra-role behaviours as: "those behaviours that go beyond specified role requirements, and are directed towards the individual, the group, or the organisation as a unit, in order to promote organisational goals".

The best known and most heavily researched extra-role concept is organisational citizenship behaviour (OCB), which represents "individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organisation" (Organ 1988: 4) and contributes "to maintenance and enhancement of the social and psychological context that supports task performance" (Organ 1997: 91). The practical importance of OCBs is that they improve organisational efficiency and effectiveness by contributing to resource transformations, innovativeness, and adaptability (Organ 1988).

Although the widely used conceptualisation of OCB consists of five dimensions: altruism, generalised compliance, sportsmanship, courtesy and civic virtue (Podsakoff *et al.* 2000; Organ 1988), Williams and Anderson (1991) suggest two dimensions: (a) behaviours directed toward the benefit of the organisation (OCBO, e.g. gives advance notice when unable to come to work, adheres to informal rules devised to maintain order) and (b) behaviours directed toward the other individuals (OCBI), through which, indirectly contribute to the benefit of the organisation (e.g. helps others who have been absent, takes a personal interest in other employees).

CONCEPTUAL MODEL

The conceptual model is shown in Figure 1. The context of this study is the Chinese construction state-owned enterprises (SOEs) which operate within the environment of the Chinese construction industry. The environmental forces include government intervention, (immature) regulatory and legal systems, market structure, operating conditions, characteristics of market segments and regions, (inefficiencies and irregularities of) procurement systems, and entry to the World Trade Organisation (WTO) (Cheah, Kang, and Chew 2007).

When the corporate strategy is formulated after auditing the external opportunities and threats and internal strengths and weaknesses, the HR strategy should also be adjusted and integrated into the corporate strategy. Organisational structure describes the formal reporting relationships and the allocation of tasks, roles and responsibility of individuals in the organisation. From the role-behavior perspective, HR management provides the organisation with its primary means for sending role information through the organisation, supporting desired behaviors, and evaluating role performances (Jackson and Schuler 1995). In-role behaviour is the most important aspect of individual behaviour in the organisation. OCB, discretionary and not directly recognised by the formal reward system, in the aggregate promotes the efficient of the organisation. Proper use of the HR practices can enhance employees' in-role behaviour and OCB.

From the resource-based view, human resource is a value-added source of sustainable competitive advantage which will improve organisational performance (Wright *et al.*

2003; Huselid *et al.* 1997; Wolfe *et al.* 2006). Organisational learning is the process to acquire, share, interpret and reuse the knowledge; HR management supports the organisational learning process in developing specific knowledge for continuous improvement.

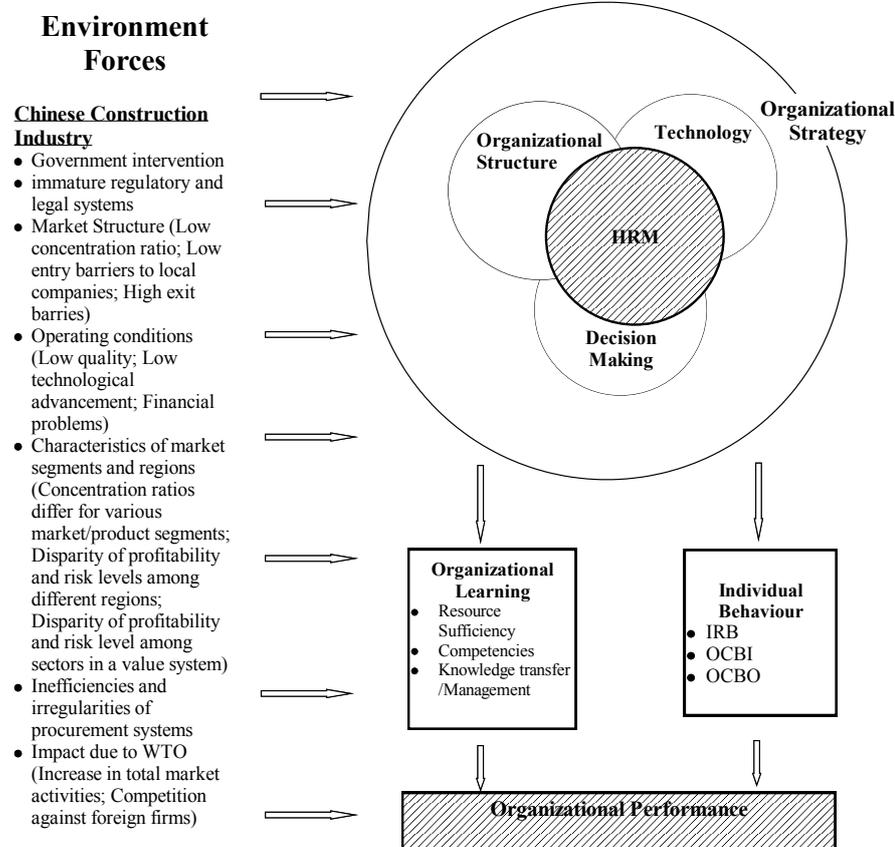


Figure 1: Conceptual Model

HRM: human resource management; IRB: in-role behaviour; OCBI: organisational citizenship behaviour toward individual; OCBO: organisational citizenship behaviour toward organisation

DEVELOPING HYPOTHESES

The mediating effect of organisation learning

HR practices play a significant role to achieve organisational learning (Soliman, and Spooner 2000; Tseng and McLean 2008) 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 socialisation mechanisms and flexible working practices is insignificant. Similarly, Lopez, *et al.* (2006) find positive relationships between selective hiring, training, employee participation and organisation learning but, organisational 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 organisational learning system is negatively associated with business performance. Lopez, *et al.* (2005) find a positive relationship between organisational learning and both innovation and competitiveness and economic/financial results. 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. According to Chen and Huang (2009), investigating 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.

Therefore, the following hypothesis is postulated:

Organisational learning mediates the relationship between HR practices and organisational performance.

The mediating effect of individual behaviour

Previous studies show that the proper use of HR practices enhances employees' in-role behaviour and OCB. Zhang, Wan and Jia (2008) provide evidence that high-performance HR practices have positive effects on OCB in the sample of 139 small-to-medium-sized Chinese biotechnology enterprises.

In-role behaviour is the most important aspect of individual behaviour in the organisation, and is the most widely used indicator for the supervisor to evaluate employees' task performance -- when the employees' in-role behaviours achieve the role expectation. Theoretically, OCBs, in aggregate, might enhance organisational performance according to its conceptual definition (Organ 1988; Podsakoff *et al.* 2000, Podsakoff *et al.* 2009). A number of empirical studies (Dunlop and Lee 2004; Koys 2001) have investigated the relationship between OCB and organisational performance which provide evidence of various OCB dimensions predicting organisational performance in different contexts, e.g. Koys (2001) finds that OCB has an impact on profitability, but not on customer satisfaction in the service sector. Sun *et al.* (2007) analyse the multilevel data from hotels in China, which reveals that service-oriented OCB partially mediate the relationship between high-performance human resource practices and both performance indicators of productivity and turnover.

Hence, hypothesis 2 postulates the following:

Individual behaviours (including In-role and Extra-role) mediates the relationship between HR practices and organisational performance.

RESEARCH APPROACH

The HR practices in China's construction enterprises are to be analysed based on measurement constructs developed in previous research studies. Two models will be tested for the mediating effects of organisational learning and individual behaviours (in-role/extra-role) on the relationship of HR practices and performance.

Mixed methods (Qual-Quant) approach is adopted in this study. The qualitative stage (using telephone interviews) investigates the current HR practices and organisational learning practices in the Chinese construction SOEs to substantiate the question items in the quantitative stage. The interview questions are developed from HR literature (e.g. Sun, *et al.* 2007; Loosemore, Dainty and Lingard 2003) and organisational learning literature (e.g. Lopez, *et al.* 2006; Kululanga *et al.* 2002; Wong and Cheung 2008; Tan, *et al.* 2006; Robinson *et al.* 2004) in consultation with two Chinese academic researchers and two industry experts. The interview data will be subject to content analysis.

Since the study seeks to investigate the relationships between the constructs, and no empirical study on HR practices has been done in the context of Chinese construction enterprises, quantitative method is adopted to test the relationships between variables from a large population using questionnaire sent to randomly selected construction SOEs sampled from the Ministry of Housing and Urban Rural Development's registered firms. The HR practices items include staffing, training, individual performance measurement, appraisal, participation, job description, balance work and life. The organisational 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 organisational performance is used (perceived organisational 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.

CONCLUSION

A framework is developed to investigate the relationship between HR practices and organisational performance in the context of Chinese construction SOEs. It is proposed that organisations adopt HR practices to influence individual behaviours and organisational learning to improve organisational performance. The research adopts a mixed method approach in which the qualitative study contributes to the understanding of the current HR practices and the barriers (if any) in implementing organisational learning practices in Chinese construction SOEs. The quantitative study tests the two structural equation models on the hypotheses, i.e., (1) organisational learning mediates the relationship between HR practices and organisational performance; (2) individual behaviours (including In-role and Extra-role) mediates the relationship between HR practices and organisational performance.

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), 263-85
- Argyris, C (1977) Double-loop learning in organisations. *Harvard Business Review*, Sept./Oct., 115-25
- Arthur, J B and Boyles, T (2007) Validating the human resource system structure: a levels-based strategic HRM approach. *Human Resource Management Review*, **17**, 77-92
- Bamberger, P and Meshoulam, I (2000) *Human Resource Strategy*. Newbury Park: Sage
- Barney, J (1991) Firm resources and sustained competitive advantage. *Journal of Management*, **17**(1), 99-120
- Bertalanffy, L V (1969) *General system theory: foundations, development, applications*. New York: Braziller
- Bontis, N, Crossan, M M and Hulland, J (2002) Managing an organisational learning system by aligning stocks and flows. *Journal of Management Studies*, **39**(4), 437-69

- Chakravarthy, B S (1986) Measuring strategic performance. *Strategic Management Journal*, **7**, 437-58
- Cheah, C Y J, Kang, J and Chew, D A S (2007) Strategic analysis of large local construction firms in China. *Construction Management and Economics*, **25**, 25-38
- 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**, 104-14
- Chinowsky, P and Carrillo, P (2007) Knowledge management to learning organisation connection. *Journal of Management in Engineering*, July, 122-30
- Chiva, R and Alegre, J (2005) Organisational learning and organisational knowledge: towards the integration of two approaches. *Management Learning*, **36**(1), 49-68
- Chow, I H, Huang, J C and Liu, S (2008) Strategic HRM in China: configurations and competitive advantage. *Human Resource Management*, **47**(4), 687-706
- Cleland, D I and King, W R (1983) *Systems Analysis and Project Management*. 3ed. New York: McGraw-Hill
- Cunningham, L X and Rowley, C (2007) Human resource management in Chinese small and medium enterprises: a review and research agenda. *Personnel Review*, **36**, 415-39
- Druker, J, White, G, Hegewisch, A and Mayne, L (1996) Between hard and soft HRM: human resource management in the construction industry. *Construction Management and Economics*, **14**, 405-16
- Dunlop, P D and Lee, K (2004) Workplace deviance, organisational citizenship behaviour, and business unit performance: the bad apples do spoil the whole barrel. *Journal of Organisational Behavior*, **25**, 67-80
- EFQM (1999) *Introducing Excellence*, European Foundation for Quality Management. Brussels, Belgium.
- Gomes, C F, Yasin, M M and Lisboa, J V (2004) A literature review of manufacturing performance measures and measurement in an organisational context: a framework and direction for future research. *Journal of Manufacturing Technology Management*, **15**(6), 511-30
- Grant, R M (1996) Toward a knowledge-based theory of the firm. *Strategic Management Journal*, **17**(Winter), 109-22
- Henri, J-F (2004) Performance measurement and organisational effective: bridging the gap. *Managerial Finance*, **30**(6), 93-123
- Huselid, M A, Jackson, S E and Schuler, R S (1997) Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal*, **40**(1), 171-88
- Huczynski, A A and Buchanan, D (2001) *Organisational Behaviour: An Introductory Text*. 4ed. Essex: Pearson
- Jackson, S E and Schuler, R S (1995) Understanding human resource management in the context of organisations and their environments. *Annual Review of Psychology*, **46**, 237-64
- Kaplan, D (2000) *Structural Equation Modelling: Foundations and Extensions*. Thousand Oaks, 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 organisational performance: the Greek experience. *Global Business and Organisational Excellence*, Sep./Oct., 40-57
- Katz, D and Kahn, R L (1978) *The Social Psychology of Organisations*. 2ed. New York: Wiley
- Koys, D J (2001) The effects of employee satisfaction, organisational citizenship behaviour, and turnover on organisational effective: a unit-level longitudinal study. *Personnel Psychology*, **54**, 101-14
- Kululanga, G K, Price, A D F, and McCaffer, R (2002) Empirical investigation of construction contractors' organisational learning. *Journal of Construction Engineering and Management*, Sep./Oct., 385-91
- Lawler, E E (1986) *High Involvement Management: Participative Strategies for Improving Organisational Performance*. San Francisco: Jossey-Bass
- Loosemore, M, Dainty, A R J and Lingard, H (2003) *Human Resource Management in Construction Projects - Strategic and operational approaches*. London: Taylor and Francis
- Lopez, S P, Peon, J M M and Ordas, C J V (2005) Organisational learning as a determining factor in business performance. *The Learning Organisation*, **12**(3), 227-45
- Lopez, S P, Peon, J M M and Ordas, C J V (2006) Human resource management as a determining factor in organisational learning. *Management Learning*, **37**(2), 215-39
- Minbaeva, D B (2005) HRM practices and MNC knowledge transfer. *Personnel Review*, **34**(1), 125-44
- 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
- Neely, A, Gregory, M and Platts, K (1995) Performance measurement system design: a literature review and research agenda. *International Journal of Operations and Production Management*, **15**(4), 80-116
- Organ, D W (1988) *Organisational Citizenship Behavior: The Good Solider Syndrome*. Toronto: Lexington Books
- Organ, D W (1997) Organisational citizenship behavior: It's construct clean-up time. *Human Performance*, **10**(2), 85-97
- Pfeffer, J (1994) *Competitive advantage through people: unleashing the power of the workforce*. Boston: Harvard Business School Press.
- Podsakoff, P M, MacKenzie, S B, Paine, J B and Bachrach, D G (2000) Organisational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, **26**(3), 513-63
- Podsakoff, N P, Whiting, S W and Podsakoff, P M (2009) Individual- and organisational-level consequences of organisational citizenship behaviors: a Meta-analysis. *Journal of Applied Psychology*, **94**(1), 122-41
- Purcell, J, Hutchinson, S, Kinnie, N, Rayton, B and Swart, J (2003) *Understanding the Pay and Performance link: Unlocking the Black Box*. London: CIPD
- Raiden, A B, Dainty, A R J and Heale, R H (2008) Understanding employee resourcing in construction organisations. *Construction Management and Economics*, **26**, 1133-43

- Robinson, H S, Carrillo, P M, Anumba, C J and Al-Ghassani, A M (2004) Developing a business case for knowledge management, the IMPaKT approach. *Construction Management and Economics*, **22**, 733-43
- Soliman, F and Spooner, K (2000) Strategies for implementing knowledge management: role of human resources management. *Journal of Knowledge Management*, **4**(4), 337-45
- Somech, A and Drach-Zahavy, A (2000) Understanding extra-role behaviour in schools: the relationships between job satisfaction, sense of efficacy, and teachers' extra-role behavior. *Teaching and Teacher Education*, **16**, 649-59
- Spender, J C (2008) Organisational learning and knowledge management: whence and whither? *Management Learning*, **39**(2), 159-76
- Styhre, A, Josephson, P E and Knauseder I (2004) Learning capabilities in organisational networks: case studies of six construction projects. *Construction Management and Economics*, **22**, 957-66
- Sun, L Y, Aryee, S and Law, K S (2007) High-performance human resource practices, citizenship behavior, and organisational performance: a relational perspective. *Academy of Management Journal*, **50**(3), 558-77
- 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 organisations. *Knowledge Management Research and Practice*, **4**, 149-61
- Tseng, C C and McLean, G N (2008) Strategic HRD practices as key factors in organisational learning. *Journal of European Industrial Training*, **32**(6), 418-32
- Walker, A (2002) *Project Management in construction*. 4ed. Oxford: Blackwell Science.
- Wang, C L and Ahmed, P K (2003) Organisational learning: a critical review. *The Learning Organisation*, **10**(1), 8-17
- Warner, M (2008) Reassessing human resource management 'with Chinese characteristics': an overview. *The International Journal of Human Resource Management*, **19**, 771-801
- Wernerfelt, B (1995) A Resource-Based view of the firm: ten years after. *Strategic Management Journal*, **16**, 171-74
- Williams, L J and Anderson, S E (1991) Job satisfaction and organisational commitment as predictors of organisational citizenship and in-role behaviors. *Journal of Management*, **17**(3), 601-17
- 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
- Wolfe, R, Wright, P M and Smart, D L (2006) Radical HRM innovation and competitive advantage: the moneyball story. *Human Resource Management*, **45**(1), 111-45
- Wong, P S P and Cheung, S O (2008) An analysis of the relationship between learning behaviour and performance improvement of contracting organisations. *International Journal of Project Management*, **26**, 112-23
- Zhang, Z, Wan, D and Jia, M (2008) Do high-performance human resource practices help corporate entrepreneurship? The mediating role of organisational citizenship behavior. *Journal of High Technology Management Research*, **19**, 128-38
- Zhao, Z Y and Shen, L Y (2008) Are Chinese contractors competitive in international markets? *Construction Management and Economics*, **26**, 225-36