Influence of entrepreneur type, region and sector effects on business confidence: Empirical evidence from Argentine firms

ABSTRACT:

In this current work we analyse the influence of factors potentially able to explain entrepreneurs' confidence in their own business activity, in view of the repercussions that they may ultimately have on economic development.

Specifically, we include a number of exogenous factors in the analysis presented here that can be considered traditional in the specialised literature, such as the regional and sectorial factors, along with an additional endogenous factor measuring the type of entrepreneur running the firm (this typology is defined on the basis of the entrepreneurs' personal characteristics, and their way of managing the firm's resources).

Our results (controlling for the moderating variables size and company density) have proved able to capture the significant effect that the entrepreneur type, the regional location of the firm and the sector of activity have in strengthening the entrepreneurs' perception of improvement of their firm's economic situation, for a cross-section (during 2001) of 1314 firms, grouped in four sectors of activity, spatially distributed over 14 Argentine provinces, and considering seven models of entrepreneurial behaviour in the analysis.

JEL classification

Keywords: Business confidence, entrepreneur type, region and sector effects

Justo de Jorge Moreno
Facultad de Ciencias Económicas y Empresariales
Universidad de Alcalá
Plaza de la Victoria, 2
28802 Alcalá de Henares, Madrid (SPAIN)
e-mail: justo.dejorge@uah.es

Elio de Zuani Masere
Universidad Nacional de Salta (ARGENTINA)
e-mail: er.dezuani@arnet.com.ar

Leopoldo Laborda Castillo
Facultad de Ciencias Económicas y Empresariales
Universidad de Alcalá
Plaza de la Victoria, 2
28802 Alcalá de Henares, Madrid (SPAIN)
e-mail: leopoldo.laborda@uah.es

1. Introduction

Leibenstein (1968) stressed the need to include the entrepreneur's role in models of economic development as a catalyst of economic activity through their double function, with, on the one hand, a "routine" component, reflecting their role combining the factors of production, and on the other, a "Schumpeterian" component, entailing tasks necessary for innovation and the development of new activities. Since then, many researchers have exerted much effort in trying to include this "forgotten factor" of growth into the analysis.

In this respect, aspects such as the influence of the innovation systems, the entrepreneurial capacity and the business culture have been incorporated into this area of knowledge by authors such as Ottati (1994), Markusen (1996), Rabellotti (1998), Lawson and Lorenz (1999), Thomas (2000), or Beugelsdijk and Noorderhaven (2004), to mention some of the most representative, with the aim of evaluating if these specific factors of the entrepreneurial phenomenon can be associated with regional and sectorial development, introducing the distinction between inter- or intra-industry effects, as Glaeser, Kallal, Scheinkman and Schleifer (1992) and Henderson, Kundoro and Turner (1995) propose.

In the previous work the empirical evidence appears to show – if rather faintly – that there is an element that potentially moderates all these factors incorporated in the analysis: the entrepreneurs' confidence in the environment in which they operate. This includes both the formal institutions (such as for example the legal or financial system) and informal institutions (such as the networks or contacts used) present in the region or industry in which the activity is carried out. The weight that entrepreneurs grant these formal and informal institutions in the reinforcement of their confidence in the business activity they undertake appears to depend to a certain extent on the level of development of the economic environment in which they operate. For example the work of Welter, Kautonen, Chepurenko, Malieva and Venessar (2003) stresses the important role of informal institutions in transition economies, in clear contrast to more consolidated and stable economic environments in which confidence in the formal institutions continues to occupy a central role along with the informal institutions.

In this context, the objective of this current work is to analyse the entrepreneur's confidence in more depth, incorporating an endogenous approach in which we attempt to evaluate the confidence that the entrepreneur has in their entrepreneurial activity, taking into account the entrepreneur's profile (according to a typology elaborated on the basis of their personal characteristics and way they manage the firm's resources), without ignoring other exogenous factors relating to the region or sector that have been considered in the abovementioned literature.

This approach appears to be particularly appropriate to shed light on the phenomenon of entrepreneurial confidence, and ultimately on economic development, especially in the economic context of an emerging country, such as the one we address here, which to some extent shares some of the characteristics of the transition economies that have been previously considered. However, we believe that the analytical approach adopted here (both at the theoretical and methodological levels), in which we add other factors, in this case to capture what we could label the "entrepreneur type effect", to the most consolidated factors in the literature such as the "region effect" or "sector affect", could be a way of incorporating other factors to enrich the analysis and to further understanding of the entrepreneur's role in economic development.

With this objective in mind, the work is organised as follows: in the next section we develop the conceptual framework proposed to study the factors potentially conditioning the entrepreneur's confidence in his or her business activity. In Section 3 we present the methodology of the analysis, and include one subsection dedicated to a descriptive analysis of the sample data, and another describing the proposed research design (which includes a further sub-subsection dedicated particularly to the instrumentalisation of the variable entrepreneur type). In section 4 we present the main empirical results obtained. Section 5 ends with a summary of the main conclusions.

2. The many faces of trust: a conceptual framework

The study of trust has been approached from perspectives as diverse as economics, see for example the work of Dasgupta (1988), Zucker (1986) or Williamson (1993); business management, where the work of Ganesan and Hess (1997) and Sako (1992) stands out; anthropology, such as in the work of Höfmann and Malieva (2002); and sociology, with the work of Coleman (1990)[1].

The theoretical framework offered by Zucker (1986), is particularly interesting as far as the objectives of this current work are concerned. Specifically, Zucker (1986) points out that the notion of *confidence* defines the beliefs of a particular agent or individual about the future prospects of the economy, and must be distinguished from the concept of *trust*, more appropriate for reflecting the personal and cultural confidence due to the institutional and collective nature of the object about which the beliefs are formed[2].

This author distinguishes between formal and informal institutions. Through formal institutions entrepreneurs find in the political, economic and judicial laws and regulations the security and confidence they need to develop their entrepreneurial inclinations. In turn, the informal institutions, which refer to values, norms and codes of conduct present in a particular culture, contribute to consolidating the individual and collective perception of security and confidence in realising their business opportunities.

2.1 Confidence and entrepreneurs

Linking with the above approach, and as far as business activity is concerned, Seligman (1997: 43) sustains that confidence occurs when entrepreneurs are convinced that this confidence is the best way of acting. In this context, authors such as Welter *et al*. (2003) distinguish between the personal, collective and institutional levels in their study of entrepreneurial confidence, although they recognise that the boundaries between these different levels of confidence are quite fuzzy. In spite of this, authors such as Zucker (1986) consider that while confidence at the personal level is governed by informal norms and rules (to some extent conditioned by the reference group as well as learning about the other participants in the relationship of confidence), in the case of collective confidence, this appears to be founded on the norms and conventions established in the different sectors of activity, something which goes further in the case of institutional confidence in which it extends to all the anonymous sources of business relationships (such as partners,

---

[1] The common link among these social science disciplines lies to some extent in the higher level of abstraction used, compared to other disciplines such as psychology, which strongly marks this current work (the approach adopted, as is discussed in the following paragraph, has among other repercussions an impact on the translation of the Spanish term "confianza", which in English can be either "trust" or "confidence").

[2] In this respect, as our work deals with the entrepreneur's beliefs about the future prospects of his or her own firm as the variable to be explained in the empirical tests advanced later in the work, we feel it is more justified to use the term *confidence* rather than *trust* (although this latter term is implicit in the explanatory variables of the empirical modelling mentioned above, and which in our opinion justifies our use of this theoretical framework). This framework of reference that we present incorporates the extension proposed by authors such as Fukuyama (1995), to distinguish between environments of high or low trust, which allows us to distinguish emerging and/or transition economies from those with higher levels of development.

consultants, etc.). Here, legal safeguards can be put in place that can lead to sanctions if the terms upon which the relationships are built are not complied with.

The concept of entrepreneurial confidence that we adopt in this current work specifically relates to the perception that the entrepreneurs have about their firm's economic situation. With this in mind we adopt a framework of reference that follows in the wake of work such as that of Granovetter (1985), North (1990) and Zucker (1986), in which three levels of influence intervene: a macro level, to capture the impact of regional differences (for example due to political, legal, economic, cultural or religious characteristics); a meso level that measures sectorial differences (deriving for example from the specific practices and codes of conduct of the different branches of economic activity, or from their level of standardisation); and a micro level that measures differences caused by the various types of entrepreneur (in function of their beliefs and values, for example, or of their management practices).

3. Methodology of analysis

At the theoretical level the concept of trust has been approached from various disciplines. Similarly, its empirical treatment has been approached using different methods, ranging from game theory, such as the work of Glaeser, Laibson, Scheinkman and Soutter (2000), Sigmund, Fehr and Nowak (2002) and Yamagishi and Yamagishi (1994), in which laboratory experiments are used, to the use of questionnaires to analyse the entrepreneur's behaviour and level of confidence, (e.g. Curran and Blackburn 2001, Smallbone and Lyon 2002), or in the above-mentioned work of Welter, Kautonen, Chepurenko, Malieva and Venessar (2003).

This second approach is considered particularly appropriate for the work proposed here, as two features of particular interest coincide: the entrepreneurs whose opinion we collect are owners of small firms in an economic environment considered emerging, but subject to conditions of significant instability at the time of carrying out the empirical analysis.

In this respect, Curran and Blackburn (2001) stress the need to pay attention to the semantics when the entrepreneurs are asked about their level of confidence in certain aspects, in function of intra- and inter-cultural differences in the concept of confidence.

For their part Smallbone and Lyon (2002) point to the difficulties in the use of quantitative data, not only with respect to its collection, but also about the suitability of using it to measure a concept as complex and as multi-faceted as confidence.

The above difficulties are mentioned by Welter, Kautonen, Chepurenko, Malieva and Venessar (2003) when they analyse the confidence of entrepreneurs in emerging economies.

3.1 Descriptive analysis of data

The determinants mentioned in the previous works have led us to use two types of information source together for this current work. One is of a primary nature, using the

entrepreneur[3] as unit of analysis, and the other is secondary, at the country level[4]. With respect to the sample selection for the primary analysis, as we have mentioned we consider firms located in 14 provinces in Argentina[5], where the universe of firms totals 360,709 (data referring to July 2001), with the target population being firms with between 1 and 250 employees, which represents 99.63% of all firms in Argentina. A total of 1,690 firms (0.36%) employ more than 250 workers.

The representativeness of the sample is determined by province (see table 1). With regards representativeness by sector of activity, and considering in this case the totality of firms in the country, we obtain 0.29% (primary: 0.12; industrial: 0.40; construction: 0.25; and services: 0.31).

[INSERT TABLE 1]

In table 2 we report the macro-economic variables GDP per capita, firm density per 1000 inhabitants and population. Likewise, the mean, minimum and maximum values of firm size in terms of number of employees, according to the firm's location and sector of activity.

A first feature that we observe is the existence of statistically significant differences in size depending on the firm's location and sector of activity.

In the primary sector, two large blocks appear in terms of firm size: the provinces Salta, Chubut, Tucuman, Neuquen and Rio Negro have large mean sizes compared to the other provinces.

In the industrial sector we also observe differences: thus, Neuquen and Misiones form a group with means exceeding 50 employees, compared to Jujuy, Catamarca and Chaco, where the averages are under 11. It is the construction sector where the most heterogeneity of sizes exists. Thus, in provinces such as Catamarca, Jujuy and Chubut the mean size does not exceed 8 employees, compared to Neuquen and Chaco, with more than 90. Finally, the services sector is perhaps the most homogeneous, except for Buenos Aires, but we should note the contrast between Catamarca, with 3 employees on average, and Salta, with 16.

[INSERT TABLE 2]

In order to deepen in the analysis of firms' implantation and their sectorial equilibrium by provinces, figures 1 and 2 complement table 2.

---

[3] In this case, we have designed a specific survey to collect information about the characteristics of the environment in which the entrepreneurs operate, as well as their attitudes and behaviours with respect to the economy and the management of the company.

[4] Given the absence of official databases, we requested that the Centre of Statistical Services - Special Works Division of the Argentine National Institute of Statistics and Censuses generate a database specially designed for this research on the total population of companies in the formal sector of the Argentine economy. The contents of the Report on Companies in Europe (Eurostat) was taken as reference for this.

[5] The choice of this scope of analysis was motivated by our interest in studying one of the regions considered emerging (in a particularly complex time period due to its substantial political and economic instability), in contrast to other work such as the studies referred to above centring on regions with a higher level of development and a more stable and consolidated institutional framework.

[INSERT FIGURE 1]

In figure 1 the proportion of firms in each sector is reported for the 14 provinces. In the sample analysed the services sector represents approximately 75.5% of the firms, followed by the industrial sector with an average of 16% of the firms, construction with 3% on average, and the primary sector with 5.5%.

On the other hand, in figure 2 we present the firms' distribution in percentages by sectors with respect to the mean values of the 14 provinces analysed. Thus, the province of Corrientes and to a lesser extent Cordoba show a greater equilibrium among the sectors of activity.

[INSERT FIGURE 2]

However, we observe important an disequilibrium or specialisation – maintaining the weight of the services sector, which as we have mentioned is by far the most representative sector in all the provinces – in the various provinces. Thus, in Salta and Neuquen there is an important presence of the primary sector, in Buenos Aires, Misiones and Jujuy the construction sector[6] is relatively strong, and Rio Negro and Chaco have above average values for the industrial sector.

3.2 Research design

As we mentioned in the introduction, the interest of this work is to determine to what extent the characteristics of the entrepreneurs (in terms of human capital and management practices), the location of the firm (at the provincial level) and the sector of activity where the firm operates influence the firm's probability of achieving superior performance. For this reason, in the questionnaire elaborated we enquired about the entrepreneur's perception of the current economic situation of their firm[7]. This economic situation was evaluated on an interval scale of 1 to 5, with 1 corresponding to a "*critical situation*" and 5 a "*very good situation*". This evaluation allows us to construct a categorical and hierarchised variable in which the scores assigned in each case reflect a ranking, so that an increase from 1 to 2 in this variable is not necessarily equivalent to an increase from 2 to 3.

The previous circumstance means that it is not appropriate to use least squares estimations here. Nor is it suitable to use conventional methods of qualitative dependent variables, such as a probit or a multinomial logit, since they do not take into account the additional information contained in the ordering of the categories of the variable.

Thus, given the nature of the dependent variable, in order to accomplish the proposed objective we estimate various ordered logit models, as described by Greene (1999: 796-800). The ordered logit model is built around a latent regression of the form:

---

[6] Surveys were not carried out for this sector in the provinces of Tucuman or Santiago del Estero.

[7] Although results variables such as sales or profitability were available, we formulated this question in order to ensure we had some output variable in the case of inconsistencies or distortions. In this respect, we should mention that from the descriptive analyses and the fieldwork itself we found that Argentine entrepreneurs undertake very little planning of their activity, and they do not often use performance measures either. In any case, the socio-economic crisis of this country in the year analysed (with currency devaluations, etc.) appears to justify this preventative measure.

$$Y^* = \alpha + \beta\,'X + \varepsilon \quad [1]$$

where Y^* is an unobservable index; α the independent term; β the vector of coefficients associated with the independent variables (defined later); and ε the random disturbance term. The observations are limited to assigning each firm to a category on the interval scale (1 to 5), such that each category corresponds to a specific rank of Y^*. Thus, we have $Y = 1$ if $Y^* < 1$; $Y = 2$ if $1 < Y^* < \mu_1$; $Y = 3$ if $\mu_1 < Y^* < \mu_2$; $Y=4$ if $\mu_2 < Y^* < \mu_3$; $Y = 5$ if $\mu_3 < Y^*$, where the μ_i are unknown parameters that determine the boundary values of each rank.

Once the distribution that ε follows is assumed – in the case of the ordered logit this is a logistic distribution[8] – the parameters of interest are estimated by maximum likelihood. As a result of these estimations we obtain a coefficient associated with each independent variable, which captures its effect (positive or negative) on the probability, in this case that the firm will improve its economic situation.

On the basis of the typology of entrepreneurs generated and the firm location, the global model is built. The final structure of the independent variables is calculated starting from Equation [1], such that disaggregating X we obtain the expression:

$$Y^* = \alpha + \beta_1 \log(size) + \sum_{j=1}^{7} \beta_j et + \sum_{k=1}^{14} \beta_k province + \sum_{l=1}^{4} \beta_l \, sector + \varepsilon \quad [2]$$

where *et, province* and *sector* are dummies measuring the effects that entrepreneur type, region and sector of activity respectively have on the independent variable mentioned earlier. For its part, log (*size*) is the logarithm of the number of employees, which captures the effect of firm size.

3.2.1 Instrumentalisation of variable entrepreneur type

Capturing the effect that the different types of entrepreneur may have on any improvements in firms' economic situations is, as we have mentioned, one of the central aspects of this work. Building a variable to capture this effect implies a process of instrumentalisation, which we now describe.

First, we carry out a principal components analysis on 29 variables selected following the work of Lumpkin and Dess (1996)[9] and Baum, Locke and Smith (2001), and considering the objective pursued in this research. With this methodological approach the aim is to obtain a new set of variables (factors[10]), fewer in number than the original variables, which allows a clearer interpretation and a precise meaning of the entrepreneurs and their environment. Determining the number of factors to retain is, as Rummel (1970) points out, in part discretionary, and is left to the researcher's judgement. However, and as Stewart (1981) notes, we should mention that there are various criteria to help decide the

---

[8] The choice of a normal distribution leads to the estimation of an ordered probit model. Greene (1999) points out that this is a trivial decision, insofar as it does not translate into relevant differences in the results.
[9] These authors use multi-level models in their analysis of entrepreneurship, relating characteristics of the entrepreneurs and the environment. Their contribution to the literature on entrepreneurs is widely recognised.
[10] In this technique a factor is a linear combination of the original variables.

number of significant factors, such as retaining the factors with characteristic root or eigenvalue greater than 1, which is the criterion chosen in this work[11]. In this case, the Bartlett (1950) test[12] allows us to reject the null hypothesis of no significant correlation (p=0.0000), meaning that it is appropriate to carry out this analysis.

Following the criteria mentioned and taking into account the results from table 3, we obtain 11 factors with eigenvalue greater than 1, whose explanatory power is 60.28%. The interpretation of these factors is carried out in function of the variables with most influence in them, previously carrying out varimax rotation to help in the interpretation of the results. We now describe the factors identified.

[INSERT TABLE 3]

- The first factor after the varimax rotation explains 6.77% of the variance, presenting a negative correlation with the variable *Decision* and a positive correlation with the variables *fSize-E, fSuc-Pos* and *Man-Posts*. The variable *Decision* represents the concentration of decisions in the figure of the entrepreneur, and the other three variables are linked to the size of the firm (measured as number of employees), the firm's degree of organisational complexity (whether it has any dependencies or not) and the governance of the firm (who occupies the management posts). Thus, this factor can be labelled "*Centralisation of decisions*".

- The second factor, which explains 8.83% of the variance, presents a high positive association with the variables *fEdad-Ca, fAge-Fi* and *fEx-Ent*. The first indicates the entrepreneur's age, the second the number of years the firm has been operating, and the third the entrepreneur's years of experience in the profession. Thus, this factor can be labelled "*Specific human capital*" (SHC), since its most important indicators are closely linked to the entrepreneur's knowledge of the business and experience in the management of the firm.

- Similarly, the factors from 3 to 11 have been labelled, respectively, "*Management practices*"; "*Change of ownership*"; "*Information and communication technology*"; "*Influence of environment in management*"; "*Policy of financial support*"; "*Business succession*"; "*Business vocation*"; "*General human capital*"; and "*Location*".

We now seek to form groups of entrepreneurs with homogeneous characteristics but different among the groups, for which a cluster analysis is appropriate. In particular, we use the Howard-Harris algorithm (a top-down model) in order to generate internally homogeneous groups of firms-entrepreneurs that differ from group to group. In the process of identification and location of the groups we use the 11 factors characterising the Argentine business system[13], obtained from the principal components analysis.

---

[11] For example the Cattell test and Horn test. The first of these criteria (eigenvalues greater than 1) is the one used in the current analysis.
[12] Bartlett test: determinant of correlation matrix = 0.024401; chi square with 351 degrees of freedom = 4838.8051 (p = 0.0000).
[13] With regards the size variable used to characterise the different groups of firms, we opted to consider five categories: firms without employees; firms of 1 to 9 employees; firms of 10 to 49 employees; firms of 50 to 249 employees; and firms of 250 employees or more.

The cluster analysis results in seven main groups, which are reported in figure 3. The segmentations are carried out starting from the factor with greatest variance (factor 11). The first split then is from factor 11 "*Location*". From this first stage two groups are obtained: Group 1 with 719 observations and Group 2 with 595.

[INSERT FIGURE 3]

In the second stage, factor 3 ("*Management practices*") carries out the division, obtaining three groups of 512, 455 and 347 firms, respectively. In the third stage factor 9 ("*Business vocation*") generates four groups of 453, 378, 301 and 182 firms. The fourth division involves factor 7 ("*Policy of financial support*"), resulting in five groups with 77, 349, 263, 180 and 445 firms. Factor 8 ("*Business succession*") carries out the fifth division, obtaining the following groups of firms: 77, 281, 201, 164, 349 and 243. Finally[14], factor 5 ("*Information and communication technology*") generates the final seven groups: 77, 229, 165, 150, 258, 217 and 218. The final results of this analysis are reported in table 4[15].

[INSERT TABLE 4]

Finally, the discriminant analysis verifies the classification of the groups, with 97.87% of the cases correctly classified. Furthermore, the ANOVA confirms the statistically significant differences between the clusters with respect to the factors (see table 4).

The interpretation of the results obtained by applying the Howard-Harris algorithm and the mean values obtained in table 4 allow us to characterise the seven groups as follows:

- GROUP 1: *Privileged entrepreneur*. This group (77 firms) can be characterised as firms that benefited from public policies of credit support at subsidised rates (factor 7). The firms in this group make up only 5.86% of the total number of firms in the sample, which could be an indication of the limited impact that policies of financial support have had in Argentina, to which we should add that the majority of these firms are strictly national in scope.

- GROUP 2: *Decentralised entrepreneur*. This group (229 firms) consists of firms characterised by belonging to their founding entrepreneur (factor 8), who locate their new business activity (factor 11) outside the province where they normally live and where their first firm is situated. The firms in this group represent 17.42% of the sample.

- GROUP 3: *Sceptical entrepreneur*. In this group (165 firms) we find firms whose entrepreneurs feel that the situation in Argentina will not change in the short term, that the state of crisis will continue. The entrepreneurs

---

[14] The total explained sum of squares is 28.78%. Obtaining an eighth group increases the sum of squares by 3.49%, with factor 1 again carrying out the split.

[15] In order to test the explanatory power and the results, this analysis of groups of firms is also carried out using the original variables in place of the factors. We obtain the seven groups (244, 115, 156, 130, 280, 144 and 245) with an explained sum of squares of 21.84%. Thus, the explanatory power of the result does not improve, and moreover the final results are more difficult to understand, as 29 original variables are used.

perceive the environment of the sector to which they belong to be either stable or recessed (factor 6), which causes them to be sceptical about the value of incorporating new competences to their management practices (factor 3 with a negative sign). In spite of this they do not wish to change their profession as entrepreneurs. This group represents 12.55% of the sample.

- GROUP 4: *Entrepreneur without vocation*. This group (150 firms) is characterised by firms belonging to entrepreneurs who wish to change their profession (factor 9 with negative sign), either by selling or changing the ownership of their firm (factor 4 with negative sign). Likewise, they are characterised by having a low level of specific human capital (factor 2 with negative sign). This group represents 11.41% of the sample.

- GROUP 5: *Modern entrepreneur*. This group (258 firms) is characterised mainly by possessing the most modern information and communication technologies, and by belonging to entrepreneurs who possess specific new skills and competences with which to understand and use them (factor 5). Furthermore, they are not prepared to leave their profession although their firms are currently experiencing a bad economic situation (factor 9). This group represents 19.63% of the sample.

- GROUP 6: *Atypical entrepreneur*. In this group (217 firms) we find firms that are not now owned by their founders, but belong instead to the entrepreneur who bought them or who took them over from their parents or another relative (factor 8). This is a group of firms in which the entrepreneurs have a high level of specific human capital (factor 2). The group represents 16.51% of the sample.

- GROUP 7: *Traditional entrepreneur*. Finally, in this last group (218 firms) we find firms lacking information and communication technologies, whose entrepreneurs also lack the skills and competences required to use them (factor 5). Their new operations tend to be located in the same province as their habitual residence, and indeed where the first firm is located (factor 11). This group represents 16.59% of the sample.

4. Empirical results

As we mentioned in the section on research design, the analysis here is carried out in two stages. In the first stage we estimate an ordered logit model, determining the marginal effects in order to capture the changes produced in the independent variables, on the basis of the probability of passing from one economic situation to another (from *critical* to *very good*). In the second stage, and as a complement, we substitute the provincial dummies for macro-economic variables (GDP per capita and density of firms per 1000 inhabitants), this time without determining the marginal effects.

The results of the two models proposed are reported in table 5. For each model we show the value of the coefficients of the different variables and the boundary values delimiting the ranks of Y* (as we have already mentioned, the first of the five is 1), and for both their standard error and significance level.

[INSERT TABLE 5]

In general, the models present satisfactory indicators of global significance, with chi square values corresponding to significance levels less than 0.05. Thus, we can reject the hypothesis that all the estimated coefficients are equal to zero. These results, taken together, confirm that the types of entrepreneur, as well as the environment in which their firms operate, significantly influence firms' probability of achieving a better economic situation.

In particular, considering Model 1, the economic situation of "very good" as reference with respect to the other four, the coefficients at the end of the table reflect lower probabilities (negative) as we move from better economic situations to a critical situation – i.e. the firms do not improve their position. Meanwhile, from a normal situation onwards the probability of achieving the best situation ("very good") rises.

In a first approximation, the coefficients of the independent variables show that the probability of improvement is associated with larger firms. In this respect, we can say that firms managed by "traditional", and above all "modern" entrepreneurs, are more likely (as is indicated by the positive and statistically significant coefficient at the 95% and 99% levels, respectively) to improve their economic situation than the "privileged" entrepreneurs (those who have received subsidies) and the omitted group. This relation changes when we consider entrepreneurs "without vocation". In this case, the negative sign of the variable and the statistical significance at the 99% level show that it is the "privileged" entrepreneurs (omitted group) that achieve a better economic situation. Likewise, the probability of improvement maintaining the entrepreneur types constant, *ceteris paribus*, are for example greater in the provinces of Rio Negro, Neuquen and Cordoba, and lower in Tucuman than in the omitted province San Juan.

With the groups of entrepreneurs established, we carry out a cross tabulation to determine the proportion of the different entrepreneur types in each of the provinces analysed. There are some differences in the distributions between the provinces (see figure 4). For example, a greater proportion of "sceptical" entrepreneurs is found in the province of Catamarca, there are more "traditional" entrepreneurs in Jujuy, and more "modern" entrepreneurs in Chaco and Rio Negro. In this latter province, along with Neuquen, Cordoba and Corrientes, we find a greater presence of entrepreneurs belonging to groups 5, 6 and 7 (modern, atypical and traditional). However, all the groups are represented in the majority of the provinces (except Chubut).

[INSERT FIGURE 4]

On the other hand, the firms from the primary sector are more likely to achieve a better economic situation than those of the construction sector.

As far as Model 2 is concerned, we observe the same behaviour with regards the variables measuring the typology of the entrepreneurs, finding that the coefficient for the variable firm density (number of firms per 1000 inhabitants) has a positive sign and is statistically significant at the 99% level, which might suggest that a greater firm density corresponds to a better economic situation for the firms. From this we could deduce that the existence of a certain degree of domestic competition/rivalry may in certain provinces

be dynamising firms to actions directed at innovation or improving the quality or productivity.

Furthermore, the negative coefficient, statistically significant at the 99% level, of the variable GDP could be suggesting that the economic situation of Argentine firms as perceived by their entrepreneurs improves as GDP declines.

The results considering the marginal effects are reported in table 6. These effects allow us to determine the firms' probabilities of transitions between ranks and the influence of the explanatory variables. The difference of these results compared to table 5 is that instead of determining the probability in function of the most favourable economic situation – i.e. position 5 "*very good*" in reference to the rest of the positions – table 6 informs about the change in probability of moving from level to level. For example, the probability of passing to a better position – i.e. from a "*normal*" to a "*good*" and "*very good*" situation – are associated with larger firms (coefficient statistically significant at the 99% level), with respect to firms managed by privileged (subsidised) entrepreneurs, group omitted, directly related with firms managed by modern entrepreneurs (passing from a "*normal*" to "*good*" situation, coefficient statistically significant at the 99% level, and from "*good*" to "*very good*", at the 95% level), and entrepreneurs belonging to the traditional group from the position "*normal*" to "*good*", and inversely related with entrepreneurs without vocation (coefficient statistically significant at the 99% level).

Thus, with respect to the analysis of the environment, we see statistically significant differences between the provinces and sectors. There is more probability in the provinces of Rio Negro, Neuquen, Cordoba and Salta and less in Tucuman compared to the omitted province San Juan. The primary sector offers greater probability than the construction sector.

[INSERT TABLE 6]

On the other hand, the probability of the situation worsening is associated directly with smaller firms, entrepreneurs without vocation, with respect to the omitted group. This relation is the reverse for the group of modern entrepreneurs (coefficient statistically significant at the 99% level), and traditional entrepreneurs (coefficient statistically significant at the 95% level), with greater intensity in the first group. There are statistically significant relations with respect to the province and sector. Thus, with the exception of Tucuman the rest of the provinces with statistical representativeness show inverse relations in the probability of worsening their economic situation, with the firms from the construction sector those most likely to worsen their situation compared to the omitted primary sector.

5. Conclusions

The results presented in the previous section allow us to identify, with respect to the models proposed, a series of factors that potentially influence Argentine entrepreneurs' level of confidence in their own business activity.

With regards the first factor referring to the so-called "entrepreneur type" effect in the two models proposed, this proves to be a useful element to help distinguish between two different sets of entrepreneur profiles: on the one hand, a series of profiles defined as

modern and traditional entrepreneurs, with personal and professional characteristics that provide them with a "locus of internal control", which boosts their confidence in their business activity although the economic situation of the country and its institutions are experiencing difficult times; and on the other, entrepreneur profiles defined as entrepreneurs without vocation and atypical entrepreneurs, more oriented towards a pattern of behaviour closer to a "locus of external control", which leads them to lose confidence in their firm's situation, especially in an economic and institutional situation provoking a situation in them similar to the "learned helplessness" described by Seligman (1975) from the field of psychology, which leads them to consider going so far as to abandon their profession.

The second factor refers to the region effect contemplated in the first model, and allows us to detect a series of regions, such as Cordoba, Corrientes, Neuquen, Rio Negro, Salta and Santiago del Estero, where there is a positive and significant relation between the entrepreneurs' confidence in their business activity and a socio-economic and demographic profile characterised by a population density lower than the national average (with the exception of the province of Cordoba), a lower urban unemployment rate than the national average (with the exception of Salta, where the unemployment practically coincides with the national average), and a greater rate of immigration from neighbouring countries than the national average (with the exception of regions such as Cordoba and Corrientes, which are further from the borders with other countries). These data are reported in table 7 and are based on data provided by the Argentine National Institute of Statistics and Censuses (INDEC). They suggest that some regions have a "local dynamism" that tends to reinforce the confidence of the entrepreneurs located within them, in stark contrast to other provinces such as Tucuman, where the relation is negative and significant.

The third factor refers to the sector effect, which in the first model allows us to observe a negative and significant relation between the entrepreneurs' confidence in their activity and belonging to the industrial sector. The data appear to be consistent with a recessionary cycle that begins in late 1998, in the economic context of the so-called "Asian" crisis, and in particular of the Brazilian devaluation in early 1999. In the period 1999-2000 Argentine industrial production declined by approximately 15%. This fall in industrial activity was caused not only by the drop in consumption, but also by the declining investment, which accumulated a reduction of 22% to the third quarter of 2000. In short, in the past decade we observe that in 1999 the industrial production was practically at 1993 levels, and that by the end of 2001 there had been no recovery.

In the second model – in which the provinces are not considered – the sector that expresses a negative and significant relation with entrepreneurial confidence is construction, which accumulates a fall of approximately 20% in the 2-year period considered previously, finishing at only 8% above its 1993 level of activity. In the first six months of 1999 alone this sector shed 52 000 workers.

Finally, we note a series of additional factors such as firm size (in terms of the firms' number of employees), which in both models associates positively and significantly with the entrepreneurs' confidence in their activity. This appears to support some Schumpeterian arguments about the importance of firm size for obtaining particular market positions. This argument appears to be in line with the results obtained in the second model when firm density-type variables are incorporated, since we observe a positive and significant relation with Argentine entrepreneurs' confidence in their business. Finally, we

find that the growth of the economy in terms of GDP per capita is negatively and significantly related with the entrepreneurs' confidence in their business activity. This to some extent supports the hypothesis that entrepreneurs are more optimistic in economic contexts in which there are more growth opportunities.

To conclude, we can say that although these results are preliminary in nature, they appear to suggest that the entrepreneur typology may be a factor helping to explain entrepreneurs' confidence in their own business activity, along with other complementary factors of a regional or sectorial nature. More specifically, we consider as a working hypothesis for future research that certain entrepreneurial profiles may serve as "antidotes" against the "learned helplessness" generated in entrepreneurs by their exposure to complex and highly unstable economic and institutional contexts, such as the one we analyse here for the Argentine case.

References

Baum, J. R, Locke E. A, and Smith, K.G. 2001, A Multidimensional Model of Venture Growth", *The Academy of Management Journal* 44 (2): 292-303.

Beugelsdijk, S. and Noorderhaven, N. 2004, Entrepreneurial attitude and economic growth: A cross-section of 54 regions, *Regional Science* 38: 199-218.

Coleman, J. S. 1990, Foundations of Social Theory (Cambridge, Mass, and London: Harvard University Press).

Curran, J, and Blackburn, R. 2001, Researching the Small Enterprise (London, Thousand Oaks, New Delhi: Sage).

Dasgupta, P. 1988, Trust as a Commodity, In Trust: Making and Breaking Cooperative Relations (ed. D. Gambetta, New York, Oxford, Brasil: Blackwell Publishers), 49-73.

Fukuyama, F. 1995, Trust -The Social Virtues and the Creation of Prosperity (New York: Free Press).

Ganesan, S, and Hess, R. 1997, Dimensions and Levels of Trust: Implications for Commitment to a Relationship, *Marketing Letters* 8 (4): 439-448.

Glaeser, E, Kallal, H, Scheinkman, J, and Schleifer, A. 1992, Growth of Cities, *Journal of Political Economy* 100, 1126-1152.

Glaeser, E, Laibson, D, Scheinkman, J, and Soutter, C. 2000, Measuring Trust, *Quarterly Journal of Economics* 115, 811-846.

Granovetter, M. 1985, Economic Action and Social Structure: The Problem of Embeddedness, *American Journal of Sociology* 91 (3), 481-509.

Greene, W. H, 1999, Análisis econométrico, (London: Prentice Hall).

Henderson, V, Kundoro, A, and Turner, M. 1995, Industrial Development in Cities, *Journal of Political Economy* 103, 1067-1090.

Höfmann, H, and Malieva, E. 2002, Trust as Basic Anthropological Category, In Entrepreneurial Strategies and Trust: Structure and Evolution of Entrepreneurial Behavioural Patterns in East and West European Environments-Concepts and Considerations, In eds. Höfmann, H, and Welter, F, *Forschungsstelle Osteuropa Bremen, Arbeitspapiere und Materialien*, 37, 11-18 (Bremen).

Lawson, C, and Lorenz, E, 1999, Collective learning, tacit knowledge and regional innovative capacity, *Regional Studies* 33: 305-317.

Leibenstein, H. 1968, Entrepreneurship and development. *American Economic Review* 38 (2): 72-83.

Lumpkin, G.T, and Dess, G. G. 1996, Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of management Review* 21 (1): 135-172.

Markusen, A. 1996, Sticky places in slippery space: a tipology of industrial district, *Economic Geography* 72: 293-314.

Miner, J. 1997, A Psychological Typology and its Relationship to Entrepreneurial Success, *Entrepreneurship and Regional Development* 9: 319-334.

North, D. C. 1990, Institutions, Institutional Change and Economic Performance, (Cambridge: Cambridge University Press).

Ottati, G. 1994, Trust, interlinking transactions and credit in the industrial district, *Cambridge Journal of Economics* 18: 529-546.

Rabellotti, R. 1998, Collective effects in Italian and Mexican footwear industrial cluster, *Small Business Economics* 10: 243-262.
Rummel, R. J, 1979, Applied Factor Analysis (Northwestern University Press, Evanston).

Sako, M. 1992, Prices, Quality and Trust: Inter-firm Relations in Britain and Japan (Cambridge: Cambridge University Press).

Seligman, A. 1997, The Problem of Trust (Princeton).

Seligman, M. 1975, Helplesness (W. H. Freeman).

Sigmund, K, Fehr, E, and Nowak, M. 2002, The Economic of Fair Play, *Scientific American January*, 83-87.

Smallbone, D, and Lyon, F. 2002, A note on Trust, Networks, Social Capital and Entrepreneurial Behaviour, In Entreprenuerial Strategies and Trust: Structure and Evolution of Entrepreneurial Behavioural Patterns in East and West European Environments – Concepts and Considerations, In eds. Höfmann, H, and Welter, F, *Forschungsstelle Osteuropa Bremen, Arbeitspapiere und Materialien*, 37, 19-24 (Bremen).

Stewart, D. L, 1981, The application and Misapplication of Factor Analysis in Marketing

Research, *Journal of Marketing Research*, 18: 51-62.

Sveiskauskas, L, Gowdy, J, and Funk, M. 1988, Urban productivity: City size or industry size, *Journal of Regional Science* 28(2): 185-202

Thomas, K. 2000, Creating regional cultures of innovation, The regional innovation strategies in England and Scotland, *Regional Studies* 34: 190-198.

Welter, Kautonen, Chepurenko, Malieva, and Venessar, 2003, Does Trust Matter? A cross Cultural View on Interpreneurship in Different Trust Milieus", Paper Presented at the Babson College-Kauffman Foundation Entrepreneurship Research Conference, 5-7-6-2003, Babson, USA.

Williamson, O. 1993, Calculativeness, Trust and Economic Organization, *Journal of Law and Economics* 36 (4): 453-486.

Yamagishi, T, and Yamagishi, M. 1994, Trust and Commitment in the United States and Japan, *Motivation and Emotion* 18 (2): 129-166.

Zucker, L. 1986, Production of Trust: Institutional Sources of Economic Structure, 1840-1920, *Researching Organizational Behavior*, 8: 53-111.

APPENDIX: Tables and figures

Table 1. Sample representativeness by province

No.	Provinces analysed	Firms surveyed	% of sample	Total population	% of total population
1	San Juan	102	7.76	5,204	1.96
2	Catamarca	110	8.37	1,835	5.99
3	Tucuman	105	7.99	7,565	1.39
4	Jujuy	110	8.37	3,008	3.66
5	Salta	97	7.38	6,303	1.54
6	Santiago del Estero	99	7.53	3,204	3.09
7	Chaco	97	7.38	8,312	1.16
8	Corrientes	95	7.23	5,221	1.82
9	Chubut	92	7.00	6,434	1.43
10	Cordoba	149	11.34	39,315	0.38
11	Neuquen	40	3.04	4,748	0.84
12	Rio Negro	53	4.03	6,814	0.77
13	Misiones	96	7.31	6,501	1.47
14	Buenos Aires*	69	5.25	256,245	0.02
	Totals	**1,314**	**100**	**360,709**	**0.364**
* Buenos Aires province includes firms of Capital Federal.					

Table 2. Macroeconomic variables and firm size (no. employees) by province and sector of activity

| | | Sectors of activity | | | | | | | | | | | | | | | | Macroeconomic variables | | |
| | | Primary | | | | Industry | | | | Construction | | | | Services | | | | GDPper | Dens. | Popul. |
No.	Province	No.	Mean (SD)	Min	Max	No.	Mean (SD)	Min	Max	No.	Mean (SD)	Min	Max	No.	Mean (SD)	Min	Max	000s$	1000inhab.	Year 2001
1	San Juan	5	9 (2.34)	7	12	19	28.9 (54.2)	2	206	2	7.5	1	14	76	12.2 (26.8)	1	144	4.771	6.14	617,478
2	Catamarca	2	8 (8.48)	2	14	19	9.1 (9.50)	1	35	3	3.6	2	5	86	3.54 (2.66)	1	15	4.338	4.70	330,996
3	Tucuman	8	21.3 (13.11)	8	45	15	10.6 (14.9)	1	60	-	-	-	-	82	7.6 (9.54)	1	40	4.481	4.71	1,331,923
4	Jujuy	3	6.3 (1.52)	5	8	17	4.8 (3.58)	1	15	6	6.1	1	18	84	8.82 (23.06)	1	200	4.113	3.76	609,048
5	Salta	14	28.4 (22.03)	2	65	11	27.5 (26.3)	1	90	2	22	8	36	70	16.3 (17.9)	1	85	3.879	4.78	1,079,359
6	Sg. del Estero	4	16 (12.51)	4	30	17	11.2 (9.77)	1	31	-	-	-	-	78	9.19 (14.2)	1	80	3.041	3.37	795,661
7	Chaco	3	2 (1.0)	1	3	20	10.8 (9.70)	2	34	2	95	25	165	72	11.02 (20.6)	1	154	3.770	4.98	978,956
8	Corrientes	5	5.8 (3.56)	3	12	15	13.4 (15.65)	2	60	3	10	4	21	72	10.6 (22.1)	1	170	3.892	4.42	926,989
9	Chubut	2	23.5 (19.09)	10	37	16	13.3 (15.16)	2	50	2	7.5	2	13	72	10.9 (19.3)	1	110	8.008	13.35	408,191
10	Cordoba	8	10.25 (10.19)	2	32	23	14.4 (23.6)	1	114	6	24	9	42	112	10.3 (19.7)	1	156	7.144	10.43	3,052,747
11	Neuquen	5	19.2 (13.59)	2	38	4	67.7 (64.8)	9	142	1	118	118	118	30	7.16 (12.5)	1	63	9.352	9.46	471,825
12	Rio Negro	3	19.66 (8.96)	14	30	12	41.6 (69.6)	2	233	1	11	11	11	37	10.08 (20.2)	1	124	6.694	9.59	549,204
13	Misiones	4	4.2 (1.5)	3	6	10	50 (69.0)	2	200	6	8.5	3	15	76	12.7 (30.03)	1	245	3.882	5.39	961,274
14	Buenos Aires	3	6.3 (4.04)	2	10	11	31.2 (56.0)	1	182	6	8.6	4	21	49	23.6 (45.9)	1	210	6.416	8.33	13,755,993
	Total	69	15.5	1	65	209	19.3	1	233	40	17.9	1	165	996	10.7	1	245			
Anova analysis of size by province		F=2.26 P-value=0.0181				F=2.61 P-value=0.0023				F=5.47 P-value=0.0001				F=2.76 P-value=0.0007						

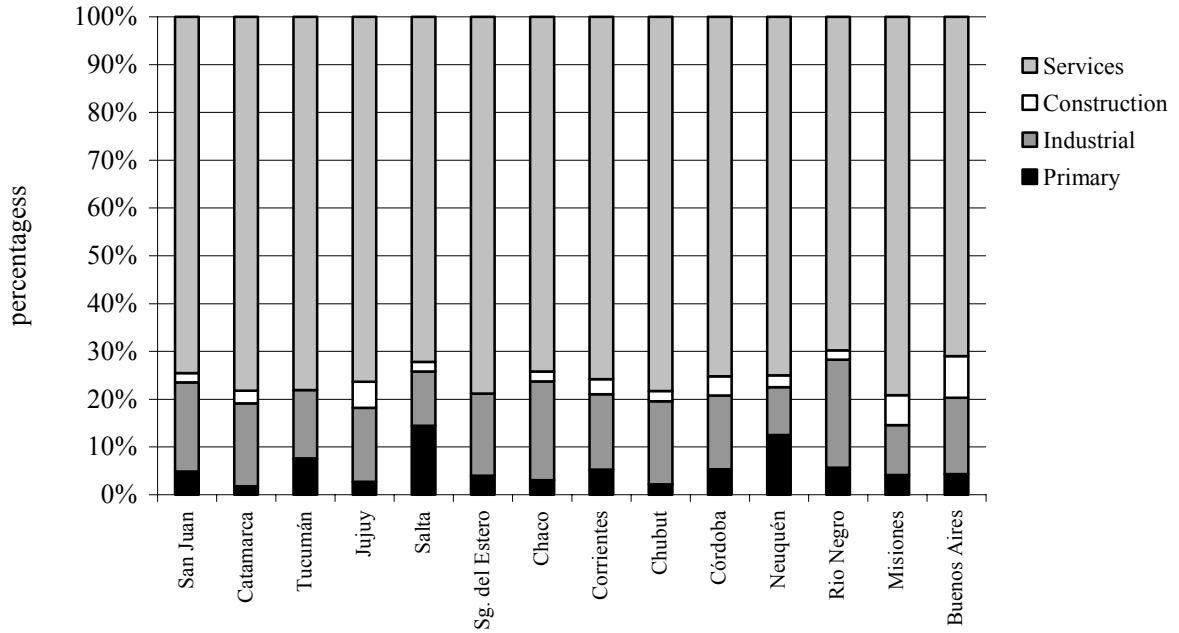Figure 1 Firm representativeness by sector and province

Figure 2: Percentage of firms by sector and province with respect to mean

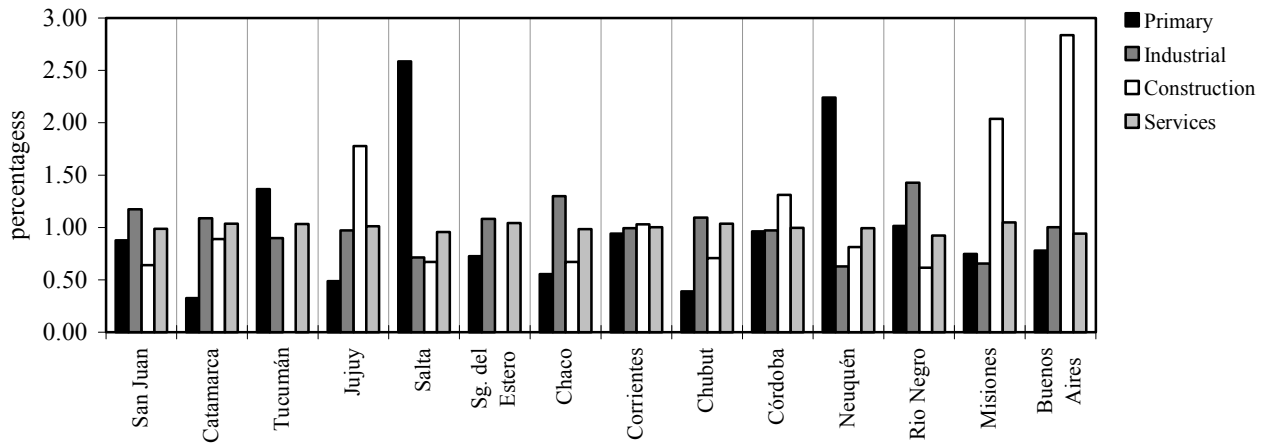# Table3: Rotated factor matrix – Factor loadings retained after varimax rotation

ITEMS	Factor_1	Factor_2	Factor_3	Factor_4	Factor_5	Factor_6	Factor_7	Factor_8	Factor_9	Factor_10	Factor_11	Communali
Who occupies firm management posts (Man-Posts)	0,6117											0,5035
Decisions concentrated in entrepreneur (Decision)	- 0,5770											0,4097
Firm size by number of employees (fSize-E)	0,5713											0,5704
Whether firm has dependencies (fSuc-Pos)	0,6837											0,5606
Age entrepreneur (fEdad-Ca)		0,7856										0,6459
Age firm (fAge-Fi)		0,7698										0,7163
Years experience as entrepreneur (fEx-Ent)		0,8775										0,7878
Firm profitability year 2001 (Profit)			0,5780									0,5001
Firm profitability level compared to sector (Prof-Lev)			0,7339									0,5929
Firm strategic planning (Plans-N)			0,4578									0,4801
Control customer "loyalty" (Loyalty)			0,5117									0,4463
Hopes to make some change in firm ownership (Change-O)				- 0,5563								0,5197
Employs relatives (fFam-Emp)				0,8040								0,6811
Indicate type of IT possessed by firm (Inf-Tech)					0,8317							0,7410
Knows how to use e-mail (Know-Email)					-0,8574							0,7856
Importance for entrepreneur that firm is certified by ISO norm (Imp-Cert)						0,7386						0,6224
Market profile (Mark-Prof)						- 0,6133						-0,5564
Geographical scope of operations (Geo-Scope)							0,6517					0,5177
Receipt of an SME credit at subsidised rate (SME-Cred)							- 0,8245					0,6934
Entrepreneur firm founder (Ant_foun)								0,8365				0,7404
Firm's economic situation (Ec-Situ)									0,7249			0,6766
Intention to change profession as entrepreneur (Vocation)									0,6643			0,6643
Sex (Sex)										0,3577		0,4463
Highest level of studies completed by entrepreneur (Education)										0,6232		0,5142
Can negotiate in English (Languages)										0,7743		0,6286
Owns other firm (Other-Firm)											0,5738	0,6090
Years resident in province where firm's head office located (fYears-Res)											0,7612	0,7232
VARIANCE:	1,8288	2,3843	1,5887	1,2225	1,7729	1,2153	1,3494	1,1294	1,2413	1,4087	1,1339	
% VARIANCE EXPLAINED	6,77%	8,83%	5,88%	4,53%	6,57%	4,50%	5,00%	4,18%	4,60%	5,22%	4,20%	
% VARIANCE CUMULATIVE	6,77%	15,60%	21,49%	26,02%	32,58%	37,08%	42,08%	46,26%	50,86%	56,08%	**60,28%**	

Figure 3 Process of group generation

Location of company expansion

FACTOR 11

| Group 1 719 | Group 2 595 |

Management practices

FACTOR 3

| Group 1 512 | Group 2 455 | Group 3 347 |

Business vocation

FACTOR 9

| Group 1 453 | Group 2 378 | Group 3 301 | Group 4 182 |

Policy of financial support

FACTOR 7

| Group 1 77 | Group 2 349 | Group 3 263 | Group 4 180 | Group 5 445 |

Business succession

FACTOR 8

| Group 1 76 | Group 2 281 | Group 3 201 | Group 4 164 | Group 5 349 | Group 6 243 |

Information technologies

FACTOR 8

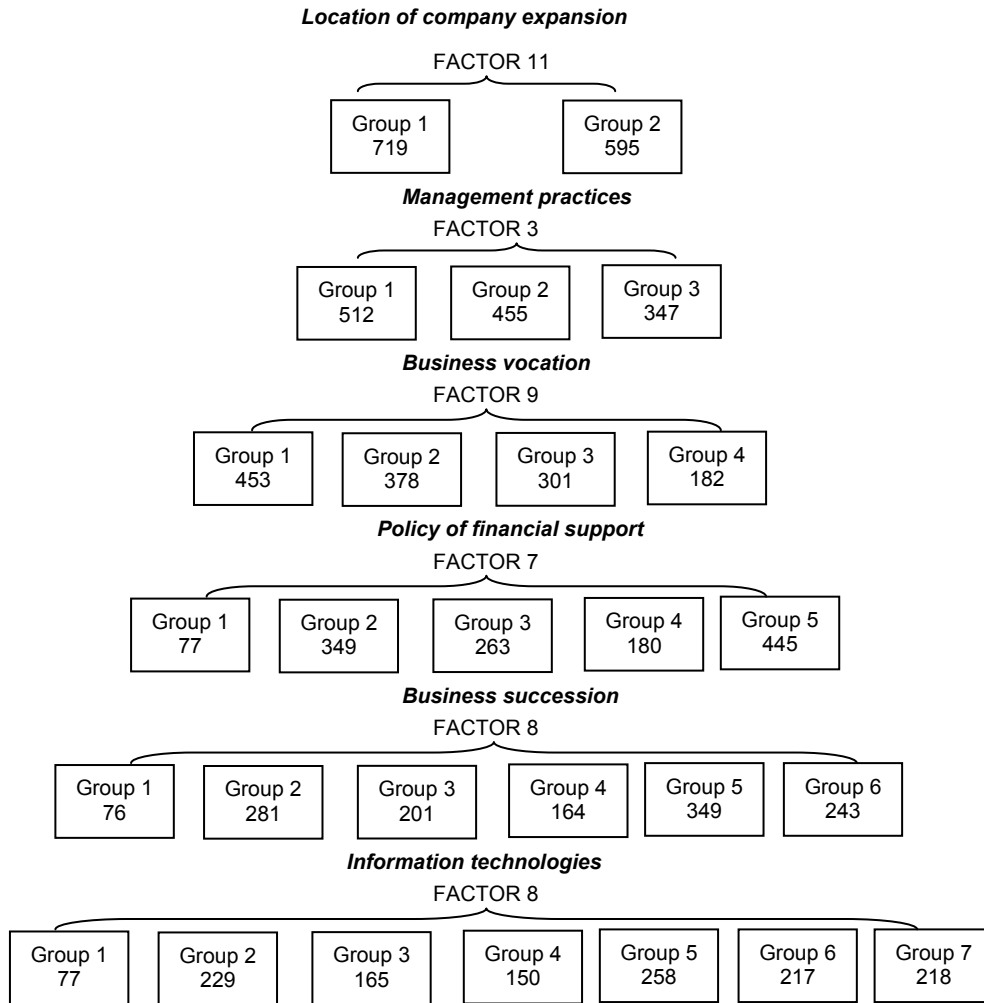| Group 1 77 | Group 2 229 | Group 3 165 | Group 4 150 | Group 5 258 | Group 6 217 | Group 7 218 |

Table 4: Mean values obtained for each group in last split

DIVISION N° 6   NUMBER OF GROUP DIVIDED PREVIOUSLY: 5
                  VARIABLE WITH BIGGEST VARIANCE: FACTOR: **FACTOR 5**

GROUP	NUM.	SUM OF SQUARES		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR10	FACTOR11
1	77	785,09	MEAN :	0,08	0,01	-0,01	0,11	0,04	0,21	3,29	0,31	-0,18	-0,02	-0,04
			SD:	1,23	1,08	0,95	0,99	0,85	0,84	0,71	1,01	0,89	1,07	0,86
2	229	1795,78	MEAN:	0,29	0,38	0,00	0,28	0,02	-0,38	-0,21	0,59	0,12	0,06	-1,12
			SD:	1,14	0,99	0,86	0,94	0,87	0,70	0,54	0,55	0,67	0,97	0,84
3	165	1383,79	MEAN:	-0,08	-0,06	-0,77	0,08	-0,04	1,64	-0,52	0,12	0,01	-0,08	0,05
			SD:	0,91	0,93	0,98	0,92	0,97	0,79	0,48	0,69	0,76	1,03	0,99
4	150	1297,49	MEAN:	0,19	-0,57	-0,09	-0,70	0,06	-0,50	-0,25	0,25	-1,74	0,23	0,32
			SD:	0,89	0,90	1,05	0,93	1,03	0,82	0,64	0,81	0,77	1,02	0,82
5	258	1617,10	MEAN:	-0,26	-0,13	0,37	-0,21	0,82	-0,13	-0,12	0,38	0,54	-0,14	0,47
			SD:	0,79	0,97	0,90	0,90	0,39	0,70	0,57	0,59	0,63	0,94	0,69
6	217	2010,11	MEAN:	0,22	0,39	0,12	0,06	0,22	-0,14	-0,14	-1,64	0,08	0,07	-0,08
			SD:	1,20	0,89	0,98	1,11	0,89	0,81	0,58	0,56	0,87	1,07	0,92
7	218	1405,17	MEAN:	-0,32	-0,21	0,09	0,28	-1,23	-0,28	-0,10	0,20	0,40	-0,07	0,46
			SD:	0,66	0,94	0,95	0,88	0,47	0,79	0,45	0,69	0,76	0,92	0,72

F(Pvalue): 13,59** 23,71** 25,88** 22,72** 139,66** 152,50** 485,50** 271,70** 168,60** 2,75** 98,80**

TOTAL 1314 10294,52 Explained sum of squares: 28,78%
** p<0.01

Figure 4: Distribution of entrepreneurs by group and province
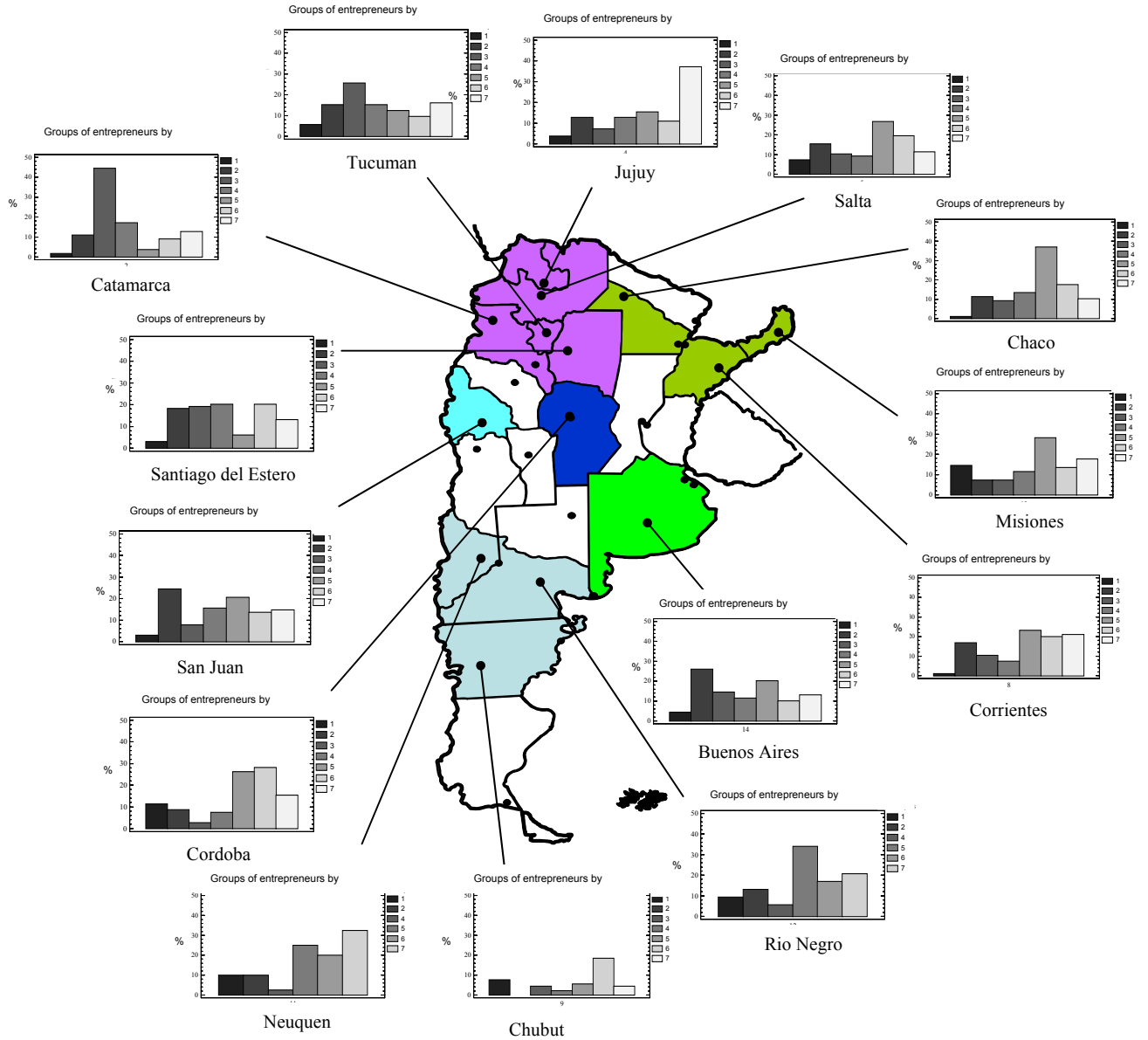
Types of entrepreneur

1 Privileged

2 Decentralised

3 Sceptical

4 Without vocation

5 Modern

6 Atypical

7 Traditional

Table 5. Estimations of ordered logit models

	Model 1 (Provinces)		Model 2 (Macroeconomic variables)	
	Std.coefficient	Std.error	Std.coefficient	Std.error
Ln(employees)	0.2146	0.0582**	0.2580	0.0494**
decentralised_CEO[†]	0.3738	0.2590	0.1082	0.2509
sceptical_CEO	0.1450	0.2751	-0.7029	0.2666
CEO_without vocation	-0.8542	0.2782**	-0.9299	0.2732**
modern_CEO	0.9456	0.2546**	0.9629	0.2499**
atypical_CEO	-0.1025	0.2551	-0.1002	0.2518
traditional_CEO	0.5405	0.2644*	0.5325	0.2613*
Catamarca[††]	-0.1373	0.2646	-	-
Tucuman	-0.5735	0.2678*	-	-
Jujuy	-0.3984	0.2669	-	-
Salta	0.8664	0.2768**	-	-
Santiago del Estero	0.6756	0.2760*	-	-
Chaco	0.4178	0.2843	-	-
Corrientes	0.6820	0.2780*	-	-
Chubut	0.1267	0.2781	-	-
Cordoba	1.0210	0.2524**	-	-
Neuquen	1.5134	0.3613**	-	-
Rio Negro	1.6984	0.3346**	-	-
Misiones	0.7500	0.2732	-	-
Buenos Aires	0.4316	0.2890	-	-
dsec_industrial	-0.3574	0.2733*	-0.4918	0.2752
dsec_construcción	-0.8026	0.3739	-0.9518	0.3717*
dsec_servicios	-0.3551	0.2468	-0.4484	0.2510
Ln(firm density)	-	-	1.4828	0.3852**
Ln(GDP)	-	-	-1.3550	0.5156**
Critical sit.	-1.5316	0.3948	-1.4532	0.4562
Bad sit.	-0.5008	0.3920	-0.4563	0.4536
Normal sit.	1.6361	0.3935	1.5670	0.4547
Good sit.	5.0330	0.4440	4.8672	0.4979
No. obs	1314		1314	
LR chi2	271.96		179.38	
Prob>chi2	0.0000		0.0000	
Pseudo R^2	0.0728		0.0513	

[†] privileged entrepreneur group omitted; [††] Province omitted San Juan; [†††] sector omitted primary

* $p < 0.01$; ** $p < 0.05$

Table 6. Determination of marginal effects

Probability of transitions

	dy/dx Critical	dy/dx Bad	dy/dx Normal	dy/dx Good	dy/dx Very good
Ln(employees)	-0.0190**	-0.0194**	-0.0045	0.0403**	0.0026**
	(0.0046)	(0.0048)	(0.0023)	(0.0096)	(0.0008)
decentralised_CEO[†]	-0.0301	-0.0325	-0.0160	0.0735	0.0053
	(0.0190)	(0.0216)	(0.0169)	(0.0529)	(0.0420)
sceptical_CEO	-0.1234	-0.0129	-0.0044	0.0278	0.0019
	(0.0224)	(0.0241)	(0.0113)	(0.0539)	(0.0038)
CEO_without vocation	0.0988*	0.0788*	-0.0327	-0.1369**	-0.0079**
	(0.0404)	(0.0248)	(0.0269)	(0.0367)	(0.0025)
modern_CEO	-0.0677**	-0.0765**	-0.0649*	0.1929**	0.0162*
	(0.0152)	(0.0183)	(0.0288)	(0.0542)	(0.0065)
atypical_CEO	0.0093	0.0093	0.0015	-0.0190	-0.0012
	(0.0239)	(0.0235)	(0.0023)	(0.0466)	(0.0030)
traditional_CEO	-0.0417*	-0.0460*	-0.0285	0.1081*	0.0081
	(0.0178)	(0.0210)	(0.0223)	(0.0554)	(0.0050)
Catamarca[††]	0.0127	0.0126	0.0014	-0.0252	-0.0016
	(0.0257)	(0.0246)	(0.0013)	(0.0473)	(0.0030)
Tucuman	0.0618	0.0536*	-0.0133	-0.0963*	-0.0057**
	(0.0344)	(0.0250)	(0.0183)	(0.0395)	(0.0024)
Jujuy	0.0404	0.0372	-0.0038	-0.0695	-0.0042
	0.0306)	(0.0251)	(0.0112)	(0.0426)	(0.0025)
Salta	-0.0577**	-0.0678**	-0.0711	0.1807**	0.0159*
	(0.0138)	(0.0182)	(0.0372)	(0.0602)	(0.0078)
Santiago del Estero	-0.0479*	-0.0550*	-0.0474	0.1389*	0.0114
	(0.0155)	(0.0198)	(0.0319)	(0.0601)	(0.0064)
Chaco	-0.0322	-0.0356	-0.0220	0.0836	0.0062
	(0.0189)	(0.0226)	(0.0239)	(0.0599)	(0.0052)
Corrientes	-0.0481*	-0.0554*	-0.0484	0.1404*	0.0115
	(0.0155)	(0.0198)	(0.0325)	(0.0605)	(0.0065)
Chubut	-0.0107	-0.0113	-0.0039	0.0243	0.0016
	(0.0226)	(0.0244)	(0.0114)	(0.0545)	(0.0039)
Cordoba	-0.0670**	-0.0787**	-0.0865*	0.2127**	0.0195*
	(0.0126)	(0.0156)	(0.0348)	(0.0540)	(0.0078)
Neuquen	-0.0781**	-0.0988**	-0.1795*	0.3158**	0.0407*
	(0.0109)	(0.0156)	(0.0615)	(0.0677)	(0.0169)
Rio Negro	-0.0838**	-0.1066**	-0.2077**	0.3484**	0.0497*
	(0.0099)	(0.0437)	(0.0559)	(0.0580)	(0.0203)
Misiones	-0.0518**	-0.0601*	-0.0564	0.1552**	0.0131
	(0.0146)	(0.0190)	(0.0338)	(0.0597)	(0.0069)
Buenos Aires	-0.0328	-0.0366	-0.0238	0.0868	0.0065
	(0.0188)	(0.0227)	(0.0255)	(0.0613)	(0.0054)
dsec_industrial	0.0350	0.0331	-0.0005	-0.0636	-0.0040
	(0.0295)	(0.0257)	(0.0074)	(0.0453)	(0.0028)
dsec_construcción	0.0959	0.0741*	-0.0374	-0.1254*	-0.0071*
	(0.0574)	(0.0321)	(0.0410)	(0.0465)	(0.0026)
dsec_servicios	0.0293	0.0312	0.0133	-0.0690	-0.0048
	(0.0190)	(0.0210)	(0.0136)	(0.0495)	(0.0038)

Table 7. Socio-economic and demographic indicators of Argentine Provinces.

Provinces	Population density (inhabitants/km2)*	Unemployment rate urban areas**	Foreign immigration rate bordering countries***
Capital Federal	13679.6	13.4	11.4
Buenos Aires	45.0	17.8	5.5
Catamarca	3.3	22.3	0.4
Cordoba	18.6	11.9	1.3
Corrientes	10.6	16.6	0.8
Chaco	9.9	13.0	0.8
Chubut	1.8	14.0	6.6
Entre Rios	14.7	16.3	0.7
Formosa	6.8	12.6	4.5
Jujuy	11.5	18.6	5.0
La Pampa	2.1	13.3	1.2
La Rioja	3.2	13.9	0.7
Mendoza	10.6	10.7	3.6
Misiones	32.4	4.1	4.6
Neuquen	5.0	15.2	7.2
Rio Negro	2.7	7.9	8.8
Salta	6.9	17.1	2.7
San Juan	6.9	14.8	1.1
San Luis	4.8	10.1	1.3
Santa Cruz	0.8	2.1	12.0
Santa Fe	22.6	18.4	1.2
Santiago del Estero	5.9	12.2	0.3
Tierra de Fuego, Antarctica & Islands	4.7	10.6	11.1
Tucuman	59.4	18.4	0.6
National total	**13.0**	**16.4**	**4.2**

*Data for 2001.
**Data for October 2001.
***Data for 2001.
Source: Argentine National Institute of Statistics and Censuses (INDEC).