

# Northumbria Research Link

Citation: Vlachos, Ilias (2009) The effects of human resource practices on firm growth. International Journal of Business Science and Applied Management, 4 (2). pp. 18-34. ISSN 1753-0296

Published by: International Journal of Business Science and Applied Management

URL: <http://dx.doi.org/10.1201/b12878-7>

This version was downloaded from Northumbria Research Link:  
<http://nrl.northumbria.ac.uk/12913/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)

[www.northumbria.ac.uk/nrl](http://www.northumbria.ac.uk/nrl)



## **The effects of human resource practices on firm growth**

Ilias P. Vlachos

Dept. of Agricultural Economics & Rural Development, Agricultural University of Athens

Iera Odos 75, Botanikos, 118 55, Athens, Greece

Tel: +30 210 5294757

Email: ivlachos@aua.gr

### ***Abstract***

Although the connection between firm growth and labour is well documented in economics literature, only recently the link between human resources (HR) and firm growth has attracted the interest of researchers. This study aims to assess the extent, if any, to which, specific HR practices may contribute to firm growth. We review a rich literature on the links between firm performance and the following HR practices: (1) job security (2) selective hiring, (3) self-managed teams (4) compensation policy, (5) extensive training, and (6) information sharing. We surveyed HR managers and recorded their perceptions about the links between HR practices and firm growth. Results demonstrated that compensation policy was the strongest predictor of sales growth. Results provide overall support for all HR practices except of job security. Eventually, selecting, training, and rewarding employees as well as giving them the power to decide for the benefit of their firm, contribute significantly to firm growth.

**Keywords:** human resource practices, firm growth, selective hiring, compensation policy

## **1 INTRODUCTION**

The extent to which, if any, human resource management (HRM) impacts on organizational performance has emerged as the central research question in the personnel/HRM field (see Becker and Gerhart, 1996; Guest, 1997 for reviews). Although initial results indicate that some human resources practices may have a positive effect on organizational performance, most scholars suggest that more conceptual and empirical work is required (Brewster, 2004; Cardon and Stevens, 2004; Givord and Maurin, 2004; Zhu, 2004). For the moment, although Human resources (HR) are considered as the most valuable asset in an organization, they make a difference only for a few organisations (Pfeffer, 1998; Wimbush, 2005).

The link between human resources (HR) and firm growth is well documented in classic economic theory. Overwhelming evidence suggests growth is driven by specialization and division of labour in the processes of generation and attraction/development of technological opportunities. However, at the firm level of analysis, only recently the link between human capital and growth has attracted the interest of researchers.

Firm growth is often seen as an indication of market acceptance and firm success (Fesser and Willard, 1990). Growth is considered as a top strategic priority for most firms yet only few companies achieve growth and ever fewer in maintaining in (Baum and Wally, 2003; Zook and Allen, 2003). Assuming, that firm growth involves more purposeful work and strategic decision making than leaving it to random and chance events, the present study addresses a central research question: How do human resource management practices contribute to firm growth?

The next section reviews the relevant literature on HR practices and firm growth. A discussion of the methodology employed for data collection follows. The last two sections illustrate the data analysis, the discussion of the key results and the provision of possible avenues for future research.

## **2 LITERATURE REVIEW**

A growing body of empirical research has examined the effect of certain HRM practices on firm performance. Although there is a long list of best HR practices that can affect either independently or collectively on the organizational performance, results are hard to interpret. In order to determine any effects of HR practices on firm growth, we choose to examine HR practices initially proposed by Pfeffer (1998) which according to the literature, can be expected to influence the firm performance. In his seminal work, Pfeffer (1998) proposed the following seven HRM practices: (1) employment security (2) selective hiring, (3) self-managed teams and decentralization of decision making (4) comparatively high compensation contingent on organizational performance, (5) extensive training, (6) reduced status distinctions and barriers, including dress, language, office arrangements, and wage differences across levels, and (7) extensive sharing of financial and performance information throughout the organization.

The following sections will develop hypotheses concerning the relationship between HRM practices and firm growth.

### **2.1 Compensation policy**

Performance-based compensation is the dominant HR practice that firms use to evaluate and reward employees' efforts (Collins and Clark, 2003). Evidently, performance-based compensation has a positive effect upon employee and organizational performance (see for reviews: Brown et al. 2003; Cardon and Stevens, 2004). However, there is scarce evidence on the effects of compensation policy of firm growth. Empirical studies on the relationship between performance-related pay and company performance have generally found a positive relationship, but a growing body of empirical evidence suggests that it is not just pay level that matters, but pay structure as well (Wimbush, 2005; Singh 2005).

Barringer et al. (2005) conducted a quantitative content analysis of the narrative descriptions of 50 rapid-growth firms and a comparison group of 50 slow-growth companies. Results demonstrated that employee incentives differentiated the rapid-growth from the slow-growth firms. Firms that were eager to achieve rapid-growth provided their employees financial incentives and stock options as part of their compensation packages. In doing so, firms managed to elicit high levels of performance from employees, provide employees the feeling that they have an ownership interest in the firm, attract and retain high-quality employees, and shift a portion of a firm's business risk to the employees.

Delery and Doty (1996) identified performance-based compensation as the single strongest predictor of firm performance. Both performance-based compensation and merit-based promotion can

be viewed as ingredients in organizational incentive systems that encourage individual performance and retention (Uen and Chien, 2004). Collins and Clark (2003) studied 73 high-technology firms and showed that the relationships between the HR practices and firm performance (sales growth and stock growth) were mediated through their top managers' social networks.

Cho et al. (2005) suggested that incentive plans are effective in decreasing turnover rates. Banker et al. (2001) conducted a longitudinal study of the effectiveness of incentive plans in the hotel industry and found that incentive plans were related to higher revenues, increased profits, and decreased cost. Paul and Anantharaman (2003) found that compensation and incentives directly affect operational performance.

To be effective, compensation practices and policies must be aligned with organisational objectives. While performance-based compensation can motivate employees, sometimes employees perceive it as a management mechanism to control their behaviour (Lawler and Rhode, 1976). In such a case, employees are less loyal and committed, thus compensation plans have the opposite than desired outcome (Ahmad and Schroeder, 2003; Rodriguez and Ventura, 2003).

Employee turnover can significantly slow revenue growth, particularly in knowledge-intensive industries (Baron and Hannan, 2002). Given that much of the tacit knowledge resides within employees, significant turnover poses a threat to firm performance and its future growth potential. With high turnover rates, firm growth flees away along with leaving managers who often become employers of rival firms or establish themselves rival firms.

Therefore, we propose this hypothesis:

*Hypothesis 1: Compensation Policy is positively related to firm growth*

## **2.2 Decentralization & Self-managed teams**

More and more, employees are required to work in teams, make joint decisions, and undertake common initiatives in order to meet the objectives of their team and organization. Self-managed teams can affect firm growth in two ways: Firstly, a surplus of junior managers in a firm may create and support dynamics of firm growth. The growth stage is perhaps the most dynamic stage of a firm's life cycle. As the business expands, new levels of management are added. Decision-making becomes more decentralized, middle managers gain authority and self-managed teams proliferate as the firm adds more and more projects and customers (Flamholtz and Randle, 2000; Miller and Friesen, 1984). Secondly, teamwork and decentralization of decision making promotes employee commitment participation and create a sense of attachment, thus indirectly affecting firm performance (Tata and Prasad, 2004).

Several studies identified self-managed teams and decentralization as important high-performance HRM practices (Pfeffer, 1998; Wagner, 1994; Yeatts and Hyten, 1998; Singer and Duvall, 2000). Jayaram et al. (1999) found that decentralised teams have a positive effect on two dimensions of the performance, time and flexibility. Collins and Clark (2003) examined the role of human resource practices in creating organizational competitive advantage and found that top management team social networks (practices such as mentoring, incentives, etc.) mediated the relationship between HR practices and firm performance. Halebian and Finkelstein (1993) examined the effects of top management team size and chief executive officer (CEO) dominance on firm performance in different environments. Results showed that firms with large teams performed better and firms with dominant CEOs performed worse in a turbulent environment than in a stable one.

Tata and Prasad (2004) found that a company with micro level of centralisation is a receptive environment for self-managed teams. In a study of differential outcomes of team structures for workers, supervisors, and middle managers in a large unionized telecommunications company, Batt (2004) found that participation in self-managed teams is associated with significantly higher levels of employment security, and satisfaction for workers and the opposite for supervisors. Black et al. (2004) examined the impact of organizational change on workers and found evidence that self-managed teams are associated with greater employment reductions.

Therefore, we propose this hypothesis:

*Hypothesis 2: Decentralisation is positively related to firm growth.*

## **2.3 Information Sharing**

Sharing of information may have a dual effect: Firstly, it conveys employees the right meaning that the company trusts them. Secondly, in order to make informed decision, employees should have access to critical information. Communicating performance data on a routine basis throughout the year help employees to improve and develop. Employees presumably want to be good at their jobs, but if

they never receive any performance feedback, they may perceive to have a satisfactory performance when in fact they do not (Chow et al., 1999). Furthermore, information sharing fosters organizational transparency which reduces turnover (Ahmad and Schroeder, 2003) and forges synergistic working relationship among employees (Nonaka, 1994).

Information sharing is not a widespread HR practice as someone might have expected it to be. Many companies are vulnerable to share critical information with their employees because in this way employees become more powerful and companies may lose control of them (Pfeffer, 1998). Furthermore, information sharing always involves the danger of leaking important information to competitors (Ronde, 2001). In a study of Japanese consultation committees, Morishima (1991) found a positive association of information sharing with productivity and profitability, and a negative one with labour cost. Constant et al. (1994) pointed out that attitudes about information sharing depend on the form of the information. Burgess (2005) studied employee motivations for knowledge transfer outside their work unit and found that employees who perceived greater organizational rewards for sharing spent more hours sharing knowledge beyond their immediate work group. However, a significant percentage of employees perceived knowledge as a means of achieving upward organizational mobility. Therefore, employees sought information more often than shared it.

Roberts (1995) studied how HR strategy affects profits in 3,000 businesses throughout the world and found that sharing information was related with higher profitability. However, Ichniowski and Shaw (1999) compared US and Japanese steel-making plants and found that employee participation based solely on problem-solving teams or information sharing did not produce large improvements in productivity. In a study of Fortune 1,000 largest manufacturing and service companies on high-performance practices, Lawler et al. (1995) found information sharing to correlate to firm performance but results are inconclusive.

Therefore, we propose this hypothesis:

*Hypothesis 3: Sharing of information is positively related to firm growth.*

#### **2.4 Selective Hiring**

This practice can ensure that the right people, with the desirable characteristics and knowledge, are in the right place, so that they fit in the culture and the climate of the organization. Moreover, pinpointing the rights employees would decrease the cost of employees' education and development.

Schuster (1986) argued that selective hiring is a key practice that creates profits. Huselid (1995) examined HR practices of high performance companies and found that attracting and selecting the right employees increase the employee productivity, boost organizational performance, and contribute in reducing turnover.

Cohen and Pfeffer (1986) argued that hiring standards reflect not only organizations' skill requirements but also the preferences of various groups for such standards and their ability to enforce these preferences. Michie and Quinn (2001) proposed that a possible indirect link between selective hiring and organisational performance can be the forging of internal bonds between managers and employees that creates the write culture for productivity growth. Collins and Clark (2003) argued that the practice of selective hiring results at sales growth. Paul and Anantharaman (2003) pointed out that an effective hiring process ensures the presence of employees with the right qualifications, leading to production of quality products and consequently in increase of economic performance.

Cho et al. (2005) examined pre-employment tests as a key component of selective hiring and found that when employed, these tests can select employees that stay with a company longer. Passing pre-employment tests may give an applicant a stronger sense of belonging to the company, resulting in higher degrees of commitment if employed. Cardon and Stevens (2004) pointed out that for small companies recruiting is often problematic. This can be due to several reasons such as limited financial and material resources and jobs with unclear boundaries responsibilities, which decreases their potential to hire qualified candidates. Therefore, we propose this hypothesis:

*Hypothesis 4: Selective hiring is positively related to firm growth.*

#### **2.5 Training and Development**

Training and development may be related to firm performance in many ways. Firstly, training programmes increase the firm specificity of employee skills, which, in turn, increases employee productivity and reduces job dissatisfaction that results in employee turnover (Huselid, 1995). Secondly, training and developing internal personnel reduces the cost and risk of selecting, hiring, and internalising people from external labour markets, which again increases employee productivity and reduces turnover. Training and development like job security requires a certain degree of reciprocity: A

company that train and develop systematically its employees advocates them that their market value develops more favourably than in other firms. This increases employees' productivity, commitment, and lowers turnover. Companies may also assist their employees in career planning. In doing so, companies encourage employees to take more responsibility for their own development, including the development of skills viewed as significant in the company (Doyle, 1997).

Barringer et al. (2005) compared rapid-growth and slow-growth firms and found that rapid-growth firms depend heavily on the abilities and efforts of their employees to maintain their growth-oriented strategies. The fast-growth firms used training programs to achieve their objectives and emphasized employee development to a significantly greater extent than their slow-growth counterparts. Therefore, training and employee development practices are more common in rapid-growth firms than slow-growth ones.

Miller (2006) examined the growth strategies in the retail sector and suggested that modern retailers should place more emphasis on the policies and practices that could contribute to staff retention, rather than on the immediacy of recruitment and selection. Zhu (2004) reviewed the changes in the area of human resource development in Japan and observed that some companies and industries have shifted towards a more strategic approach that emphasizes the impact of effective learning at both individual and organizational levels on long-term organizational competitiveness. Huslied (1995) found that the education and development of employees have a significant effect both upon the personnel productivity and the short-term and long-term indicators of organizational performance.

Ngo et al. (1998) investigated the effects of country origins on HR practices of firms from the United States, Great Britain, Japan and Hong Kong operating in Hong Kong. Study results showed that structural training and development and retention-oriented compensation were related to various measures of firm performance. Paul and Anantharaman (2003), in searching the links between human resource practices and organizational performance, proposed that career development programmes demonstrate a true interest of the organization for the growth of its personnel, which, in turn, stimulates commitment and devotion, which, subsequently, raises personnel productivity and consequently economical output.

Cerio (2003) examined the manufacturing industry in Spain and found that quality management practices related to product design and development, together with human resource practices, are the most significant predictors of operational performance. Michie and Quinn (2001) investigated the relationships between UK firms' use of flexible work practices and corporate performance and suggested that low levels of training are negatively correlated with corporate performance. Therefore, we propose this hypothesis:

*Hypothesis 5: The extent of training and development will be positively related to firm growth.*

## **2.6 Job Security**

Job security creates a climate of confidence among employees which cultivates their commitment on the company's workforce. Job security requires a certain degree of reciprocity: firstly, a company must signal a clear message that jobs are secure; then, employees believing that this is true, feel confident and commit themselves to expend extra effort for the company's benefit; finally, a company that have learnt that job security contributes to its performance, invests again in job security (Pfeffer, 1998). Probst (2002) has developed a conceptual model of the antecedents and consequences of job security. Antecedents include worker characteristics, job characteristics, organizational change and job technology change. Consequences include psychological health, physical health, organizational withdrawal, unionisation activity, organizational commitment and job stress. Job involvement, cultural values, and procedural justice moderate job security perceptions and attitudes.

Buitendach and Witte (2005) assessed the relationship between job insecurity, job satisfaction and affective organisational commitment of maintenance workers in a parastatal in Gauteng. Study results revealed small but significant relationships between job insecurity and extrinsic job satisfaction and job insecurity and affective organisational commitment. Job satisfaction was also found to mediate the relationship between job insecurity and affective organisational commitment.

However, today's business environments are far from providing job security to their employees. For example, in an analysis of involuntary job loss in France between 1982 and 2002, Givord and Maurin (2004) found evidence that technological changes contribute to keeping the employees for shorter periods of time, thus increasing job insecurity.

When companies do provide job security, then empirical evidence suggests that it has a positive effect on firm performance. Following Pfeffer (1998), Ahmad and Schroeder (2003) found that among others, job security impacts operational performance indirectly through organizational commitment. Delery and Doty (1996) studied the US banking sector and found some support for a

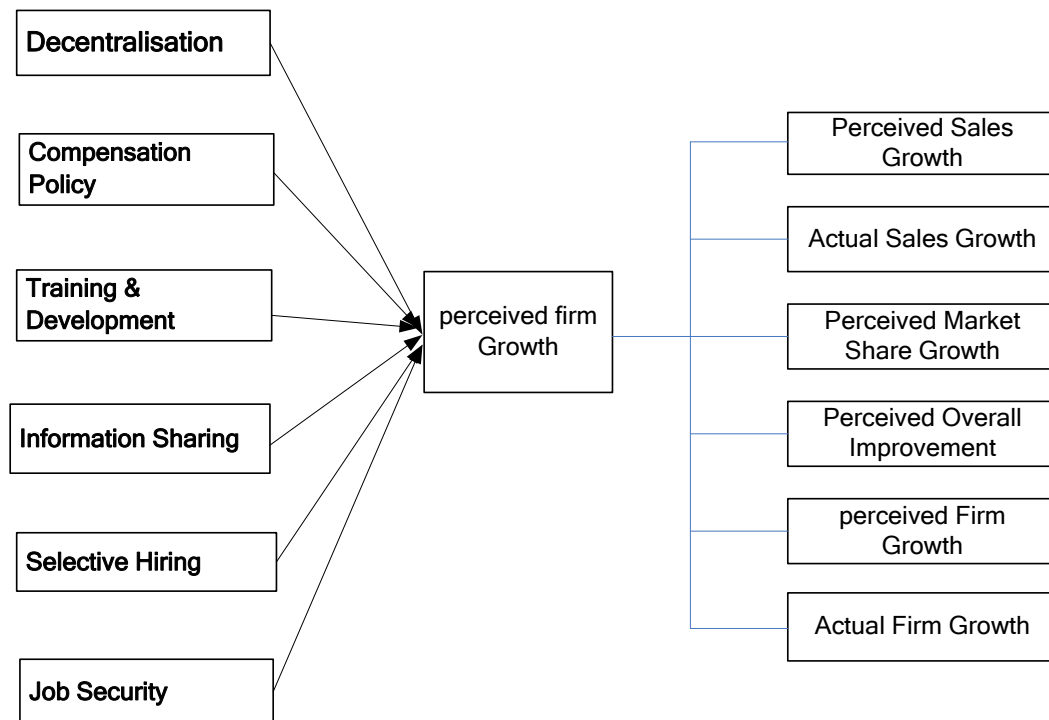
positive relationship between employment security and firm performance. In their study of 101 foreign firms operating in Russia, Fey et al. (2000) found evidence that human resource practices indirectly improve organisational performance. The results showed that not only, there was a direct positive relationship between job security and performance for non-managers, but job security was the most important predictor of HR outcomes for non-managerial employees. Results also suggested a direct positive relationship between managerial promotions based on merit and firm performance.

Michie and Quinn (2001) examined labour market flexibility in over 200 manufacturing UK firms and found that job security is negatively correlated with corporate performance. In contrast, results showed that 'high commitment' organizations are positively correlated with good corporate performance. Kraimer et al. (2005) used psychological contract and social cognition theories to explore the role of full-time employees' perceived job security in explaining their reactions to the use of temporary workers by using a sample of 149 full-time employees who worked with temporaries. Results demonstrated that employees' perceived job security negatively related to their perceptions that temporaries pose a threat to their jobs. On the one hand, for those with high job security, there was a positive relationship between benefit perceptions and performance. On the other hand, for those with low job security, there was a negative relationship between threat perceptions and performance. Therefore, we propose this hypothesis:

*Hypothesis 6: The presence of job security is positively related to firm growth.*

Figure 1 illustrates the associations between these hypotheses and relevant constructs.

**Figure 1: The association between hypotheses and constructs**



### 3 METHOD

#### 3.1 The sampling procedure and sample

While Figure 1 is a model of the firm performance, we choose to examine it as understood by the individuals who take decisions about firm performance. In doing so, we operationalize and measure individuals' perceptions of the model's variables in their work situations.

In order to develop robust model linking HR practices and firm performance, we drew our sample from food companies operating in Greece for a minimum of five years. We included companies from the food processing and trading sub-sectors, excluding hospitality and retailing. In doing so, we aimed to increase the homogeneity of our population as we as decrease the necessary sample size to achieve robust validity of data analyses.

Testing the research hypotheses in a specific sector adds to the validity of the research design because managerial skills are to a large extent industry-specific. Furthermore, food industry is dealing with subsequent food crises and human resources are considered as a valuable asset to survive and maintain competitive advantage. In-depth interviews were conducted with key decision makers prior to designing a pre-test. The questionnaire was pre-tested with randomly selected firms. Based on the results of the pre-test instrument, the final questionnaire was refined. The respondents were mainly HR managers or, in some instances, the managing directors (MD) of the food firms.

In terms of the empirical research, we posted 372 questionnaires. We got 71 questionnaires, most of them answered by HR Managers (95%). We chose to include both HR and MD responses in the sample size although we recognize that there would be different perceptions about HR practices and organizational performance.

The total response rate was 19.1%. To ensure that the respondents were comparable to non-respondents, analyses of variances were conducted between these groups. We also found no significant differences between HR managers and managing directors. The non-response bias was assessed by comparing early respondents with late respondents (Armstrong and Overton, 1977).

#### 3.2 Statistical Analysis

SPSS v.10 on Windows XP was utilized for all analyses. We first had to reduce a large number of variables to a smaller set of components. Principal component analysis is a preferred method for this kind of study. We, then, used hierarchical regression in order to assess the effect of relation, if any, between HR practices and firm growth measures.

Principal component analysis with varimax rotation was conducted to assess the underlying structure for the nineteen HR practices questionnaire. Principal component analysis (PCA) involves a mathematical procedure that transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called *principal components*. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible.

PCA helps with the latter. Having too many features often results in the problem having too many degrees of freedom leading to poor statistical coverage and thus poor generalization. The Varimax rotation is an orthogonal rotation applied to a truncated set of principal components (Harman 1970, Krzanowski 2000). Its application is an attempt to obtain modes that are simple to interpret.

Hierarchical regression models are well suited for this type of analysis. In hierarchical regression, the order of predictor entry, whether individual or in blocks, makes a difference in the results and conclusions. This allows examining the 'effects' of specific independent variables over and above one or more dependant variables.

Surveys using questionnaires often result in small sample size in Greece (Ketikidis et al. 2007; Pasiouras, 2008; Vlachos and Bourlakis, 2006). For example, Ketikidis et al. (2007) used a sample size of 79 observations in six South East European countries including Greece. Pasiouras (2008) used the total population of Greek banks to get 78 observations in order to estimate the technical and scale efficiency of Greek commercial banks.

#### Measures

Principal component analysis with varimax rotation was conducted to assess the underlying structure for the nineteen HR practices questionnaire. The scales were measured on a Likert format ranging from 1 (strongly disagree) to 5 (strongly agree). Six factors were requested, based on the fact that the items were designed to index the six HR practices. After rotation, decentralisation accounted for 17.53% of the variance, compensation policy for 12.67%, training & development for 12.24%, information sharing for 8.73%, selective hiring for 8.61%, and job security for 6.17%. We used the



Anderson-Rubin Method, which ensures orthogonality of the estimated factors, to produce factor scores.

Table 1 contains the items, the scale composite reliability (Cronbach  $\alpha$ ), and factor loadings for the rotated factors, with loading less than 0.40 omitted to improve clarity.

The first factor, which included items measuring the firm's decentralisation and decision making practices was labelled Decentralisation (seven items,  $\alpha = 0.906$ ). The second factor, labelled compensation policy, included items measuring the firm's compensation practices and items measuring the firm's policy and HR practices to reduce turnover of employees (four items,  $\alpha = 0.757$ ). The third factor, labelled training & development, included four items ( $\alpha = 0.647$ ) measuring the firm's emphasis on train and develop its personnel. The fourth factor, labelled information sharing, included two items ( $\alpha = 0.713$ ) measuring the firm's policy to share critical information and performance data with its personnel. The fifth factor, labelled selective hiring, included three items ( $\alpha = 0.556$ ) measuring the firm's policy to recruit personnel that fits its culture and objectives.

The last factor had low internal validity to be included in further analysis. The six factor, labelled job security, included two items ( $\alpha = 0.383$ ) measuring the ability of the firm to create a trustworthy business climate.

### **3.3 Firm Growth**

Respondents were asked to indicate their firm's growth as compared to the industry's average in these areas: perceived sales growth, perceived market share growth, perceived overall improvement and perceived firm growth. For perceived items, a 5-point scale ranging from bad (1) to very good (5) was used. Furthermore, we calculated actual sales growth, and actual firm growth based on the last 3-year firm performance. We calculated firm growth using sales and employee figures.

Although we believe the perceived firm growth measures are appropriate, they have some limitations which should be discussed. The first is that they are self-reported responses from HR managers, who may have a stake in seeing positive relationships between their decisions about personnel recruitment, training, development and compensation with achievement of firm's objectives. However, the responses from the sample contain ample variance and means that do not reflect an extremely strong positive bias (see Table 2, variables 2 through 7). If the respondents had greatly inflated their responses, there may have been more consistently positive results than were seen. Secondly, as in all self-reported studies, the possibility of common method variance should be addressed. When both the outcome measure (i.e. firm growth) and the six predictor variables (i.e. compensation policy, decentralisation), are self-reported on the same survey instrument, both measures share common methods variance. There are several techniques that can be used to minimise common method variance (see Podsakoff et al. 2003 for a review of these methods).

We used the Harmon's factor test to examine whether or not common methods variance in the predictor and outcome variables inflates the empirical relationships among the variables. Harmon's test consists of a factor analysis of all relevant variables. If a large degree of common method variance is present, one factor will emerge. Such an analysis was conducted on the firm performance and HR practices variables of this sample. Seven factors emerged, with the first factor (which, in cases of common method variance, would account for most of the variance) only accounting for 18.472% of the variance. Thus, common method variance is unlikely to bias this sample.

Third, management perceptions about concepts like firm growth and organisational performance may actually be more valid indicators than objective data such as profitability, market share and sales, since actual figures are directly related to a vast number of variables, such as trends in the economy, industry factors, and other environmental factors. Therefore, self-reported measures may, in some cases, represent more accurate descriptions than more objective measures (Day, 2003; Podsakoff and Organ, 1986). In the present study, since we are interested in the direction of causation between HR practices and firm effectiveness, the only people with the breadth and depth of knowledge to report adequately about these concepts are the HR managers or managing directors.

Finally, since we were interested in assessing the separate factors of a successful collaboration, we were limited in the number of objective measures that were available within the scope of this study. Because of the previously stated arguments, we concluded that the expert opinions of HR managers or managing directors would be valid and appropriate for this study. The results of data analysis should be acceptable if adequate controls, such as Harmon's one factor test, are reported for the data. While we expect that further research into these firm performance constructs is essential, we believe that they are acceptable for this initial research study.

### 3.4 The Effect of HR Practices on Firm Growth

Table 2 presents the mean, standard deviation, and Pearson's correlation analysis of control variable (sales), firm growth (perceived sales growth, perceived market share growth, perceived overall improvement, perceived firm growth, actual sales growth, and actual firm growth), and HR practices (compensation policy, decentralisation, information sharing, selective hiring, training & development, and job security). The control variable showed low correlation with growth variables as well as each one HR practice.

Compensation Policy had significant association with perceived sales growth ( $r=-.328$ ,  $p<.01$ ) perceived market share growth ( $r=.265$ ,  $p<.05$ ), and perceived overall firm performance ( $r=.323$ ,  $p<.01$ ). Decentralisation had significant association with perceived sales growth ( $r=-.284$ ,  $p<.05$ ) perceived firm growth ( $r=.422$ ,  $p<.01$ ), and perceived overall firm performance ( $r=-.271$ ,  $p<.01$ ). Information sharing had significant association with perceived sales growth ( $r=-.282$ ,  $p<.05$ ), perceived firm growth ( $r=.373$ ,  $p<.01$ ) and perceived overall firm performance ( $r=-.345$ ,  $p<.01$ ). Selective hiring had significant association with perceived sales growth ( $r=-.252$ ,  $p<.05$ ) perceived market share growth ( $r=-.510$ ,  $p<.01$ ), perceived firm growth ( $r=-.317$ ,  $p<.05$ ). Training & Development had significant association with perceived market share ( $r=-.274$ ,  $p<.05$ ) perceived firm growth ( $r=.311$ ,  $p<.05$ ), and perceived overall improvement ( $r=.346$ ,  $p<.01$ ).

Job security, which had low internal validity, showed no significant correlations with any permanence measure. None HR practice showed any significant correlation with actual firm growth variables (sales growth, firm growth).

We then conducted hierarchical multiple regression to determine the best linear combination of HR practices for predicting firm growth. Initially, we entered the control variable (Firm size) in Step 1 of the regression equation. Based on the resource-based view, HR practices will be a competitive advantage if are difficult to emulate. Similarly, large firms may have a resource advantage over smaller firms. Therefore, we included firm size as a control variable, measured by the number of employees. In Step 2, we entered the five HR practices into the regression equations. Finally, in Step 3, we entered the ten interactions of the five factors into the regression equations. Tolerance tests showed no significant collinearity among variables.

We used six measures of firm growth: sales growth (actual, perceived), firm growth (actual perceived), perceived market share growth, and perceived improvement of overall firm performance.

The results are reported in detail in Table 3. Figure illustrates the results of the associations between the research hypotheses and the researched constructs. The combination of HR practices in Step 2 significantly predicted firm growth, in particular perceived firm growth (adjusted  $R^2=.483$ ;  $F=11.9$ ,  $p<.001$ ) with all five variables significantly contributing to the prediction. The beta weights, presented in Table 3, suggest that compensation policy (.2), decentralisation (.41), information sharing (.35), selective hiring (.3), and training & development (.29) were perceived to contribute to firm growth. The change in adjusted R square value was .49,  $p<.001$ . This indicates that 49% of the variance of firm growth was explained by the model. According to Cohen (1988), this is a large effect which makes us accept hypotheses 1 to 5.

For all perceived measures of firm growth, HR practices showed a significant effect. On the contrary, HR practices had no significant relation to actual firm growth.

In Step 3, the ten interactions of the five HR practices had a moderate effect only on the perceived firm growth ( $F=4.422$ ,  $p<.001$ ) and the perceived overall firm performance ( $F=3.281$ ,  $p<.001$ ) but with no significant changes in  $R^2$ . This indicates that the five HR practices have unique impact on firm growth. Specifically, in Step 2, the changes in adjusted R square value were: perceived sales growth  $R^2=.336$ ,  $p<.001$ ; perceived market share growth  $R^2=.342$ ,  $p<.001$ ; perceived firm growth  $R^2=.49$ ,  $p<.001$ ; and perceived overall firm performance  $R^2=.399$ ,  $p<.001$ .

**Table 1: Rotated factor loadings for the six HR practices**

	Factor loadings					
	Decentralisation	Compensation Policy	Training & Development	Information Sharing	Selective Hiring	Job Security
We encourage decentralized decision making	<b>.864</b>					
We use teams to decide about production problems	<b>.845</b>					
We regularly use teams to perform various task	<b>.725</b>					
All team members contribute to decision making	<b>.724</b>					
We encourage and reward personnel being team players	<b>.638</b>	.551				
We reward personnel to reduce turnover		<b>.784</b>				
We use incentives to boost individual performance		<b>.608</b>	.543			
We select and pay employees based on their contribution		<b>.583</b>				
Employees that care about firm's objectives are rewarded		<b>.539</b>	.458			
Training is a motive for employees to achieve more			<b>.700</b>			
We systematically train and develop our personnel			<b>.635</b>			
We provide training in one key skill	.410		<b>.436</b>			
We train personnel to gain many skills and abilities		.549	<b>.427</b>			
Our employees know well our objectives and strategy				<b>.729</b>		
We inform personnel about their performance				<b>.778</b>		
We use consultant when hiring personnel					<b>.747</b>	
We use pre-recruitment tests					<b>.655</b>	
We select personnel that fits our culture		.449			<b>.476</b>	
We focus on job security						<b>.814</b>
Employees that perform modestly do not get fired				.446		<b>.619</b>
Eigenvalue	8.220	2.279	1.610	1.394	1.279	1.043
Initial percent of variance explained	34.249	9.497	6.709	5.810	5.330	4.347
Rotation sum of squared loadings (total)	4.207	3.040	2.937	2.094	2.067	1.480
Percent of variance explained	17.531	12.667	12.238	8.726	8.612	6.167
Cronbach $\alpha$ (sample N)	0.906	0.757	0.647	0.713	0.556	0.383

Extraction Method: Principal Component analysis. Rotation method: Varimax with Kaiser Normalization.

**Table 2: Means, Standard Deviations and Correlation Matrix**

	Mean	SD	1	2	3	4	5	6	7
<b>Control variables</b>									
Sales	20,187	74,661	1	,151	,031	,165	,194	-,046	,183
<b>Firm Growth</b>									
Perceived Sales Growth	3.59	0.88		1	-,125	,515**	,585**	,104	,667**
Actual Sales Growth	0.06	0.37			1	-,181	,116	,522**	-,057
Perceived Market Share Growth	3.58	0.96				1	,514**	,016	,398**
Perceived Firm Growth	3.68	0.91					1	,145	,694**
Actual Firm Growth	0.20	0.37						1	,153
Perceived Overall Improvement	3.69	0.87							1
<b>HR practices variables</b>									
Compensation Policy	1	0	,089	,328**	-,061	,265*	,211	,057	,323**
Decentralisation	1	0	,059	,284*	,083	,105	,422**	,230	,271*
Information Sharing	1	0	,126	,282*	-,003	,063	,373**	,172	,345**
Selective Hiring	1	0	,070	,252*	-,178	,510**	,317*	-,007	,233
Training & Development	1	0	,218	,241	,148	,274*	,311*	-,092	,346**
Job Security	1	0	-,100	-,016	-,233	,106	-,103	,131	-,009

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Since the HR practices variables are factor scores, produced by the Anderson-Rubin Method, the scores produced have a mean of 0, a standard deviation of 1, are uncorrelated, the correlations with each other are .00, and thus are not included in this table. Sales: thousands of euros

**Figure 2: Model results**

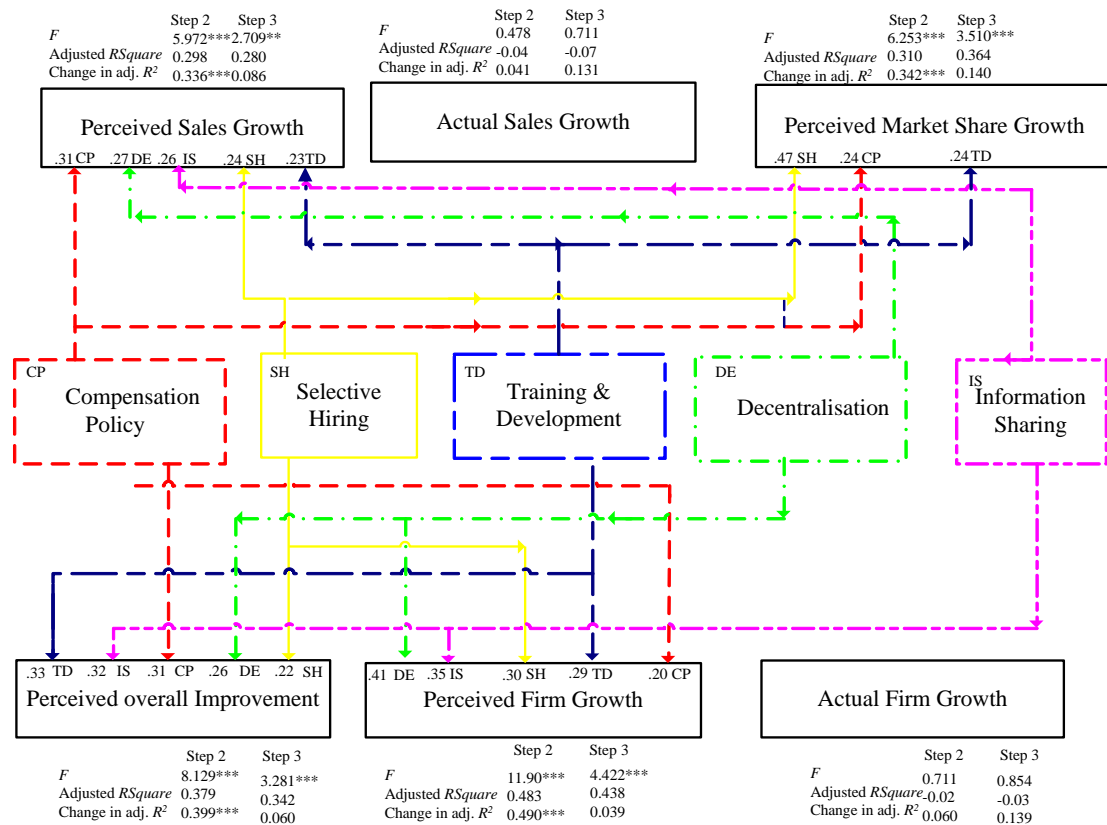


Table 3: Hierarchical regression results of HR practices on six growth measures

Control variable	Perceived Sales Growth			Actual Sales Growth			Perceived Market Share Growth		
	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)
1. Firm Size	0.15	0.00	0.00	0.03	0.01	0.03	0.16	0.04	0.02
HR Practices	1.27	0.06	0.05	0.26	0.13	0.22	1.39	0.43	0.20
1. Compensation Policy		0.31	0.32		-0.05	-0.04		0.24	0.17
		3.14**	2.39*		-0.45	-0.28		2.44*	1.33
2. Decentralisation		0.27	0.26		0.06	0.00		0.09	0.18
		2.72**	2.06*		0.52	0.05		0.95	1.50
3. Information Sharing		0.26	0.18		-0.00	0.04		0.05	0.10
		2.61*	1.49		-0.01	0.30		0.50	0.93
4. Selective Hiring		0.24	0.24		-0.14	-0.21		0.47	0.47
		2.42*	2.04*		-1.18	-1.45		4.76**	4.20**
5. Training & Development		0.23	0.23		0.11	0.08		0.24	0.25
		2.25*	1.97*		0.93	0.55		2.41*	2.24*
Interactions									
1. Compensation Policy *			-0.12			0.24			0.02
Decentralisation			-0.92			1.49			0.22
2. Compensation Policy *			-0.07			-0.15			0.09
Information Sharing			-0.46			-0.82			0.66
3. Compensation Policy *			0.16			0.02			-0.39
Selective Hiring			1.21			0.14			-2.98**
4. Compensation Policy *			-0.03			0.10			0.04
Training & Development			-0.26			0.63			0.37
5. Decentralisation *			0.05			0.09			-0.08
Information Sharing			0.43			0.61			-0.72
6. Decentralisation *			0.08			0.06			-0.19
Selective Hiring			0.58			0.35			-1.46
7. Decentralisation *			0.17			-0.17			0.00
& Development			1.34			-1.07			0.00
8. Information Sharing *			0.10			0.05			-0.16
Selective Hiring			0.67			0.28			-1.16
9. Information Sharing			0.00			-0.14			0.17
*Training & Development			0.05			-0.87			1.42
10. Selective Hiring *			-0.18			0.15			0.05
& Development			-1.53			1.01			0.43
F	1.618	5.972***	2.709**	0.068	0.478	0.711	1.941	6.253***	3.510***
Adjusted R-square	0.008	0.298	0.280	-0.01	-0.04	-0.07	0.013	0.310	0.364
Change in adjusted R-square	0.022	0.336***	0.086	0.000	0.041	0.131	0.027	0.342***	0.140

Standardized regression coefficients are reported. Within cells, first row figure is beta coefficients and second row the t-test values, significant at: \* $p < 0.10$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Table 3: Continued

Control variable	Perceived Firm Growth			Actual Firm Growth			Perceived firm performance Improvement		
	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)	Step 1 (Control)	Step2 (HR practices)	Step3 (Interaction)
Firm Size	0.19 1.63	0.01 0.22	0.07 0.69	-0.04 -0.37	-0.06 -0.52	0.00 0.04	0.18 1.54	0.01 0.11	0.00 0.02
<i>R Practices</i>									
Compensation Policy		0.20 2.37*	0.15 1.28		0.05 0.47	-0.10 -0.65		0.31 3.28**	0.37 2.91**
Decentralisation		0.41 4.77***	0.40 3.47**		0.16 1.39	0.18 1.16		0.26 2.77**	0.13 1.06
Information Sharing		0.35 4.07***	0.27 2.54*		0.15 1.28	0.32 1.85*		0.32 3.39**	0.30 2.60*
Selective Hiring		0.30 3.58***	0.28 2.66*		0.00 0.00	-0.12 -0.84		0.22 2.38*	0.18 1.62
Training & Development		0.29 3.38**	0.30 2.81**		-0.06 -0.51	-0.11 -0.78		0.33 3.41**	0.35 3.09**
<i>Interactions</i>									
Compensation Policy* Decentralisation			-0.09 -0.84			0.19 1.24			-0.17 -1.40
Compensation Policy* Information Sharing			-0.01 -0.09			-0.11 -0.63			0.06 0.42
Compensation Policy* Selective Hiring			-0.10 -0.86			0.00 0.02			0.06 0.48
Compensation Policy* Training & Development			-0.01 -0.14			-0.25 -1.58			-0.02 -0.15
Decentralisation* Information Sharing			-0.12 -1.06			0.21 1.36			0.13 1.11
Decentralisation* Selective Hiring			0.06 0.47			0.09 0.56			0.13 0.99
Decentralisation* Training & Development			-0.05 -0.43			-0.09 -0.60			-0.10 -0.86
Information Sharing* Selective Hiring			0.05 0.38			-0.07 -0.43			0.16 1.13
Information Sharing* Training & Development			-0.05 -0.43			-0.14 -0.90			-0.02 -0.23
Selective Hiring* Training & Development			-0.06 -0.56			0.08 0.59			0.00 0.00
<i>F</i>	2.689 0.023	11.90*** 0.483	4.422*** 0.438	0.144 -0.01	0.711 -0.02	0.854 -0.03	2.381 0.019	8.129*** 0.379	3.281*** 0.342
Adjusted R-square	0.037	0.490***	0.039	0.002	0.060	0.139	0.033	0.399***	0.060

Standardized regression coefficients are reported. Within cells, first row figure is beta coefficients and second row the t-test values, significant at: \*  $p < 0.10$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

## **4 DISCUSSION**

The primary purpose of this study was to evaluate the impact of HR practices on firm growth. In summary, a review of existing literature finds that there are HR practices positively linked to organizational performance (Pfeffer, 1998; Becker and Gerhart, 1996; Guest, 1997; Cardon and Stevens, 2004; Givord and Maurin, 2004; Zhu, 2004). Based on a comprehensive literature review, we hypothesised that the following HR practices are related to firm growth: (1) Compensation policy, (2) Decentralization & self-managed teams, (3) Information Sharing (4) Selective Hiring, (5) Training and Development and (6) Job Security.

However, a review of literature pertaining to organizational performance shows that firm growth, an indication of market acceptance and firm success as well as a top priority of most companies (Baum and Wally, 2003; Zook and Allen, 2003; Fesser and Willard, 1990), has been studied mostly as a latent variable of organisational performance (Pfeffer, 1998; Cardon and Stevens, 2004; Givord and Maurin, 2004).

Consequently, this paper argues that the selection of specific HR practices becomes a strategic decision. Therefore, HR managers should be able to report on the concrete results of specific HR practices on specific firm growth measures. Briefly, a survey of HR managers demonstrated that HR practices are linked to firm growth. The findings of the study lead to a number of interesting implications for HRM theorists and practitioners. The first (and rather obvious) implication can be derived from the evidence found that all HR practices are related to firm growth, a finding consistent with a variety of extant theories and studies. Hence, firm growth as a strategic priority depends on human capital: selecting, developing, and rewarding the best people as well as revealing to them critical company information in order to make informed decisions which they are authorised to take.

More profound implications can be derived from the findings regarding the links between specific HR practices and firm growth measures. All five HR practices contributed to perceived sales growth, overall firm performance improvement, and firm growth. Selective hiring, compensation policy, and training & development were the predictor of perceived market share growth. In particular, selective hiring was strongly correlated to perceived market share growth ( $r^2=.47$ ,  $p<.01$ ). On the contrary, decentralisation and information sharing did not contributed significantly to market share growth.

Compensation policy was related to all perceived firm growth measures, being the strongest predictor of sales growth and the weakest of firm growth. Linking sales with compensation benefits can be an explanation of the high correlation between compensation policy and sales growth. Decentralisation and team working was significant factor of firm growth. This finding may provide some justification of the claim that as the business expands, decision-making becomes more decentralized and self-managed teams proliferate as the firm adds more and more projects and customers (Flamholtz and Randle, 2000; Miller and Friesen, 1984).

Training and development was related to all firm growth measures but it showed higher correlation to overall firm performance improvement. Beta weight was 0.33 ( $r^2$  3.41,  $p<0.001$ ). This finding may have a profound implication: Given that firms were well established, they may have already run many in-company training programmes and noticed and reported concrete evidence of the benefits of training and development.

Information sharing comes with pros and cons. Information sharing has the inherent vulnerability that informed employees will become more powerful and companies may loose control of them (Pfeffer, 1998). Even worse, information sharing involves the danger of leaking important information to competitors (Ronde, 2001). On the other hand, information sharing tells employees that the company trusts them and thus gives them sensitive information to make informed decisions which will shape the future of the company. The findings demonstrate that information sharing does positively relate to firm growth. Information sharing was significantly correlated to sales growth, firm growth, and overall firm performance improvement. Respondents did not perceive that job security was an important HR practice. This finding can be attributed to the fact that most respondents were HR managers who might be reluctant to report an insecure job environment in their company's workplace.

The findings as a whole suggest that a positive relationship exists between the extent to which companies implement HR practices and firm growth achievements. This overall result corroborates previous empirical studies on the links between HRM and firm performance. These findings provide tentative support of the contention that HR practices can create a competitive advantage.

Future research could clarify the causal relationship between HR practices and firm performance. Another research stream is examining HR practices in sets in order to assess their collective effect. The conceptual basis of further research can be extended. An interesting avenue for future research is the market-based competitive advantage approach, which declares that the market determines who is competitive or not (Reed et al., 2000). The market-based approach can provide another theoretical basis

than resource-based view of competitive advantage, in order to examine the effect of HR practices on firm performance.

A series of limitations bounds the findings, conclusions, and implications of this study. The most obvious limitations of this study stem from the sample used and the measures employed. We examined a small set of HR practices that seem to have an effect on firm growth in Greek food industry. Given that managerial skills are to a large extent industry-specific, generalizability of research findings beyond the food industry remains an open question. Furthermore, given the dynamic nature of firm growth, this study measured one instance of this dynamic phenomenon. The effects of HR practices can take years to materialize into organizational performance. For example, selective hiring and training can produce results after years. Often, high performance work practices have better results in bundles than implemented in isolation. This study focused on established firms with more than 5 years of operation. However, the stage of a firm's lifecycle, either growth, mature, decline or revival stage (Ciavarella, 2003) can be an important factor in applying specific HR practices. Another limitation of the findings is the use of self-report questionnaires to collect data on all measures. This limits our ability to draw conclusions about the causal nature of the relationships between HR practices and firm growth. In a future study there would be of great value to see how different HR and MD responses are.

These limitations suggest that the interpretation of research findings need to be cautious they also indicate a number of potentially fruitfully avenues for future research. Except from testing the research hypotheses in other settings and environments, the combined effect of HR practices, and which practice works better with another one is yet another open question. A large quantitative survey could also control for mediating and/or moderating variables between human resource management and firm performance.

## REFERENCES

- Ahmad S., and Schroeder R.G., 2003. The impact of human resource management practices on operational performance: recognizing country and industry differences, *Journal of Operations Management*, 21: 19-43.
- Armstrong, J.C. and Overton, T.C. 1977. Estimating Non-response Bias in Mail Surveys, *Journal of Marketing Research*, 14: 396-402.
- Banker, R.D., Lee, S.Y., Potter, G., Srinivasan, D., 2001. An empirical analysis of continuing improvements following the implementation of a performance based compensation plan, *Journal of Accounting and Economics*, 30 (1): 315-350.
- Baron, J. N., & Hannan, M. T. 2002. Organizational blueprints for success in high-tech start-ups: Lessons from the Stanford project on emerging companies. *California Management Review*, 44(3): 8-36.
- Barringer, B. R., Jones, F. F., and Neubaum, D. O., 2005. A quantitative content analysis of the characteristics of rapid-growth firms and their founders, *Journal of Business Venturing*, 20: 663-687.
- Batt, R., 2004. Who Benefits from Teams? Comparing Workers, Supervisors, and Managers, *Industrial Relations*, 42(1): 183-212.
- Baum, J. R., and Wally S., 2003. Strategic decision speed and firm performance, *Strategic Management Journal*, 24 (11): 1107 - 1129.
- Becker, B., and Gerhart, B., 1996. The impact of Human Resource Management on organisational performance: Progress and prospects, *Academy of Management*, 39 (4): 779-801.
- Black, S.A., Lynch, L.M., and Krivelyova, A., 2004 How Workers Fare When Employers Innovate, *Industrial Relations*, 43(1): 44-66.
- Brewster, C., 2004. European perspectives on human resource management, *Human Resource Management Review* 14: 365-382.
- Buitendach, J. H. Witte, H. De, 2005. Job insecurity, extrinsic and intrinsic job satisfaction and affective organisational commitment of maintenance workers in a parastatal, *South African Journal Business Management*, 36(2).
- Burgess, D., 2005. what motivates employees to transfer knowledge outside their work unit?, *Journal of Business Communication*, 42(4): 324-348.



- Cardon, M. S., Stevens, C. E., 2004. Managing human resources in small organizations: What do we know?, *Human Resource Management Review*, 14: 295–323.
- Cerio, J. Merino-Diaz De, 2003. Quality management practices and operational performance: empirical evidence for Spanish industry, *International Journal of Production Research*, 41, No. 12, 2763–2786.
- Cho, S., Woods, R. H., Jang, S., Erdem, M., 2005. Measuring the impact of human resource management practices on hospitality firms' Performances, *International Journal of Hospitality Management*.
- Chow, C. W., Harrison, G. L., McKinnon, J. L., and Wu, A., 1999. Cultural Influences on Informal Information Sharing in Chinese and Anglo-American Organizations: An Exploratory Study, *Accounting, Organizations and Society*, 24: 561-582.
- Ciavarella, M. A. 2003. The adoption of high-involvement practices and processes in emergent and developing firms: a descriptive and prescriptive approach, *Human Resource Management*, 42(4): 337–356.
- Cohen, J., 1988. Statistical power and analysis for the behavioral sciences 2<sup>nd</sup> ed.. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, Y., and Pfeffer, J., 1986. Organizational Hiring Standards, *Administrative Science Quarterly*, 31(1): 1-24.
- Collins C. J., and Clark K. D., 2003. Strategic human resource practices, top management commitment, team social networks and firm performance: the role of human resource practices in creating organizational competitive advantage, *Academy of Management Journal*, 46(6): 740-751.
- Constant, D., Kiesler, S., and Sproull, L. 1994. What's Mine Is Ours, or Is It? A Study of Attitudes about Information Sharing, *Information Systems Research* 5(4): 400-421.
- Delery, J. E, Doty, D. H., 1996. Modes of theorizing in strategic human resource management: tests of universalistic, contingency and configurational performance predictions, *Academy of Management Journal*, 39(4): 802-835.
- Doyle, M., 1997. Management development, in Beardwell, I. and Holden, L. eds *Human Resource Management: A Contemporary Perspective*,. London: Pitman.
- Fesser, H.R., Willard, G.E., 1990. Founding strategy and performance: a comparison of high and low growth high tech forms, *Strategic Management Journal*, 11(2): 87–98.
- Fey, C. E., Bjorkman, I., Pavlovskaya, A., 2000. The impact of human resource management practices on firm performance in Russia, *International Journal of Human Resource Management*, 11(1): 1-18.
- Flamholtz, E. G., & Randle, Y. 2000. Growing pains: Transitioning from an entrepreneurship to a professionally managed firm. San Francisco: Jossey-Bass.
- Givord, P., and Maurin, E., 2004. Changes in job security and their causes: An empirical analysis for France, 1982–2002, *European Economic Review*, 48: 595 – 615.
- Guest, D., 1997. Human resource management and performance: a review and research agenda, *International Journal of Human Resource Management*, 8, 263-276.
- Haleblian, J., and Finkelstein, S., 1993. Top Management Team Size, CEO Dominance, and Firm Performance: The Moderating Roles of Environmental Turbulence and Discretion, *Academy of Management Journal*, 36: 844-863.
- Harman, H.H., 1970. Modern Factor Analysis 2<sup>nd</sup> revised ed., Chicago, IL: University of Chicago Press.
- Huselid, M. A., 1995. The impact of human resource management practices on turnover, productivity and corporate financial performance, *Academy of Management Journal*, 38(3): 635-672.
- Ichniowski, C., and Shaw, K., 1999. The effect of human resource management systems on economic performance: an international comparison of US and Japanese plants, *Management Science*, 75 (5): 704-721.
- Jayaram, J., Droge, C., Vickery, S. K., 1999. The impact of human resource management practices on manufacturing performance, *Journal of Operations Management*, 18 (1): 1-20.
- Ketikidis, P.H. Koh, S.C.L. Dimitriadis, N. Gunasekar, A. and Kehajova, M., 2008. The use of information systems for logistics and supply chain management in South East Europe: Current status and future direction, , *Omega*, 36 (4): 592-599.

- Kraimer, M.L., Wayne, S.J., Liden, R.C., Sparrowe, R.T., 2005. The role of job security in understanding the relationship between employees' perceptions of temporary workers and employees' performance, *Journal of Applied Psychology*, 90 (2): 389-98.
- Krzanowski, W.J., 2000. Principles of Multivariate Analysis: A User's Perspective, revised ed., Oxford: Oxford University Press.
- Lawler, E. E., and Rhode, J. G., 1976. *Information and Control in Organizations*, Goodyear Publishing Company, Pacific Palisades, CA.
- Lawler, E. E., Mohrman, S. A. and Ledford, G. E. Jr., 1995. *Creating High Performance Organizations*, San Francisco: Jossey-Bass
- Michie, J., and Sheehan-Quinn M., 2001. Labour Market Flexibility, Human Resource Management and Corporate Performance, *British Journal of Management*, 12 (4): 287-306.
- Miller, D., & Friesen, P. H. 1984. Organizations: A quantum view. Englewood Cliffs, NJ: Prentice Hall.
- Miller, D., 2006. Strategic human resource management in department stores: An historical perspective, *Journal of Retailing and Consumer Services*, forthcoming.
- Morishima, M., 1991. Information sharing and firm performance in Japan, *Industrial Relations*, 30 (1): 37-61.
- Ngo, H., Turban, D., Lau, C., and Lui, S., 1998. Human resource practices and firm performance of multinational corporations: influences of country origin, *International Journal of Human Resource Management*, 9 (4): 632-652
- Nicholis, C. E., Lane, H. W., and Brechu, M. B., 1999. Taking self-managed teams to Mexico, *Academy of Management Executive*, 13 (3): 15-25.
- Nonaka, K. 1994. The Knowledge creating company, *Harvard Business Review*, 69: 96–104.
- Pasiouras, F., 2008. Estimating the technical and scale efficiency of Greek commercial banks: The impact of credit risk, off-balance sheet activities, and international operations, *Research in International Business and Finance*, 22 (3): 301-318.
- Paul, A. K., Anantharaman, R. N., 2003. Impact of people management practices on organizational performance: analysis of a causal model, *International Journal of Human Resource Management*, 14 (7): 1246-1266.
- Pfeffer, J., 1998. Seven practices of successful organizations, *California Management Review*, 40 (2): 96-124.
- Probst, T. M., 2002. The impact of job insecurity on employee work attitudes, job adaptation, and organizational withdrawal behaviours. In J. M. Brett & F. Drasgow Eds. *The psychology of work: Theoretically based empirical research*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Roberts, K., 1995. The Proof of HR is in the Profits, *People Management*, February, 42-43.
- Rodriguez, J. M., and Ventura J., 2003. Human resource management systems and organizational performance: an analysis of the Spanish manufacturing industry, *International Journal of Human Resource Management*, 14 (7): 1206-1226.
- Rønde, T., 2001. Trade Secrets and Information Sharing, *Journal of Economics & Management Strategy*, 10 (3): 391–417.
- Schuster, F. 1986. The Schuster Report. New York: John Wiley and Sons.
- Singer, J., and Duvall, S. 2000. High-Performance Partnering By Self-Managed Teams In Manufacturing, *Engineering Management Journal*, 12 (4): 9-15.
- Singh, K., 2005. The effect of human resource practices on firm performance in India, *Human Resource Development International*, 6 (1): 101-116.
- Tata, J., and Prasad, S., 2004. Team self-management, organisational structure, and judgments of team effectiveness, *Journal of management issues*, 16 (2): 248-265.
- Tosi, H. L., Misangyi, V. F., Fanelli, A., Waldman, D. A., and Yammarino, F. J., 2004. CEO charisma, compensation, and firm performance, *The Leadership Quarterly*, 15: 405–420.
- Vlachos, I. P. and Bourlakis, M., 2006. Supply Chain Collaboration between retailers and manufacturers: Do they trust each other? *Supply Chain Forum: An International Journal*, 7(1): 70-81.
- Wagner, J. A. 1994. 'Participation's Effect on Performance and Satisfaction: A Reconsideration of Research Evidence', *Academy of Management Review*, 19: 312–31.

- Wimbush, J. C., 2005. Spotlight on human resource management, *Business Horizons*, 48: 463—467.
- Yeatts, D. E., and Hyten, C., 1998. High-performing self-managed work teams, a comparison of theory and practice, Thousand Oaks, CA: Sage
- Zhu, Y., 2004. Responding to the challenges of globalization: human resource development in Japan, *Journal of World Business*, 39: 337–348.
- Zook, C., and Allen, J., 2003. Growth outside the core, *Harvard Business Review*, December.