

Human Resource Management and Performance in the Hospitality Industry: Methodological Issues

Anastasia A. Katou*

Teaching Fellow in HRM , Department of Marketing and Operations Management, University of Macedonia,
540 06 Thessaloniki, Greece

Abstract:-

The purpose of this paper is to review methodological issues highlighted in the empirical literature in the field of strategic human resource management that may be applied to the hospitality industry, and to propose possible solutions to overcome methodological problems. The paper makes use of a general HRM-performance linkage framework that refers to the 'black box' in strategic human resource management, and is based on the three HRM perspectives (universalistic, contingency, and configurational).

Keywords: Human resource management, Performance, Methodological issues, Hospitality industry

INTRODUCTION

Although there is evidence of an increased interest of research with respect to human resource management (HRM) and performance in the hospitality industry, systematic tests investigating the relationship between HRM and performance are yet to be conducted (Hoque, 1999). The development of the link between the adoption of HRM and performance in the hospitality industry has its origins on the manufacturing sector and much of the literature reflects this orientation (Worsfold, 1999). However, over the last 20 years, this point of reference is based on the following three key broad areas in strategic human resource management (SHRM), or the so-called HRM-performance linkage models, that outline the way in which HR practices contribute to business performance (Delery & Doty, 1996; Mohinder & Katou, 2007):

- **Universalistic or best practice model of HRM:** This model requires firstly, important strategic HR practices to be identified, and secondly, arguments that relate the individual practices to business performance, maximizing thus internal, or horizontal, fit. This model indicates that there exists a linear relationship between HR practices and business performance, expressed by zero-order interactions between the variables that

predict business performance. This means that no products of any HR practices exist among the explanatory variables (Osterman, 1994; Pfeffer, 1994; Huselid, 1995; Brewster, 1999; Claus, 2003).

- **Contingency or strategic fit model of HRM:** This model requires firstly, to select a theory of business strategy, and secondly, to specify how individual HR practices interact with business strategy to result in business performance, maximizing thus external, or vertical, fit. This model indicates that there exists a non-linear relationship between HR practices and business performance, expressed by first-order interactions between the variables that predict business performance. This means that products of two HR practices exist among the explanatory variables (Schuler & Jackson, 1987; Gomez-Meija & Baklin, 1992; Huselid, 1995; Youndt, Snell, Dean, & Lepak, 1996).
- **Configurational or bundles model of HRM:** This model requires firstly, to theoretically derive internally consistent configurations of HR practices, that maximize horizontal fit, secondly, to select a strategic configuration theory, and thirdly, to link these HR practices to alternative strategic configurations to maximize vertical fit. This model indicates that there exists a non-linear relationship between HR practices configurations, or unique patterns of factors, and business performance, expressed by high-order interactions between the variables that predict business performance (Arthur, 1994; Guest & Hoque, 1994; MacDuffie, 1995; Huselid & Becker, 1996; Ichniowski, Shaw, & Prennushi, 1997).

With respect to these three models, there is no clear picture which of these three key broad areas is the predominant one (Wood, 1999). Furthermore, Schuler & Jackson (2005) advocate that there is no substantial difference between the contingency model and the configurational model. Moreover, "evidence obtained shows clearly that HRM scholars are progressively abandoning the universalistic perspective and completing their models with contingent and contextual variables"

(Alcazar, Fernandez & Garney, 2007). However, the universalistic or best practices perspective implies a 'direct' relationship between individual HR practices, as well as internally consistent systems of HR practices, and business performance. The contingency perspective implies a 'moderated' according to business strategies relationship between individual HR practices, as well as internally consistent systems of HR practices, and business performance. The effects of the direct and the moderated relationships are operationally defined as 'main effects' and 'interaction effects' respectively (Youndt et al., 1996).

Although most studies speak of HR practices leading to performance, such a one-way line of causation is unsatisfactory (Edwards & Wright, 2001). The usual key criticism of HR practices and business performance is that, rather the HR practices leading to high performance, it is the highly performing firms that can afford costly HR practices (Huselid, 1995; Ichniowski et al., 1997). However, even by using one-way line causation from HR practices to business performance, sound theoretical development that explains how such HR practices operate is rather absent (Becker and Gerhart, 1996; Becker, Huselid, Pickus, & Spratt, 1997; Guest, 1997; Becker and Huselid, 1998; Ferris, Arthur, Berkson, Kaplan, Harell-Cook, & Frink, 1998). In an effort to address such theoretical developments in the area, authors proposed to consider intermediate linkages between HR practices, or HRM systems, and business performance (Ferris et al., 1998) producing thus mediating models. The general framework of mediating models refers to a 'direct linkage', and 'indirect linkage' through HRM outcomes, between HR practices and business performance (Harel and Tzafrir, 1999). However, it is not required these linkages to be simultaneously present. It is very possible even in the absence of a direct linkage, some practices to significantly contribute to business performance through the intervening process.

Thus, the general consensus developed among researchers is that HR practices and HRM systems do not lead directly to business performance. Rather they influence firm resources, such as the human capital of the firm, or employee behaviours, and it is these resources and behaviours that ultimately lead to performance (Wright, McMahan, & McWilliams, 1994; Delery, 1998). This implicit model assumes that there are mediating variables between HR practices and business performance, although, rather few researchers have measured these mediators and addressed their importance (Park, Mitsuhashi, Fey, & Bjorkman, 2003; Paul & Anantharaman, 2003). Thus, although each of the three perspectives – universalistic, contingency, configurational, - complements the others by

adding constructs, variables or relationships (Alcazar et al., 2005), a serious limitation that recent reviews of the literature points out is that the link between HRM and business performance is considered like a 'black box', i.e., lack of clarity regarding 'what exactly leads to what' (Gerhart, 2005; Becker & Huselid, 2006).

Considering the discussion above, the primary purpose of this paper is:

1. To review methodological issues highlighted in the empirical literature in the field of strategic human resource management that may be applied to the hospitality industry.
2. To propose possible solutions to overcome methodological problems.

A GENERAL HRM-PERFORMANCE LINKAGE MODEL

In an attempt to fill the gap referring to the 'black box' in SHRM, and to better understand the linkages between human resource management and business performance, Figure 1 presents a general model summarising its major characteristics as follows (Katou & Budhwar, 2007a):

1. Stakeholders (such as owners and investors, customers, and society) play a pivotal role in the way a business is conducted and any strategy a business implements must consider views of its stakeholders as the consequences of the strategies are either approved or disapproved by them. Thus, there is a two-way relationship between stakeholders and consequences; one 'indirectly' throughout strategies and the other 'directly' back from consequences.
2. Organisational statements (mission, goal, objectives) are in effect an "umbrella" of the overall objectives of the organisation and are considered to be the foundations of the organizations' culture, and furthermore, constitute the basic premise from which all strategies are derived and "provide direction and a set of implicit decision rules for evaluating the firm-specific appropriateness of various HR practices" (Schuler and Jackson, 2005: p. 14).
3. Financial performance (e.g., ROE, ROCE) of an organisation depends to a large extent on organisational performance (e.g., effectiveness, efficiency, development, satisfaction, innovation, quality). However, the extent to which an organisation achieves its "ultimate objective", i.e. financial performance, will depend on the degree to which its "intermediate objectives or outcomes", i.e.

HRM outcomes and organisational performance are reached (Huselid, 1995; Delaney & Huselid, 1996; Delery, 1998).

4. Performance and success of an organisation depends to a large extent on human resources, processes and technology. Specifically, when employees have the right mix of skills, are

motivated, satisfied and committed then it is more likely to help the organisation to perform well. Furthermore, unless the organisation is able to retain its employees, it will not be able to capitalize on the human assets developed within the organization.

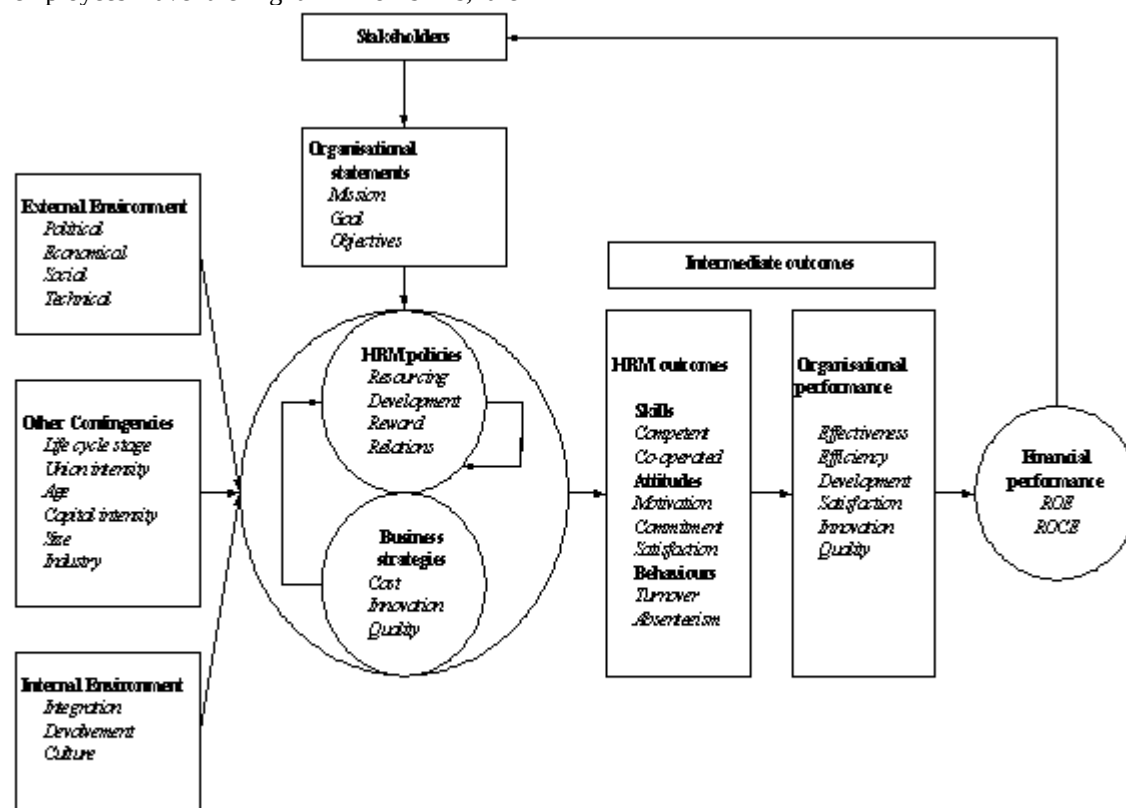


Figure 1 A general HRM-performance linkage model

Figure 1 A general HRM-performance linkage model

5. HRM outcomes depend to a large extent on the effective resourcing, development, reward, and relations of human resources. HRM outcomes are usually indicated as being outcomes with respect to: *skills*, i.e., competent (Guest, 2001; Park et al., 2003) and cooperated (Richardson & Thompson, 1999); *attitudes* - motivation, commitment, satisfaction (Park et al., 2003); and *behaviour*, i.e., turnover and absenteeism (Richardson & Thompson, 1999; Guest, 2001). Considering that the generalisability of HRM policies across countries depends on the characteristics of the specific country (Brewster, Sparrow, & Harris, 2005; Gerhart & Fang, 2005; Tregaskis & Brewster, 2006), four key areas in which human resources strategies may be developed are usually *resourcing* (recruitment, selection, separation, flexible

work arrangements), *development* (individual and team training and development, monitoring training and development, careers, work design, performance appraisal), *reward* (job evaluation, compensation, promotion arrangements, incentive schemes, benefits), and *relations* (employee participation, employee involvement, communications, health and safety) (Armstrong, 1996; Foot & Hook, 1999).

6. HRM may affect performance directly, indirectly through HRM outcomes, and moderately according to the business strategies filter. There are a number of generic strategies an organisation may choose to follow, such as 'generic corporate strategies' (growth, stability, defensive, and combination strategies) that are adopted and followed by the

organisation as a whole (Anthony, Perrewe, & Kacmar, 1996), '*generic business strategies*' (cost leadership, innovation, and quality) that adopt the concept of competitive advantage (Porter, 1980; 1985), and '*competitive product strategies*' (defenders, prospectors, analysers, and reactors) that refer to the strategic choices an organisation makes in order to link the organisation with its environment (Miles & Snow, 1984).

7. The existence of a number of linkages between the contextual factors of the '*external environment*' (political, economical, social, technical), the '*internal environment*' (integration, devolvment, culture), and the '*other contingencies*' (size, age, life cycle stage, union intensity, capital intensity), and business strategies and HRM policies make organisations to follow different pathways in order to achieve the same results (Budhwar & Debrah, 2001; Alcazar et al., 2004; Godard, 2004).

To summarise, the general framework in Figure 1 reflects partly contribution of the writers who view workers primarily as resources or objects and therefore focus on productivity indicators, such as effectiveness and efficiency (Storey, 1997), and partly of the writers who apply a stakeholder perspective and therefore focus on HRM outcomes such as competency, motivation, satisfaction, commitment, cooperation, retention, and absenteeism (Guest & Peccei, 1994; McNabb & Whitfield, 1997). Although HRM departments of hospitality organizations have been criticized for being cost centres (Cho, Woods, Jang, & Erdem, 2006) the general framework presented in Figure 1 may be used for investigating the impact of HRM on performance in the hospitality industry. However, special emphasis should be put on the various constructs used in the analysis, because it is rather difficult to measure outcomes of HRM in the hospitality industry. This is because HRM outcomes are usually measured with intangible factors such as customer satisfaction, customer complaints, etc. Furthermore, HRM or organizational outcomes are usually measured with tangible factors such as decreased turnover rates, increased labour productivity, and increased profit margin within the hospitality industry (Cho et al., 2006).

MEASUREMENT ISSUES

Measurement issues that usually accompany the HRM-performance linkage models may be summarised as follows (Aryee, Katou, Daniels, & Budwar, 2008):

HR policies/practices: There are usually three types of choices in collecting data referring to HR policies/practices:

- | | |
|-----------------------|---|
| Existence, | referring to the existence or not on an individual HR policy/practice in the organisation, indicated in the format of yes = 1, or no = 0. |
| Extensiveness, | referring to the extent to which individual HR policies/practices were used in the organisation, measured on a Likert-type scale ranging usually from 1 = very little, to 5 = very much. |
| Effectiveness, | referring to the effectiveness to which individual HR policies/practices were used in the organisation, measured on a Likert-type scale ranging usually from 1 = not at all effective, to 5 = highly effective. |

These choices are not without weaknesses. Existence is a very 'poor' choice indicating only the existence or not, of an individual HR policy/practice and neglects extensiveness and effectiveness. Extensiveness is a 'better' choice than existence, but still does not necessarily incorporate effectiveness. It is probable an individual HR policy/practice to be used very little but highly effectively, or on the contrary, to be used very much but not at all effectively. Effectiveness by definition incorporates existence and thus it is assumed as being a 'richer' choice because refers to "how well the HR policy/practice is performing" (Huselid, Jackson, & Schuler, 1997; Richard and Johnson, 2001). However, effectiveness has a broader meaning. Although respondents are some times asked to indicate how 'satisfied' they were with the specific HR policy/practice, using a scale ranging from 1 = very dissatisfied to 5 = highly dissatisfied, the choice still indicates 'perceived effectiveness' (Huselid et al., 1997). Similarly, respondents may also be asked to indicate how 'acceptable' were individual HR policies/practices, or how individual HR policies/practices were 'received' (Sanz-Valee, Sabater-Sanchez, & Aragon-Sanchez, 1999).

In collecting data researchers have to distinguish between HRM policies and HR practices (Lepak, Liao, Chung, & Harden, 2006). HRM policies constitute a higher level of HRM activity construct, because HRM policies combine various relevant HR practices (Delery, 1998). Furthermore, HRM policies refer to a higher level of abstraction than

HR practices, because HRM policies represent business intentions on HRM activities, whilst HR practices consist of actual HRM activities (Huselid & Becker, 2000; Gerhart, Wright, McMahan, & Snell, 2000). Considering that HRM policies are expressed at a higher level of abstraction than HR practices, some researchers prefer the use of HR practices in measuring the impact of HRM activities on business performance. However, considering the countless combinations of HR practices the use of HRM policies relaxes the problem of 'equifinality', i.e. the production of identical outcomes achieved by a number of different HR practices (Delery & Doty, 1996), and thus, reduces the likelihood of miscalculating the impact of a specific HR practice that was not included in the survey instrument (Lepak et al., 2006). With respect to the hospitality industry, existing studies examined the impact of only single HR practices on organizational performance, resulting thus in biased conclusions, because the effect of single HR practices on performance may be erroneously inflated (Cho et al., 2006).

HRM systems: The following definitions with respect to HRM systems may be distinguished:

- **HR systems (HRS)** are coherent sets of synergistic HR practices that blend better in producing higher business performance. These systems refer to the so-called 'best HRM practices' (Barney, 1995; Becker and Gerhart, 1996; Wood, 1999).
- **High-performance work systems (HPWS)** are used as a synonym for 'high-performance management' (HPM), or 'high-commitment management' (HCM), or 'high-involvement management' (HIM). These systems are another way to refer to the 'best HRM practices' (Walton, 1985; Pfeffer, 1994; Wood and Albanese, 1995; Becker and Huselid, 1998; Wood, 1999).

However, irrespectively of definitions, the main question is how to determine an HRM system. The methods used in order to develop HRM systems depend on the following relations among HR practices:

- **Additive relationship:** This is the case when the HR practices involved have independent and non-overlapping effects on outcome. This is translated into the case where the effect of the simultaneous use of HR practices is higher in terms of outcome than the effect of using anyone HR practice alone, but this simultaneous effect is no more than the sum of the individual effects of each HR practice (Delery, 1998).
- **Interactive relationship:** This is the case when the effect of one HR practice depends on the level of the other HR practices involved. We can distinguish several types of interactive relationships:
 - **Substitute:** This is the case when the effects of two HR practices are exactly the same and the introduction of one of the two HR practices in the system, whilst the other HR practice is already in the system, will add nothing to the output, except of course the expense that is associated with this HR practice (Ichniowski et al., 1996).
 - **Synergistic:** This is the case when the total effect of some HR practices is substantially different than the sum of the individual effects of these HR practices (MacDuffie, 1995; Delery and Doty, 1996; Becker et al., 1997; Ichniowski et al., 1997).

Although we can find in the literature works where systems of internally consistent practices have been proposed (Miles and Snow, 1984; Arthur, 1992; Delery and Doty, 1996), in fact, very few works have satisfactorily described how the HR practices support and improve one another. Furthermore, and similarly to policies vs. practices debate, the countless combinations of HR practices will raise the concept of equifinality (Doty et al., 1993; Meyer et al., 1993; Doty and Glick, 1994; Delery and Doty, 1996).

Considering that HRM policies constitute a higher level of HRM activity construct, the majority of empirical studies investigating the relationship between HRM systems and business performance have measured a large number of HRM policies and either created a scale or index system measure by summing scores on groups of policies identified through factor analysis (Huselid, 1995; Snell and Dean, 1992; Tsui, Pearch, Porter, & Tripoli, 1997; Youndt et al., 1996), or classified organisations as having a particular type of HRM system based on the results of cluster analysis (Arthur, 1992, 1994; Ichniowski, 1997).

Specifically, in creating an HRM system variable the following four-step procedure should be employed (Mohinder & Katou, 2007):

- Step 1:** A theoretical grouping, or 'typology', of the HRM policies/practices must be presented. Researchers should identify first which HRM policies/practices are the most appropriate according to the objectives of the HRM system (Lepak et al., 2006).
- Step2:** The typology of the HRM policies/practices must empirically be verified indicating thus 'taxonomy', or empirical grouping, of the HRM policies/practices. In order to determine

the underlying dimensionality of the HRM policy/practices measures, the principal components factor analysis with varimax rotation is usually employed on the individual HRM policy/practices items. The rules to categorise items into factors are as follows:

1. Requirement that a given item represented the construct underlying each factor. Huselid (1995) used a factor weight of 0.30 as the minimum cut-off. Youndt et al. (1996), Huselid, Jackson, & Schuler (1997), and Ngo *et al.* (1998) used a factor weight of 0.40 as the minimum cut-off.
 2. Requirement that each item be clearly defined by only one factor. Youndt et al. (1996), used cross-loadings (i.e. difference between weights for any given item) not less than 0.10. Sanz-Valle et al. (1999), used cross-loadings less than 0.10 in cases where the loading of the specific item was rather strong (more than 0.50).
 3. Requirement for the determination of the specific factor. Each factor's eigenvalue should exceed 1.00 (Cattell, 1978).
- Step 3:** To check the interrelatedness among the relevant items, the Cronbach's alpha must be calculated. Cronbach's alpha calculated for all the items assigned into a factor should exceed 0.70 (Nunnally, 1978).
- Step 4:** Scores may be calculated for each factor as the average (simple or weighted) of the scores on the individual HRM policies/practices that loaded most strongly on that factor.

Mediating variables: A noteworthy attempt to measure mediating variables was presented by Tsui et al. (1997). However, mediating variables are usually measured under the philosophy of a perceived rating of the organisation's HRM outcomes measure on a Likert-type scale ranging from (1) very bad to (5) very good. The HRM outcomes are usually indicated as being outcomes with respect to (Richardson & Thompson, 1999; Guest, 2001; Park et al., 2003):

Skills: Knowledge, Competence, Cooperation between managers and employees, and Cooperation among employees.

Attitudes: Motivation, Commitment, and Satisfaction.

Behaviour: Turnover (counterpart of staying within the organisation), and Absenteeism (counterpart of presence).

Intermediate outcomes, or mediating variables in HRM-performance linkage models, represent the most important variables in SHRM (Becker & Huselid, 2006). This is because these variables try to illuminate the 'black box' in SHRM. However, considering that mediating variables constitute intermediate dependent variables in the whole SHRM process, their nature heavily depends on the end-points in the HRM-performance linkage models. For example, if the ultimate dependent variable in the model is financial performance (e.g., ROE, ROCE), then the mediating variables may be considered to be of quantitative nature (e.g., employee productivity, percent of quality products). On the contrary, if the dependent variable in the model is organisational performance (e.g., perceived effectiveness, efficiency), then the mediating variables may be considered to be of qualitative nature (e.g., perceived motivation, commitment) (Skaggs & Youndt, 2004).

Business performance variables: Two types of business performance variables are usually identified:

- **Organisational Performance:** Organisational performance is usually indicated by indices such as *effectiveness*, i.e. if the organisation meets its objectives (Dyer & Reeves, 1995), *efficiency*, i.e. if the organisation uses the fewest possible resources to meet its objectives (Rogers & Wright, 1998), *development*, i.e. if the organisation is developing in its capacity to meet future opportunities and challenges (Phillips, 1996), *satisfaction*, of all participants – owners and investors, customers, society, other organizations, and organization members (Schuler & Jackson, 2005), *innovation*, for products and processes (Guest, 2001), and *quality*, % of products of high quality (Richardson & Thompson, 1999).
- **Financial performance variables:** Researchers argue that four measures of financial performance are important in studies involving organisational effectiveness: return on equity (ROE), return on capital employed (ROCE), sales growth rate (SGR), and earnings per share growth rate (EPSGR). Two of these measures (SGR and EPSGR) tap the firm's growth, while the other two (ROE and ROCE) reflect the productivity on capital employed (Hirschey and Wichern, 1984; Phillips, 1996). Several studies have used

some of these measures (Kalleberg and Moody, 1994; Huselid, 1995; Delery and Doty, 1996; McNabb and Whitfield, 1999; Richard and Johnson, 2001; Singh, 2003).

ROE and ROCE are two objective bottom-line financial measures, because they represent the ultimate measures of the strength of organisations (Earle and Mendelson, 1991), despite the criticism that these indicators can be manipulated and they do not always reflect an organisation's true underlying value or performance (Phillips, 1996). However, it may be considered that financial performance may be subject to factors outside the organisation's management control, such as economic downturns or fiscal policies that may hide or exaggerate the influence exerted by certain HRM policies (Kintana et al., 2003). Thus, it should be treated with caution the belief of some researchers in obtaining conclusions with respect to the SHRM processes, that the use of objective quantitative measures is more secure compared to the subjective qualitative measures.

Contingencies: Although the concepts of fit and moderation are core concepts in HRM-performance linkage models, there has been limited theoretical and empirical research on these subjects in SHRM (Zajac, Kraatz, & Bresser, 2000). Three types of contingencies relevant to the concepts of fit and/or moderation may be identified:

- **Business strategies:** The ability to gain and retain competitive advantage is crucial to an organisation's growth and prosperity. For an organisation to gain and retain competitive advantage there are three generic business strategies: cost, quality and innovation (for details see Porter, 1980; 1985). Porter's theory of generic business strategy is usually employed for a number of reasons. First, it has been shown to be a relatively powerful predictor of organisational effectiveness (Youndt et al., 1996). Second, scholars (see Schuler and Jackson 1987; Schuler 1989) highlight its implications for an organisation's HRM policies/practices. Third, the theory has been commonly used in the SHRM literature (Othman, 1996; Guest, 1997; Sanz-Valle et al., 1999; Huang, 2001).
- **Organisational contextual variables:** Organisational contextual factors may influence the adoption of HRM policies such as '*management style*' (1 = heavily centralised to 5 = heavily decentralised) (Miles and Snow, 1984), and '*organisational culture*' (1 = power-oriented, 2 = role-oriented, 3 = project-oriented, 4 = fulfilment-oriented) (Trompenaars, 1993).
- **Controls:** Several controls may influence the adoption of business strategies, HRM policies and performance (Delaney & Huselid, 1996;

Youndt et al., 1996), such as '*size*' (employment in logs) (Youndt et al., 1996), '*life cycle stage*' (introductory, growth, maturity, decline, turnaround) (Christensen Hughes, 2002), '*union intensity*' (percent of employees in unions) (Delbridge & Whitfield, 2001), '*capital intensity*' (total assets by employment, in logs) (Richard & Johnson, 2001), and '*industry*' (Delbridge & Whitfield, 1999).

No business works in a vacuum. Contingencies are important in order to capture organisational and environmental forces that are related to both the adoption of HRM strategies and business performance (Delaney and Huselid, 1996). Therefore, the choice of contingency variables in the analysis can have important effect on the results (Guest, 2001). Specifically, contingencies are much more important when cross-sectional data are used in the analysis (Becker & Huselid, 2006).

STATISTICAL ANALYSIS

To test the hypotheses raised in strategic human resource management research the following analysis is usually employed:

- *Hierarchical regression models* may be used for testing whether business strategies moderate HRM systems/policies/practices (Youndt et al., 1996; Delery and Doty, 1996). The steps of this methodology are as follows (Katou & Budhwar, 2007):

- Step 1:* The control variables were added as a set to control any extraneous effects across industries and/or organizations.
- Step 2:* The set of business strategies were entered in order to control any effects strategy might have on business performance.
- Step 3:* The individual HRM systems/policies/practices were entered as a set to test the universalistic approach.
- Step 4:* Individual terms were examined to test specific hypotheses. To achieve this step three may be repeated using backward regression to control possible multicollinearity.

- *Competing regression models* may be used for testing whether HRM outcomes mediate HRM systems/policies/practices and business performance (Baron and Kenny, 1986). Considering that mediation is a hypothesised causal chain in which one variable (X) affects

a second variable (M) that, in turn, affects a third variable (Y), this procedure is to conduct the following regressions (Katou & Budhwar, 2006):

- Step 1:** Conduct a regression analysis with X predicting Y to test if there is an effect that may be mediated, $Y = a + bX + e$.
- Step 2:** Conduct a regression analysis with X predicting M to test if X is related to M, $M = a + bX + e$.
- Step 3:** Conduct a regression analysis with M predicting Y to test if M is related to Y, $Y = a + bM + e$.
- Step 4:** Conduct a regression analysis with X and M predicting Y to test if M completely mediates Y, $Y = a + b_1X + b_2M + e$.

Paths from X to M and from M to Y are the 'direct effects'. The mediation effect in which X leads to Y through M is the 'indirect effect'. The indirect effect represents the portion of the relationship between X and Y that is mediated by M. The purpose of Steps 1 to 3 is to establish that 'zero-order' relationships among the variables exist. If one or more of these relationships are non-significant, mediation is not likely. Assuming there are significant relationships from Steps 1 through 3, one proceeds to Step 4. In Step 4, some form of mediation is supported if the effect of M remains significant after controlling for X. If X is no longer significant when M is controlled, the findings support 'full mediation'. If X is still significant (i.e., both X and M significantly predict Y), the finding supports 'partial mediation'.

- *Structural equation models or latent variable models* may be used in investigating causal

relationships between categorical variables (Hair, Anderson, Tatham, & Black, 1995; Agresti, 2002). These models are defined by two components, namely the 'structural equation model' and the 'measurement model(s)' (Jöreskog & Sörbom, 2004).

Structural equation model: $\eta = \alpha + B\eta + \Gamma\xi + \zeta$

where η is a $m \times 1$ vector of endogenous variables, ξ is a $n \times 1$ vector of exogenous latent variables, ζ is a $m \times 1$ vector of error terms, and α , B and Γ are coefficient matrices.

Measurement models: $y = \tau_y + \Lambda_y \eta + \varepsilon$
 $x = \tau_x + \Lambda_x \xi + \delta$

where the p endogenous observed variable represented by the vector y , and the q exogenous observed variable contained in the vector x relate the observed variables to the latent variables, considering that ε and δ are vector error terms and τ_y , Λ_y , τ_x and Λ_x are coefficient matrices.

Each latent variable model is accompanied with a path diagram indicating all the causal relationships between the variables involved. As an example, a version of the path diagram for the general HRM-performance linkage model presented in Figure 1 is presented in Figure 2. In this figure the boxes represent exogenous or endogenous observed variables and the circles represent the related latent variables. The light arrows indicate the observed variables that constitute the related latent variable and the bold arrows indicate the structural relationships between the corresponding variables.

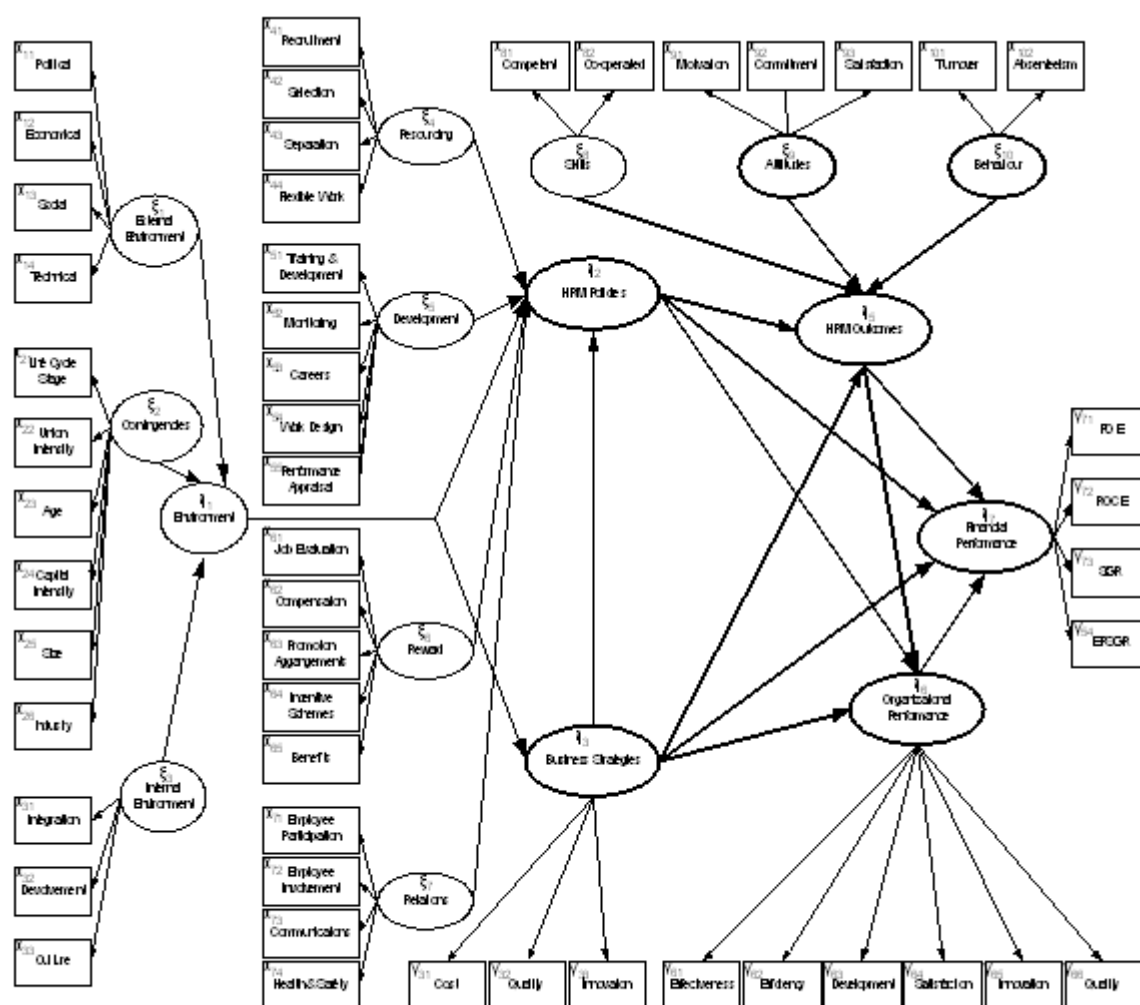


Figure 2 An HRM-performance linkage structural equation model

It is argued that the methodology of structural equation models is much more powerful in investigating causal relationships between categorical variables (Bollen, 1989; Bollen & Long, 1993; Mels, 2004), and thus, illuminating the 'black box' (Wright, Gardner, & Moynihan, 2003; Wright, Gardner, Moynihan & Allen, 2005) between HRM systems and organisational performance. These models are important for basically three reasons. First, they can summarize information contained in many response variables by a few latent variables. A latent variable is a statistical device used to summarise the information in a collection of correlated response variables. Second, a latent variable model can minimize the biasing effects of errors of measurement in estimating treatment effects. Third, a latent variable model investigates effects between primary conceptual variables, rather than between any particular set of ordinary response variables (Mels, 2004).

The statistical analysis thus far did not generally address the 'dual-causation' model (Wright et al.,

2005), i.e. the model that treats jointly HRM activities and business performance (Becker & Huselid, 2006). The estimates of this model are based on a simultaneous equation system, avoiding thus the problem of the simultaneous equation bias in the estimates, and therefore investigating more carefully the concept of causality in SHRM. As a result, the causality hypothesis should be further investigated employing simultaneous equation systems and generally using time-series and/or longitudinal data.

SAMPLE ISSUES

The discussion with respect to collecting data in SHRM is usually focused on issues relevant with the level of analysis, and with the number and type of respondents (Aryee et al., 2008):

Level of analysis: A wide number of approaches with respect to the level of analysis unit have been used in SHRM. The following breakdown illustrates some of the possibilities:

- Cross-sectional surveys (Richardson & Thompson, 1999):
 - o multi-industry
 - o single-industry
- Level of analysis unit (Lepak et al., 2006):
 - o Corporate
 - o Firm/ enterprise/ business
 - o Establishment/ facility/ workplace

Lepak et al. (2006: 244) argue that, “we do not suggest that there should be the one right or wrong level of analysis to utilize when examining HRM activities. Rather, this choice reflects tradeoffs such as increased accuracy in measuring HR systems at lower levels of analysis (e.g., individual, establishment) versus increased generalizability of results or greater accessibility to organizational level performance metrics (e.g., firm, corporate levels of analysis). However, Cappelli & Neumark (2001) support that it is better to investigate HRM within a single industry, because relevant variables, such as organizational performance, HR practices, HRM outcomes, and controls, are precisely measured when the study focuses on a particular industry (Ichniowski et al., 1997).

Number and type of respondents: Although some researchers, such as Gerhart et al. (2000) and Paul & Anatharaman (2003), have addressed the problem of measurement errors in the SHRM measures based on single respondent surveys, known as ‘*common method bias*’, and some other researchers, such as Wagner & Crampton (1993) and Datta, Guthrie, & Wright (2005), argued that the problem of common method bias is often overstated, the introduction of multi-respondent measures although challenging it is often argued that is either infeasible in large-scale studies or of little contribution to the overall accuracy of the results (Becker & Huselid, 2006). It is not the number of respondents that matters so much but is the type of respondents that is important (Huselid & Becker, 2000). Respondents, or the so-called ‘*referent groups*’, are important because different strategic HRM systems are usually employed for different employees (Lepak & Snell, 2002), and “not all employees are of equal strategic value within the organisation” (Lepak et al., 2006: 246).

Common method bias check: A common method bias is said to have occurred when statistical relationships between variables are due to the method used to measure the variables rather than relationships between the constructs they represent (Venkatraman & Ramanujam, 1987). A common method bias is most likely to be a problem in studies that use a single instrument administered to a single informant to contemporaneously measure both dependent and independent variables. The

specific concern is that respondents may, to some extent, reflect the ‘expected relationships’ between variables and then shade their answers to be more consistent with the expected relationships (Fichman & Kemerer, 1997), or reflect the ‘implicit theories’ held by the respondent rather than by the relationship (Bjorkman & Xiucheng, 2002). The following points are used in order to reduce or check common method bias:

- Questionnaire items arranged so that dependent variables followed, rather than preceded, the independent variables reduces the risk of the common method bias problem (Salancik and Pfeffer, 1977).
- The many types of measures used in a questionnaire limit the potential for common method bias (Eisenhardt and Tabrizi, 1995).
- Bias of a single respondent is an inherent problem in small sample sizes. In larger sample sizes the problem of a single respondent bias could be eliminated, as aggregated responses would have a central tendency toward the mean (Cooper and Emory, 1995).
- The exhaustive data-gathering process minimizes the risk of o a single respondent bias (Kintana et al., 2003).
- A usual test of whether a common method bias may exist is Harman’s single factor test (Harman, 1967). According to this test if a significant amount of common method bias exists in the data, then the factor analysis of all the relevant variables in the model will generate a single factor that accounts for most of the variance.

CONCLUDING REMARKS

It is well accepted that the hospitality industry is labour-intensive. However, only a few studies investigated the impact of HRM policies on hospitality organizations performance (Cho et al., 2006; Mohinder & Katou, 2007). Although, most studies attempted to investigate the impact of single HRM policies on organizational performance, few attempts have been made to assess the importance of fit between HRM policies and business strategies in determining organizational performance (Hoque, 1999). This was mainly due to the lack of HRM research interest relating to services and specifically to the hospitality industry. Recently, the research interest with respect to strategic human resource management and performance in the hospitality industry has been increased, demanding thus for stronger research methods.

Following Wall & Wood (2005), who argue that future progress in strategic human resource

management depends on using stronger research methods, the scope of this paper was to summarise some important methodological issues that researchers usually face in their empirical studies. Only robust conclusions, as a result of the application of stronger empirical research methods, will be of some value to practitioners.

REFERENCES

- Agresti, A. (2002) *Categorical Data Analysis*. New York: Wiley.
- Alcazar, F.M., fernandez, P.M.R., & Gardey, G.S. (2007) Human resource management as a field of research. *British Academy of Management*. : 1-16.
- Anthony, W.P. Perrewe, P.L. & Kacmar, K.M. 1996. *Strategic Human Resource Management*. Forth Worth: The Dryden Press.
- Armstrong, M. (1996) *A Handbook of Personnel Management Practice*. London: Kogan Page.
- Arthur, J.B. (1992) The link between business strategy and industrial relations systems in American steel minimills. *Industrial and Labour Relations Review*, 45:
- Arthur, J.B. (1994) Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37: 670-687.
- Aryee, S., Katou, A., Daniels, K., & Budhwar, P. (2008) Issues in SHRM and the Way Forward (Chapter 14). In: *Strategic Human Resource Management – Building Research-Based Practice*. London: Chartered Institute of Personnel and Development.
- Barney, J. (1991) Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99-120.
- Baron, R.M. & Kenny, D.A. (1986) The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51: 1173-1182.
- Becker, B.E. & Gerhart, B. (1996) The impact of human resource management on organizational performance: progress and prospects. *Academy of Management Journal*, 39: 779-801.
- Becker, B.E. & Huselid, M.A. (1998). High performance work systems and firm performance: A synthesis of research and managerial implications. In G.R. Ferris (ed.) *Research in Personnel and Human Resources*. Stamford, CT: JAI Press.
- Becker, B.E. & Huselid, M.A. (2006) Strategic human resource management: Where do we go from here? *Journal of Management*, 32: 898-925.
- Becker, B.E., Huselid, M.A., Pickus, P.S., & Spratt, M.F. (1997) HR as a source of shareholder value: Research and recommendations. *Human Resource Management*, 36(1): 34-47.
- Bjorkman, I. & Xiucheng, F. (2002) Human resource management and the performance of Western firms in China. *International Journal of Human Resource Management*, 13(6): 853-864.
- Bollen, K.A. (1989) *Structural Equations with Latent Variables*. New York: John Wiley.
- Bollen, K.A. & Long, S.J. (1993) *Testing Structural Equation Models*. London: SAGE.
- Brewster, C. (1999) Different paradigms in strategic HRM: Questions raised by comparative research. In Wright, P., Dyer, L., Boudreau, L. and Milkovich, G. (eds.) *Research in personnel and human resource management: Strategic HRM in the 21st century*. Supplement 4. Greenwich, CT: JAI Press.
- Budhwar, P. & Debrah, Y. (2001) Rethinking Comparative and Cross National Human Resource Management Research. *The International Journal of Human Resource Management*, 12: 497-515.
- Cappelli, P. & Neumark, D. (2001) Do high performance work practices improve establishment level outcomes?. *Industrial and Labor Relations Review*, 54(4): 737-775.
- Christensen Hughes, J.M. (2002) HRM and universalism: is there one best way? *International Journal of Contemporary Hospitality*, 14(5): 221-228.
- Claus, L. (2003) Similarities and differences in human resource management in the European Union. *Thunderbird International Business Review*, 45: 729-756.
- Combs, J.G., Ketchen, D.J., Jr., Hall, A.T., & Liu, Y. (2006) Do high performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59: 501-528.
- Cooper, D.R. & Emory, C.W. (1995) *Business research methods*. 5th ed. Irwin.
- Datta, D.K., Guthrie, J.P., & Wright, P.M. (2005) Human resource management and labor productivity: Does industry matter? *Academy of Management Journal*, 48(1): 135-145.
- Delaney, J.T. & Huselid, M.A. (1996) The impact of human resource management practices on perceptions of organisational performance. *Academy of Management Journal*, 39(4): 949-969.

- Delbridge, R. & Whitfield, K. (2001) Employee perceptions of job influence and organisational participation. *Industrial Relations*, 40(3): 472-489.
- Delery, J.E. (1998) Issues of fit in strategic human resource management: Implications for research. *Human Resource Management Review*, 8: 289-309.
- Delery, J. & Doty, D.H. (1996) Modes of theorizing in strategic human resource management: test of universalistic, contingency and configurational performance predictions. *Academy of Management Journal*, 39: 802-835.
- Doty, D.H. & Glick, W.H. (1994) Typologies as a unique form of theory building: Toward improved understanding and modelling. *Academy of Management Review*, 19: 230-251.
- Doty, D.H., Glick, W.H., & Huber, G.P. (1993) Fit, equifinality, and organisational effectiveness: A test of two configurational theories. *Academy of Management Journal*, 36: 1196-1250.
- Dyer, L. & Reeves, T. (1995) Human resource strategies and firm performance: what do we know and where do we need to go? *International Journal of Human Resource Management*, 6(3): 656-670.
- Earle, D.M. & Mendelson, M. 1991. The critical mesh in strategic planning. *The Bankers Magazine*, 174: 48-53.
- Edwards, P. & Wright, M. (2001) High-involvement work systems and performance outcomes: the strength of variable, contingent and context-bound relationships. *International Journal of Human Resource Management*, 12: 568-585.
- Eisenhardt, K.M. & Tabrizi, J. (1995) Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly*, 40: 84-110.
- Ferris, G.R., Arthur, M.M., Berkson, H.M., Kaplan, D.M., Harell-Cook, G., & Frink, D.D. (1998) Toward a social context theory of the human resource management-organization effectiveness relationship. *Human Resource Management Review*, 8: 235-264.
- Fichman, R.G. & Kemerer, C.F. (1997) The assimilation of software process innovations: An organizational learning perspective. *Management Science*, 43(10): 1345-1364.
- Foot, M. & Hook, C. (1999) *Introducing Human Resource Management*. London: Longman.
- Gerhart, B., Wright, P.M., McMahan, G.C., & Snell, S.A. (2000) Measurement error in research on human resources and firm performance: How much error is there and how does it influence effect size estimates? *Personnel Psychology*, 53: 803-834.
- Gerhart, B. (2005) Human resources and business performance: Findings, unanswered questions, and an alternative approach. *Management Review*, 16: 174-185.
- Godard, J. (2004) A critical assessment of the high-performance paradigm. *British Journal of Industrial Relations*, 42: 349-378.
- Gomez-Mejia, L.R. and Balkin, D.B. (1992) *Compensation, organisational strategy and firm performance*. Cincinnati: Southwestern.
- Guest, D. (1997) Human resource management and performance: a review and research agenda. *International Journal of Human Resource Management*, 8: 263-276.
- Guest, D.E. (2001) Human resource management: when research confronts theory. *International Journal of Human Resource Management*, 12(7): 1092-1106.
- Guest, D.E. & Hoque, K. (1994) The good, the bad and the ugly: Human resource management in new non-union establishments. *Human Resource Management Journal*, 5: 1-14.
- Guest, D. & Peccei, R. 1994. The nature and causes of effective human resource management. *British Journal of Industrial Relations*, 32: 219-242.
- Hair, F., Anderson, R., Tatham, R. & Black, W. (1995) *Multivariate Data Analysis with Readings*. (4th ed.). London: Prentice-Hall.
- Harel, G.H. & Tzafrir, S.S. (1999) The effect of human resource management practices on the perceptions of organisational and market performance of the firm. *Human Resource Management*, 38: 185-200.
- Harman, H.H. 1967. *Modern factor analysis*. Chicago, IL: University of Chicago Press.
- Hirschey, M. & Wichern, D.W. (1984) Accounting and market-value measures of profitability: Consistency, determinants, and uses. *Journal of Business and Economic Statistics*, 2: 375-383.
- Huang, T.C. (1998) The Impact of HRM on organizational performance: an examination of contingency theory, *Proceedings, 6th Conference on International HRM*. University of Paderborn. Germany.
- Huselid, M.A. (1995) The impact of human resource management practices on turnover, productivity and corporate financial performance. *Academy of Management Journal*, 38: 635-670.
- Huselid, M.A. & Becker, B.E. (1996) Methodological issues in cross-sectional and panel estimates of the human resource-firm performance link. *Industrial Relations*, 35: 400-422.
- Huselid, M.A. & Becker, B.E. (2000) Comment on "Measurement error in research on human resources and firm performance: How much error is there and how does it influence

- effect size estimates?" by Gerhart, B., Wright, P.M., McMahan, G.C., & Snell, S.A. *Personnel Psychology*, 53(4): 835-854.
- Huselid, M.A., Jackson, S.E., & Schuler, R.S. (1997) Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal*, 40: 171-188.
- Jöreskog, K.G. & Sörbom, D. (2004) *LISREL 8.7 for Windows [Computer Software]*. Lincolnwood, IL: Scientific Software International, Inc.
- 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.
- Ichniowski, C. Kochan, T., Levine, D. Olson, C., & Strauss, G. (1996) What works at work: Overview and assessment. *Industrial relations*, 35: 299-333.
- Kalleberg, A.L. & Moody, J.W. (1994) Human resource management and organisational performance. *American Behavioural Scientist*, 7(37): 948-962.
- Katou, A.A. & Budhwar, P.S. (2006) Human resource management systems and organizational performance: a test of a mediating model in the Greek manufacturing context. *International Journal of Human Resource Management*, 17: 1223-1253.
- Katou, A.A. & Budhwar, P.S. (2007) The effect of human resource management policies on organisational performance in Greek manufacturing firms. *Thunderbird International Business Review*, 49(1): 1-35.
- Katou, A.A. & Budhwar, P.S. (2007a) An integrative framework for understanding the link between human resource management and business performance. *Academy of Management Annual Meeting*, Philadelphia, PA, August 3-8.
- Kintana, M.L., Alonso, A.U., & Verri, C.G.O. (2003) 'High performance work systems and firm's operational performance: The moderating role of technology'. *Working Paper*. Public University of Navarra.
- Lepak, D.P. & Snell, S.A. (2002) Examining the human resources architecture: The relationships among human capital, employment and resource configurations. *Journal of Management*, 28(4): 517-543.
- Lepak, D.P., Liao, H., Chung, Y., & Harden, E.E. (2006) A conceptual review of human resource management systems in strategic human resource management research. *Research in Personnel and Human Resources Management*, 25: 217-271.
- MacDuffie, J.P. (1995) Human resource bundles and manufacturing performance: Flexible production systems in the world auto industry. *Industrial Relations and Labour Review*, 48: 197-221.
- McNabb, R. & Whitfield, K. (1999) The impact of financial participation and employee involvement on financial performance. *Scottish Journal of Political Economy*, 45(2): 171-187.
- McNabb, R. & Whitfield, K. (2001) Job evaluation and high performance work practices: Compatible or conflictual? *Journal of Management Studies*, 38: 293-312.
- Mels, G. (2004) *LISREL 8.7 for Windows: Getting Started Guide*. Lincolnwood, IL: Scientific Software International, Inc.
- Meyer, A., Tsui, A., & Hinings, C.R. (1993) Configurational approaches to organizational analysis. *Academy of Management Journal*, 36(6): 1175-1195.
- Miles, R.E. & Snow, C.C. (1984) Designing human resource systems. *Organisational Dynamics*, 13(1): 36-52.
- Mohinder, C. & Katou, A.A. (2007) The impact of HRM practices on organisational performance in the Indian hotel industry. *Employee Relations – an international journal*, 29(6): 576-594.
- Nunnally, J.C. (1978) *Psychometric theory*. New York: McGraw-Hill.
- Ngo, H. Turban, D. Lau, C., & Lui, S. (1998) Human resource practices and firm performance of multinational corporations: influences of country origin. *The International Journal of Human Resource Management*, 9: 632-652.
- Osterman, P. (1994) Turnover, employment security, and the performance of the firm. In: Kleiner, M.M. et al. (eds.) *Human Resources and the Firm Performance*. Washington, DC: BNA Press.
- Othman, R.B. (1996) Strategic HRM: evidence from the Irish food industry. *Personnel Review*, 25(1): 40-58.
- Park, H.J., Mitsuhashi, H., Fey, C.F. & Bjorkman, I. (2003) *The effect of human resource management practices on Japanese MNC subsidiary performance – A partial mediating model*. Working Paper no. 03-102, St. Petersburg: Stockholm School of Economics.
- Paul, A.K. & Anantharaman, R.N. (2003) Impact of people management practices on organisational performance. *International Journal of Human Resource Management*, 14: 1246-1266.
- Pfeffer, J. (1994) *Competitive Advantage through People*. Boston, Mass: Harvard Business School Press.

- Phillips, J.J. (1996) *Accountability in human resource management*. Houston: Gulf Publishing Company.
- Porter, M.E. (1980) *Competitive strategy*. New York: The Free Press.
- Porter, M.E. (1985) *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.
- Richard, O.C. & Johnson, N.B. (2001) Strategic human resource management effectiveness and firm performance. *International Journal of Human Resource Management*, 12: 299-310.
- Richardson, R. & Thompson, M. (1999). *The Impact of People Management Practices on Business Performance: A Literature Review*. London: IPD.
- Rogers, E.W. & Wright, P.M. (1998) Measuring organizational performance in strategic human resource management: problems, prospects, and performance information markets. *Human Resource Management Review*, 8: 311-331.
- Salancik, G.R. & Pfeffer, J. (1977) An examination of need satisfaction models of job attitudes. *Administrative Science Quarterly*, 22: 427-456.
- Sanz-Valee, R., Sabater-Sanchez, R. & Aragon-Sanchez, A. (1999) Human resource management and business strategy links: an empirical study. *The International Journal of Human Resource Management*. 10: 655-671.
- Schuler, R.S. & Jackson, S.E. (1987). Linking competitive strategies with human resource management practices. *Academy of Management Executive*, 1: 207-219.
- Schuler, R.S. & Jackson, S.E. (1999) Strategic human resource management: A reader. London: Blackwell.
- Schuler, R.S. & Jackson, S.E. (2005) A quarter-century review of human resource management in the U.S.: The growth in importance of the international perspective. *Management Review*, 16: 11-35.
- Singh, K. (2003) The effect of human resources practices on firm performance in India. *Human Resource Development International*, 6(1): 101-116.
- Skaggs, B.C. & Youndt, M. (2004) Strategic positioning, human capital and performance in service organizations. *Strategic Management Journal*, 25: 85-99.
- Snell, S.A. & Dean, J.W. (1992) Integrated manufacturing and human resource management: A capital prespective. *Academy of Management Journal*, 35(3): 467-504.
- Storey, J. (1997) *Managing Human Resources: Preparing for the 21st Century*. New Delhi: Beacon Books.
- Trompenaars, F. (1993) *Riding the Waves of Culture*. Chicago, IL: Irwin.
- Tsui, A.S., Pearce, J.L., Porter, L.W., & Tripoli, A.M. (1997) Alternative approaches to the employee-organisation relationship: Does investment in employees pay off? *The Academy of Management Journal*, 40(5): 1089-1121.
- Venkatraman, N. & Ramanujam, V. (1986) Measurement of performance in strategy research: A comparison of approaches. *Academy of Management Review*, 11: 801-814.
- Wagner, J.A. & Crampton, S.K. (1993) Percent percept inflation in micro organisational research: An investigation of prevalence effect. In Moore, D. ed. *Academy of Management Proceedings*. 310-314.
- Wall, T.D. & Wood, S.J. (2005) The romance of human resource management and business performance, and the case for big science. *Human Relations*, 58(4): 429-462.
- Walton, R. (1985) From control to commitment in the workplace. *Harvard Business Review*, 64(2): 77-84.
- Wood, S. (1999). Human resource management and performance. *International Journal of Management Reviews*, 1: 367-413.
- Wood, S. & Albanese, M. (1995) Can you speak of a high commitment management on the shop floor? *Journal of Management Studies*, 32(2): 215-247.
- Wright, P.M., McMahan, G.C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management*, 5: 301-326.
- Wright, P.M., Gardner, T.M. & Moynihan, L.M. (2003) The impact of HR practices on the performance of business units. *Human Resource Management Journal*. 13: 21-36.
- Wright, P.M., Gardner, T.M., Moynihan, L.M. & Allen, M.R. (2005) The relationship between HR practices and firm performance: examining causal order. *Personnel Psychology*. 58(2): 409-446.
- Youndt, M., Snell, S., Dean, J., & Lepak, D. (1996) Human resource management, manufacturing strategy, and firm performance. *Academy of Management Journal*, 39: 836-866.
- Zajac, E.J., Kraatz, M.S., & Bresser, R.K. (2000) Modeling the dynamics of strategic fit: A normative approach to strategic change. *Strategic management Journal*, 21: 429-453.