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## Article

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# The link between HR practices, psychological contract fulfilment, and organisational performance in Greece: An economic crisis perspective

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## **Abstract:**

**Purpose:** This study examines the impact of HR practices on organizational performance through the mediating role of psychological contract (expressed by the influence of employer on employee promises fulfilment through employee attitudes) and further examines whether this relationship remains stable during periods of external economic crisis.

**Design/methodology/approach:** The analysis is based on structural equation modelling using two national samples of a two time study of Greek private and public organizations in the manufacturing, services and trade sectors. The first data collection took place in 2008 (treated as a control period) and the second in 2010 (treated as an economic crisis period).

**Findings:** The study is providing proof that the employee attitudes of satisfaction, commitment and motivation, constitute a nested mediating epicentre of the HR practices – organizational performance relationship, meaning that employee attitudes are positively influencing employee promises fulfilment and organizational performance and being positively influenced by employer promises fulfilment and HR practices.

**Research limitations/implications** Although data was collected using the same questionnaire at the two time periods of 2008 and 2010, the design of the study is not longitudinal. As a result, the study does not allow for dynamic causal inferences.

**Originality/value** The study supports the view that although the structure of the relationship between HR practices and organizational performance does not change in periods of economic crisis, the strength of this structure is weaker compared to normal economic periods. Additionally, this study provides a greater understanding of the process by which psychological contract mediates the relationship between HR practices and organizational performance, with special reference to economic crisis.

**Keywords** HR practices, psychological contract, employee attitudes, organizational performance, economic crisis

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## 1. Introduction

Although the relationships between human resource management (HRM) and organizational performance appear to be statistically weak, empirical research since the late 1990s demonstrates that 'HRM does matter' (Guest, Mitchie, Conway & Sheeham, 2003; Wright, Gardner & Moynihan, 2003). In trying to investigate the link between HRM and organizational performance several issues have been put forward (Paauwe & Boselie, 2005). For example, the type and the number of variables or 'boxes' that mediate the relationship between HRM and organizational performance, that should be taken into account (Wright & Gardner, 2003). Such intervening variables could be attitudinal outcomes (e.g., employee satisfaction, motivation, commitment) and behavioural outcomes (e.g., employee turnover, absence) which are closely linked to HRM. Institutional context is another issue that should also be taken into account when studying the HRM-performance relationship (Paauwe & Boselie, 2003). This is because organizations are activated in wider institutional contexts (e.g., employment legislation, collective bargaining agreements, employee representation) that influence the employment relationship and the HRM decision making in organizations.

Multilevel analysis constitutes a major issue with respect to the empirical investigation when examining the sequence of the mediating variables in the HRM-performance relationship. For example, HRM practices may be analysed at employee group level, employee attitudes or behaviours may be looked at individual level, whilst performance may be measured at organizational level. To consider the problems raised by the multilevel analysis, the importance of blending research on the organizational level with research on the individual employee level has been emphasized (Wright & Boswell, 2002). Typical organizational behaviour studies such

as the psychological contract studies refer on the individual employee level, whilst typical strategic HRM studies refer on the group or organizational level. However, in blending these types of research appropriate aggregation of data should first be taken into account (Bliese, 2000).

Another important issue is how the HRM-performance relationship may be affected in cases of external shocks (Paauwe & Boselie, 2005). An external shock may be a drastic change in the national economy. How this new economic situation may influence the relationship between HRM and organizational performance? For example, in times of national economic crisis organizations might change their HRM programmes by planning layoffs, recruit fewer employees, and make a range of cost-cutting changes such as restricting employee development expenditures and increasing employee contributions to health care premiums. How these changes, and other changes, in HRM may affect the feelings of employees? Usually in times of prosperity employees might feel more secure than in times of economic crisis. How these changes might affect employees' psychological contract? Finally, how any change due the external shock of the economic crisis will influence the HRM-performance relationship? Paauwe and Boselie (2005, p. 15) emphasizing that there is no "any study that explicitly takes into account these external events, but it might be possible that they affect the nature of the linkage between HRM and performance as well" suggest that "it would be interesting to study the relationship between HRM and performance in different economy cycles".

The purpose of this study is to investigate how the relationship between HRM and organizational performance will be affected by the recent financial and economic crisis in the context of Greece. Following a period of relative economic well-being through joining the euro area in 2001, Greece was subject to a range of pressures and difficulties in the period succeeding 2008, the year of the global financial and economic crisis. The general consequences of the financial and economic crisis in Greece may be summarised as following. The growth rate has decreased from 1.0% in 2008 to -4.5% in 2010, resulting in an increase of the unemployment rate from 7.7% to 12.6%. Inflation has been increased from 4.0% in 2008 to 4.7% in 2010. The fiscal deficit increased from 9.8% in 2008 to 10.5% in 2010. The general government debt increased from 110.7% in 2008 to 142.8% in 2010 (European Economy, 2011). A Memorandum of Economic and Financial Policies between Greece and the euro area member states and IMF was agreed, that outlines the economic and financial policies that the Greek government will implement in the immediate coming period to strengthen market confidence and Greece's fiscal and financial position during a difficult transition period toward a more open and competitive economy.

For this purpose a model was proposed that investigates the impact of HR practices on organizational performance through the mediating role of psychological contract, expressed by the influence of employer on employee promises fulfilment, which takes into account the following issues. First, there is a lack of psychological contract research referring to employer

and employee promises fulfilment (Grimmer & Oddy, 2007; Nelson & Tonks, 2007). Second, there is a lack of previous psychological contract research treating organizational performance as the ultimate dependent variable (de Jong, Schalk & de Cuyper, 2009). Third, there is a scarcity of research considering that HR practices are antecedents of employer and employee promises fulfilment (Taylor & Tekleab, 2004; Suazo, Martinez & Sandoval, 2009), especially for non-Western contexts investigating the HR practices – psychological contract – organizational performance relationship (Pate, Martin & McGoldrick, 2003). Fourth, although the concept of psychological contract originated from outside HRM literature, it is used in explaining how HR practices predict employee attitudes and behaviours within the psychological contract (Guest & Conway, 2002; Cullinane & Dundon, 2006; Seeck & Parzefall, 2010).

For comparison reasons the study was divided into two phases. In the first phase, a survey took place in 2008, which was considered to be the basic reference period before the actual economic crisis. In the second phase, a survey took place in 2010, which was considered to be the experimental reference period expressing the period of the economic crisis. However, period two of this study was not clearly planned in advance given the uncertain nature of the credit crisis, but we developed it given the opportunity it offered to examine the key research themes as a response to it. We acknowledge that 'precision matching' between the two survey periods, in terms of organizations and respondents was not fully possible to achieve, and thus the alternative efficient method of 'frequency distribution matching' was used in order to investigate whether the two samples were matched on central characteristics such as the demographics of organizations and people (Frankfort-Nachmias & Nachmias, 1996).

## **2. Research model and hypotheses**

Figure 1 presents an operational model linking HR practices, psychological contract and organizational performance. The proposed operational model assumes that the state of the psychological contract mediates the relationship between HR practices and organizational performance. Specifically, the model is constituted by two related systems; the psychological contract system and the HR practices system. The first system refers to psychological contract that is expressed by the relationship between employer promises fulfilment (e.g., transactional, relational) and employee promises fulfilment (e.g., transactional, relational) mediated by employee attitudes (e.g., satisfaction, commitment, motivation). This system is based on the notions of reciprocity and social exchange, whereas if the employer upholds his side of the bargain, this will make employees satisfied, committed and motivated, and so they will reciprocate by upholding their side of the bargain (Coyle-Shapiro & Kessler, 2003; Rousseau, 1995). The second system refers to the relationship between HR practices (e.g., resourcing, development, rewards, relations) and organizational performance (e.g., effectiveness, efficiency, development, innovation, quality). This system is based on the high performance HR practices concept, whereas HR practices influence organizational performance

because of psychological contract fulfilment (Rousseau, 1995). In more detail, the two systems of the proposed model are explained below:

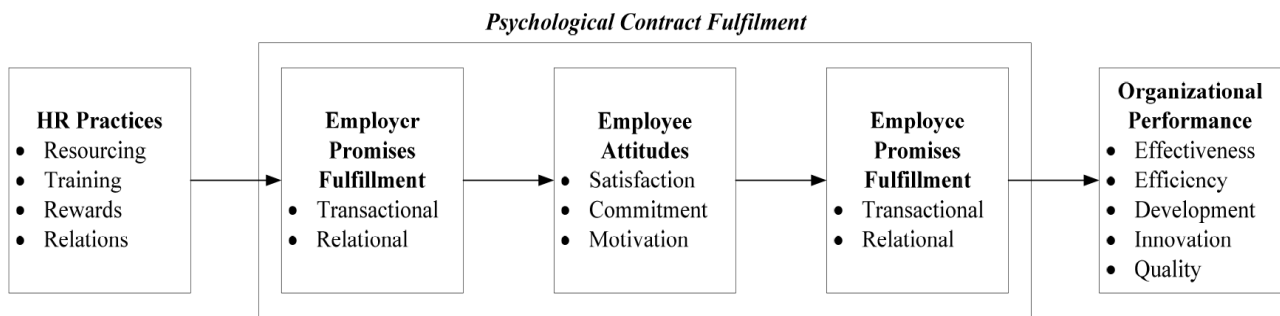


Figure 1. An HR practices – psychological contract – organizational performance linkage framework

## 2.1. The psychological contract system

Employees keep their promises according to the behaviour of the “*good employer*”, or the “*history*” of the organization in keeping its promises to employees (Rousseau, 1995; Purcell & Hutchinson, 2007). Specifically, in the context of the employment exchange relationship employees keep their promises if employers also keep their promises (Coyle-Shapiro, 2002; Coyle-Shapiro & Kessler, 2003). “*Reciprocity*” constitutes a core component in the psychological contract, meaning that employees positively respond to favourable behaviour from their employers (Rousseau & McLean Parks, 1993). In cases where employees believe that employers have broken their given promises, this will have a negative effect on employee promises fulfilment (Coyle-Shapiro & Kessler, 2000).

In the proposed model employer and employee promises fulfilment are two related parts of psychological contracts. However, although psychological contracts are highly subjective (McDonald & Makin, 2000), there are some common features that categorize psychological contracts into ‘*transactional*’ and ‘*relational*’ contracts (MacNeil, 1985; Rousseau, 1990). Transactional contracts involve short-term, specific, and monetary in nature beliefs such as competitive wage rates and performance-based pay. Relational contracts involve long-term, less specific, and monetary and non-monetary in nature beliefs such as job security, loyalty, training and development, career development, commitment and trust (Cavanaugh & Noe, 1999; Robinson, Kraatz & Rousseau, 1994; Rousseau, 1990).

Psychological contract literature, further, argues that fulfilment of the employer promises will be reciprocated by employee satisfaction, commitment and motivation (Coyle-Shapiro & Kessler, 2000). For example, Robinson and Rousseau (1994) and Guest, Conway, Briner and Dickman (1996) support the view that employer contract influence job satisfaction and organizational commitment. Bies and Tripp (1995) argue that the state of the psychological contract in terms of fulfilment or breach will result to positive or negative employee attitudes respectively, which in turn will have an impact on employees in fulfilling their promises. Coyle-Shapiro and Kessler (2000), Robinson (1996), and Sturges, Conway, Guest, and Liefooghe

(2005) support the view that employer promises fulfilment is positively related to employee commitment, supporting additionally that these attitudes will bring significant benefits to the organization in the form of increased efficiency. Generally, in cases where employees are satisfied, committed and motivated will keep their promises to the organization. Accordingly, we hypothesize that:

*Hypothesis 1: Employee attitudes (e.g., satisfaction, commitment, motivation) mediate the relationship between employer promises fulfilment and employee promises fulfilment.*

## **2.2. The HR Practices system**

It is argued that HR practices, such as employee resourcing, development, rewards, and relations, influence psychological contracts by shaping employer and employee promises fulfilment (Suazo et al., 2009). Specifically, employee resourcing, being the beginning of the employment relationship, transmits the employment terms and conditions of the organization to the potential job applicants (Rynes, 1991). The emphasis the organization is putting on employee training and development usually reflects the view that the organization considers employees as being part of its permanent employment (Gomez-Mejia, Balkin & Cardy, 2004). Each of the components of employee rewards is capable of producing psychological contract by establishing the belief that organization's employees worth their long-term salaries (Gomez-Mejia et al., 2004). Good employee relations produce positive feelings to employees who accordingly keep their promises to organizations (Robinson et al., 1994). Consequently, HR practices are likely to influence psychological contracts. This is because the appropriate use of HR practices will create a positive organizational environment that will influence the degree of employer and employee promises fulfilment (Marchington, 2001; Purcell, Kinnie & Hutchinson, 2003; Suazo et al., 2009). Thus, HR practices determine the status of psychological contracts by shaping the day-to-day behaviours of the members in an organization (Rousseau, 1995).

Consequently, a major function of HR practices is to cultivate a positive psychological contract that will lead to improved organizational performance (Pate et al., 2003; Suazo et al., 2009). This means that HR practices produce positive psychological contracts, reflected in the positive attitudinal reactions with respect to organizational commitment (Rousseau, 1990; Robinson & Rousseau, 1994; Robinson et al., 1994; Lemire & Rouillard, 2005), work satisfaction (Sutton & Griffin, 2004), and motivation (Lester, Claire, & Kickull, 2001), which consequently will improve organizational performance. Therefore, it has been argued that psychological contract mediates the relationship between HR practices and organizational performance (Tekleab, Lepak & Bartol, 2001; Guest & Conway, 2004). This means that better HR practices will produce superior psychological contracts, which by incorporating healthier employee attitudes will improve organizational performance (Seeck & Parzefall, 2010). Therefore, we hypothesize that:



*Hypothesis 2: Psychological contract fulfilment mediates the relationship between HR practices and organizational performance.*

### **2.3. Issues of economic crisis**

During periods of economic crisis organisations usually layoff employees in order to be more cost efficient (Campbell, 1997; McKinley, Mone & Barker, 1998). However, these layoffs create feelings of job insecurity among employees (DeWitt, 1998; Martin, Staines & Pate, 1998). Therefore, the implicit social contract of job security for loyalty between employees and employers is usually broken (Lee, Phan & Tan, 2003). As a result of possible layoffs employees are trying to develop new skills and update old ones in order to remain employable in the rapidly changing environment (Griffith, 1998). Training is one of the methods that employees use in order to develop new skills and update old ones, aiming at maintaining their current job security and improving their future employment prospects (Heyes & Stuart, 1996). Additionally, training will help employees to be in command of their own careers in the internal labour market (Arthur & Rousseau, 1996) and deal with employability in the external labour market in the event of a dismissal (Rousseau & Arthur, 1999). However, we would expect employees to try to minimise their job insecurity, to be more flexible and to undergo more training and development in periods of economic crisis in comparison to the periods of economic recovery (Lee et al., 2003).

Performance appraisal is considered to be one of the major processes in the employment relationship because employees are aware that their work in the organisation will be evaluated and accordingly rewarded. However, if workers do not receive the expected rewards according to their good performance due to economic crisis, they will be de-motivated and furthermore, they will start doubting the purpose of performance appraisal (Davila & Elvira, 2007). Thus, employees will be sceptical of employer promises referring to opportunities for promotion, good rewards and benefits, and other recognitions.

It has been argued that due to increased globalization, rapid technological development, and asymmetric economic instability, organisations frequently change their strategies aiming at restructuring their organisations in order to survive in the strongly intensified competitive environment. Lay-offs and redundancies, bringing a sense of insecurity in employees, are the usual side effects of these strategies (Westwood, Sparrow & Leung, 2001). Economic liberalization and privatisation usually results in increased stress, declining job security and downsizing (Luo, 2002; Budhwar & Debrah, 2009). Similarly, it has been argued that these changes alter the nature of psychological contracts, often leading to contract breaches and violations (Morrison & Robinson, 1997), which are linked to a number of downward adjustments in employee attitudes and behaviours (Zhao, Wayne, Glibkowsky & Bravo, 2007).

Summarising, it may be argued that in periods of economic crisis employees are trying to develop their employability in the external labour market in the event of a dismissal, be more flexible



within the organization in order to be able to maximise their job security in the internal market, and be more sceptical of employer promises referring to opportunities for promotion, good rewards and benefits, and other recognitions. Furthermore, strategies aiming at restructuring organisations in order to survive in the strongly intensified competitive environment generally lead to psychological contract breaches and violations, and downsizing that increase stress and demotivation of employees. All these make much weaker the links in the employment relationship during periods of economic crisis. Accordingly, it is hypothesised that:

*Hypothesis 3:* The strength of the links in the employment relationship is weaker in periods of economic crisis.

### **3. Method**

#### **3.1. Sample**

Data for this research was initially collected in April-May 2008 (i.e., two years before the economic crisis seriously affected Greece) by help of a questionnaire, which was administered with the employees of public and private firms in the manufacturing, services and trade sectors covering whole of Greece. The samplers were 120 individuals pursuing management degrees at a Greek business school who helped to collect data from their organisations and also from their contact organisations. The survey instrument was distributed to 600 organisations with more than 20 employees. The questionnaires were filled face-to-face with the help of the samplers who followed a specific seminar for this purpose. Following Gerhart, Wright, McMahan and Snell (2000) who suggest that the reliability of structural measures will be increased by using 5-10 respondents per firm, the samplers were asked to concentrate on 6 respondents from each firm; two at management level (one from the HRM/Personnel Department and one from the Finance Department) and four at other employees' level, i.e. 3600 questionnaires altogether. 912 usable questionnaires were returned from the employees in 177 firms, a response rate of 29.5 % at firm level, and 25.3% at employee level. Similarly, data was further collected in April-May 2010 (i.e., during the year of the economic crisis) by help of the same individuals attending the management degrees who helped with the questionnaire survey for the first phase. They were requested to approach the same 600 organizations which participated during the first phase and where possible same respondents to complete the surveys. This time, 897 usable questionnaires were returned from the employees in 156 firms, a response rate of 26.0% at firm level, and 24.9% at employee level.

The sample demographic characteristics with respect to organisations for both years are shown in Table 1.  $\chi$ -square homogeneity tests for each nominal characteristic (sector, ownership, size) and t-tests for each continuous characteristic (mean size) were used in order to investigate whether the samples for both years came from the same population. The exact significance levels of these tests are shown in the last column in Table 1. As all significance levels were

higher than 0.05 we accept the hypothesis that the samples of the organisations for all characteristics came from the same population.

Period	2008		2010		Tests and significant levels
	Number	Percentage	Number	Percentage	
<b>Sample size</b>	177		156		
<b>Sector</b>					
Manufacturing	57	32.2	52	33.3	$\chi^2$ – test
Services	78	44.1	68	43.6	p = 0.974
Trade	42	23.7	36	23.1	
<b>Ownership</b>					
Public	45	25.4	40	25.6	$\chi^2$ – test
Private	132	74.6	116	74.4	p = 0.532
<b>Size</b>					
20 – 100	111	62.7	105	67.3	$\chi^2$ – test
100 – 500	45	25.4	43	27.6	p = 0.770
500 +	21	11.9	8	5.1	
Mean size ( $\pm$ standard error)	152.02 ( $\pm$ 26.57)		168.48 ( $\pm$ 16.74)		t-test p = 0.347

Table 1. Sample demographics with respect to organisations

The sample demographic characteristics with respect to respondents for both years are shown in Table 2. As for Table 1,  $\chi$ -square homogeneity tests for each nominal characteristic (sector, ownership, size, sex, position, age, seniority) and t-tests for each continuous characteristic (mean size, mean age, mean seniority) were used in order to investigate whether the samples for both years came from the same population. The exact significance levels of these tests are shown in the last column in Table 2. As all significance levels were higher than 0.05 we accept the hypothesis that the samples of the respondents for all characteristics came from the same population.

Although 'precision matching' between the two survey periods was preferable, still, the efficient method of 'frequency distribution matching' indicated that the two samples were matched on central characteristics such as the demographics of organisations and people. Hence, it may be deduced that the samples for both organizations and respondents came from the same population for both years respectively. Therefore, any differences in the results reported in the rest of the paper may be attributed to external factors and not to factors representing the two samples. The deterioration of the Greek economy between 2008 and 2010 is considered to be one really marked external factor. Although it could be easily argued that there are other external factors that may influence organizations, these factors could also be easily considered to constitute the differences in the contexts between the normal 2008 and the crisis 2010 economic periods in Greece.

Period	2008		2010		Tests and significant levels
	Number	Percentage	Number	Percentage	
<b>Sample size</b>	912		897		
<b>Sector</b>					
Manufacturing	348	38.2	325	36.2	$\chi^2$ – test
Services	348	38.2	379	42.3	$p = 0.170$
Trade	216	23.7	193	21.5	
<b>Ownership</b>					
Public	222	24.3	221	24.6	$\chi^2$ – test
Private	690	75.7	676	75.4	$p = 0.600$
<b>Size</b>					
20 – 100	537	58.9	532	59.3	$\chi^2$ – test
101 – 500	216	23.7	220	24.5	$p = 0.537$
500 +	159	17.4	145	16.2	
Mean size ( $\pm$ standard error)	170.20 ( $\pm 11.00$ )		185.54 ( $\pm 7.69$ )		t-test $p = 0.208$
<b>Sex</b>					
Male	492	53.9	494	55.1	$\chi^2$ – test
Female	420	46.1	403	44.9	$p = 0.439$
<b>Position</b>					
Manager	252	27.6	227	25.3	$\chi^2$ – test
Worker	660	72.4	670	74.7	$p = 0.442$
<b>Age</b> (in years)					
– 25	99	10.9	103	11.5	$\chi^2$ – test
26 – 35	300	32.9	290	32.3	$p = 0.980$
36 – 45	342	37.5	317	35.3	
46 +	171	18.8	187	20.9	
Mean age ( $\pm$ standard error)	37.54 ( $\pm 0.30$ )		36.89 ( $\pm 0.32$ )		t – test $p = 0.133$
<b>Seniority</b> (in years)					
1 – 5	336	36.8	352	39.2	$\chi^2$ – test
6 – 10	237	26.0	217	24.2	$p = 0.946$
11 – 15	132	14.5	109	12.2	
16 +	207	22.7	219	24.4	
Mean seniority ( $\pm$ standard error)	10.04 ( $\pm 0.26$ )		9.74 ( $\pm 0.24$ )		t-test $p = 0.278$

Table 2. Sample demographics with respect to respondents

### 3.2. Measures

#### *Organisational performance*

We used multiple organisational performance variables which were measured under the philosophy of a perceived rating of the organization's performance on a five-point scale ranging from 1 = 'very low' to 5 = 'very high'. The specific items constituting the organisational performance construct include: "effectiveness" - if the organisation meets its objectives;

"*efficiency*" - if the organisation uses the fewest possible resources to meet its objectives; "*development*" - if the organisation is developing in its capacity to meet future opportunities and challenges; "*innovation*" - for products and processes; and "*quality*" - per cent of products of high quality, adopted from Delaney and Huselid (1996). Specifically, the respondents were asked "How would you rate '*effectiveness*' [if the organisation meets its objectives] in your organization?"

#### *Employee attitudes*

Were measured with three aggregate items (e.g., satisfaction, commitment, motivation) following Katou (2008). We acknowledge that the employee satisfaction, commitment, and motivation items could instead be introduced as three distinctive constructs by themselves, and thus, they should not be combined into one general measure. However, we decided to accept this aggregation because our model was already too large and complex and by introducing into the model three more separate constructs would make it more complex without necessarily improving the validity of the model. Responses were made on a five-point scale ranging from 1 = 'very low' to 5 = 'very high'. Specifically, the respondents were asked "How would you rate '*satisfaction*' in your organization?"

#### *Fulfilment of employer promises*

The construct of fulfilment of employer promises comprised of ten items, following the psychological contract CIPD (2008) fact sheet. Specifically, items that have been used in the past to reflect the transactional nature of employer promises in the psychological contract were pay commensurate with performance and an attractive benefits package, whilst items that have been used in the past to reflect the relational nature of employer promises in the psychological contract were opportunities for training and development, opportunities for promotion, recognition for innovation for new idea, feedback on performance, interesting tasks, respectful treatment, reasonable job security, a pleasant and safe working environment (McDonald & Makin, 2000). Respondents were asked to indicate the degree to which they believed the employer has fulfilled its promises along a five-point scale from 1 = 'not at all' to 5 = 'very well fulfilled' (Coyle-Shapiro & Kessler, 2000). Specifically, the respondents were asked "How would you rate the fulfilment of the employer promises with respect to the '*opportunities for promotion*' in your organization?"

#### *Fulfilment of employee promises*

The construct of fulfilment of employee promises comprised of ten items, following the psychological contract CIPD (2008) fact sheet. Specifically, items that have been used in the past to reflect the transactional nature of employee promises in the psychological contract were work hard, maintain high levels of attendance and punctuality, and work extra hours when required, whilst items that have been used in the past to reflect the relational nature of

employee promises in the psychological contract were uphold company reputation, show loyalty to the organization, develop new skills and update old ones, be flexible, be courteous to clients and colleagues, be honest, come up with new ideas (Robinson et al., 1994). Respondents were asked to indicate the degree to which they believed the employee has fulfilled its promises along a five-point scale from 1 = 'not at all' to 5 = 'very well fulfilled' (Coyle-Shapiro & Kessler, 2000). Specifically, the respondents were asked "How would you rate the fulfilment of the employee promises with respect to '*working hard*' in your organization?"

#### *HR practices*

The construct of HR practices comprised of 12 items (e.g., recruitment, selection, flexible work arrangements; work design, performance appraisal, training and development; compensation, promotion, incentives; participation, involvement, communication) referring to the usual four key areas of resourcing, development, reward, and relations, developed by Armstrong (1996). The items were measured on a five-point scale ranging from 1 = 'low use' to 5 = 'high use'. Specifically, the respondents were asked "How would you rate the use of the '*training and development practice*' in your organization?"

#### *Controls*

Several additional organisational and individual variables were controlled for in order to rule out alternative explanations of the findings (Turnley & Feldman, 2000). Specifically, we used the controls of '*sector*' ('1'=manufacturing, '2'=services, '3'=trade), '*ownership*' ('1'=public, '2'=private) and '*size*' ('1'=20-100, '2' = 101 – 500, '3'= more than 500, employees).

### **3.3. Consistency of the survey instrument**

*Content validity* of the questionnaire was established by operationalising well accepted and validated items developed in the literature (Straub, 1989). *Construct internal consistency* was investigated by evaluating the computed Cronbach (1951) alphas. The figures in Table 3 indicate that the survey instrument is reliable for testing the model presented in Figure 1, as all Cronbach alphas are higher than 0.70 (Nunnally, 1978). *Construct validity* was examined by evaluating the percentage of the total variance explained per dimension obtained by applying confirmatory factor analysis (CFA) with varimax rotation and the eigenvalue greater than one criterion using LISREL (Jöreskog & Sörbom, 2004). The percentage of total variance explained values are reported in Table 3, where all items loaded well on their respective factors (omitted for brevity), are higher than 50.0% indicating acceptable survey instrument construct validity (Hair, Anderson, Tatham, & Black, 2008). Furthermore, construct validity was examined by evaluating the average variance extracted (AVE) per dimension obtained by applying CFA. The AVE values reported in Table 3 are much higher than 0.50 indicating acceptable survey instrument construct validity (Hair et al., 2008). *Construct composite reliability* was assessed by examining the calculated composite reliability scores (Pavlou & Gefen, 2005).

Year		Means (Standard deviations)	Cronbach Alpha	Percent of variance explained	Construct reliability <sup>a</sup>	Organisational performance	Employee promises fulfilment	Attitudes	Employer promises fulfilment	HR practices	Sector	Ownership	Size
2008	Organisational performance	4.017 (0.700)	0.875	71.81	0.963	[0.714] <sup>b</sup>							
	Employee promises fulfilment	3.831 (0.574)	0.868	70.23	0.908	0.806**	[0.719]						
	Attitudes	3.616 (0.733)	0.908	92.32	0.978	0.772**	0.753**	[0.922]					
	Employer promises fulfilment	3.474 (0.729)	0.938	72.26	0.962	0.838**	0.724**	0.832**	[0.717]				
	HR practices	3.350 (0.702)	0.928	71.75	0.951	0.673**	0.643**	0.724**	0.791**	[0.721]			
	Sector					0.063	0.082	0.169*	0.181*	0.171*	1		
	Ownership					0.489**	0.322**	0.332**	0.376**	0.250**	0.143	1	
	Size					-0.278**	-0.190*	-0.335**	-0.296**	-0.107	-0.077	-0.264**	1
2010	Organisational performance	3.950 (0.621)	0.765	66.23	0.858	[0.647]							
	Employee promises fulfilment	3.760 (0.518)	0.805	56.79	0.865	0.635**	[0.472]						
	Attitudes	3.532 (0.666)	0.748	82.80	0.881	0.646**	0.597**	[0.811]					
	Employer promises fulfilment	3.4018 (0.610)	0.874	64.71	0.918	0.653**	0.526**	0.662**	[0.625]				
	HR practices	3.469 (0.613)	0.840	52.15	0.879	0.495**	0.455**	0.560**	0.654**	[0.502]			
	Sector					-0.004	0.026	0.106	0.162*	0.101	1		
	Ownership					0.474**	0.329**	0.298**	0.372**	0.269**	0.116	1	
	Size					-0.182*	-0.166*	-0.270**	-0.220**	-0.117	-0.059	-0.123	1

\*p &lt; 0.05, \*\*p &lt; 0.01

a Construct reliability =  $\left( \sum_i \lambda_i \right)^2 / \left[ \left( \sum_i \lambda_i \right)^2 + \sum_i (1 - \lambda_i^2) \right]$  where  $\lambda_i$  = standardized loading

b Diagonal figures in brackets represent average variance extracted (AVE)

Table 3. Correlation coefficients

The figures in Table 3 indicate that the degree of construct composite reliability is acceptable for 2008, since all reliability scores exceed 0.90, and the degree of construct composite reliability is rather acceptable for 2010, since the reliability scores either exceed 0.90, or they are marginally lower than 0.90. *Construct discriminant validity* was assessed by examining whether the correlation coefficients between pairs of constructs were significantly different

from unity and by examining whether the square root of each factor's AVE is larger than its correlations with other factors. Table 3 presents the correlation coefficients of all constructs used in the study. It is seen that the correlation coefficients are significantly different from unity, and they are smaller than the square root of each factor's AVE, providing thus evidence for separate constructs.

To reduce the common method bias threat in the survey design, we asked multiple respondents from each organization to answer the questions of the questionnaire. However, taking into consideration that some correlation coefficients were rather high, Harman's (1967) single factor test was used to examine the likelihood of common method bias threat. According to this test the simultaneous loading of all items in a factor analysis, revealed seven factors, and not just one, with the first factor covering only 18.446% of total variance explained, for year 2008, and revealed nine factors, with the first factor covering only 29.913% of total variance explained, for year 2010, indicating thus that the common method bias in the data was rather limited.

### **3.4. Statistical analysis**

To test the raised research questions of the proposed framework the methodology of '*structural equation models*' (SEM) or '*latent variable models*' (Hair et al., 2008) was used, via LISREL and the maximum likelihood estimation (MLE) (Jöreskog & Sörbom, 2004). SEM is effective when testing models that are path analytic with mediating variables, and include latent constructs that are being measured with multiple items (Luna-Arocas & Camps, 2008). We used MLE because tests of departure from normality, skewness and kurtosis for all variables used were (except for controls) within acceptable statistical limits. However, to avoid nested effects and problems due to the blending research on the organizational level with research on the individual employee level, we aggregated the data to mean scores at the organizational level. This is for two reasons. First, although data stem from different organizations potential biasing effects of organizational membership may be present. Second, psychological contracts are based on the perceptions and beliefs of individuals (McDonald & Makin, 2000) although performance is based on the organizational level. Thus, to avoid any bias due to the non-independence in the data and to make analyses on relationships between individual data and performance data possible, individual scores on the survey were aggregated to mean scores at organizational level.

We assessed the overall model fit following Bollen's (1989) recommendation to examine multiple indices, since it is possible for a model to be adequate on one fit index but inadequate on many others. We used the chi-square test (with critical significant level  $p > 0.05$ ) and the normed-chi-square ratio (with critical level no more than 3), the goodness of fit index, GFI (with critical level not lower than 0.80), the normed fit index, NFI (with critical level not lower than 0.90), the comparative fit index, CFI (with critical level not lower than 0.90), and the root



mean squared error of approximation, RMSEA (with critical level not more than 0.08) (Bentler, 1990).

#### 4. Results

Table 3 presents the means and the standard deviations of all the constructs used in the study, for both survey periods, derived as weighed averages of confirmatory factor analyses applied to each group of relevant items. Furthermore, Table 3 displays the bivariate correlation coefficients between all constructs used in the study. We observe strong, positive and significant correlations between HR practices, organizational performance, employee attitudes, and employer and employee promises fulfilment, supporting the hypotheses of the study. With respect to organizational controls we see in Table 3 that generally there is a variety of correlations between controls and the rest of the variables used in the study.

However, results based on correlations, although interesting, may be misleading due to the interactions between several variables. Therefore, in order to isolate the possible links between the variables involved in the operational model presented in Figure 1, the estimated path diagrams for this proposed framework are presented in Figure 2 for 2008 and in Figure 3 for 2010. The circles represent the related latent variables and the bold arrows indicate the structural relationships between the corresponding variables. The numbers that are assigned to each arrow show the estimated standardized coefficients. All coefficients are significant at the 0.001 level.

The excellent goodness-of-fit indexes in Figure 2 confirmed the validity of the operational model (Chi-Square = 960.11,  $df = 854$ ,  $p\text{-value} = 0.007$ , Normed-Chi-Square = 1.12, RMSEA = 0.027, NFI = 0.94, CFI = 1.00, GFI = 0.80). However, it must be noted here that the chi-square being significant indicates that the proposed model is not an adequate presentation of the entire set of relationships. But, taking into account that chi-square statistics may be inflated by high sample sizes, the value of the normed-chi-square (i.e., value of chi-square / degrees of freedom) was used instead. In our case this value is less than 3, confirming the validity of our model (Pedhazur & Pedhazur-Schelkin, 1991).

Considering that all the standardized coefficients are significant and the fit statistics of the model are acceptable we conclude that hypotheses H1 and H2 of the study are supported. This means that employee attitudes mediate the relationship between employer and employee promises fulfilment, and psychological contract fulfilment mediates the relationship between HR practices and organizational performance. However, as post hoc analysis, we re-estimated the same model adding two more links. A direct link from HR practices to organizational performance, and a direct link from employer to employee promises fulfilment. In this re-estimation these two additional paths were not significant, indicating that the more parsimonious model was preferable. This result confirmed the support of hypotheses H1 and

H2, reflecting full mediation of the psychological contract fulfilment in the HR practices – organizational performance relationship.

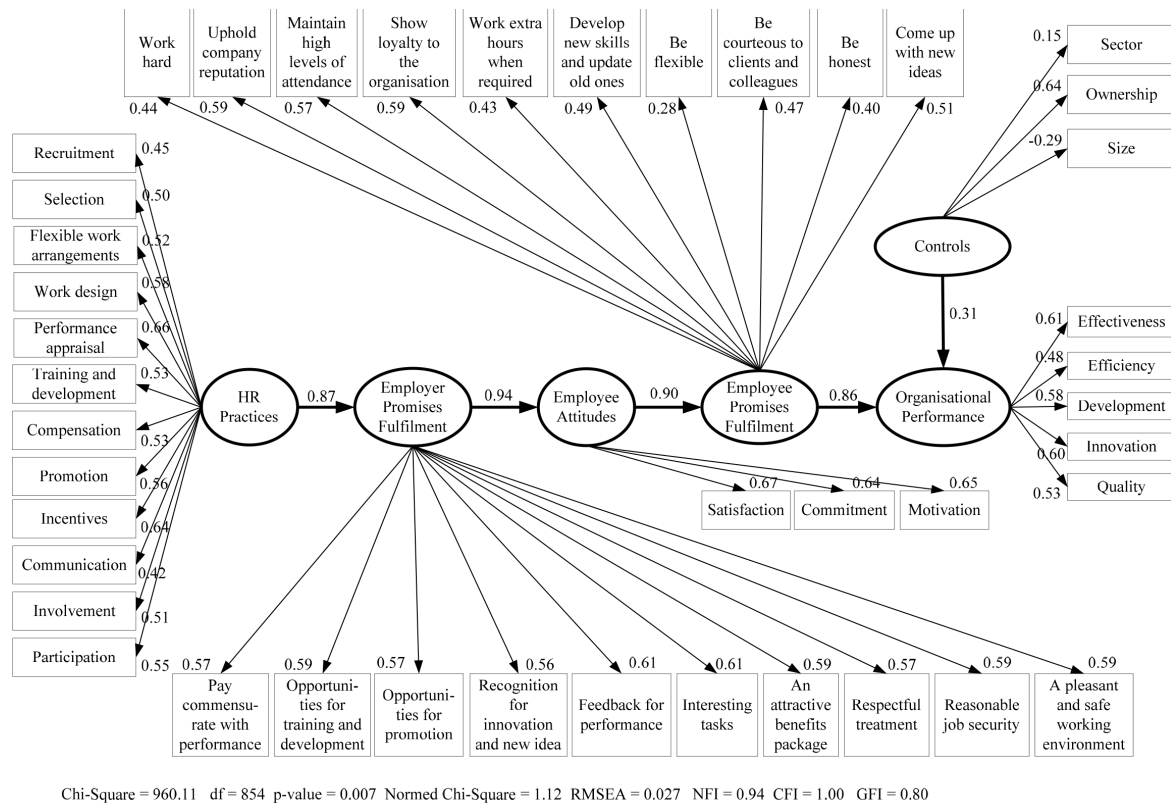


Figure 2. Estimation results of the hypothesized model for year 2008

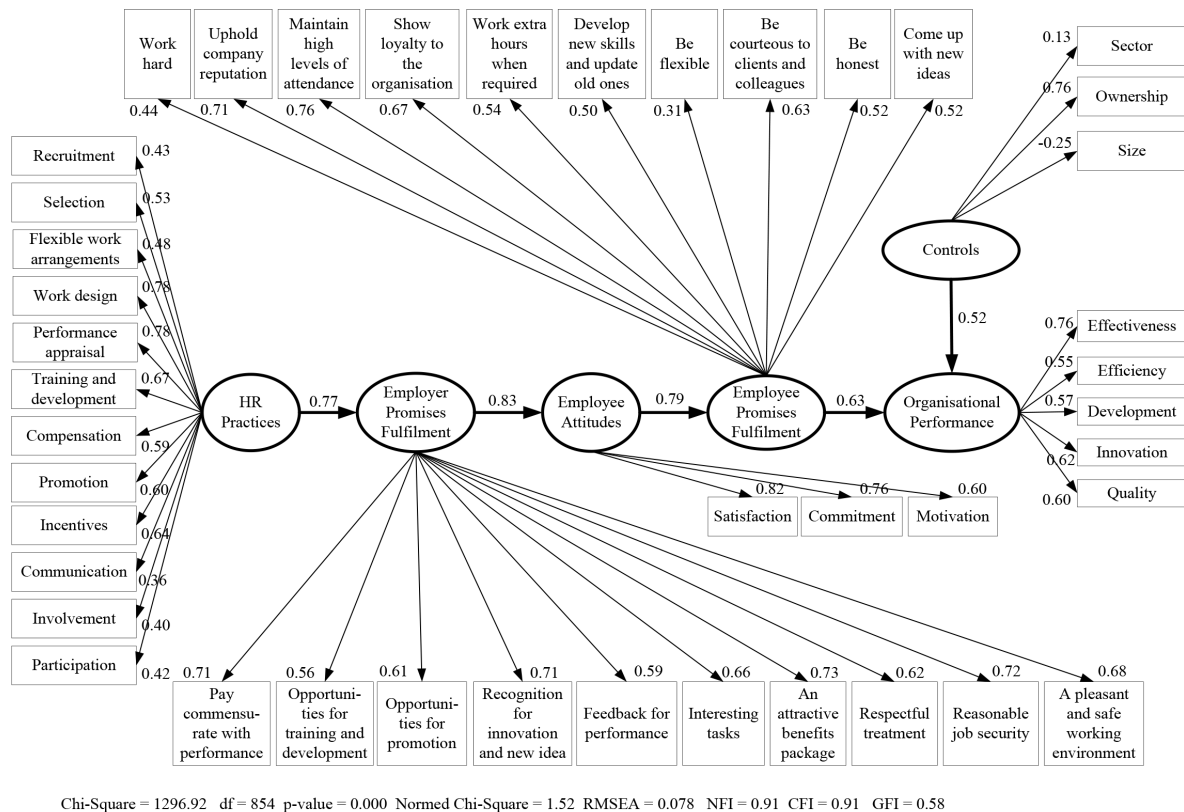


Figure 3. Estimation results of the hypothesized model for year 2010

Figure 3 shows the results of estimating the operational model presented in Figure 1, under the survey data of 2010. The rather acceptable goodness-of-fit indexes in Figure 3 confirmed the validity of the operational model (Chi-Square = 1296.92,  $df = 854$ ,  $p\text{-value} = 0.000$ , Normed-Chi-Square = 1.52, RMSEA = 0.078, NFI = 0.91, CFI = 0.91, GFI = 0.58).

Undertaking the same post-hoc analysis as before we confirmed the support of hypotheses H1 and H2, reflecting also in this case the full mediation of the psychological contract fulfilment in the HR practices – organizational performance relationship.

Comparing the results in Figure 2 and 3 we see that in both periods, i.e. the normal period and the economic crisis period, the structure of the model is exactly the same. This means that under both periods the relationship between HR practices and organizational performance is mediated by psychological contract fulfilment, which is shaping the attitudes of the employees that accordingly influence organizational performance. However, the standardized coefficients of the links in Figure 3 are all smaller than the standardized coefficients of the corresponding links in Figure 2. This means that Hypothesis 3 is supported, indicating that the strength of the links in the employment relationship are weaker in periods of economic crisis.

Special reference should be made with respect to the controls used in estimation. Although we acknowledge that there is no a sound theoretical rationale to consider 'organizational controls as a distinct 'factor'', we still use this factor for estimation purposes only in order to isolate the impact of the independent variables on organizational performance (Boselie, Dietz & Boon, 2005). Additionally, we must note here that although we tried all possibilities connecting controls with all the other constructs (Paawe & Richardson, 1997), the only significant results obtained are those reported in Figures 2 and 3. Specifically, for both periods, the positive factor loadings of the sector item reveal that organizational performance is larger in the trade and services sectors than in the manufacturing sector. The positive factor loadings of the ownership item reveal that organizational performance in private organizations is higher than in public organizations in Greece. In contrast, the negative factor loadings of the size item reveal that organizational performance does not follow the economies of scale rule, as it usually hypothesized (Tzafrir, 2005).

## **5. Discussion**

### **5.1. Implications for theory**

The theoretical significance of this study is four-fold. First, this study confirms and extends existing empirical evidence concerning the basis of the HR practices – psychological contract – organizational performance relationship. This is because a major finding of this relationship is that employee attitudes such as employee satisfaction, commitment and motivation, constitute the heart (Boxall & Purcell, 2002) or the epicentre of this relationship. All other relationships are activated around this epicentre, meaning that employee attitudes are influencing employee

promises fulfilment and organizational performance and being influenced by employer promises fulfilment and HR practices. Additionally, comparing the average of the standardized coefficients of the items constituting employee resourcing, training and development, rewards, and relations in the initial driving construct in Figures 2 and 3, it is seen that training and development is perceived by employees to be the most important group of HR practices that will help their employability both in the internal and external labour market (Arthur & Rousseau, 1996; Lee et al., 2003). These findings not only support the theory that HR practices have a positive impact on organizational performance, on both normal and crisis economic periods, but also extend the literature referring to the HRM-performance relationship in a non US/UK context such as that of Greece.

Second, the study provides evidence of the reciprocal influence that occurs in the exchange relationship between employers and employees. This is because, for period 2008, in view of the standardized coefficients of the items constituting the employer promises fulfilment construct in Figure 2, it is seen that employer promises fulfilment with respect to feedback for performance and interesting tasks have the highest influence on employee satisfaction, motivation and commitment. These attitudes will make employees to positively react by keeping their promises with respect to upholding company reputation and showing loyalty to the organization. For period 2010, it is seen in Figure 3 that an attractive benefits package and reasonable job security are the employer promises that generally must be fulfilled for employees to maintain high levels of attendance and show loyalty to the organization. These results are important because they support the view that in periods of economic crisis employees are afraid that may lose their jobs and thus they show their best face to the organization by maintaining high levels of attendance.

Third, the study confirms and extends Rousseau's (1995) argument on the centrality of reciprocity with respect to how exchange relationships are governed (Coyle-Shapiro & Kessler, 2003). This is because the major property of the conceptual model of the study is that the relationship between HR practices and organizational performance is mediated by psychological contract fulfilment, and employee attitudes are nested in this psychological contract. Although extensive empirical research has been carried out linking HR practices with organizational performance through employee attitudes, still little justification has been presented for how HR practices influence individual attitudes (Allen, Shore & Griffeth, 2003). This study considers that the history of the organization in terms of keeping its promises to employees, being contingent on the HR practices employed, shapes both employee attitudes and the degree of employee promises fulfilment to the organization (see also Rousseau, 1995). This finding may give some light to the so-called "black-box" referring to the mechanism that exists between HR practices and organizational performance (Hutchison & Purcell, 2003; Purcell et al., 2003). Moreover, this study supports the view that although the structure of the HR practices – psychological contract fulfilment – organizational performance relationship does not change in

periods of economic crisis, the strength of this structure is weaker compared to normal economic periods.

Fourth, this study provides evidence with respect to the relative importance of transactional vs. relational contracts when the external factor of economic crisis shocks the environment. The average values of the standardized coefficients reported in Figure 2 are equal to 0.58 for transactional and 0.59 for relational employer promises fulfilment, and to 0.48 for both transactional and relational employee promises fulfilment. These values indicate that during normal economic periods and for both parties, i.e. employers and employees, the transactional short-term promises fulfilment is perceived to have the same importance to the relational long-term promises fulfilment. On the contrary, the average values of the standardized coefficients reported in Figure 3 are equal to 0.72 for transactional and 0.64 for relational employer promises fulfilment, and to 0.58 for transactional and 0.55 for relational employee promises fulfilment. These values indicate that during crisis economic periods and for both parties, the transactional short-term promises fulfilment is perceived to have more importance to the relational long-term promises fulfilment. In other words, in terms of normal economic periods the organization puts the same emphasis in the transactional and the relational part of the contract, whilst during crisis economic periods the organization is more interested in the short-term transactional contracts to cover its current needs. Therefore, our findings support the view that transactional aspects of the psychological contract must be fulfilled before relational aspects can be addressed (Millward & Brewerton, 1999), because transactional aspects drive relational aspects due to their cause and effect association (Pate et al., 2003).

## **5.2. Implications for practice / management**

The study has clear implications for both managers and decision makers in Greek organizations. It identifies employee training and development and rewards as the major HR practices potentially capable of sending signals that may lead to the creation of psychological contract fulfilment in both normal and crisis economic periods. Although it may be difficult to know exactly what constitutes the psychological contract of an employee (Suazo et al., 2009), in periods of economic crisis managers primarily must send messages of reasonable security to employees in order for them to largely keep their own promises about maintaining high levels of attendance and upholding company reputation. Finally, managers need to develop skills that will allow them to improve the employee attitudes of satisfaction, commitment, and motivation, because these attitudes constitute the nested epicentre mediating construct in both the HR practices – performance and employer – employee promises fulfilment relationships, which will improve organizational performance, in both normal and crisis economic periods.

### 5.3. Limitations

This study has some limitations. First, considering that the second survey period was not clearly planned in advance, precision matching between the two survey periods, in terms of organizations and respondents, has not fully been achieved. This could possibly make the results to depend on other factors than the external shock of economic crisis. Second, although data was collected using the same questionnaire at the two time periods of 2008 and 2010, the design of the study is not longitudinal. As a result, the study does not allow for dynamic causal inferences (Cavanaugh & Noe, 1999). Third, to minimize possible common method bias concerns data should be gathered from independent sources (Podsakoff & Organ, 1986). Fourth, the study was applied in the context of Greece which has unique labour relations and institutional conditions, and thus the findings from the Greek sample may not generalize across borders (de Jong et al., 2009). However, despite these limitations, this study provides a greater understanding of the process by which psychological contract mediates the relationship between HR practices and organizational performance, with special reference to economic crisis.

### 6. Conclusion

Past research has provided extensive evidence on the positive relationship between HR practices and organizational performance in an effort to reveal a positive impact of HR practices (Wright, Gardner, Moynihan & Allen, 2005). This study is partially in line with Purcell et al. (2003) high performance model, where employee attitudes mediate the relationship between HR practices and organizational performance, and with Guest and Conway's (2004) psychological contract model where HR practices have a major influence on the state of the psychological contract, indicating that a positive psychological contract will lead to improved organizational performance. Thus, this study is attempting at providing proof that the employee attitudes of satisfaction, commitment and motivation, constitute the epicentre of the HRM - performance relationship. All other relationships are activated around this epicentre, meaning that employee attitudes are influencing employee promises fulfilment and organizational performance and being influenced by employer promises fulfilment and HR practices. Finally, this study supports the view that although the structure of this relationship does not change in periods of economic crisis, the strength of this structure is weaker compared with normal economic periods.

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