INSTITUTO UNIVERSITARIO
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Universidad de Alcalá

ENTREPRENEURSHIP, CREATIVE INDUSTRIES AND REGIONAL. DYNAMICS IN SPAIN

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ENTREPRENEURSHIP, CREATIVE INDUSTRIES AND REGIONAL DYNAMICS IN SPAIN

ABSTRACT:
Depending on the country or region, the amount of entrepreneurial activity differs greatly. In order to appreciate these differences, a general supply and demand scheme has been suggested (Verkeul et al. 2001) to measure the rate of entrepreneurship of an economy in the long term. This rate can be seen to depend on the level of development (Belso, 2004), the economic growth (Audretsch et al., 2002) and the unemployment rate (Thurik and Verheul, 2002). However, the degree of competitive creativity linked to the entrepreneurial activity in its early, commencing and establishing stages, particularly from a regional perspective, is not so well known. This is calculated using various indicators based on entrepreneurial decisions derived from the timing, sector and location opportunity when starting a business (GEM, 2006), as well as others that assess the commitment to innovation in dynamic markets generating emerging products. This paper analyses entrepreneurial activity from this completely new perspective, applying this to the Spanish regions (NUTS-1), with the intention of providing some useful results for research in this area.
KEY WORDS: entrepreneurial activity, creative industry, entrepreneurial clusters, regional differences.
JEL classification codes: L25, L26 and R30

RESUMEN:
La magnitud y evolución de la actividad emprendedora difiere notablemente en función del país o región en estudio. Con el fin de observar estas diferencias, la literatura económica ha sugerido un esquema general de oferta y demanda que permite calcular la ratio de empresarialidad de una economía a largo plazo. Esta ratio, entre otras variables, puede depender del nivel de desarrollo y crecimiento económico, así como de la tasa de desempleo. No obstante el grado de creatividad competitiva, asociado a la actividad emprendedora en sus etapas temprana y consolidada, y particularmente desde una perspectiva regional, no ha sido suficientemente estudiado. En este documento de trabajo, se utilizan como aproximación diversos indicadores basados en decisiones empresariales tomadas en el momento de creación de la empresa –tiempo, sector y localización-, así como otras ligadas al compromiso con la innovación dentro de mercados dinámicos y con productos emergentes. El trabajo analiza la actividad emprendedora desde esta nueva perspectiva innovadora y territorial de las regiones españolas (NUTS-1), con la intención de proveer resultados útiles para la investigación en esta área.

PALABRAS CLAVE: Actividad emprendedora, industria creativa, clusters de empresarios, diferencias regionales

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INDEX

1. INTRODUCTION

The dimension of entrepreneurship has been explained, as with other productive factors, by focusing on supply and demand (Verheul *et al.* 2001). Among the key interacting variables are the characteristics specific to the population, as well as business opportunities offered by the economy, the market and environment conditions, labor policies (Kanniainen and Vesala, 2005), the entrepreneur's way of life and personal characteristics (Collins *et al*, 1964; Stuart y Abetti, 1990), and the social and individual value he places on risk during a specific period of time. From a spatial perspective, it is believed, likewise, that the urban environment and its economies of agglomeration favor the entrepreneur, who benefits from the networks or attempts to create them (Nijkamp, 2000).

National and regional public administrations have frequently intervened in the markets with the aim of increasing business activity by means of programs with incentives for training, financing or assessment (Velasco, 1998; Audretshch *et al*., 2002). One would expect that these promotional programs would decrease the number of barriers to entry into the market, increasing turnover, but they scarcely would have made progress in the elimination of the obstacles to their coming out on the market, due to the fact that other policies favoring survival would decrease turnover (Pablo-Martí, 2004).

Entrepreneurial activity has been studied very little, however, from a double perspective that contemplates, on the one hand, the degree of competitive creativity in its beginning and establishing stages and, on the other hand, the different territorial behaviors generated depending on certain variables associated with regional development. That is, to what extent are the actions of the entrepreneur, influenced by a regional dynamic, involved in a business strategy based on sectoral and innovative opportunities of dynamic markets and differentiated products.

In line with various research projects, when entrepreneurial activity is studied in depth, a distinction must be made between Schumpeterian (i.e., real) entrepreneurs and managerial businessmen (Wennekers and Thurik, 1999). The 'entrepreneurs' represent only a small fraction of businessmen, and are those who create and run independent, innovative businesses –by means of creative destruction- with market structure. Often, when they achieve their aims they become conventional businessmen, but on occasion they undertake new ventures (Carree *et al.,* 2002). Nevertheless, within an empirical context it is difficult to distinguish between entrepreneurs and managerial businessmen, due to the fact that the vast majority of businessmen are not pure Schumpeterian, nor are they mere businessmen, rather they combine to some extent attitudes associated with both extremes (Audretsch and Thurik, 1998). Whereas the majority of business initiatives imitate other already existing ones with the aim of benefitting from a supposed elastic

demand, only a small number operate from their initial creative process within certain demanding coordinates and at greater risk. Both sectorally and territorially, higher inertia is observed in the decisions made during the beginning phase of the business project, decisions which nevertheless can be seen as altered –either favoured or limited- by regional and strategic opportunities.

The objective of this paper is to explore, from a regional perspective, the motives behind new Spanish entrepreneurs' having chosen a specific time, place and sector when launching their companies, as well as the degree of innovation of the product being offered, depending on its novelty and its target market. Emphasis is placed, likewise, on the technological efforts made and whether cooperation agreements are signed with other firms or agents in order to innovate, as well as on the companies' growth strategy. By means of this research evidence on business behaviours –to some degree similar to those of Schumpeterian entrepreneurs- is being sought. Behaviours associated with innovative activities, with territorial or sectoral clusters, and with benefitting from specific advantages and from the regions' 'business environment' where the initiative takes place. In short, this paper makes an attempt to gain knowledge about entrepreneurs who act based on motives of strategic opportunity as compared with those who act out of inertia due to personal reasons or necessity (1).

The study forms part of the research being undertaken in recent years on entrepreneurs and entrepreneurial spirit in Spain (2), which Reports I and II on entrepreneurial activity in Spain (García-Tabuenca *et al.,* 2004 and 2006) have given birth to. Based on these premises, along with this Introduction, this paper consists of three sections. In the first section the principle characteristics of entrepreneurial activity in Spain are presented synthetically, underlining certain regional differences. In the second section an examination -for the various regions in Spain- is made of the development of the rate of entrepreneurship and of other aggregate variables that have influence on it and the regions that are more and less dynamic are extracted. The third section goes into depth on the objective of this paper, identifying differences in business and regional behaviours in entrepreneurial initiatives based on strategic reasons and on opportunity, as well as on the uneven 'business environment' in the regions where they are carried out. Finally, the most important conclusions are presented.

2. PRIMARY CHARACTERISTICS OF ENTREPRENEURIAL ACTIVITY IN SPAIN

The 2006 survey introduced a number of methodological changes as compared with the one carried out in 2002. This was an attempt to improve the representation of the smaller companies and of those created within the last three years. In spite of these changes, no significant changes are observed in the results, which would stand in agreement with the expansive cycle of the Spanish economy. Below are presented the most outstanding results as related to Spanish entrepreneurs' personal traits and motivation, and in relation with the variables of greatest significance when identifying factors explaining creative entrepreneurial activity.

As for primary personal characteristics (sex, age, education and influence from the home environment), the following results stand out: the growing presence of women, the increase in age when beginning business activities, the acknowledged bipolarity in the level of education, and the importance of family tradition in business. The various personal motives that influence one to choose the arduous path of entrepreneurial activity can be classified into three categories (Patchell, 1991) depending on whether they are related with the quality of life, job satisfaction or the amount of income obtained.

Women's participation in Spanish entrepreneurship continues its tendency towards growth: between 2002 and 2006, the percentage rose from 8.5 to 13 percent, a value that has increased until reaching 20 percent among recently created businesses.

30 is the average age of men and women when starting entrepreneurial activity; the most frequent age of entrepreneurs stands between 40 and 50. This would appear to confirm that in recent years there has been a broadening in the range of age when beginning business activity, which agrees with results obtained by Hayter (1997) at the end of the 90s. This change is due to the growing need to be qualified technically and for financial resources, both of which are difficult to obtain for young people.

Businessmen's level of education is distributed between two poles: a very large group composed of somewhat more than 40 percent who only completed elementary studies, and another of somewhat less than 40 percent who completed university studies.

Approximately 60 percent of businessmen come from families with a business tradition. Although belonging to a family that does business favors the decision to become an entrepreneur, it does not seem to be a significant indication of whether or not the businessman will be successful (Van Praag, 1999). Nevertheless, influence of having come from a family with a business tradition is confirmed with respect to the

choice of sector in which the new activity is carried out, particularly among women. A business family home environment provides resources and abilities that facilitate success on a practical level.

The primary motives given by entrepreneurs are "self-actualization", "to be self-employed", "to be one's own boss", "to take on a challenge", "to contribute to society", and to earn an income that is "equal to the efforts made".

Regionally, it can be observed that the Madrid region (stands out amply due to its having the greatest number of businesswomen (17.9 percent), followed by the Este region (14,3); contrariwise, the Sur and Centro regions' businesswomen scarcely reach 9.5 percent, which is very far from the average 13 percent in Spain. The greatest concentration of businessmen of up to 30 years old is found in the Noroeste (Northeast) and Este (East) regions (9.1 and 7.9 percent, respectively), and those over 60 years of age in Madrid and the Northeast (19.9 and 12.5 percent). Madrid again stands out by surpassing the average number of businessmen with university studies by more than 9 points (49.3 percent). As for the Sur region, it shows a greater amount of family tradition at 67.7 percent, whereas the Noroeste (Northwest) region has the lowest percentage at 49 percent. The other regions are located near the average.

The variables of greatest importance when it comes to identifying factors explaining entrepreneurial activity are those of "strategic opportunity", the technological efforts made, the type of product chosen when creating the business, the background and experience of staff and a strategy of constant growth. This list of variables, along with personal characteristics and motivation of the businessman under study, make it possible to generate the cluster of entrepreneurs by NUT1 regions presented in Section 4, and to explain productive creativity.

The entrepreneur must try to take advantage of "strategic opportunity". In order to do so, he must provide answers to three crucial questions that will affect his future: the sector in which he will carry out his activity, the place where it will be located and the time he will begin. The answers given to these three questions are indicators of the entrepreneur's commitment to the above-mentioned productive creativity, as well as the following: the technological effort made in the carrying out of activities, R&D contracts and technological cooperation agreements with third parties, the decision on the type of product (standard or innovative) that he chooses when creating the company, the number of engineers or university graduates hired by the company and the combination of internal growth strategies by means of take-overs of or mergers with other companies.

Nearly 60 percent of the entrepreneurs indicate that a determining factor for making the decision to begin their activity is prior work experience in the sector. Two thirds indicate that the choice of the time to begin the activity is due to reasons that are both personal and

fortuitous (having finished one's education, unemployment, family inheritance). The others indicated that their choice was due to economic factors or opportunity. 50 percent choose the place to carry out the new activity based on closeness to their place of residence. Only 10 percent of entrepreneurs stated they carried out or contracted R&D activities during the previous year. This percentage increases significantly in large companies (35 percent), which coincides with results obtained in other studies (Buesa and Molero, 1998; Molero, 2005). Only one fourth selected a non-standard product or service, with some innovation making its differentiation possible. More than 90 percent of the businesses surveyed have more than 5 university graduates. Less than 4 percent of companies consider take-overs of or mergers with other companies as a growth strategy.

Regionally, the entrepreneurs in the region of Madrid stand out greatly because they offer the best performance in relation with 'strategic opportunities of 'the right time and place', a greater number of technological cooperation agreements that they sign with other companies or specialized agencies; further, they stand because a greater proportion opt for non-standard products, and because their companies are the ones that hire the greatest number of university graduates and engineers. In contrast, the Central region is the one that opts for more standard products and that hires the lowest number of university graduates. Nevertheless, it is the one that offers the best performance with respect to 'strategic opportunities in the sector'.

3. DEVELOPMENT OF ENTREPRENEURSHIP IN SPAIN AND ITS REGIONS

During the twelve-year period between 1994 and 2005 eight autonomous communities (3) stand out in terms of the average because they present values at the rate of real entrepreneurship –defined as the number of businesses divided by the working population (in thousands)-, which are above the average: in the following order (high to low), Baleares, Cataluña, La Rioja, Madrid, Navarra, Aragon, Basque Country and the Community of Valencia (table 1). With the exception of Asturias (slightly above the average, 149.6), the remaining regions present rates that are quite below the average; in particular, the first ones below average are the two Castilles and Cantabria, standing between 6.4 (Castille-La Mancha) and 8.5 (Castille and Leon) points as compared to the Community of Valencia, a region that stands at the lowest position of the set under consideration. Extremadura, Andalusia and Ceuta and Melilla show the lowest rates, lower than 130 firms per 1000 that are active. Galicia, Murcia and the Canaries lie halfway between.

The group of regions with the greatest business dynamics consists, therefore, of three of the NUTS-1 Eurostat clusters for the Spanish regions: a) ESTE (East), Catalonia, Baleares and the Community of

Valencia; b) The Community of MADRID, and c) The NORESTE (Northeast) (Basque Country, Navarra, La Rioja and Aragon). As for the lowest rate of entrepreneurship, the following clusters are represented a) CENTRO (Centre), the two Castilles and Extremadura (the latter region considerably lowering the values brought by the others) and b) SOUTH, Andalusia, Murcia, plus two cities in Northern Africa (Ceuta and Melilla) and the Canaries Ils., This last region could be considered individually, but for convenience's sake with respect to this study have been included in the SOUTH cluster. Finally, between both classifications the NOROESTE (Northwest) cluster appears, made up of the following regions: Galicia, Asturias and Cantabria.

The development of the rate of entrepreneurial balance has been studied from various perspectives, particularly with respect to the relation it holds with economic growth (Carree et al, 2002; Audretsch *et al*., 2002; Schmitz, 1989), or the relation linking it with entrepreneurial activity –for the Spanish case, in particular- with the level of unemployment (Thurik and Verheul, 2002). Also for the case of Spain the automatic adjustment mechanisms have been studied in the face of situations of imbalance in the development of the rate of entrepreneurship, as well as the secular tendency to decrease at first and afterwards to increase, between the degree of development and the rate of equilibrium (Belso, 2004).

Taking the fundamental aspects of these research papers, a model has been carried out that explains entrepreneurship on the basis of its optimum rate of equilibrium, from the unemployment rate and the participation of wages over surplus exploitation. At the same time, the rate of equilibrium is made to depend on the level of economic development. In the same table 1, where the rate of entrepreneurship (empirical) is shown, the average values that these variables hold in the indicated period are shown.

Intuitively a region's entrepreneurial dynamism may be associated with the above variables. In fact, descriptively it is observed that regional behaviors found in relation with the rate of entrepreneurship are repeated. The NUTS-1: MADRID and NORESTE stand out due to a greater per capita GDP and lower unemployment rate, as well as because of the opposite values they present as compared to the other regions, especially SUR and CENTRO. There are, however, exceptions: the Community of Valencia, which has a lower per capita GDP than the average, and the autonomous communities of Galicia, Cantabria, Murcia and the two Castilles, which present unemployment rates that are lower than the average, although close to it. Likewise, the relation of employee wages over surplus show greater (or lower) values for the same abovementioned NUTS-1 regions, with, among prosperous regions, the exception of La Rioja and Baleares, which show results contrary to expectations and which, in addition, are the lowest of the group under study. The circumstance could be associated with the behaviour of wages and salaries and the surplus of exploitation in two regions that are highly specialized in tourism and food agriculture,

respectively. Nevertheless, as indicated below, the estimation of the proposed model does not offer significant results for this last variable.

TABLE1.
Spanish entrepreneurship by regions. Some relevant variables (average 1994-2005)

	Rate of entrepreneurship	Per capita GDP	Unemployment rate	Emploiment income / GOS*
SPAIN	148.6	14710.6	15.9	1.21
Andalucia	129.0	11068.5	24.7	1.13
Aragon	154.8	15765.5	10.1	1.20
Asturias	149.1	12713.1	15.9	1.21
Baleares	181.9	17269.4	9.7	1.02
Canaries	139.4	13819.9	16.6	1.18
Cantabria	145.9	14213.4	15.4	1.16
Castille and Leon	144.2	13891.7	15.1	1.04
Cast-LaMancha	146.3	11877.0	14.2	1.04
Cataluña	166.6	17627.8	12.9	1.25
C. Valenciana	152.7	13839.2	15.2	1.23
Extremadura	123.6	9811.9	23.5	1.10
Galicia	139.4	11906.8	15.4	1.06
Madrid	154.6	19377.9	12.9	1.41
Murcia	139.4	12319.5	15.1	1.08
Navarra	155.3	18552.7	8.1	1.24
Basque Country	152.6	18227.3	14.6	1.37
Rioja (La)	167.0	16595.8	9.6	1.03
Ceuta and Melilla	130.2	12988.6	20.0	1.62

Source: Instituto Nacional de Estadística (INE), Directorio Central de Empresas, Encuesta de Población Activa, Contabilidad Regional.
* Emploiment income/Gros Operative Surplus.

Via the model presented below the aim is to discover how the regions adjust their (estimated) rate of entrepreneurship with the rate of equilibrium or optimum rate of entrepreneurship. The disequilibriums produced between these two rates will have consequences on the economic variables indicated later, that is, the unemployment rate and the participation of the labour factor in the results of entrepreneurial activity. In a market economy, in the field of national as well as regional policies, there are mechanisms which make it possible to return the rate of entrepreneurship to one of equilibrium in the face of imbalances that may arise in the business dynamics (surplus or deficit of businesses that enter or leave the market). The level of entrepreneurship, together with this lesser or greater capacity for adjustment, makes it possible to establish a regional hierarchy in the entrepreneurial field. The recursive model, which consists of two equations, presents the following formula:

$$E_{i,t} = \alpha - \beta_{-} \cdot E^{*}_{i,t} + \beta_{-} \cdot U_{i,t} + \beta_{-} \cdot S_{i,t} + \iota_{1;i,t} \qquad (1)$$

where, the variables being considered are (footnote 3 lists the data sources being used):

$E_{i,t}$: Rate of estimated entrepreneurship of each Spanish region i at moment t.

$E^*_{i,t}$: Rate of estimated optimum entrepreneurship of each Spanish region i at moment t.

$U_{i,t}$: Rate of unemployment of each Spanish region at moment t.

$S_{i,t}$: Ratio of salaries by gross surplus of exploitation of each Spanish region i at moment t.

u_1 : Term of random disturbance of the equation (1)

As indicated above, a second equation is introduced in order to explain the behavior of the rate of optimum equilibrium. It seems logical to establish that an economy's rate of entrepreneurship is a function of the country's economic development itself and, more concretely, of the per capita GDP. The chosen formula follows Carree's approach, which expresses the relation in parabolic form, taking logarithmic instead of nominal values, so that:

$$\log(E^*)_{i,t} = \alpha_{\_} + \delta \ \log(GDPpc)_{i,t} + \gamma \log(GDPpc)^2_{i,t} + u_{2;i,t} \quad (2)$$

where:

PIBpc : Per capita Gross Domestic Product

u2 : Term of random disturbance in the equation (2)

The model's recursive formulation carries out a primary estimation of minimum squares of the rate of equilibrium (2), correcting the autocorrelated behavior of disturbances in this equation upon introducing this estimation into the equation (1). The results of the equation's estimation (2) are summed up in:

$$\log(E^*)_{i,t} = 32.6618 - 12.796\log(GDPpc)_{i,t} + 2.457\log(GDPpc)^2_{i,t} + e_{i,t}; \; con \; e_{i,t} = 0.803e_{i,t-} + e_{i,t}$$
$$(Stat.t) \Rightarrow \quad .259) \qquad (-.684) \qquad (0.677) \qquad (23.99)$$

The model presents an $\mathbf{R^2 = .8108}$ and a $\mathbf{\overline{R}_2 = .8079}$. Statistic F is 277.204 and the probability of statistic F is 0.000.

The signs of the estimated parameters reflect the parabolic hypothesis in the form of a U, since the estimation of δ is negative, associated with a lower volume of per capita GDP, and that of γ is positive, due to the positive relation between an elevated per capita GDP and the optimum volume of firms per thousand workers.

Once the estimation of the optimum rate in logarithmic terms is obtained, it is necessary to convert it into nominal values by applying anti-logarithms. The resulting values of variable E* are introduced in the equation (1), thereby obtaining the values corresponding to the estimated rate of entrepreneurship. The results of the equation model's estimation (1) are shown in table 2.

TABLE 2.
Results of the model, equation (1)

Parameter	Estimated Coefficient	Standard Error	Statistic t	Probability
α	17.7863	8.1533	2.1814	0.030
β_1	0.9264	0.0441	21.005	0.000
β_2	-0.2483	0.8418	-2.949	0.003
β_3	-2.6980	2.5045	-1.0772	0.282
$R_2 = .8183$ y $\overline{R}_2 = .8154$		Global Significance: Stat. F = 291.2328 (prob.): (0.000)		

Source: own elaboration

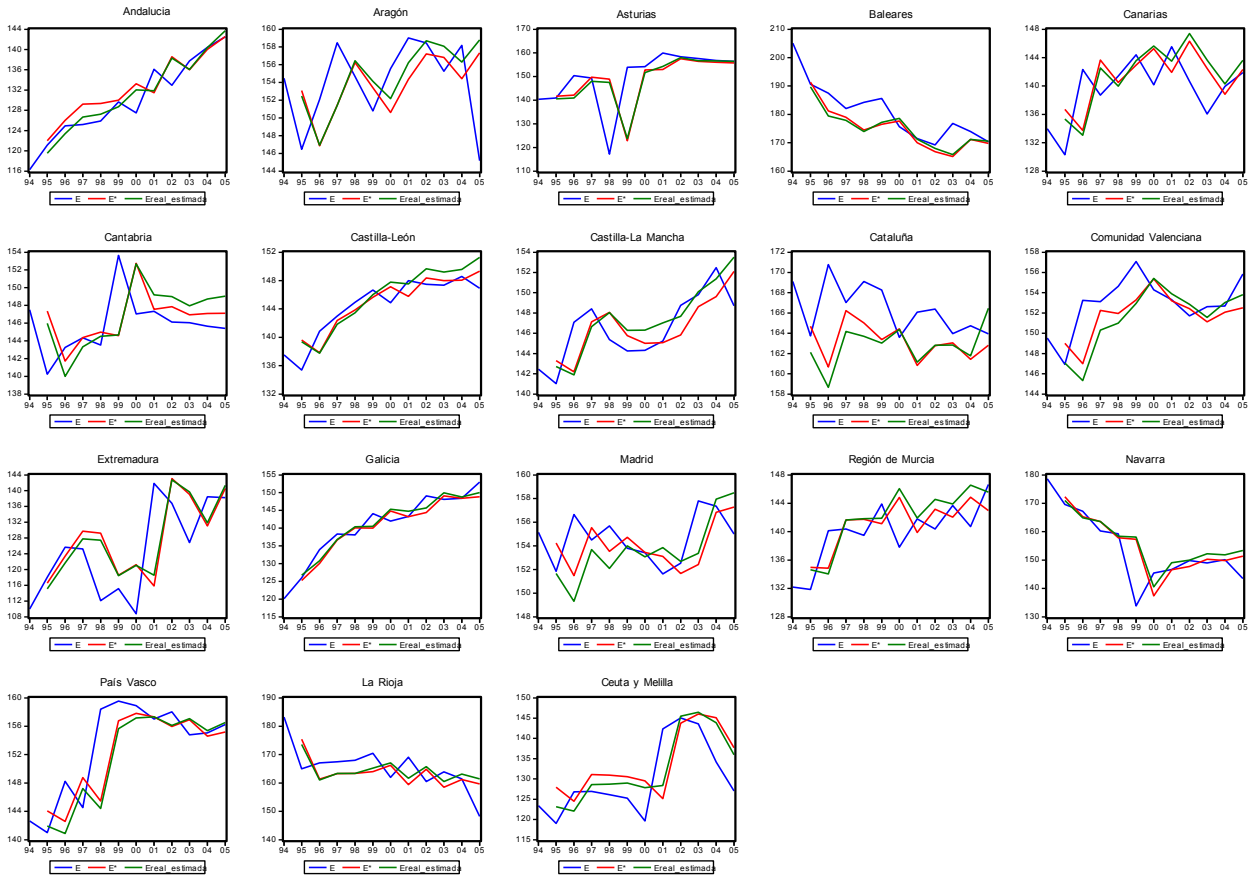
The results show both a globally as well as individually significant adjustment (exceeding 99% of confidence), except in the explanation offered by the ratio of wage participation, which scarcely exceeds 70% of confidence. The estimated signs for the parameters coincide with the generated expectations: the sign of the variable corresponding to the rate of unemployment is negative, since a higher rate of entrepreneurship means a lower level of unemployment; likewise –and in spite of this variable's insignificance-, the model presents an inverse relation with respect to the payment of workers over the surplus, since the better paid the work factor is the less incentive workers will have to become self-employed.

The value of the determination coefficient is better than others obtained in previous studies on functions of the same characteristics, although it must be underscored that the lags they propose have not been considered. This circumstance is justified on the basis that in this paper the regional behaviour of entrepreneurial activity is sought more than the contrast of causes and consequences of the imbalances with respect to the rate of optimum entrepreneurship. Likewise, and keeping in mind the model's good results, it has been considered that the great dynamism of the Spanish economy in its latest expansive cycle makes it possible to act with greater speed to economic agents, even within the present fiscal year (considering that the error in the estimation with respect to the previous year has been corrected, that is, in $E_{i,t-}$)

Graph 1 presents the development followed by the variables under study: the rate of empirical entrepreneurship, the estimated optimum rate (*equation 2*) and the real estimated rate (*equation 1*) for the 17 autonomous communities (as well as the cities of Ceuta and Melilla) in the 1994-2005 period. Some interesting results arise from the analysis and observation. First, in the greater part of autonomous communities during the first part of the period under study (1994 to 2001) the rate of equilibrium is higher than the real estimated rate, whereas in the second part (until 2005) the tendency is inverted or converges, due to the application of more incisive public measures (better access to financing, elimination of obstacles to entry and exit…). Second, the regions that held low rates throughout the period that have experienced greater growth have been: Andalusia (28 percentage points), Extremadura (40 points), Galicia (35 points) -probably a consequence of their own incentive policies as well as benefits derived from inter-territorial compensation plans - and the Basque Country (16 points), probably a consequence of improvements in the political and social arena. The cases of Extremadura and the Basque Country stand out: in the former, beginning in 2002 the rate of entrepreneurship shoots from 100 to 144 percent, and in the latter, in the 1997-98 period it rose from 144 to 160, maintaining the same rate since that time. Third, the communities that held high rates and which have experienced the greatest drops are: Baleares (20 points), Navarra (20 points), La Rioja (15 points), although they continue to offer rates that are higher than average. In Baleares, on the other hand, the indicated decrease could be due in part to increases in the working population that are proportionately higher with respect to the growth of the number of created businesses, although it should be observed that it had been in decline throughout the period from 190 to 170 percent, without achieving stabilization. Fourth, the other communities show relatively stable growth. Fifth, from the above the following entrepreneurial hierarchy by region can be extracted: a) the autonomous communities that offer the highest rates of entrepreneurship throughout the period are, in the following order, Cataluña, Baleares, Asturias, Madrid, Aragon and the Basque Country; b) the communities that have made greater efforts towards growth in their entrepreneurship are: Andalucía, the Canaries, Castille and Leon, Extremadura, Galicia, Murcia and the cities of Ceuta and Melilla; c) the communities that have had the most interannual variation are: Catalonia, Madrid, Aragon and, on a lower scale, the Community of Valencia.

If we carry these results over to regional NUTS-1 groupings: a) the Noreste, Madrid and the Este, which have quite similar values, present the highest rates of entrepreneurship b) the Noroeste, Centro and the Sur present the lowest rates, although they have made noticeable improvement in recent years. Globally, a convergence of the rates of entrepreneurship of the various autonomous communities to their optimum level is observed.

GRAPH 1.
Development and deviation of the rates of entrepreneurship in Autonomous Communities, 1994-2005



Source: own elaboration, INE data

4. REGIONAL ENTREPRENEURIAL ACTIVITY AND CREATIVE INDUSTRY

4.1 Cluster of entrepreneurs and indicators of creative activity

Considering the above and the data obtained from 507 new surveys undertaken in 2006 on a representative sample of the Spanish business network, a set of 37 variables grouped into five blocks has been taken: on motivations, on survival, on valuation of public assistance, characteristics of the businessman and characteristics of the business-environment. Some papers have been taken into consideration in the analysis, papers that suggest the combination of individual aspects of the businessman, the organization and environment and, in particular, the proposals put forth by Baum, Locke and Smith (2001) on multilevel

analysis to explain the primary factors of entrepreneurial activity. These grouped variables have served as the basis for the carrying out of a factorial and cluster study with the aim of being able to better explain the determinants that explain entrepreneurial activity in Spain. They have also served to classify the entrepreneurs –based on eleven factors identified above- into homogeneous groups based on their business behavior. In table 3, the results for the six NUTS-1 regions are shown.

This analysis makes it possible to subsequently identify which groups the entrepreneurs under study are found in both in the Spanish set as well as in the proposed NUTS-1 regions, according to the results presented by some of their business decision taken in the beginning and established phases of their projects. As a hypothesis, it is supposed that these conducts are associated with reasons of strategic and creative opportunity in a Schumpeterian sense.

TABLE 3.
Groups of entrepreneurs by NUTS-1 regions (by percentage)

NUTS-1 REG.	Adaptative	Autonomous	Manager	Employee	Family man	Creative
Noroeste	14.5	18.2	21.8	14.5	21.8	9.1
Noreste	16.7	6.3	10.4	37.5	14.6	14.6
Madrid	10.4	17.9	19.4	22.4	14.9	14.9
Centro	17.3	17.3	19.2	25.0	15.4	5.8
Este	18.0	11.6	13.8	22.2	24.9	9.5
Sur	18.8	16.7	13.5	15.6	25.0	10.4
SPAIN	**16.6**	**14.2**	**15.6**	**21.9**	**21.3**	**10.5**

Source: own elaboration

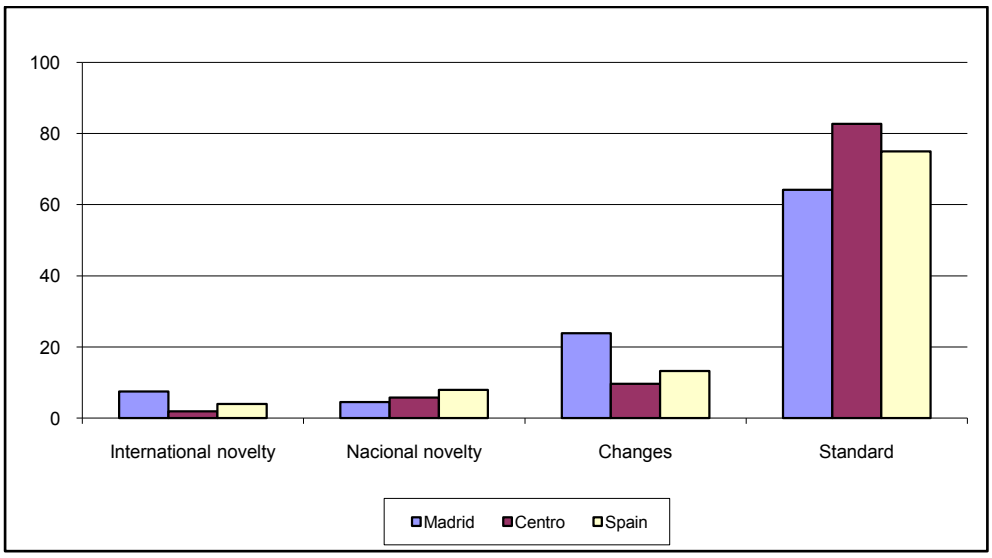
Six groups have been identified. In order to identify these groups, the variables associated with the personal characteristics of entrepreneurs as well as those corresponding to their motives have been determining factors. The first group, made up of 84 businessmen, which stands out due to the need for personal and social achievements and the contribution that public policy has made, has been called 'adaptive businessman'. The second group (72 businessmen), which is characterized primarily by autonomy in decision-making, is called 'autonomous-businessman'. The third, with 79 businessmen, stands out because its components focus on the economic dimension, and thus is called 'manager-businessman'. The fourth group has 111 individuals that are identified by keeping their job position, and so they are called 'employee-businessman'. The fifth, made up of 108 units, clearly bets on business traditions set up by other businessmen or family members, and is called 'family businessman'. Finally, the sixth group, made up of 53 businessmen, places its bet on long-term businesses and on their creative abilities, and for this reason it has been called 'creative entrepreneur'. 10.5 percent of the entrepreneurs belong to the last group and, regionally, Madrid and the Noreste stand out, which stand respectively at 14.9 and 14.6 percent in their regional groups. The

remaining regions stand at four or five points beneath the same, approximately at the average in the Spanish environment. The Centro region is the exception, since it stands at only 5.8 percent of creative businessmen in its regional group.

As indicated in Section 2, the following variables are essential for characterizing creative entrepreneurs: the type of product offered at the start of the activity, 'strategic opportunities', efforts and cooperation in technology, the staff's education, background and training, as well as monitored growth strategy.

It is possible to suppose that **the product offered at the start of an activity** is a decisive component –although not the only one- in the projection of the business. Therefore, it may serve as an initial indicator of the degree of commitment the entrepreneur has with innovation and creative productivity. In graph 2 it can be observed that in 75 percent of the cases businessmen chose to produce a standard good or service, already in existence and known by them. On the contrary, 25 percent selected a non-standard product, with some innovation in order to differentiate it. This percentage drops to 7.9 percent when the incorporation attains a nation-wide reach, imbuing the product with a new or novel nature in the Spanish market, and it drops down to as much as 4 percent if its reach is international.

GRAPH 2.
Type of product chosen during the creation of the company (by percentage)



Source: own elaboration

Madrid and Centro cases show remarkable differences. Firstly, that a standard product was chosen by 82.7 percent of those in the Centro region, percentages which are lower and greater than the NUTS-1 set,

respectively. Likewise, 7.5 percent of Madrid entrepreneurs entered the market with an internationally novel product, as compared to 3.9 percent in the case of the aggregate set of Spain, which, nevertheless, offered more novelty in its products in the national sphere.

In order to explore the commitment on the part of entrepreneurs with creative offers and with a strong orientation to the market we have gone into depth on the motives which lead them to choose a specific **location**, a specific **time** and a concrete **activity** for the creation and launching of their business. Table 4 presents the univariable aggregate information of the open-ended questions offered to these three fields. The hypothesis that the motives of **"strategic opportunity"** are those that are found the most in the concept of creative industry can be established, since the others would be, to a greater or lesser extent, further removed from the essential business nucleus. 'Location' and 'time' stand out with respect to 'sector', and in the two first options the Madrid entrepreneurs stand above the Spanish average, particularly in the 'strategic opportunity of location', which reach nine percentage points more than in the case of the set of Spain, and which are very far removed from the values offered by those in the Centro zone. These latter entrepreneurs from the Centro zone are, nevertheless, the ones who offer the best role with respect to 'strategic opportunity in the sector', almost triple those in the Madrid zone.

TABLE 4.
Motives for the creation of a business: time, place and sector.
Spain and Madrid and Centro regions (by percentage)

MOTIVES	Location			Time			Sector		
	Madrid	Centro	Spain	Madrid	Centro	Spain	Madrid	Centro	Spain
Personal or family	65.7	84.6	77.9	67.2	80.8	71	70.2	57.7	65.9
Strategic opportunity	**23.9**	**9.6**	**14.6**	**19.4**	**9.6**	**17.4**	**5.9**	**15.4**	**10.9**
Avail. of resources and factors.	10.4	5.8	7.5	13.4	9.6	11.6			
Experience							19.4	11.5	14,9
Other reasons							4.5	15.4	8.3
TOTAL (%)	100	100	100	100	100	100	100	100	100

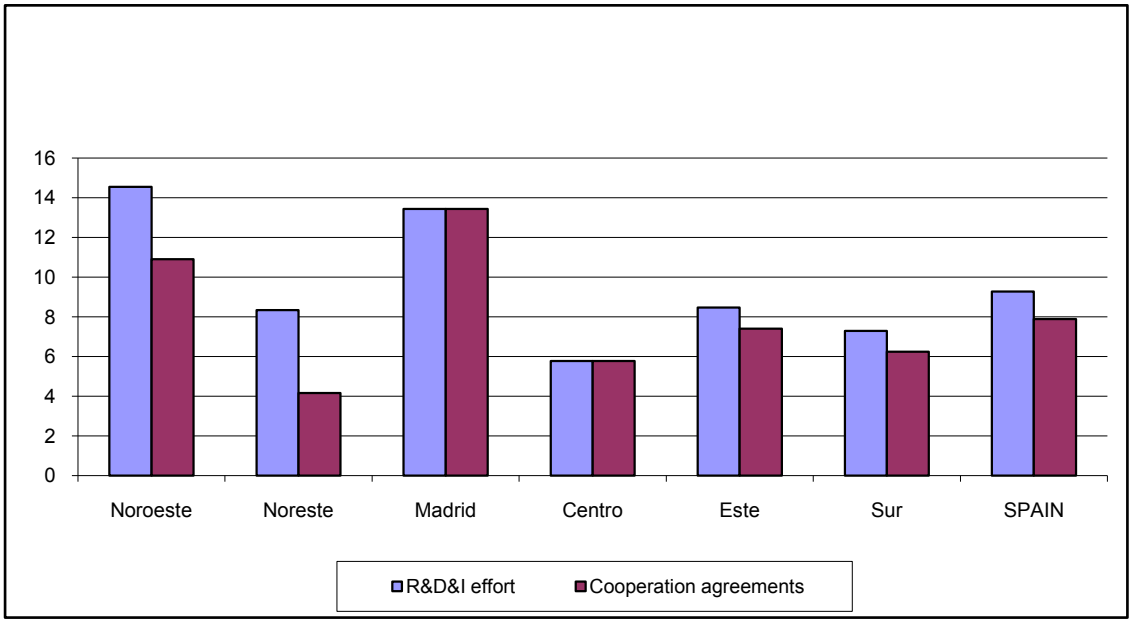
Source: own elaboration

If the three variables are correlated, results show that scarcely 1 percent of the set of Spanish businessmen chose the same item of "strategic opportunity" when they were questioned on location, time and sector. The other motives for creating businesses (personal or family, availability of factors, experience and others) are related minimally or not at all to strategic opportunity or the possible creative nature of the entrepreneur.

Whether the interviewed businessmen have made some type of technological effort, either within the company or by means of hiring

from the outside has been discovered as well. It is possible to suppose that having some **commitment to the area of R&D&I** means taking on greater risks, having greater creativity and greater long-term vision, and a better business role would be expected. As graph 3 shows, the results are low (in line with the Spanish trajectory) with respect to those shown by other advanced countries. Only 9.3 percent of Spanish businesses demonstrate having undertaken or hired research and development activities in 2005. The Madrid businessmen improve these results up to 13.6 percent, although those from the Noroeste zone are the ones who show the best results (14.5 percent). The other four zones lie below the Spanish average, but NUTS-1 Centro entrepreneurs stand out as they present the worst (and very low) regional results on commitment to innovation (5.7 percent).

GRAPH 3.
R&D&I activities and technological cooperation in companies by NUTS-1 regions, 2005 (by percentage)



Source: own elaboration

Likewise, the temporary existence of **R&D&I cooperation agreements with other firms or specialized institutions** has been studied (see graph 2). The processes of business cooperation, particularly if they are in reference to the area of technological development, are effective indicators of emerging businesses, open to competition and to probable competitive earnings. From the results it is shown that it is also not a widespread behavior among Spanish businesses. Of the set of businesses that undertook technological activity in 2005, scarcely 8 percent signed cooperation agreements in relation with this subject with other firms or institutions or organizations. The Madrid businesses offer the best results (13.5 percent).

On the other hand, a relation can be established between technological activity developed by companies and the **university graduates or engineers that have been hired on staff**. This relation may vary depending on the sectoral activity and the company size. Here it is supposed that the higher the number of engineers or university graduates in a company, the greater their commitment to creative activities will be. Madrid stands out again both for being the region that most often exceeds the company average of more than five employees being university graduates or engineers, as well as for being the region that stands the lowest on average with respect to businesses that have up to five employees that are university graduates. This behaviour is precisely the opposite in the cases of the NUTS-1 Centro and –although not reaching the extreme values with respect to the average- in the case of the Este, Sur, and Noroeste regions. The Noreste region, nevertheless, follows the same line as Madrid.

Finally, with respect to the adopted **growth strategies**, the greater part of entrepreneurs move forward based on the internal growth of the company. It can be assumed that those businessmen that propose growth measures based, in addition to internal growth, on acquisitions or mergers with other companies offer a more energetic and forward-looking vision and, therefore, of greater probability of consolidation. With the exception of NUTS-1 Sur, the remaining regions present above average results with respect to internal growth strategy, with the Noroeste standing out the most. This same region also stands out due to the adoption of strategies based on mergers, and the Sur region due to its opting for acquisitions.

4.2. Differentiated behaviours of creative entrepreneurs in the various regions?

The results of the factorial and cluster analysis can now be used to examine, in the set of Spanish entrepreneurial activity, the existing relations with indicators of creativity referred to in the previous section. It is sufficient to identify, within recognized clusters, those businessmen who, based on the indicators, can be considered more dynamic, creative and that have long-term projections for their business ventures. These relations are shown in table 5.

The results, which present statistic significance for some indicators (Chi squared in **bold**), make it possible to determine which groups of businessmen hold a greater concentration of the creative variables under consideration: The type of product, choice of business based on strategic opportunity, undertaking R&D&I activity, technological cooperation agreements, future growth strategies and the number of employees that are university graduates or engineers in the company. The technique utilized presents, in the first place, the average values that each variable obtains with respect to the total number of individuals in the sample (507 surveyed businessmen) and, afterwards, the situation that the different groups show based on the average arrived at by the individuals that make up each one: depending on whether they

are found above or below the average value of the total sample in the average of each group, a positive (+) or negative (-) sign is inserted, respectively. Within each variable and group, a positive or negative sign with an asterisk (+* o -*) has been inserted in order to indicate the values that are furthest from the average on the top or bottom part, respectively.

TABLE 5.
Indicators of entrepreneurial creativity and Clusters in Spain

Entrepreneur group / Variables	Global Sample: Average Values	Group I: "Adaptative"	Group II: "Self-employed"	Group III: "Manager"	Group IV: "Employee"	Group V: "Family man"	Group VI: "Creative"	Significance Chi-Square
Number of entrepreneurs	507	84	72	79	111	108	53	
Type of product								
- International novelty	3.95%	+ *	=	+	- *	-	+	
- National novelty	7.89%	- *	+	+	+	-	+ *	0.2784
- Modifications	13.21%	=	+ *	+	- *	-	+	
- Standard	74.95%	=	-	-	+ *	+	- *	
Choice of business due to strategic opportunity:								
- Place	14.6%	=	=	+ *	-	- *	+	0.4345
- Time	17.36%	+ *	+	-	-	- *	=	**0.0745**
- Sector	10.85%	+	+	+	- *	-	+ *	**0.0682**
Companies that carry out R&D activities								
- R&D	9.27%	+ *	+	+	-	- *	+	**0.0028**
Companies that have cooperation agreements								
- Agreements	7.89%	+	+	+	-	- *	+ *	0.1453
Future growth strategies								**0.0002**
- Internal growth	82.45%	-	-	-	+	+ *	- *	
- Acquisition of other compar	3.75%	+	-	+	-	- *	+ *	
-Mergers	3.55%	+	-	-	- *	-	+ *	
- Other	10.26%	-	+	+	-	- *	+ *	
Num. of college grads/engineers								0.3449
-Up to 5	6.71%	- *	=	+	=	+ *	-	
-More than 5	93.29%	+ *	=	-	=	- *	+	

Source: own elaboration

To sum up, in the analysis it is shown that group 6 (with only 53 individuals), which is the one explained primarily by the survival factor (having a product adapted to the market, technological effort made, high expectations from the market, good business knowledge and availability of financial resources) and also by the factor of organizational complexity and management (saturated above all by variables of business size and university education of the businessman), is the one that shows the highest concentration of the values of the indicators/variables associated with creative and innovative activity.

Therefore, it seems to suggest that it is the group that includes more businessmen that are committed to the creation of emerging and

dynamic businesses. Notice that the values of the averages of the indicators show excellent results: i) with respect to the type of product chosen by the businessman (a standard negative value indicates a good showing by this indicator), ii) with respect to the choice of using strategic reasons on the part of the company, the specific value of the sector stands out, that, in addition, is statistically significant; iii) with respect to technological effort made, the value exceeds the global average, although there is another group –the one that is identified with notoriety and public financial assistance- that shows better results, most likely due to support received from public administrations; iv) as for technological cooperation agreements, it stands out for being above the average; v) as for growth strategies, which is statistically significant, it shows the best values, and vi) as for the number of hired employees that are university graduates or engineers, it stands above the average when there are more than five employees that are university graduates or engineers.

On the other hand, group 5 has been placed on the lower part, focused on the continuity of the company (accumulated experience: family tradition), which presents the lowest concentration, followed very closely by group 4, called "employee businessman". In the second position of this ranking of creative entrepreneurial activity in Spain, although showing worse figures than those achieved in group 6, we find group 1, which is made up of businessmen who focus on the achievement of personal and public goals and the search for public financial assistance. Finally, groups 3 and 2 are located in an intermediate position. The first stands out for being businesses dedicated to normal management of the company and for the attainment of financial goals, whereas the second seeks autonomy in the activity, without setting challenges or seeking public incentives.

Finally, from regional perspective under study, table 6 shows the results of entrepreneurial activity in the NUTS-1 regions. As expected, the region of Madrid shows the best results in creative entrepreneurial activity, since it has the highest number of indicators above (or below, in some cases) the Spanish average: of the 15 indicators corresponding to the six business variables (or conducts) under study, 10 show above average values and, of these 10, 7 show the best regional results (type of product: most novel internationally, having the highest number of modifications –or least standard-; Strategic opportunity: place; Companies with the most cooperation agreements; Number of employees that are university graduates or engineers: more companies with more than five university graduates and fewer companies with less than five university graduates).

On the other hand, the Centro region shows the poorest results: only 3 values lie above the average; it only stands out with respect to the other regions in the indicator of strategic opportunity 'choice of sector', which presents the highest value, but it has the lowest in time and place strategic opportunity, in technological efforts in R&D&I and in hired university graduates.

TABLE 6.
Regional entrepreneurial activity and creativity in Spain (NUTS-1)

Entrepreneur REG Variables	SPAIN Global Sample: Average Values	Region: NOROESTE	Region: NORESTE	Region: MADRID	Region: CENTROL	Region: ESTE	Region: SUR	Significance Chi-Square
Number of entrepreneurs	507	55	48	67	52	189	96	
Type of product								
- International novelty	3.95	-	-*	+*	-	-	+	0.3958
- National novelty	7.89	+	+*	-*	-	+	-	0.5361
- Modifications	13.21	-*	+	+*	-	-	+	**0.0649**
- Standard	74.95	+*	=	-*	+	-	+	0.1979
Choice of business due to strategic opportunity								
- Place	14.60	-	+	+*	-*	+	-	0.392
- Time	17.35	+*	-	+	-*	+	-	0.2968
- Sector	0.00	-*	+	-	+*	+	+	**0.0175**
Businesses that undertake R&D&I activities								
- R & D & I	9.27	+*	-	+	-*	-	-	0.4646
Companies that have cooperation agreements								
- Agreements	7.89	+	-*	+*	-	+	-	0.3948
Future growth strategies								
- Internal growth	82.45	+*	+	+	+	+	-*	0.2159
- Acquisition of other compar	3.75	-	-*	-	=	-	+*	0.1879
- Mergers	3.55	+*	-	-*	+	+	-	0.3964
- Others	10.26	+*	-	=	-*	-	+	0.3409
Num. College grads/Engineers								
- Up to 5	93.29	+	-	-*	+*	+	+	0.1012
- More than 5	6.71	-	+	+*	-*	-	-	0.1012

Source: own elaboration

Three regions, the Noreste, the Noroeste and the Este, present 7 values that are above the average. Whereas the Noreste stands out due to offering the the best value in the type of novel national product, the Noroeste stands out for having the greatest values with respect to companies that make technological effort as well as with respect to future growth strategies, but it has the most negative result with respect to modification of the product (or highest degree of standardization of products). The Este region does not present any extreme values.

Finally, the Sur region shows only 5 above-average values, with growth strategy through acquisition of other companies being the best in the set of the regions, and internal growth strategy being the worst.

5. CONCLUSIONS

The analysis carried out provides some conclusions on the entrepreneurial activity in Spain and its regions. Some of the variables or business behaviours under analysis seem to reinforce entrepreneurial activity in order to convert it into a creative and innovative action, which could be properly called 'Schumpeterain entrepreneurs'.

The spatial dimension exerts influence on entrepreneurial activity and on creative activity, since differentiated business behaviours are obtained when the territory is studied by region. By means of the estimation of a model, both at the national as well as the national level, the existence of a positive relation between the rate of entrepreneurship –which develops with its optimum rate of equilibrium- and economic development, has been contrasted.

From the results obtained it can be deduced that the level of entrepreneurs with creative capability in Spain present values of low magnitude. With the indicated limitations, this paper suggests that, among those who take on entrepreneurial activity, the most dynamic and creative businessmen belong to quite a homogenous group, characterized by their commitment to factors of business survival and others linked with organizational complexity and with management, more than with the achievement of personal challenges or the achievement of public notoriety. Nor is a desire to benefit from public programs aimed at favoring productive activity a basis for this group.

The Spanish division into NUTS-1 units makes it possible to deduce that the region of Madrid takes the lead as it has the highest indicators that exhibit certain business behaviors associated with greater dynamism and entrepreneurial emergence. On the opposite side we would find the Centro region, which corresponds to the autonomous communities of Extremadura and the two Castilles (Castille-La Mancha and Castille and Leon), followed by the Sur region, made up of Andalusia, Murcia, and the cities of Ceuta and Melilla [and the Canaries]. The Este, Noreste and Noroeste regions are found in an intermediate position.

Nevertheless, it must be pointed out that using the Eurostat NUTS-1 as regional units facilitates the analysis due to the greater amplitude of aggregate territories, but it may conceal positive results that some regions-autonomous communities or Spanish provinces would offer were they contemplated separately. Among possible examples the autonomous communities of Catalonia or Navarra, or the province of Zaragoza can be pointed out.

FOOTNOTES:

(1) The Global Entrepreneurship Monitor-GEM Spain (De la Vega et al., 2006), when launching an entrepreneurial activity –early activity- distinguishes between the motives of 'need' and 'opportunity'. In general terms, the former would correspond primarily with personal reasons, or reasons related to family or experience, whereas the latter would respond with strategic or creative approaches.

(2) This research has been undertaken within the Instituto Universitario de Análisis Económico y Social (SERVILAB), of Alcala University (Madrid) and forms part of a line of research on entrepreneurial activity in Spain begun in 2002 and financed by the Rafael del Pino Foundation. Research has also been done on the entrepreneurial spirit in Madrid, sponsored by Madrid City Hall. The various reports have relied on specific surveys aimed at representative samples of entrepreneurs: 458 and 507 completed surveys were obtained for the I and II Reports indicated above, respectively; the field work was undertaken by a specialized company. In the case of Madrid 701 businessmen were interviewed. The quantitative analysis sections were based on the SABI database, are originally from the Commerce Registries of Spain and Portugal (Bureau van Dijk Electronic Publishing, S.A.). Along with the authors the researchers Federico Pablo-Martí and Justo de Jorge have also made contributions to various parts.

(3) Spain has 17 Autonomous Communities and two Autonomous Cities (Ceuta y Melilla), equivalent to NUTS2 regions. Each community has a high degree of politico-administrative and economic decentralization, set forth in their respective Statutes (or Norms) regulating their relation with the State.

The data presented in this paper have been obtained from official sources indicated in the respective graphics and graphs. In order to dispose of a complete data base for the twelve years of the series under study it was necessary on occasion to use data coming from Series with Base in different years, or make an occasional calculation based on estimations. These exceptions are the following:

- Rate of entrepreneurship: 1994: It calculates on the basis of a regression intercept with the values of the period 2005-1995. (19.174 + 2005*(-0.745)+ 1999*(0.382) + 1995*(1.269).

- Salaries / Surplus: From 1995 through 2003 Regional accounting, INE, Base 1995 series 1995-2005 is used. And for the years 2004 and 2005 the accounting series 2000-2005 with base 2000 is used. And for 1994

estimations have been made by means of typical deviations of the values of the series base 1995, subtracting from the 1995 value said typical deviation.

- Per capita GDP:

1994: GDP: INE, Base1986, series 1980-96; Population: INE, 1986 to 1995.

1995: GDP: INE, Base1995, series 1995-2004; Population: INE, 1986 to 1995

2005: GDP: INE, Base 2000; series 2000-05; Population: Series since 1996

- Unemployment.

Series 1996-2004 of the EPA (INE). For 2005, series 2005.

And for 1995 and 1994 series EPA 1987-1995.

The data from the second quarter have been used as reference point.

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