

**ORGANISATIONAL LEARNING CONTEXT AND FIRM PROFILES:  
AN EMPIRICAL EVIDENCE.**

**Ruiz-Mercader, Josefa**

Business Management Department.  
University of Murcia, Spain.  
Facultad de Economía y Empresa  
Campus de Espinardo  
30100 Espinardo (Murcia)  
Phone number: 00 34 968 363 803  
Fax number: 00 34 968 363 792

[peparuiz@fcu.um.es](mailto:peparuiz@fcu.um.es)

**Martínez-León, Inocencia**

Business Management Department.  
Polytechnic University of Cartagena, Spain.  
C/ Paseo Alfonso XIII, 50  
30203 Cartagena (Murcia)  
Phone number: 00 34 968 325 902  
Fax number: 00 34 968 325 577

[ino.martinez@upct.es](mailto:ino.martinez@upct.es)

**Thorpe, Richard**

Faculty of Management & Business  
Department of Management  
Manchester Metropolitan University  
Aytoun Building, Aytoun Street  
Manchester M1 3GH  
Phone +44 161 247 3953  
Fax +44 161 247 6304

[R.Thorpe@mmu.ac.uk](mailto:R.Thorpe@mmu.ac.uk)

## ABSTRACT

Which is the appropriate context to create and maintain an optimum level of organisational learning? What kind of firms have the suitable context to institutionalise its knowledge? Using data collected from 602 Spanish firms, empirical research is developed to answer these questions. As an initial step and to reply the first one, a scale for the construct *organisational learning context* is defined. To response the second interrogation, this paper explores the features of the firms with a favourable context to originate and keep up the capability of learning in comparison with those whose context is unfavourable. Our findings allow us to reveal the profile of the firms according with its organisational learning context.

**Keywords** *Organisational learning context, technological system, human resources practices, industrial activity sector, strategy, small and medium enterprises, empirical study.*

## INTRODUCTION

We share the opinion of Nonaka which asserts that "knowledge is a thing that can be located and manipulated as an independent object or stock. It seems possible to "capture" knowledge, to "distribute", "measure", and "manage" it" (see, Cohen, 1998). Nevertheless, it is not simple to achieve this target and the scientific community together with the agents in organisations will need time. To institutionalise an organisational learning, positive, competitive and not subject to corporate flights is not an easy task for organisations. This could explain why many executives tend to achieve greater levels of competitiveness through other tools easier to control and with more immediate effects such as obtaining greater organisational flexibility increasing its number of atypical employees -temporary or part-time contracts-.

In our opinion the competitive advantage provided by organisational learning is more sustainable in the time. Industrial growth and productivity gains will depend heavily on improvements in knowledge work.

In this paper, firstly, we aim to provide a construct to value the organisational context needed to create, distribute and manage knowledge. In our opinion, the cornerstone on which rests the success of the institutionalisation of organisational learning is formed by the combination of the organisational structure of the firm, its technological system, human resource practices and an appropriate strategy. That is why, in this research, it is also determined if there are significant relationships between these variables and the organisational learning context of the firm. With the results of our empirical research, we provide the profile of organisations with a context significantly more favourable to institutionalise organisational learning in comparison with those which have a context significantly less favourable.

## BACKGROUND: ORGANISATIONAL LEARNING AND ITS CONTEXT

Several authors have provided a concept for organisational learning. However, they have not focus their definitions on similar references as it is shown in table 1. In our opinion, organisational learning can be defined as *the capacity to create, acquire, incorporate and transfer knowledge through a synergy process where the individual learning is converted into collective learning through the transformation of the knowledge into organisational routines.*

**Table 1** Dimensions used to define the organisational learning concept

REFERENCES	AUTHORS
Creation, acquisition and transfer of knowledge and new forms of thinking	Bushe and Shani (1991) Senge (1990) Garvin (1993)

	Davenport, Jarvenpaa, Beers (1996)
Synergy effect in the learning: "learning to learn together". From the individual learning to the collective learning	Senge (1990) Dixon (1997)
Continuous improvement process	Fiol and Lyles (1985) Dixon (1997)
Innovation	Leonard-Barton (1995)
Rethinking the theories and assumptions about the form in which the world operates	Argyris (see Kurtzman, 1999)
Information	Huber (1991)
Purpose: to satisfy increasingly the desires of the consumers	Dixon (1997)

The importance of creating and maintaining a context that favour the generation of knowledge in order to reach the optimum level of organisational learning has been underlined by authors such as Teece, Glazer, Petrash, Brown, Nonaka and Leonard (see Cohen, 1998).

We consider the *organisational learning context* as the area where ideas are produced and consolidated; where each idea is enriched when it is related with others ideas; where it has produced a volume of information that explains and/or gives meaning to the ideas, words, and/or actions created and developed by the organisation. Table 2 shows the most outstanding characteristics of the context to create and maintain organisational learning proposed by several authors. It is in the authors' opinion and considering the information in table 2, that organisations must have the following characteristics to obtain a context that favour the institutionalisation of organisational learning:

1. To be based on a work group whose members share: mutual trust, active identification and empathy of the problems, breaking-off the structured habits, mutual help, assistance and protection.
2. To be able to address and guide the individual learning toward the members of the group creating social knowledge.
3. To favour and boost the transfer of information and new knowledge.
4. To have a culture for sharing and transferring the individual knowledge and a culture that enhances innovation and new behaviours.

**Table 2** Characteristics of a favourable context to create and maintain organisational learning

GARVIN (1993)	
1.	Systematic problem solving
2.	Experimentation with new approaches
3.	Learning from their own experience and past history
4.	Learning from the experiences and best practices of others
5.	Transferring knowledge quickly and efficiently throughout the organisation
BARRET (1998)	
1.	Provocative competence: deliberate efforts to interrupt habit patterns.
2.	Embracing errors as a source of learning.
3.	Shared orientation toward minimal structures that allow maximum flexibility.
4.	Distributed task: continual negotiation and dialogue toward dynamic synchronization.
5.	Reliance on retrospective sense-making.
6.	"Hanging out": membership in a community of practice.
7.	Taking turns soloing and supporting.
O'DELL and GRAYSON (1998)	
1.	Technology:
-	The really important and useful information for improvement is too complex to put on-line. So, most firms have turned to directory and pointer systems that can supplement the search for best practices.
-	There has to be a framework for classifying information.
-	Entering information into the system must be part of someone's job.
-	Culture and behaviours are the key drivers and inhibitors of internal sharing.
2.	Organisational culture:
-	To develop elements to motivate and reward for sharing and transferring knowledge.
-	To develop tools to help establish and reinforce a supportive culture.

<ul style="list-style-type: none"> <li>- To give the time and support to those who have best practices in order to serve as coaches to the rest of the organisation.</li> </ul>
<p>3. Leadership:</p> <ul style="list-style-type: none"> <li>- Recognition lies in being an expert. Make sure the perception of expertise is communicated, via feedback and celebration of sharing.</li> <li>- Using the knowledge system has to be self-rewarding to the consumer; users have to get something out of it.</li> <li>- Time to use and create knowledge has to be recognised and rewarded.</li> <li>- Create recognition for transferring and using best practices.</li> <li>- Recognise both parties or units involved in the transfer.</li> </ul>
<p>KROGH (1998)</p>
<ol style="list-style-type: none"> <li>1. Considerable mutual trust.</li> <li>2. Active empathy.</li> <li>3. Access to help among team members to optimise their task performance and, therefore, to share knowledge.</li> <li>4. Lenience in judgement and courage. The individual can experiment more freely in order to develop unconventional task solutions.</li> </ol>

## EMPIRICAL DESIGN

### *Objective*

The aim of this paper is to provide a profile of the organisations with a significantly more appropriate context for organisational learning in comparison with those organisations whose context does not support the creation and transfer of knowledge. To achieve it, firstly, a scale to measure the construct of the "organisational learning context" is supplied, and, secondly, it is explored if certain characteristics of the firm, its technological system, its human resources practices, certain characteristic of activity sector of the firm and the type of strategy followed by the firm are significantly related with the context of the organisational learning.

### *Sample and data collection*

Data used for this investigation come from a larger study, commissioned by the Regional Confederation of Businesses of Murcia and the Regional Trade Unions. The study was conducted by a team of interdisciplinary researchers from the University of Murcia with an overall aim to develop an Industrial Plan for the region of Murcia. The target population consisted of firms with more than three employees, from the most significant industries of the region of Murcia (Spain), a total of 2785 firms. Six hundred and two valid responses were obtained, yielding an overall response rate of 21.6%. The error is the 3.6% for  $p=q=50\%$  and a level of trust equal to 95.5%.

For collecting information, a structured questionnaire consisting of close-ended questions was developed. It was pre-tested with some firms and colleagues in order to assess its content validity and to increase its clarity. Questionnaires were sent to CEO of firms during the first three months of 1997.

Briefly, the characteristics of the firms in the sample are as follows: there is an equal number of firms with an operate age of less than 10 years old, from 10 to 20 years old and greater than 20 years. Limited companies (49.2%) predominate in comparison with public corporations, sole traders and co-operatives. More than half of them are family owned (more than the 80% of its share capital belongs to the same family). Most of these firms are small and medium size companies with a turnover bellow 1.5 million euros (76.5%) and less than 250 employees (the 93.8% of them have less than 50 employees). In general, they are not very diversified firms. They carry out little research and development and are not very open in seeking co-operation with other firms.

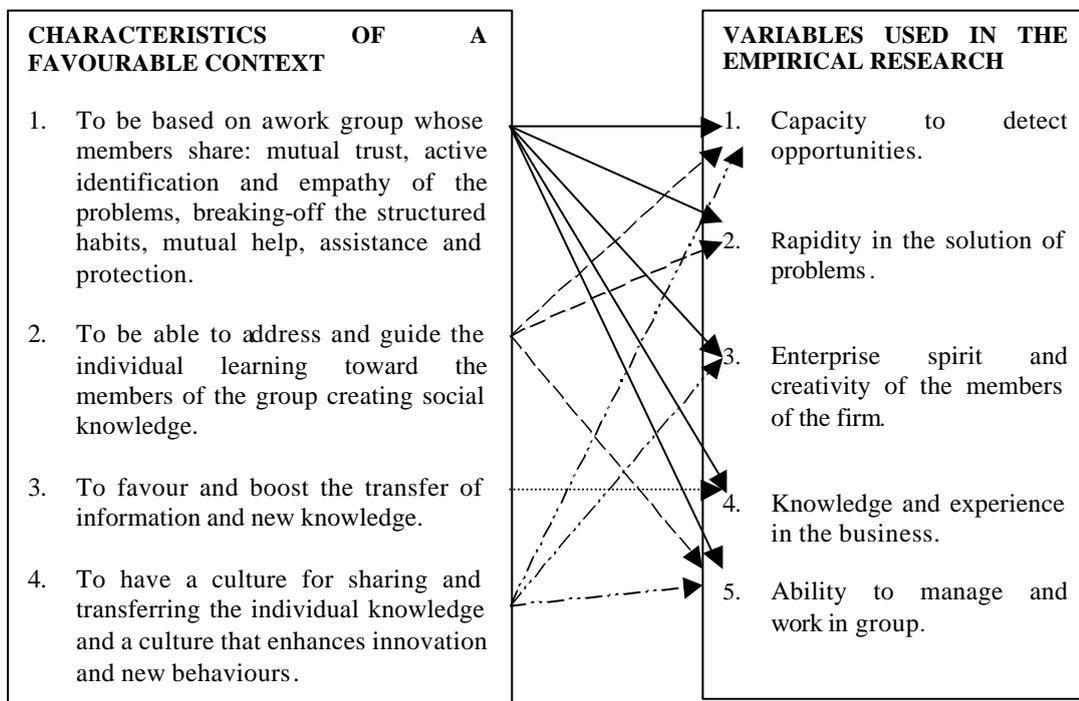
### *Measurement of variables*

**Organisational learning context** To measure the organisational learning context we take as a starting point the characteristics of the context that the firm should have to favour the institutionalisation of knowledge to increase organisational learning. These characteristics have been already expressed and they appear in the left side of figure 1. To measure these characteristics, we use five variables in our

empirical research (right side of figure 1): capacity to detect opportunities; rapidity in the solution of problems; enterprise spirit and creativity of the members of the firm; knowledge and experience in the business; and ability to manage and work in groups. Arrows in figure 1 express that each variable is referred to by one or more characteristics of the organisational learning context.

Using a 5-point Likert scale, respondents were asked to indicate the importance their firms attached to these variables (1= "it does not exist in my firm" and 5= "it is totally developed in my firm"). An exploratory factorial analysis has been conducted with these variables. The factorial analysis solution utilising the principal components method with varimax rotation is shown in table 3. This resulted in one factor explaining 64.64% of the overall variance. Additionally, internal reliability test showed strong Cronbach alpha, reaching the value of 0.859. This factor is then used as a *scale for the organisational learning context*.

**Figure 1** Characteristics of a favourable context to create and maintain organisational learning and the variables used to measure this context.



**Table 3:** Results of the exploratory factorial analysis

Factor 1:	Items loading	Cumulative variance explained	KMO	Barlett test	Significance
1. Capacity to detect opportunities.	0.775	64.64%	0.867	5682.5	0.000
2. Rapidity in the solution of problems .	0.791				
3. Enterprise spirit and creativity of the members of the firm.	0.810				
4. Knowledge and experience in the business.	0.847				
5. Ability to manage and work in group.	0.796				

**Characteristics of the firm** The characteristics included are the *activity sector* of the firm (we use the Spanish National Classification of Economic Activities (CNAE-74)); the *size of the firm* measured by both the average turnover in the last three years and by the average number of employees; the *age of the firm* comparing those with less than 10 years old, those between 10 and 20 years old and those with more than 20 years; and the availability/unavailability of formal organisation chart.

**Technological system** To value the technological system of the firm, three variables have been included: the *type of technological system* distinguishing between small batches, large batches and having both types of production systems happening at the same time; its *technological position* which can be "very good" (firms develop their own technology and obtain much better results than its competitors), "good" (technology purchased by the firm and/or the way it is used provide to the firm a better technological position than its competitors), "sustainable" (technology utilised is more or less similar to the technology used by the majority of the firms of the activity sector), or "weak" (mainly competitors have a more efficient and modern technology than the firm); and the *obstacles to change the technological system* of the firm stem from the technology offered by its suppliers, the lack of training of its workforce, the organisational structure and the resistance of the employees to change (in this case we use a 4-point Likert scale, where 1 means "very low obstacle" and 4 means "very high obstacle").

**Human resources practices** Human resources practices have been divided into four areas: the *selection criteria* used by the firm (respondents were asked to order the three most important criteria used to select their employees between the following choices: general knowledge and skills, specific knowledge and skills, experience, functional and geographic mobility, and smaller salary); *training* (university training of the manager and of the rest of the employees and the investment the firm makes in training and retraining); main *motivating elements* (job security, prestige and power, autonomy at work and making decisions, higher salary, and interest in the accomplished work); and the main criteria followed to promote employees (experience, professional training, capacity for leadership, and capacity for work). To evaluate the main motivating and promotion elements we use a 5-point Likert scale where 1 means "not important at all" and 5 means "very important".

**Characteristics of the activity sector** With regard to the characteristics of the activity sector, its life cycle, uncertainty and competitive forces has been studied. To analyse the *life cycle of the activity sector*, it is distinguished between young sectors (products sold in these sectors are novel and growing), mature sectors (sales of the products of these sectors are stabilised) or declining sectors (sales in these sectors are suffering a general reduction). The *uncertainty of the activity sector* has been studied through four variables: difficulty to foresee changes in the activity sector, the rapidity of the changes in the activity sector, the specialised knowledge needed to understand the factors of the activity sector and their evolution, and the difficulty of the firms to adapt them to the changes in their activity sector. Porter's definition has been used to measure the *competitive forces of the activity sector*: threat of entry of new competitors, intensity of rivalry among existing competitors, bargaining power of buyers, bargaining power of suppliers, and pressure from substitute products (Porter, 1980). To value the uncertainty and the competitive forces of the activity sector a 4-point Likert scale has been used where 1 means "not important at all" and 4 means "very important".

**Strategy** To value the type of strategy followed by the firms, Porter generic competitive strategies have been used: overall cost leadership, differentiation, and focus (Porter, 1980). Using a 5-point Likert scale, respondents were asked to indicate the importance that their firm attached to "the cost of the products" (to measure overall cost leadership), to "the creation of new products" (to value the strategy of differentiation) and to "the develop of very specialised products and/or the concentrating on specific areas" (to evaluate focus strategy) in comparison with direct competition.

## *Hypotheses*

Once it is known how all the variables have been measured, our hypotheses in order to achieve the aim of providing a profile of firms with a more favourable context to create and transfer knowledge in comparison with those firms whose context is less favourable to organisational learning are as follows:

H<sub>1</sub>: *There are significant relationships between certain characteristics of the firm (such as its activity sector, size, age and the availability/unavailability of a formal organisational chart) and its organisational learning context.*

H<sub>2</sub>: *There is a significant relationship between the technological system of the firm (analysed through its type of manufacturing system, technological position and the importance of its obstacles to change its technological system) and its organisational learning context.*

H<sub>3</sub>: *There are significant relationships between the human resources practices of the firm (valued through its selection, training, motivation and promotion systems) and its organisational learning context.*

H<sub>4</sub>: *There are significant relationships between certain characteristics of the activity sector (such as its life cycle, uncertainty and competitive forces) and the organisational learning context of the firm.*

H<sub>5</sub>: *There is a significant relationship between the type of strategy followed by the firm and its organisational learning context.*

### Statistical analysis

To test our hypotheses and determinate the variables that maintain a significant relationship with the organisational learning context, *one factor anova analysis* has been carried out. It has been considered significant for all those variables whose means are significantly different with a level of trust superior or equal to 95%.

Furthermore, we aim to know whether the means of the different groups that integrate each of these variables are significantly different or not. To obtain this information, the Bonferroni or Tamhane contrasts has been used, according to the variances would be equal or not, respectively. From this analysis, a profile of firms with a significantly more favourable context for the development of the organisational learning in comparison with those firms which context is significantly less favourable has been obtained.

## EMPIRICAL RESULTS

The results from the survey were subject to one way anova analysis to find significant relationships between organizational learning context and each one of the independent variables –characteristics of the firms, technological system, human resources practices, characteristics of the sector and strategy. This was done at the 95% or greater significance level. Table 1 provides data on the sum of squares, degrees of freedom, mean square, F statistic and alpha level of significance for each of the relationships found significant as well as the significance of the Levene in the test of homogeneity of variances.

**Table 1: Outputs of the One way anova analysis and test of homogeneity of variances (Sig. Levene)**

	Sum of Squares	Degrees of freedom*	Mean Square	F	Significance	Significance Levene
<b>ACTIVITY SECTOR</b>						
Between groups	346,510	25	13,860	15,786	0,000	0,000
Within groups	2307,440	2628	0,878			
<b>SIZE: turnover</b>						
Between groups	8,193	2	4,096	4,105	0,017	0,033
Within groups	2500,983	2506	0,998			
<b>SIZE: number of employees</b>						
Between groups	8,528	3	2,843	2,848	0,000	0,036
Within groups	2645,422	2650	0,998			
<b>FORMAL ORGANISATION CHART</b>						
Between groups	10,927	1	10,927	10,981	0,001	0,000
Within groups	2489,817	2502	0,995			
<b>TYPE OF PRODUCT</b>						
Between groups	40,713	2	20,357	20,721	0,000	0,121
Within groups	2521,875	2567	0,982			

<b>MANUFACTURE SYSTEM</b>						
Between groups	68,819	2	34,409	35,302	0,000	0,000
Within groups	2486,497	2551	0,975			
<b>OBSTACLES TO CHANGE TECHNOLOGICAL SYSTEM: technology offered by suppliers</b>						
Between groups	80,253	4	20,063	20,650	0,000	0,000
Within groups	2573,697	2649	0,972			
<b>OBSTACLES TO CHANGE TECHNOLOGICAL SYSTEM: lack of training of the workforce</b>						
Between groups	62,281	4	15,570	15,915	0,000	0,000
Within groups	2591,669	2649	0,978			
<b>OBSTACLES TO CHANGE TECHNOLOGICAL SYSTEM: organizational structure</b>						
Between groups	126,145	4	31,536	33,048	0,000	0,013
Within groups	2527,805	2649	0,954			
<b>OBSTACLES TO CHANGE TECHNOLOGICAL SYSTEM: resistance to change of the workers</b>						
Between groups	107,012	4	26,753	27,825	0,000	0,001
Within groups	2546,938	2649	0,961			
<b>SELECTION: specific knowledge and skills</b>						
Between groups	25,243	3	8,414	8,482	0,000	0,000
Within groups	2628,707	2650	0,992			
<b>SELECTION: functional and geographic mobility</b>						
Between groups	19,104	3	6,368	6,405	0,000	0,238
Within groups	2634,846	2650	0,994			
<b>SELECTION: low wage</b>						
Between groups	22,153	3	7,384	7,436	0,000	0,000
Within groups	2631,797	2650	0,993			
<b>TRAINING: university training of managers and workers</b>						
Between groups	29,192	1	29,192	29,495	0,000	0,073
Within groups	2624,758	2652	0,990			
<b>TRAINING: resources in training and retraining</b>						
Between groups	18,283	3	6,094	6,125	0,000	0,000
Within groups	2574,190	2587	0,995			
<b>MOTIVATION: job security</b>						
Between groups	71,874	3	23,958	24,434	0,000	0,000
Within groups	2512,133	2562	0,981			
<b>MOTIVATION: prestige and power</b>						
Between groups	85,542	3	28,514	29,039	0,000	0,001
Within groups	2483,276	2529	0,982			
<b>MOTIVATION: autonomy at work and making decisions</b>						
Between groups	161,747	3	53,916	57,024	0,000	0,000
Within groups	2377,919	2515	0,945			
<b>MOTIVATION: higher salary</b>						
Between groups	115,901	3	38,634	40,086	0,000	0,000
Within groups	2463,375	2556	0,964			
<b>MOTIVATION: interest in the accomplished work</b>						
Between groups	128,441	3	42,814	44,593	0,000	0,000
Within groups	2459,780	2562	0,960			
<b>PROMOTION: professional training</b>						
Between groups	36,448	2	18,224	22,404	0,000	0,000
Within groups	353,846	435	0,813			
<b>PROMOTION: capacity for leadership</b>						
Between groups	38,329	4	9,582	11,788	0,000	0,000
Within groups	351,965	433	0,813			
<b>PROMOTION: capacity for work</b>						
Between groups	34,768	2	17,384	21,270	0,000	0,000
Within groups	355,527	435	0,817			
<b>LIFE CYCLE OF THE ACTIVITY SECTOR</b>						
Between groups	78,022	2	39,011	40,133	0,000	0,218
Within groups	2534,131	2607	0,972			
<b>UNCERTAINTY ACTIVITY SECTOR: difficulty to foresee changes</b>						
Between groups	29,120	3	9,707	9,863		
Within groups	2571,667	2613	0,984		0,000	0,000
<b>UNCERTAINTY ACTIVITY SECTOR: rapidity of the changes</b>						
Between groups	64,154	3	21,385	21,717	0,000	0,175
Within groups	2548,424	2588	0,985			
<b>UNCERTAINTY ACTIVITY SECTOR: specialised knowledge needed</b>						
Between groups	113,209	3	37,736	39,286	0,000	0,000
Within groups	2498,413	2601	0,961			

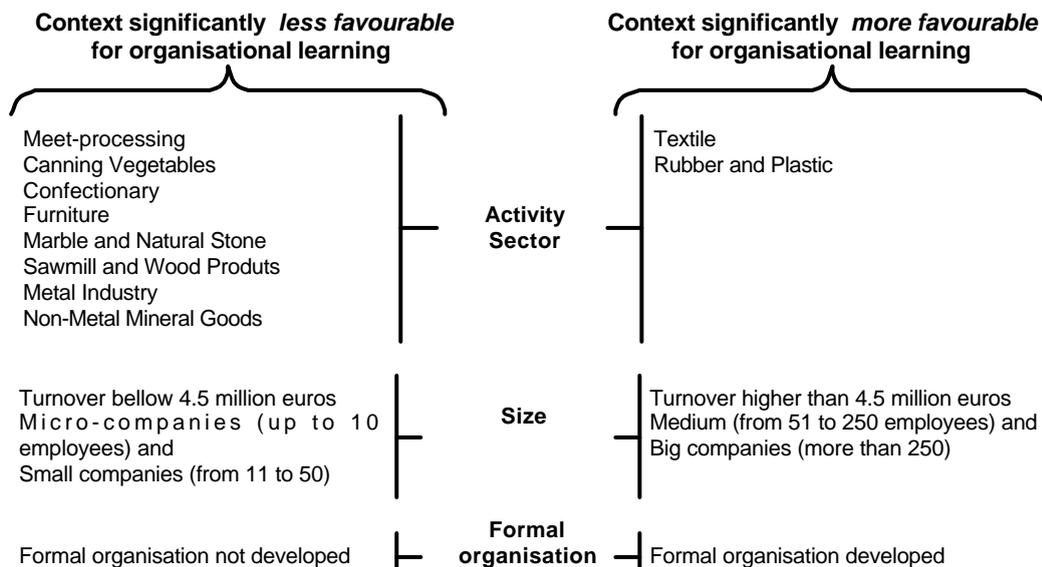
<b>UNCERTAINTY ACTIVITY SECTOR: difficulty of the firms to adapt them to the changes</b>						
Between groups	61,963	3	20,654	21,008	0,000	0,006
Within groups	2559,199	2603	0,983			
<b>COMPETITIVE FORCES OF THE ACTIVITY SECTOR: entry of new competitors</b>						
Between groups	28,649	3	9,550	9,615	0,000	0,000
Within groups	2625,016	2643	0,993			
<b>COMPETITIVE FORCES OF THE ACTIVITY SECTOR: rivalry among competitors</b>						
Between groups	53,398	3	17,799	18,124	0,000	0,000
Within groups	2600,551	2648	0,982			
<b>COMPETITIVE FORCES OF THE ACTIVITY SECTOR: bargaining power of buyers</b>						
Between groups	23,143	3	7,714	7,765	0,000	0,002
Within groups	2630,806	2648	0,994			
<b>COMPETITIVE FORCES OF THE ACTIVITY SECTOR: bargaining power of suppliers</b>						
Between groups	39,786	3	13,262	13,445	0,000	0,001
Within groups	2598,188	2634	0,986			
<b>COMPETITIVE FORCES OF THE ACTIVITY SECTOR: pressure from substitute products</b>						
Between groups	31,535	3	10,512	10,697	0,000	0,047
Within groups	2578,477	2624	0,983			
<b>STRATEGY: overall cost leadership</b>						
Between groups	74,528	4	18,632	19,163	0,000	0,001
Within groups	2486	2557	0,972			
<b>STRATEGY: differentiation</b>						
Between groups	152,439	4	38,110	39,957	0,000	0,000
Within groups	2449,276	2568	0,954			
<b>STRATEGY: focus on very specialised products</b>						
Between groups	132,694	4	33,173	35,775	0,000	0,000
Within groups	2294,991	2475	0,927			
<b>STRATEGY: focus on specific geographic areas</b>						
Between groups	101,938	4	25,485	26,621	0,000	0,003
Within groups	2343,489	2448	0,957			

\* To accomplish the empirical research, 602 valid questionnaires from 16 different activity sectors were obtained. In order to reduce the influence of the number of firms in each activity sectors, weight cases by "activity sector" variable were used, that is why the "degrees of freedom within groups (N-K)" is higher than 602.

### *Certain characteristics of the firm and organisational learning context*

Our empirical research has confirmed hypothesis  $H_1$  (there are significant relationships between certain characteristics of the firm -such as its activity sector, size, age and the availability/unavailability of a formal organisational chart- and its organisational learning context) except when the relationship between the age of the firm and the organisational learning context is analysed. Figure 2 shows the values achieved for these characteristics of the firms when there are significant relationships with a more favourable organisational learning context in comparison with a less favourable one.

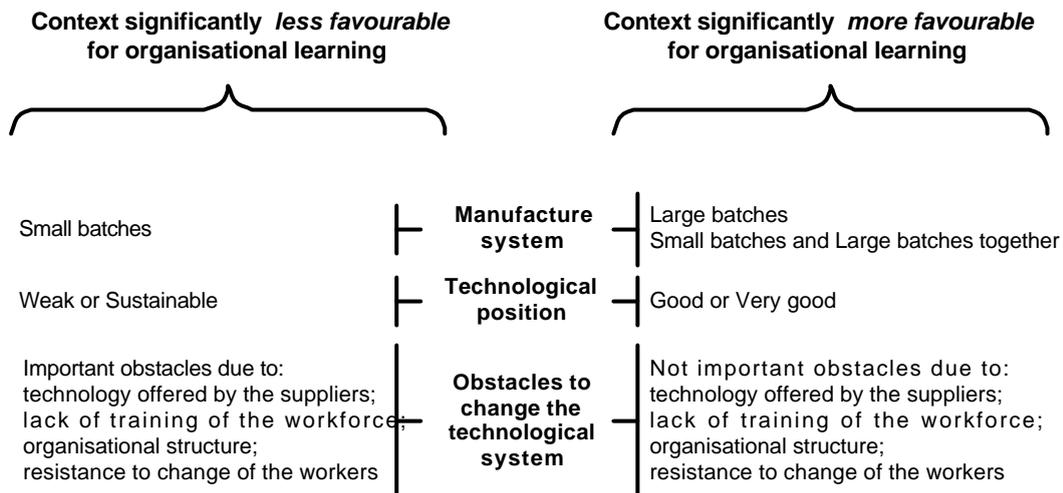
**Figure 2** Certain characteristics of the firm and organisational learning context



*Technological system of the firm and organisational learning context*

The hypothesis H<sub>2</sub> establishes that *there is a significant relationship between the technological system of the firm (analysed through its type of manufacturing system, technological position and the importance of its obstacles to change its technological system) and its organisational learning context.* This hypothesis is verified with our data and the results are reported in figure 3.

**Figure 3 Technological system of the firm and context for organisational learning**



*Human resources practices of the firm and organisational learning context*

**Figure 4 Human resource policy of the firm and organisational learning context**

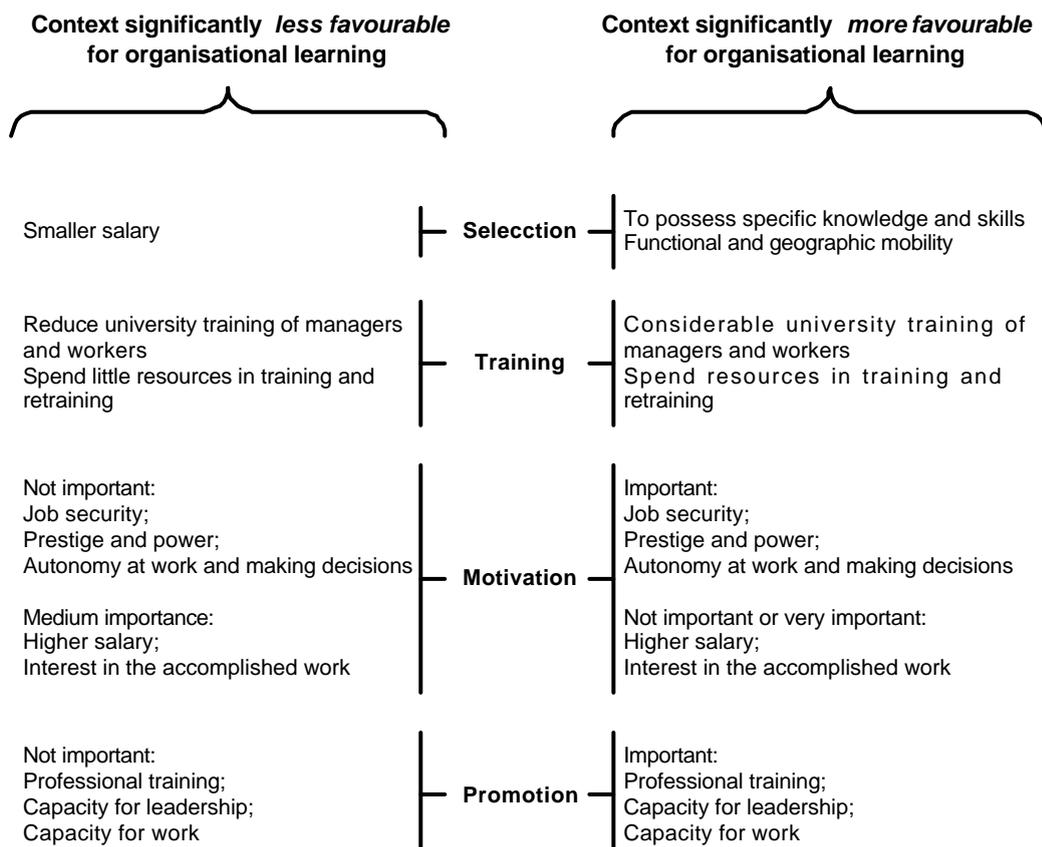


Figure 4 reports the results achieved contrasting the hypothesis H<sub>3</sub> (*there are significant relationships between the human resources practices of the firm -valued through its selection, training, motivation and promotion systems- and its organisational learning context*).

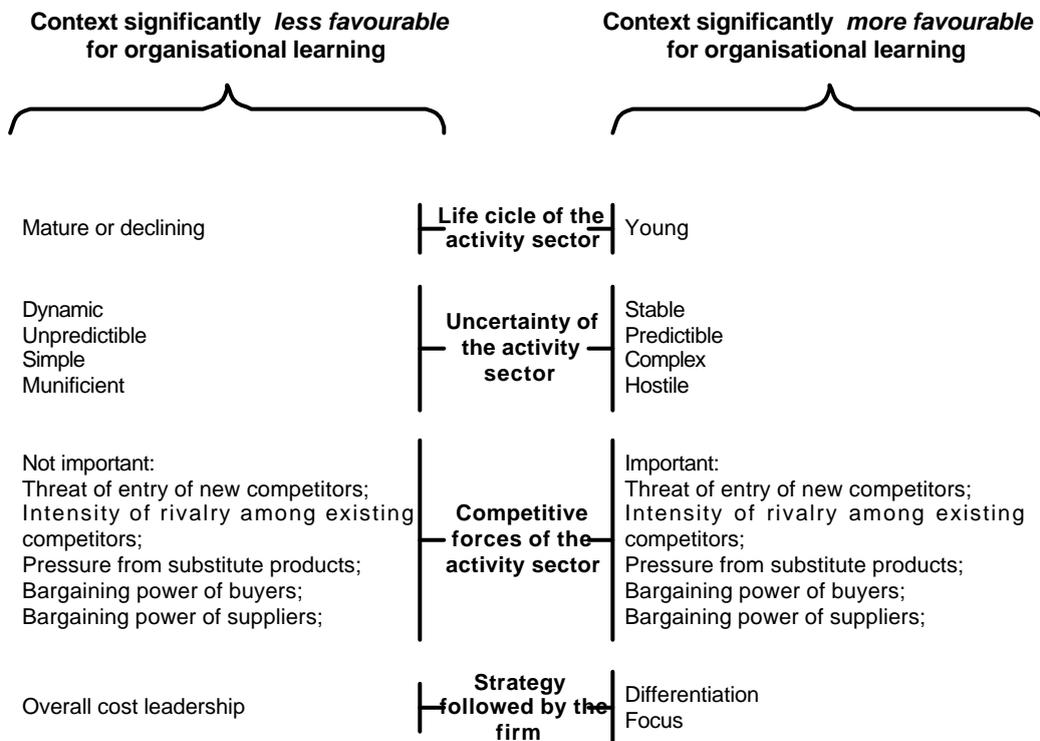
*Certain characteristics of the activity sector of the firm and organisational learning context*

The hypothesis H<sub>4</sub> asserts that *there are significant relationships between certain characteristics of the activity sector (such as its life cycle, uncertainty and competitive forces) and the organisational learning context of the firm*. Our empirical research confirms this hypothesis, showing in figure 5 the results found.

*Strategy followed by the firm and organisational learning context*

The results achieved after testing hypothesis H<sub>5</sub> (*there is a significant relationship between the type of strategy followed by the firm and its organisational learning context*) are also shown in figure 5.

**Figure 5 Certain characteristics of the activity sector and the strategy followed by the firm and organisational learning context**



**DISCUSSION AND CONCLUSIONS: profile of firms according to their organisational learning context**

The aim of this research is to describe firms with a more favourable organisational learning context in comparison with those that have a less favourable context to create and transfer knowledge. To achieve this we have defined a scale to measure the “organisational learning context” whose attributes are: capacity to detect opportunities, rapidity in the solution of problems, enterprise spirit and creativity of the members of the firms, knowledge and experience in the business, and ability to manage and work in group. Applying this scale to the population of the industrial sector in the Region of Murcia (Spain) we have observed the following conclusions below.

Regarding activity sector, Meat-processing Industry; Canning Vegetables; Confection; Furniture; Marble and Natural Stone; Sawmill and Wood Products Factory; Non-Metal Mineral Goods; and Metal are the industries which show a less favourable context to institutionalise the organisational learning while Textile Industry and Rubber and Plastic Industry are characterised by presenting a significantly more favourable context to create and transfer knowledge. In addition to the indicated sectors above, the following activities sectors have also been studied: Non-Pharmaceutical Chemistry; Leather; Graphic Arts and Edition; Beverage, Footwear, and Other Food Manufacturing. However, firms of these last activity sectors do not reflect a clear trend (less favourable or more favourable) to the establishment of an organisational learning context.

*Firms with a context more favourable to organisational learning* are more likely to be medium and big firms with a developed formal organisational structure and focus on large batches production systems or both kinds of production systems. They have a good technological position in comparison with their competitors and they do not encounter large obstacles in introducing new technological systems. Both external obstacles (those from suppliers) and internal obstacles (those due to the lack of training of the workforce, rigidity of the organisational structure, and resistance to change) are also not encountered.

In selecting their workforce, they tend to use “to possess specific knowledge and skills” as one of the principle criteria, recognising the importance of university training of all its employees whilst simultaneously investing in internal training. About its motivation system, it is also detected that these firms give importance to “job security”, “prestige and power” and/or “autonomy at work and making decisions”. Furthermore, about its promotion system, these firms concede importance to the “professional training”, “capacity for leadership” and/or “capacity for work”.

These firms belong to activity sectors with a young life cycle, which have predictable and stable but complex and hostile environments. Their competitive forces are characterised by high threat of entry of new competitors, elevated intensity of rivalry among existing competitors, big pressure from substitute products and an important bargaining power of buyers and suppliers. These firms based their strategies mainly on differentiation or focus.

*Firms with a context less favourable to organisational learning* are small without a defined organisational structure. They have a weak or sustainable technological position and with major obstacles to technological changes (from suppliers, workforce training, organisational structure and/or resistance to change). Our results show that firms with a small volume of production are not particularly interested in generating and transferring knowledge due to the fact that they need more time to capitalise the investment accomplished taking into account its tight benefit margins.

These firms use the “smaller salary” as an important criterion to select its employees. They do not give importance to university training and invest very little in internal training. The allocation of less resource in training and retraining impedes the firm from creating and transferring knowledge.

They belong to mature or declining activity sectors, with unpredictable and dynamic but simple and munificent environments, and with a low threat of entry of new competitors, low intensity of rivalry among existing competitors, little pressure from substitute products and with small bargaining power of buyers and suppliers. Their main strategies are based on overall cost leadership.

From these findings, it can be noted that to institutionalise the creation and transfer of knowledge through their employees, organisations need to build and maintain an appropriate context. What can firms do to achieve this context? It is in the author's opinion that an important driver for organisational learning is to manage the culture of the organisation.

This research finds that those organisations with an organisational culture that gives importance to training and retraining of their workforce, that values job security very positively (full time and permanent employees) and autonomy at work, that enhances more the criterion of having knowledge

and skills than to pay low wages when they have to select their employees have a better context to create and transfer knowledge.

As a result of having this culture, these firms can achieve a better technological position than their competitors (they can develop their own technology and obtain much better results than their competitors or the way the technology is used provides the firm with a competitive advantage) and they can follow a strategy based on differentiation or focus.

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