

HUMAN RESOURCES MANAGEMENT AS A DETERMINING FACTOR IN ORGANISATIONAL LEARNING

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Abstract

The aim of this paper is to analyse the relationship between HR practices and organisational learning. The hypotheses proposed are contrasted with a sample of 195 Spanish companies employing over 200 people, and using the modelling of structural equations as a statistical technique. The results show that the introduction of techniques such as selective hiring, strategic training, employee participation in decision making, and contingent reward increases the ability of the organisation to learn.

Keywords: organisational learning, strategic HRM, selective hiring, strategic training, employee participation in decision making, contingent compensation.

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ABSTRACT

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Suggested track: G Organizational learning

1 Introduction

We now find ourselves in a competitive environment characterised by market globalisation, a greater complexity and increasing changes, which reinforces the need for flexibility and differentiation. Consequently, traditional sources of competitive advantage such as subsidised markets, both physical and financial assets and even technology have been pushed into the background in favour of knowledge since they tend to be increasingly easily available to everyone on equal terms, in open markets.

In order to survive and obtain advantages in this environment, it is necessary for the companies to be able to innovate and assimilate new knowledge, which allows them to take a different approach. Learning and creativity become necessary in order to guarantee the sustainability of competitive advantage. Being aware of this, many companies build technical infrastructures that allow the retrieval and distribution of knowledge while at the same time the firm concentrates on aspects such as strategy, quality control and stock control. However, the reason why most companies fail is due to excessive focus on technical problems at the expense of human resources (Cross and Israelit, 2000).

The role of human resources management in learning organisations has been discussed by a number of researchers and practitioners. In a permanent changeable and intensive environment like this, the main tasks of human resource management are to monitor, measure and intervene in construction, embodiment, dissemination and use of knowledge by employees. Garavan *et al.* (2000) see that the daily task of human resource development in building of a learning organisation as: assisting employees in creating and using knowledge; establishing appropriate networks; and engaging in double-loop learning.

Therefore, the aim of this paper is to analyse the relationship between the human resources management and organisational learning. To be precise, it is a question of determining whether selective hiring, strategic training, employee participation in decision making and contingent compensation contribute to the generation of organisational learning. Thus, the characteristics that define both the learning process and its importance as a source for competitive advantages are analysed under the following heading. Also, the relationship between HR practices and organisational learning is assessed and the

hypotheses which will be verified are proposed. Finally, the most relevant findings of the empirical analysis on a sample of 195 firms of more than 200 employees are shown.

2 Organizational learning

For over thirty years, research on organizational learning has contributed significantly to the development of organizational theory and the change in strategic management. Moreover, this research has increased very rapidly in the last years. The contributions of the resource-based view of the firm and the approach based on knowledge management suggest that competitive advantage arises as a result of the abilities and capabilities of the company. Thus, learning becomes a fundamental strategic aspect. But in spite of the increasing interest in this subject, consensus on basic matters and concepts has not yet been reached. This is due to the fact that this subject has been studied by several disciplines and from different approaches (Tsang, 1997).

Economists tend to view learning either as simple quantifiable improvements in activities, or as some form of abstract and vaguely defined positive outcomes. The management and business literature often equates learning with sustainable comparative efficiency, and the innovation literature usually sees learning as promoting comparative innovative efficiency. These various literatures tend to examine the outcomes of learning, rather than delve into what learning actually is and how these outcomes are achieved. In contrast, it is a major concern to organizational theory and psychology to examine the processes of learning. Learning, in the sense used here, relates to firms and encompasses both processes and outcomes.

Organizational learning can be defined as a dynamic process of creation, acquisition and integration of knowledge aimed at the development of resources and capabilities that allow the organizations a better performance.

This definition includes three basic assumptions. One of main assumptions is that organizational learning is a process whose goal is to improve the development of the organization by means of new initiatives (technological, productive or commercial). This requires a move from simply putting more knowledge into databases to leveraging the many ways that knowledge can migrate into an organization and impact business performance

(Cross and Baird, 2000). Among the benefits of organizational learning it is worth mentioning, first, that it establishes a link between the organization and the environment which allows a proactive behavior rather than a reactive one. Learning implies an improvement in response capacity through a wider understanding of the environment (Sinkula, 1994). This behavior helps to diminish its sense of complexity and avoids stagnation of strategic decisions. Nevertheless, it is not only a question of changing according to modifications in the environment, but also a question of giving the organization the possibility of regenerating itself continuously. On the other hand, the flexibility inherent to the organizations that are oriented towards learning allows them to adapt themselves quickly to new market opportunities (Slater and Narver, 1995). The wish to learn and to know more leads to the establishment of relationships with customers, suppliers and other market agents so that there is a generation of favorable attitudes towards collaboration and solution of conflicts (Webster, 1992).

Another assumption is the individual plays a fundamental role in the development of organizational learning. The interaction of human through certain media or instruments creates new knowledge and adds to the pool of organizational knowledge that acts as the engine of organisation's growth and learning capability (Yahya and Goh, 2002). Knowledge management initiatives must help individuals learn more effectively and also attend to the social processes that shape how knowledge becomes actionable in such contexts as cross functional teams or communities of practice.

And the last assumption is that the learning process has identifiable stages. Several authors have studied the process of organizational learning in order to define its dimensions, stages or flows (Huber, 1991; Day, 1994; Nevis *et al.*, 1995; Crossan *et al.*, 1999; Winter, 2000). Although the terminology differs from one author to another, the defined processes are similar. The revision of the different works on the subject allows us to identify four different dimensions or phases: 1) knowledge acquisition through external sources or internal development; 2) distribution by means of which knowledge is spread among the members of the organization; 3) interpretation, in which individuals share and incorporate aspects of their knowledge, which are not common to all of them, achieving a shared understanding as well as co-ordination in decision making, and finally 4) organizational memory which tries to store knowledge for future use, either in organizational systems designed for this purpose or in the form of rules, procedures and other systems.

Most studies of organizational learning have been concerned with the acquisition of knowledge and, to a lesser extent, with the sharing or distribution of the acquired knowledge. Less is known about the assimilation process, the stage in which individual and group learning is embedded into the non-human aspects of the organization including systems, structures, procedures and strategy (Nevis *et al.*, 1995). Organizational memory is much in need of systematic investigation, particularly by those whose special concerns are improving organizational learning and decision making.

Generally, organizational memory is constituted through various places: systems of information processing, processes of execution and social systems. From a dynamic point of view, the permanent restructuring of organizations leads one to question the durability of organizational memory and its related knowledge (Bounfour, 2003). Walsh and Ungson (1991) defined the memory structure through several components: the acquisition of information, its means of retention (individuals, cultures and structures) and renewal. Studies of organizational memory must be concerned with all three stages in the process.

All these characteristics make clear that the learning process in a firm will be a very-wide ranging one, involving the obtaining of knowledge from the existing organization, the combining of knowledge, data or previous experience and the generation of new uses for the resources (Nonaka and Takeuchi, 1995).

3 The link between human resource management and organizational learning

As already discussed, individuals play a fundamental role in the development of organisational learning since the organisation would not exist without them. Therefore, HR systems may contribute to the capacity of the organisation to learn by facilitating the development of organisation-specific competencies that result in complex social relationships based on the company's history and culture, and generate tacit organisational knowledge (Barney, 1992; Reed y DeFillipi, 1990; Wright y McMahan, 1992). HRM can be seen as personnel management with an emphasis on the acquisition, organisation and motivation of human resources (Amstrong, 2000).

Using literature relevant to strategic HRM and organisational learning as a starting point, this paper will analyse the relationship between four HR areas (hiring, training, compensation and decision making) and organisational learning.

3.1 Selective Hiring

A central concern of human resource management, especially in relation to organisational learning is the recruitment and retention of valued employee (Davenport, 2000). The importance of managing the employment relationship such that it generates value added knowledge for the organization has an obvious link to recruitment and retention of staff (Ulrich and Lake, 1990; Wayland and Cole, 1997).

The purpose of any recruitment campaign should be to attract those candidates that will fit best with the job-to-be staffed and the organisation overall. The recruitment process allows prospective employees to gauge whether they would like to work within a particular organisation (Wood and Payne, 1998). Put otherwise, they are given the opportunity to determine whether an employer will help them achieve their career ambitions and fulfil their ideals. It is therefore crucial for employers to give candidates the most realistic job preview so that their expectations are met, once hired. Research has suggested that realistic job previews can help ensure employee retention (Catano *et al.* 1997)

A recruitment campaign usually results in identifying a number of employees who can potentially meet the requirements of particular jobs or roles. The organization must select, among the candidates in this selection pool, those that would add the highest value to the firm. Competency profiles are instrumental in this regard, in that they tell hiring managers which knowledge, skills, abilities and other attributes candidates possess to be successful once hired. It is usually quite easy to determine whether a job candidate has the necessary technical or professional competencies to perform well on the job. What is more difficult to gauge, however, is whether a particular candidate has the necessary level of initiative or required ability to work effectively with others as a member of a team or to provide regular coaching and mentoring. These “softer” competencies are more subjective in nature and are therefore more difficult to measure (Lapierre and McKay, 2002). However, they are no less important to success on the job. Indeed, a great deal of research evidence shows that the degree of cultural fit and value congruence between job applicants and their organizations significantly predict both subsequent turnover and job performance (Chatman, 1991; O'Reilly *et al.*, 1991). Di Bella *et al.* (1996) and Williams (2001) point out that companies who are orientated towards learning should emphasise

the selection of individuals with appropriate cultural and linguistic background to support knowledge management activities.

Nevertheless, failure at this stage is frequent since front line managers, who are very committed to achieving target objectives, tend to select applicants based on their technical abilities. They overestimate the value of a possible immediate contribution from a new employee, and undervalue other attributes such as the candidate's ability to acquire new knowledge, and their flexibility regarding changes in their job descriptions. An apparently correct decision in the short term could become a barrier to the company's ability to adapt to the changing market.

Therefore, the following hypothesis is proposed:

H1: *Selective hiring practices have a positive effect on learning.*

3.2 Training

Training is another key factor related to the achievement of efficient learning. With this in mind it is necessary to identify the changes that have taken place in this area in the last few years. The individual plays a more active role in defining his/her own training objectives, and attempts to match them to company objectives. The focus of human resource training is placed on developing people who are capable of tapping internal and external information and turning it into useful organizational knowledge. Thus, leadership, management change and company mission and values are reinforced through training (Yahya and Goh, 2002). All these skills are crucial in initiating the organizational learning process, and thus promoting proactive acquisition of knowledge and the subsequent knowledge documentation activity and knowledge transfer.

The leadership skills are essential to the middle level manager, as they are the one who leads the change in lower levels. They also need to maintain employees' morale during the difficult change period. The leadership skills that need to be fostered may include communication skills, strategic thinking, collaboration skills, visionary leadership and business acumen (Lloyd, 1999). With regard to organisational change management, Ulrich (1998) suggest that the HRM can play its role by helping employees figure out what they should and can do make a company's vision of knowledge organisation a reality. In addition, pointing out the "who, why, what and how" of the change process is certainly

helpful to drive out the fear of change. The training on company mission and values would show the employees and managers how the entire knowledge management framework is linked to the company's strategy. A clear understanding of the company's mission and values would help ensure a right direction for the learning processes (acquisition, distribution, interpretation and organizational memory).

Therefore, the following hypothesis is proposed.

H2: *Strategic training significantly improves organisational learning.*

3.3 Compensation and Reward

Pay systems have traditionally been linked to holding a certain type of job (Gomez-Mejía *et al.*, 2001). However, the organisational learning literature draws attention to the need to go further than the explicit job description, and to establish a different form of compensations systems that reinforce the experimentation and transfer of knowledge (Lei *et al.*, 1999; Lepak y Snell, 1999). The pay and incentive system should:

- Reward risk taking attitude in order to promote creativity in solving daily problems (Garvin, 1993; Ulrich *et al.*, 1993; Snell *et al.*, 1996; Goh y Richards, 1997; Yahya and Goh, 2002); and
- Stress on group-based compensation and reward to stimulate knowledge exchange and sharing within group members (Pill and MacDuffie, 1996; Yahya and Goh, 2002).

Since the number of team based activities is increasing, competitive pay systems that are based on individual reward could discourage the exchange of knowledge reversing the effectiveness of the measures taken to enhance knowledge transfer (Quinn *et al.*, 1996; Lei *et al.* 1999). Group based incentives reinforce cooperation between members improving the dissemination, transfer and integration of knowledge (Leonard-Barton, 1992; McGill y Slocum, 1993).

On the other hand, employees who own intellectual capital are usually emotionally involved with the company, which means that they are not only interested in possible economic benefits, but also in their working conditions. This implies that when faced with poor social rewards, there is more chance that workers will leave the company in search

of better working conditions. Pfeffer (1998) suggests some policies and practices that are focused on retaining employees: offering methods of allowing the workers to develop their knowledge, strengthening the organisation's shared values, offering the opportunity to work as high ranking professionals. Pfeffer also suggests other issues of importance, such as the stability of innovation projects, and the need for a timetable that can be adapted to task requirements without unnecessary inflexibility.

Therefore, based on this analysis, the following hypothesis is proposed:

H3: *Contingent compensation positively influences learning.*

3.4 Employee participation in decision making

The organisation should provide sufficient incentives for employees to use and develop specific knowledge efficiently. By and large, this is achieved through worker participation in decision-making, that is to say locating decision-making rights where the specific knowledge related to that decision can be found.

Programs to use the ideas and knowledge of the work force require decentralising decision making and permitting people at all levels to exercise substantial influence over organizational decisions and processes (Pfeffer, 1998). By empowering people, it gives them a sense of power and authority, thus giving them more room to innovate and explore new opportunities.

However, all of this requires motivational and cognitive mechanisms (Nykodym et al. 1994). Motivational mechanisms include actions such as trust, greater control of the work, more ego involvement on the job, increased identification with the organization and the setting of higher goals and/or increased goal acceptance. On the other hand, cognitive mechanisms include more upward communication and better utilisation of information of supervisors who do not have the knowledge or enough information to make a high quality decision on their own.

In conclusion, participation demands a greater recognition of the importance of issues such as trust and information sharing, which influence both individual and organizational learning.

Therefore, the following hypothesis is proposed:

H4: *Employee participation in decision-making has a positive effect on organisational learning.*

4 Methodology

4.1 Sample

With the aim of contrasting the hypotheses formulated above, an empirical study has been carried out, among large Spanish companies, since we believe that the learning process is more formalised in this type of companies. The target population of this research is made up of 2,740 firms from the industrial and service sector which, in 2001, according to the data available at Duns & Bradstreet data base, employed over 200 people.

Postal survey methodology was used to compile information. In order to check the viability of the questionnaire, it was submitted, in the academic field, to the evaluation of several researchers of business management, most of whom are experts on organizational learning and human resource management. From a professional point of view, interviews were done with the managers of a sample of leading enterprises belonging to the banking, computing, road transport, iron and steel and engineering sectors. The final survey was given to the General Manager or main executive of the company. One hundred and ninety-five of the returned surveys were considered valid, which represents a 7% response rate, and a 6.9% sampling error for a confidence interval of 95%.

4.2 Validation of scales

Since the aim of this paper is to analyse the relationship between human resource practices, organizational learning and business performance, it is necessary, first of all, to evaluate the scales used to measure each of the variables.

The methodology used was that suggested by Churchill (1979), and Anderson and Gerbing (1998), which meant having to assess its respective uni-dimensionality, reliability

and validity. In order to do that, we turned to the statistical technique of confirmatory factor analysis using EQS 5.7a software (Bentler, 1995).

Organizational learning. In order to assess organizational learning, we develop a scale which both recognise the multidimensional character of learning and which collects explicit information about the four dimensions of learning theoretically identified: acquisition, distribution, interpretation and organizational memory. The choice of the variables representative of the dominion and each critical dimension was carried out from an exhaustive revision of both the organizational learning literature and other reliable instruments (Nonaka *et al.*, 1994; Marquardt, 1996; Goh and Richards, 1997; Hult and Ferrel, 1997; McGraw *et al.* 2001; Bontis *et al.*, 2002). The resulting 5-point Likert scale (with 5 = completely agree, to 1 = completely disagree) is presented in Appendix 1.

The psychometric analysis was carried out in consecutive stages. Firstly, a first order model was considered so as to contrast the existence of the inherent dimensions of organizational learning previously mentioned: acquisition of external knowledge, acquisition of internal knowledge, distribution, interpretation and organizational memory. Subsequently, a second order model was considered so as to contrast the integration of external and internal knowledge acquisition in a defining basic dimension of knowledge acquisition. Finally, through a third order model it is checked that the four dimensions are underlying a single main factor, organizational learning.

The results of the different analysis are shown in Table 1. It can be observed that all the coefficients between the items and factors are positive and significant, which corroborates the existence of four dimensions inherent to organizational learning. The indicators of goodness of fit for each of the models show their adaptation to the corresponding recommended critical values.

Table 1. Scale for measuring Organisational Learning. Evaluation of psychometric properties

DIMENSION	ÍTEM	STANDARDIZED FACTOR LOADINGS	RELIABILITY	DISCRIMINANT VALIDITY				
				DIMENSION	C. CORRELATION (Confidence Interval)			
ACQUISITION EXTERNAL (AE)	A. EXTERNAL 1	0.65	0.698	AI-AE	0.55 (0.4; 0.692)			
	A. EXTERNAL 2	0.60		AE-DB	0.41 (0.234; 0.578)			
	A. EXTERNAL 3	0.63		AE-IT	0.54 (0.396; 0.692)			
	A. EXTERNAL 4	0.53		AE-MO	0.32 (0.144; 0.488)			
ACQUISITION INTERNAL (AI)	A. INTERNAL 1	0.74	0.840	AI-DB	0.60 (0.472; 0.714)			
	A. INTERNAL 2	0.87		AI-IT	0.63 (0.519; 0.751)			
	A. INTERNAL 3	0.78		AI-MO	0.52 (0.395; 0.655)			
DISTRIBUT (DB)	DISTRIBUT 1	0.59	0.772	DB-IT	0.89 (0.82; 0.968)			
	DISTRIBUT 2	0.61		DB-MO	0.62 (0.501; 0.745)			
	DISTRIBUT 3	0.74		IT-MO	0.50 (0.36; 0.632)			
	DISTRIBUT 4	0.61						
	DISTRIBUT 5	0.62						
INTERPRET (IT)	INTERPRET 1	0.63	0.821					
	INTERPRET 2	0.67						
	INTERPRET 3	0.68						
	INTERPRET 4	0.72						
	INTERPRET 5	0.76						
MEMORIA (MO)	MEMORY 1	0.59	0.844					
	MEMORY 2	0.53						
	MEMORY 3	0.56						
	MEMORY 4	0.69						
	MEMORY 5	0.75						
	MEMORY 6	0.53						
	MEMORY 7	0.70						
	MEMORY 8	0.71						
GOODNESS OF FIT STATISTICS FOR FIRST ORDER MODEL								
S-B χ^2 (265) 352.3584 (P=0.000)		RMSR 0.061	GFI 0.861	NFI 0.806	NNFI 0.912	AGFI 0.830	CFI 0.922	IFI 0.924
DIMENSION	SUB-DIMENSIONS	STANDARDIZED FACTOR LOADINGS	RELIABILITY	DISCRIMINANT VALIDITY				
				DIMENSION	C. CORRELATION (Confidence interval)			
ACQUISITION (AC)	A. INTERNAL A. EXTERNAL	0.67	0.703	AC-DB	0.70 (0.533; 0.853)			
		0.80		AC-IT	0.79 (0.661; 0.925)			
DISTRIBUT (DB)				AC-MO	0.60 (0.501; 0.745)			
INTERPRET (IT)				DB-IT	0.89 (0.821; 0.969)			
				DB-MO	0.62 (0.501; 0.745)			
MEMORY (MO)				IT-MO	0.50 (0.361; 0.633)			
GOODNESS OF FIT STATISTICS FOR SECOND ORDER MODEL								
S-B χ^2 (268) 365.5002 (P=0.000)		RMSR 0.063	GFI 0.840	NFI 0.804	NNFI 0.912	AGFI 0.830	CFI 0.921	IFI 0.923
DIMENSION	SUB-DIMENSIONS	STANDARDIZED FACTOR LOADINGS	RELIABILITY					
ORGANIZAT. LEARNING	ACQUISITION DISTRIBUTION INTERPRETATION ORG. MEMORY	0.81 0.95 0.93 0.61	0.9					
GOODNESS OF FIT STATISTICS FOR THIRD ORDER MODEL								
S-B χ^2 (270) 366.7812 (P=0.000)		RMSR 0.067	GFI 0.856	NFI 0.798	NNFI 0.906	AGFI 0.827	CFI 0.915	IFI 0.917

To ensure the reliability of the scale used we calculated the composite reliability coefficients compiled in Bagozzi and Yi (1988). As presented in Table 1, the composite reliability coefficients are over the recommended minimum value of 0.6 in all cases. Furthermore, it can be observe that all the coefficients between the items and factors are higher than 0.5 and significant ($p < 0.01$) which, according to Anderson and Gerbing (1988), is a guarantee of the convergent validity. Finally, according to the procedure compiled in Anderson and Gerbing (1988), the discriminatory validity between each pair of dimensions is guaranteed, as the reliability interval of its correlation does not include value 1 in any of the cases.

Human resource practices. With the aim to determine the state of the companies as regards the implementation of human resource practices, a measurement scale is developed for each of the practices aforementioned: selective hiring, strategic training, participation of employees in decision making process and contingent compensation. This scale is presented in Appendix II.

Their evaluation process has been carried out by means of a confirmatory factor analysis. Firstly, it is worth pointing out that the indicators of goodness of fit of the model depicted in Table 2 are adequate, which shows a reasonable fit between the model and the data. Furthermore, the composite reliability coefficients are over the recommended minimum value of 0.6. Likewise, the convergence of almost all the items in their corresponding main factors is emphasised, only TRAINING 2 and HIRING 3 are slightly below 0.5. Finally, the scales' discriminatory validity is guaranteed since the confidence interval of the correlation between each pair of latent variables does not include value 1 in any of the cases. To summarise, the reliability and validity of the scales developed to measure each of the analysed practices has been verified.

Table 2. Scale for measuring human resource practices. Evaluation of psychometric properties

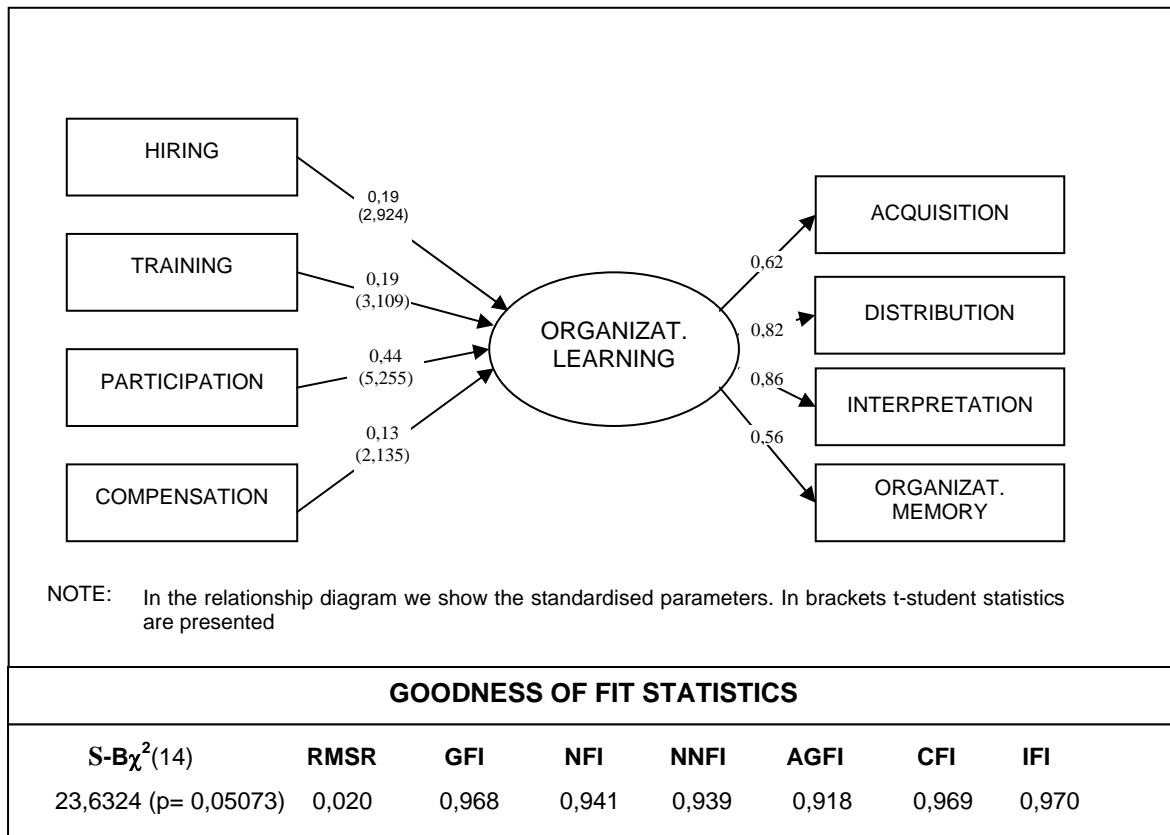
DIMENSION	ÍTEM	STANDARDIZED FACTOR LOADINGS	RELIABILITY	DISCRIMINANT VALIDITY			
				DIMENSION	COEF. CORRELATION (CONFIDENCE INTERVAL)		
HIRING (HR)	HIRING 1	0.58	0.705	HR-TR	0.39 (0.204; 0.592)		
	HIRING 2	0.72		HR-PT	0.56 (0.418; 0.71)		
	HIRING 3	0.46		HR-CP	0.37 (0.21; 0.53)		
	HIRING 4	0.68		TR-PT	0.25 (0.056; 0.444)		
TRAINING (TR)	TRAINING 1	0.69	0.604	TR-CP	0.28 (0.102; 0.462)		
	TRAINING 2	0.44		PT-CP	0.35 (0.197; 0.501)		
	TRAINING 3	0.60					
PARTICIPATION (PT)	PARTICIP 1	0.61	0.775				
	PARTICIP 2	0.73					
	PARTICIP 3	0.84					
COMPENSATION (CP)	COMPENS 1	0.84	0.885				
	COMPENS 2	0.94					
GOODNESS OF FIT STATISTICS							
S-B χ^2 53.8012 (P=0.2619)	RMSR 0.059	GFI 0.950	NFI 0.911	NNFI 0.971	AGFI 0.918	CFI 0.979	IFI 0.979

5 Results

In order to test the proposed hypotheses, we have estimated a structural equation model (EQS. 5.7a). This analysis enables us to assess the causal relationship between selective hiring, strategic training, employee participation in decision making, contingent compensation, and organisational learning.

The diagram of relationships of the model as well as its indicators of goodness of fit are shown in Figure 1. As it may be observed, the estimated model can be considered appropriate. All the indicators of goodness of fit greatly exceed the recommended value for each of them. In addition, the study of the standardised regression coefficients that relate each HR policy to organisational learning are positive and statistically significant ($p < 0.01$) which allows conclusions to be drawn in keeping with the hypotheses.

Fig. 1. Representative model of the causal relationships between human resource practices and organizational learning



Firstly, it was established that selective hiring, strategic training, contingent compensation and participation of employees in decision making have a positive influence on learning, although the technique that shows the greatest ability to influence this process is the level of involvement of employees.

This highlights the need to move towards developing manager-worker relations in which the participation of the worker in decision making is emphasised, sometimes even by allowing the worker to make decisions that are traditionally reserved for management.

In this way, taking into account the analyses of the model and the relationships that have been identified, the proposed hypotheses can be considered valid. The results are due to two main factors: firstly, the analysed techniques attract, retain and train suitable employees. Secondly, these techniques have an important symbolic effect: the

company sends out a message to the employees that they are valued, which motivates them to apply and transfer their knowledge.

5 Conclusions

In the present economic environment, competitive advantage results from generating and applying knowledge through organisational learning, a process in which individuals play a vital role (Soliman and Spooner, 2000). Therefore, the aim of this study was to analyse the way in which HR policies and techniques focused on the creation and development of strategic human resources can contribute to the establishment of organisational learning.

The acquisition and application of knowledge requires the organisation to develop HR policies that increase the amount of knowledge that employees possess, and to motivate them to transfer this knowledge. With regard to this, it was found that selective hiring, strategic training schemes, employee participation in decision-making, and contingent compensation have a positive effect on organisational learning. Thus, the companies who consider dissemination of knowledge and compromise to be essential parts of HR policies will achieve more active employee participation in the learning process, which will ultimately contribute to the company gaining sustainable competitive advantage

Any conclusion drawn from this research has to be interpreted taking into account its inherent limitations, which we shall now point out. Perhaps the most significant limitation of the current study is associated with the use of cross-sectional data. While we presented and tested models in which we assumed a causal flow from human resource practices to organizational learning, there is the possibility that these relationships may occur in reverse order. A longitudinal work is needed to conclusively replicate the findings presented here. But such data are extremely costly to generate and are as yet unavailable.

A second limitation of the research is the social desirability of the respondents (Arnold and Fedman, 1981; Podsakoff and Organ, 1986). In order to reduce this bias we designed and implemented a survey to guarantee respondents anonymity. The topic of investigation, although strategic, was not thought to be so highly sensitive as to be likely to

prevent responses that would present the respondent or organization in an unfavourable light. In addition, much of the information obtained was not deemed highly confidential. However, the occurrence of such bias cannot be totally ruled out.

Finally, it is possible to identify potential research areas for the future development of this study. Thus, it would be desirable to analyse human resource strategy along with other variables such as organizational structure, leadership style and corporate strategy. Since all the organizational factors are closely interlinked, the human resource management effectiveness could be determined by the existence of a global approach affecting all areas of the organization.

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**APPENDIX 1
ORGANIZATIONAL LEARNING SCALE**

EXTERNAL ACQUISITION OF KNOWLEDGE	
A. EXTERNAL 1 A. EXTERNAL 2 A. EXTERNAL 3 A. EXTERNAL 4	Co-operation agreements with other companies, universities, technical colleges, etc. are fomented. The company is in touch with professionals and expert technicians. The organisation encourages its employees to join formal or informal nets made up by people from outside the organisation. The employees attend fairs and exhibitions regularly.
INTERNAL ACQUISITION OF KNOWLEDGE	
A. INTERNAL 1 A. INTERNAL 2 A. INTERNAL 3	There is a consolidated and resourceful R&D policy. New ideas and approaches on work performance are experimented continuously. Organisational systems and procedures support innovation.
KNOWLEDGE DISTRIBUTION	
DISTRIBUT 1 DISTRIBUT 2 DISTRIBUT 3 DISTRIBUT 4 DISTRIBUT 5	All members are informed about the aims of the company. Meetings are periodically held to inform all the employees about the latest innovations in the company. The company has formal mechanisms to guarantee the sharing of the best practices among the different fields of the activity. There are within the organisation individuals who take part in several teams or divisions and who also act as links between them. There are individuals responsible for collecting, assembling and distributing internally employee's suggestions.
KNOWLEDGE INTERPRETATION	
INTERPRET 1 INTERPRET 2 INTERPRET 3 INTERPRET 4 INTERPRET 5	All the members of the organisation share the same aim to which they feel committed. Employees share knowledge and experience by talking to each other. Teamwork is a very common practice in the company. The company develops internal rotation programs so as to facilitate the shift of the employees from one department or function to another. The company offers other opportunities to learn (visits to other parts of the organisation, internal training programs, etc.) so as to make individuals aware of other people or departments' duties.
ORGANIZATIONAL MEMORY	
MEMORY 1 MEMORY 2 MEMORY 3 MEMORY 4 MEMORY 5 MEMORY 6 MEMORY 7 MEMORY 8	The company has databases to stock its experiences and knowledge so as to be able to use them later on. The company has directories or e-mails filed according to the field they belong to, so as to find an expert on a concrete issue at any time. The company has up-to-date databases of its clients. There is access to the organisation's data basis and documents through some kind of network (Lotus Notes, Intranet, etc.) Databases are always kept up-to-date. All the employees in the organisation have access to the organisation's databases. Employees often consult the databases. The codification and knowledge administration system makes work easier for the employees.

**APPENDIX II
HUMAN RESOURCE PRACTICES SCALE**

SELECTIVE HIRING	
HIRING 1 HIRING 2 HIRING 3 HIRING 4	Permanent staff hiring is more common in the company. Internal promotion takes priority over external hiring of staff to occupy vacancies. The members of the department or team, which the new worker will be part, participate in the selection of candidates. In the selective process not only are knowledge and experience taken into account, but also the capacity to work in synergy and continuous learning.
STRATEGIC TRAINING	
TRAINING 1 TRAINING 2 TRAINING 3	Personnel to whom the training programs are addressed. Type of knowledge on which training is based. Frequency with which the training programs take place.
PARTICIPATION OF THE EMPLOYEES IN DECISION MAKING	
PARTICIP 1 PARTICIP 2 PARTICIP 3	Participation of employees in the decision making. Inform to the employees about economic and strategic information. Importance of empowerment for the company
CONTINGENT COMPENSATION	
COMPENS 1 COMPENS 2	The organisation has a mixed system of rewarding: fix + variable. The company offers incentives to its employees related to their performance.

