



DEPARTMENT OF ECONOMICS
UNIVERSITY OF MILAN - BICOCCA

WORKING PAPER SERIES

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Evidence from a Historical Perspective**

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No. 155 – February 2009

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Università degli Studi di Milano - Bicocca
<http://dipeco.economia.unimib.it>

Italian Entrepreneurship: Conjectures and Evidence from a Historical Perspective

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Abstract

This paper is the first product of an ongoing research on the determinants and the role of entrepreneurship in Italian economic development. Its primary aim is the creation of a data-set of Italian entrepreneurs for the period encompassed between the Unification of the Kingdom (1861) and the end of the XXth century. The main source of the research is a collection of 390 entrepreneurial biographies, prepared for an ongoing Dictionary of Italian Entrepreneurs. The first part of the paper presents a descriptive analysis of the main peculiarities of the country's entrepreneurship on the basis of a few standard variables traditionally used in economic analysis. The second one refines the descriptive approach through a methodology – Multiple Correspondence Analysis and Cluster Analysis – usual by now in standard statistics, yet not very familiar to scholars in economic and/or business history. This has allowed us to single out a few entrepreneurial typologies of the history of Italian capitalism which partly confirm the “traditional” features already emphasized by historiography; such as the prominence of northern entrepreneurs, the strong relations both with own and partner's families, the almost total absence of female entrepreneurs and an essentially middle-class rooted entrepreneurship. However a few novel interesting aspects emerge, the most surprising being the good level of formal education of the sample: a neat majority (60%) has a medium/high degree and almost one third an university degree.

Keywords: Business history, Italian entrepreneurship, cluster analysis

JEL classification: N83, N84, L26, Z13

A previous version of this paper, entitled “Mapping Italian Entrepreneurship. A Quantitative Approach”, has been presented at the conference *The Historical Determinants Of Entrepreneurship* - a Pre-conference of session I10 of the XV World Economic History Congress, Utrecht 2009 - held in Madrid (Instituto Rocasolano, CSIC, 30-31 October 2008). The authors wish to thank the organizers and the participants to that meeting for useful comments and insights. Financial support from CISEPS is acknowledged.

1. *Introduction*

The last two decades have seen quite a renewed interest toward entrepreneurship and/or the individual entrepreneur. This sentiment has been stimulated primarily by the ICT revolution and the “new entrepreneurial economy” (Audretsch-Thurik 2001, Audretsch et al. 2003). Nowadays theoreticians, applied economists and business historians try once more to answer to the following crucial question: what is the relationship between the expansion and the renewal of the entrepreneurial class and economic growth? If one thinks of the revitalization of the western economies in the post-Fordist era induced by the new technological drive, that question already contains an implicit answer, namely that the first – growth of entrepreneurship – does necessarily have some sort of positive influence on the second, economic growth. But why and how the two relate? Is it possible to figure out some generalization about the reciprocal behaviour?

Recent investigations by specialized institutions have shown how difficult is to grasp this association, especially with regard to the complex and manifold impact exerted by the social, cultural and political context on the implementation of entrepreneurial capacities and entrepreneurial opportunities (GEM 1999).

Unfortunately the entrepreneur constitutes “one of the most intriguing” characters acting in the economic game, and economics so far has failed to offer a sound and a convincing analysis of its basic features as well as of its role and performance in economic development. Reasons may be at least twofold: one pertains to its conceptually most elusive character and analytical vagueness (Baumol 1968; Leff 1979) – made up of virtues and capabilities changing over time, therefore extremely dynamic and volatile – which can be hardly portrayed through the traditional (analytical and quantitative) tools of the “dismal science” or forced into a general model which can be proved valid beyond time and space. The other is that in an ideal-type market economy, without uncertainty, asymmetric information, factor-market imperfections and externalities, such as the one considered by mainstream economics, entrepreneurial initiatives are not only not necessary but not even hypothesized. Therefore, despite the increasing attention to the issue paid also at the theoretical level, insofar the most useful insights seem to have come from the field of the applied sciences – be they sociology, or management and business or entrepreneurial (business) history. Yet, notwithstanding a number of recent contributions (f.i. Shane 1996, Temin 1999, Foreman-Peck 2005, Cassis-Minoglou 2006) we are still far from having an empirical evidence large enough to support a convincing explanation of the historical determinants of entrepreneurship.

Probably the best way to tackle such a fundamental question is starting from the bottom: that is assembling the empirical evidence from which to induce possible generalizations. Naturally this can be fruitfully performed only through a clever use of the suggestions (not that many, to tell the truth) coming from the theory (Schumpeter 1939, 1993; Casson 1982; Casson and Godley 2005). This endeavor might allow the construction of empirically supported national typologies, in order to open the way to further steps towards the discovery of stylized facts, such as encompassing the national experiences into a more general model. Our work is organised in the following way: next section is focused on the historical debate on entrepreneurship in Italy, the third describes the sources used to identify a significant sample of Italian entrepreneurs and the fourth illustrates the main features of our sample by means of a descriptive statistical approach. The following paragraph explains the methodology used for the multidimensional analysis while section 6 is devoted to illustrate the main results obtained by the cluster analysis. In Section 7, some final conclusive considerations will be suggested.

2. Entrepreneurship in Italian historiography: the issues

But for few exceptions, until the end of the 1970s in Italy contemporary economic history was characterized mostly by a macroeconomic approach dealing with issues such as economic growth and development, structural change, backwardness, dualism and so on. The very few business oriented historical studies were addressed towards big companies, either private or public. Later on the trend changed and the focus increasingly moved towards a microeconomic approach emphasizing single behaviours and individual strategies (for a survey, see Giannetti-Vasta, 2006b). This was the result of converging factors: on the one side the slow-down of the economic process induced by the energy emergency of the 1970s, the decline of the Keynesian recipes and of the previously dominant paradigm of growth centred on industrialization and big business; on the other, the growing influence of economic sociology and business history of American origin brought about both by American consulting agencies and Italian scholars visiting the US academic world. Yet at least for a decade – that is before the outburst of districts and network was fully considered by the economic and social culture of the country - the primary interest concentrated on the evolution, strategy and organization of single big business, either private or public. Scarce effort was devoted to the reflection about entrepreneurs and even less to the attempt to figure out any sort of taxonomy or classification.

There was however a major exception, the 1980 path breaking contribution by Franco Amatori, whose title explicitly referred to «entrepreneurial typologies» of Italian industrial history. Amatori suggested a simple but still substantially unchallenged typology that outlines the enduring threefold structural character of the country's entrepreneurship: “private”, “supported” and “public” entrepreneurs. The first was epitomized by the Milanese-type textile, food and mechanic industrialists who had been on the front run of the Italian big-spurt; the second ones were to be found in «those sectors such as steel, shipbuilding and heavy mechanical industries, in which, given the narrowness of the domestic market, there was little possibility for survival without protection» (Amatori, 1980: 366). These could be paradigmatically represented by the Genoa (and Terni) actors, with the Turin ones (that is Fiat's Giovanni Agnelli) somehow in between. Finally the third typology was to be referred to few outstanding manager/entrepreneurs at the top of the State-holdings and/or of their operative companies. Since then few other scholars took part in the debate. In his fundamental bibliographical essay on Italian business history, Bigazzi (1990) sustained that the remarkable backwardness and poverty of Italian entrepreneurial history did not allow at the time the construction of an Italian repertory of entrepreneurs. Later contributions largely built upon the previous Amatori's contribution, often dwelling on sectoral individual or cluster initiatives (Amatori-Brioschi, 1997, Doria 1998 and 1999, Amatori-Colli, 1999). Only recently new insights into the category of family entrepreneurs and/or outward looking entrepreneurs had been added (Colli 2002 and 2003, Toninelli 2003, Federico-Toninelli 2006).

There is probably another reason, beyond the ones just sketched, which helps to explain those protracted backwardness and sturdy laziness of Italian entrepreneurial history: it has to do with the ambiguous attitude toward the figure and the role of the entrepreneur in the economic and social history of the country. In a large part of the socio-political as well as cultural circles the entrepreneurship has long been scarcely legitimized, his function not being considered as important in the change and modernization of the country as it had been in the other first comers (see f.e. Gramsci 1966a and 1966b; Gerschenkron 1962). Alas some entrepreneurial reluctance to compete on the market freely accepting both risks and benefits cannot be certainly ruled out. Such an ambiguity is probably rooted in a further still unsolved and even more pervasive question of Italian history: did the post-renaissance dark centuries definitely cancelled the entrepreneurial spirit which animated the economic activity of so many Italian

cities in the previous era? If so the feeble capitalist initiative of modern times would assume the character of a structural permanence of our economy, even reinforced by path-dependence mechanisms (Cipolla, 1990⁴, Romano, 1974). Or, rather, the XVII and XVIII centuries' crisis and decay just quarantined a process of primitive accumulation of entrepreneurial capabilities ignited in the Middle Age and bound to reemerge slowly but pervasively first in the North-western region of the country, and then in central-eastern areas, that is the so called "Third Italy" (Sella 1979, De Maddalena 1982, Cafagna, 1989 and 1999, Mori and Poni 1986, Toninelli 2003)?

In a business history perspective these questions become the central issues of our analysis: is Italy's prolonged backwardness to be explained mostly by her structural absence of those Schumpeterian virtues - innovative capacity and risk-taking - which were at the basis of the Anglo-American success? Did such a frailty ask for substitutive factors such as State intervention and banks support? Or, *au contraire*, has that supposed prolonged process of entrepreneurial accumulation been hampered by the state's political and economic interference and banks' excessive power? Finally and more generally, is the Italian institutional setting on the whole not able to offer opportunities to the most valid entrepreneurial projects?

It is clear to us that to answer these fundamental questions we have to start almost from the beginning, that is we have to construct the basic empirical support on which to build any analytical explanation. Therefore the primary aim of our research program is the creation of a data-set of Italian entrepreneurs for the period encompassed between the Unification of the Kingdom (1861) and the end of the 20th century. Of course the foregone historical debate as well as insights from theory have guided us in the setting out of the framework of the database.

3. Sources

The main source of our research is a collection of entrepreneurial biographies prepared for an ongoing Dictionary of Italian Entrepreneurs, which as so far processed about 600 "gross" entries: these in fact are comprehensive of figures which might stand out more for political than entrepreneurial reasons or that acted primarily as managers. From a practical point of view this means that such a rough estimate has to be depurated from spurious entries, but at the same time increased by the variable number of characters that have been taken into consideration in the dynastic biographies referred not to a single entrepreneur, but to an entrepreneurial family. These biographies will be classified on the basis of a scheme organized according to the following main categories:

- 1) demographic variables: dates of birth and death, location, age at which the entrepreneurial activity began or was suspended
- 2) family relations: inheritance, number of generations, marriage
- 3) networks: religion, member of minority groups, affiliation (social, cultural, institutional, political)
- 4) human capital formation: level and field of education, training on the job, travels and training abroad, apprenticeship
- 5) versatility: sector(s) of activity, diversification, geographical mobility,
- 6) innovation: type and timing of innovation (product, process, organization, marketing)

More specifically, the variables considered in our analysis are presented in Table 1: of course there is no complete information for many of them as the table just enumerates all the variables for which at least one entry has been found.

<Table 1 about here>

4. *The descriptive analysis of the database*

Insofar we have collected data concerning 390 entrepreneurs, which match in practice with the entries of the first volume of the Dictionary, which gathers individuals with surnames between the letters A and D. To be more precise, such a figure corresponds to the original number of the records of the volume plus the entries resulting from all the entrepreneurial characters taken into consideration in a single item (that is a business family), minus the characters recorded in the Dictionary but who acted essentially as politicians such as for instance Orso Maria Corbino - physician and Italian Minister of Education - minus the Italian born entrepreneurs who moved abroad such as Antonio Devoto - who emigrated in Argentina, minus those for whom we have in any case too few information to be processed.

To make the journey through the description of the data base easier to the reader, we have partitioned the results of the survey in two broad categories: the first concerning the individuals - their background, their formation etc. -, the other collecting information more specifically related to the enterprises – their start-up, the sector of activity, the innovation strategies and so on.

The first thing to note is that the sample covers a large time-span, in practice two centuries (the XIX and the XX), even though the bulk of them was active in the post-unification period (in other terms from 1861 onwards). Out of these 331 entrepreneurs (about 85% of the total) are to be considered “pure”: so we can define those who own and manage directly their firm, while 59 (15%) didn’t participate of the double nature of owner and manager. The latter category includes at least three groups of individuals: first, those who kept the position of manager/director in the enterprise founded by them and sold later on (such as for instance Ettore Conti, who created Imprese Elettiche Conti); second, managers/directors who were among the founders of important concerns, of which owned a small or a minority share (such as Giuseppe Colombo, among the founders of the Edison Co.); and, third, dynamic managers who *de facto* acted like real entrepreneurs either in public companies or in State-owned enterprises (f.i. Guido Donegani in Montecatini, Eugenio Cefis in ENI, Enrico Cuccia in Mediobanca).

A neat majority of our sample of entrepreneurs came from the North-West region (153, corresponding to roughly 40% of the total), the area which, as said, was the forerunner of Italian industrialization; almost 20% (74 entrepreneurs) came from the North-East, the region bound to become one of the most important section of the third and fourth dimensions of Italian capitalism (districts and pocket multinationals). Such a destiny was to be shared with Central Italy which registers similar values (71 entries corresponding to 18,5%). The South and the Islands (65 individuals corresponding to 16.9% of the total) stay at the bottom, whilst a fair value (22 and 5.7%) concerns foreign entrepreneurs.

A fundamental question of the theory of entrepreneurship is how the entrepreneurial activity began: in other terms, whether the entrepreneur created the new activity from scratch, or whether he (or she) inherited the activity or acquired it from someone else. Our evidence does not offer a neat answer. Even though information on this subject is not complete, it appears all in all exhaustive enough: it covers 328 cases, that is 84.1%. At a very aggregate level the start-ups of entrepreneurship can be divided almost equally in two classes: the first groups 173 individuals (53%), who were founders of a new firm, the second 155 (47%) who acquired it: 132 (40.2%) by inheritance, 23 (7%) by purchase.

Sex does appear to have had a crucial role in Italian entrepreneurship. In fact quite negligible is the value corresponding to the total amount of female-entrepreneurs: just seven¹.

¹ They were the following: Ada Armaroli, Maria Isabella Bellisario, Lina Bianconcini, Maria Bigarelli, Anna Bonomi, Cecilia Danieli and Marietta Dieni

This however should not surprise social scientists at home, most familiar with the social, cultural and institutional backwardness of the country. It is not surprising, instead, the age at which the greatest part of our sample began their entrepreneurial activity: about 60% of them did it before the 31st birthday, with a crowding in the 21-30 classes of age. Some reflections seems to deserve our finding that a bit less than 30% of the sample (112 entrepreneurs) was born before 1850. It is an important piece of information if conjugated with the previous one: there is a 60% probability that these 112 entrepreneurs started their activity before 1880, the date at which the new technologies of the Second Industrial Revolution began to be introduced in Italy². This seems to suggest that they should be classified as “traditional”, meaning with this that they almost certainly pertained to the trajectory of the First Industrial Revolution.

As far as the social class of origin is concerned, we have rather nice information, covering 341 entries over 390. The greatest part of them (202, corresponding to 67.7% of the coverage) came from the middle class - a category in which we registered artisans, small entrepreneurs, retailers and shopkeepers; a fair number (110) from the upper class (32.3%) - great entrepreneurs, professionals, well-born individuals – and just 29 from the lower classes (8.5%): 6 peasants and 23 factory workers. A convincing specification concerning the origins of the entrepreneurs is the one related to the profession and the level of education of their fathers.

With regard to the first point, fathers’ prevailing activity, this can be divided in two main categories: dependent or independent activity. Evidence here covers about 73% of the sample: 28% (79 in absolute values) of this has to be located in this typology, which register humble occupations such as workers, labourers, ploughmen but also managers and technicians. In the second group – independent activities – there are 206 entries (72% of the collected data), with a neat majority of entrepreneurs (45%) - who most likely handed their assets on their sons, followed from afar by traders (19.3%) and artisans (12.3%). As for the level of education of the fathers, unfortunately only scattered information have been collected (71 cases on 390): however well 72% of these show high level of education (41% an university degree, and 21% a high school degree). Returning to our entrepreneurs a legitimate question is whether the first working activity might be indicative of their future entrepreneurial destiny. According to the 375 answers that have been collected this does not comes out so clearly, if we take into account the two larger categories - dependent or independent activity (self-employment) - in which they have been portioned: well 45% of them belong to the category of the dependent employees. Yet if we get into more details we discover that 108 (28.8%) began their working career already as entrepreneurs, 30 as shopkeepers or merchants, 28 as artisans and 89 (23.7%) as managers or technicians. Conversely only 39 (10.4%) came from more humble activities (country or city labourers) whereas 32 (8.5%) moved their first footsteps in the liberal professions.

It has to be underlined that education comes out as probably the most interesting and crucial variable in the description of our sample and by far the most surprising. The sample offers a good quantity of information concerning the basic data, the ones related to the level of schooling: it has been registered for 305 cases, that is 78.2%. A large share of them - 224 (73.5%) - shows a high level of formal education: 122 (40%) could boast a university degree (laurea) plus 6 (2%) with a post-doc degree, whereas 96 (31.5%) possessed a high-school degree. Conversely only fourteen entrepreneurs - less than 5% of the entries – were illiterate whereas 28 (9.2%) had attended just the elementary school and 39 (12.8%) were fairly educated. Regarding the specific areas of schooling we have a clear preference for the techno-scientific curricula: 56% of the graduated students *vis-à-vis* 23.4% of the law ones, 13.7% of the business

² See, in general, Giannetti (1998), Giannetti-Vasta (2006a), Amatori-Colli (1999), on the electrical sector, Bezza (1984); on chemicals, Amatori-Bezza (1990) and Zamagni (1990); on chemicals and electromechanical, Vasta (1999), on the iron and steel, Bonelli (1975) and Bonelli (1982).

students and just 7.3% of humanities. Among the 68 entrepreneurs with a techno-scientific formation a neat preference (42, i.e. 61%) had been given to engineering, 11 (16%) to chemistry and 16 (23%) to other fields. Besides it must be noticed that in 59 cases (15.1%) the curriculum of formal education had been at least partly carried out abroad.

Interesting enough is the fact that often the process of human capital formation didn't stop with the formal education. A good part of our entrepreneurs (150 out of 390, i.e. almost 40%) had a training experience abroad, mostly in more industrialized countries (about 90% out of the 140 recorded cases): since the 1880s this had become quite a familiar tradition among young Italian entrepreneurs, particularly (but not exclusively) in the case of wealthy and/or already consolidated entrepreneurial dynasties. Finally an indirect test of the medium-high average education of the 390 entrepreneurs is that only 54 of them (less than 14%) experimented workshop apprenticeship, that is a more or less prolonged period of training on the job.

It is well known that another central feature of the historical and theoretical debate on entrepreneurship is the role of family. Our survey offers some interesting evidence on this point. The first result to be taken into consideration is marriage, as long as the family of one of the two partners can add to the activity of the other in terms of wealth, capital, material and immaterial assets. Therefore the social class to which belong the partner can be indicative of possible further "acquisitions" to the family of the entrepreneur. Unfortunately information about this point is much scattered in our database (it covers only 15% of the total entries). Yet the result seems to converge with the conventional wisdom: 98% of the entries (that is 57 entrepreneurs out of 59) married with partners coming from high-medium classes: more specifically 34 (57%) with off-springs from well-born, entrepreneurial or outstanding professional families and just 2 from country or town workers. A further aspect to be considered is whether the entrepreneur had job relations with his (her) own family, which is a very much debated issue in the literature on family business³. Our survey does not offer an unambiguous answer: 224 out of 390 entrepreneurs (57.4%) maintained job relations with members of their families; much less (only 30, i.e. 7.7%) however with members of the partner's family.

Further information about the background of the sample concern religion, political commitment, affiliations, honorary rewards. As for the first point, 373 out of 389 entries (96%) were catholic while Jewish and protestant formed a haggard minority. The great majority - 277, i.e. 71% - seems to have kept away from politics: of the politicized minority (113) almost 60% had commitments at the local level, 24.1% at the national level, 12.5% both at the local and national level and less than 4% at the international level. Such an evidence is indirectly confirmed by the restricted number of entrepreneurs (33 individuals and 8.5%) who during their activity could avail themselves of the financial support from the state. With regards to affiliations, the majority (247 that is 63.3%) belonged to entrepreneurial associations while only a very small number (6) seems to have been affiliated to the freemasonry. Finally a good number of our entrepreneurs (99, that is 25.4%) could see their entrepreneurial activity rewarded with the appointment to the honour of Knighthood (*Cavaliere del lavoro*).

The second broad category of information includes the basic evidence concerning the companies. One set of data is related to the juridical forms which characterize the enterprises at their start-ups: here individual firms (125, corresponding to 32.5% of the total) or limited/commercial partnerships (189, that is 48.5%) largely prevailed. Conversely limited liabilities companies - 9, i.e. 2.3% - and joint stock companies - 58 (14.9%), 5 of which quoted

³ The problem - as known - is if and how attributing responsibility positions to members of the family to the detriment of managers might hinder the success of the firm. On this see f.i. Rose (1996), Jones-Rose (1993), Colli (2003).

at the Stock Exchange – were a neat minority. The widespread family business form which characterizes the sample seems to be consistent with the extensive preference for self-financing showed by the data concerning the bank-firm relationship: well 255 (65.4%) entrepreneurs didn't show to have clear links with the bank-system.

Another interesting point to be clarified is the one concerning the start-up sectors of the various business initiatives. Manufacturing firms were the clear majority (64.1%), followed at a long haul by commercial (11%), financial (7%), agricultural (5.4%) and building (3.9%) initiatives. Out of the 250 enterprises which started their activity in the manufacturing sector, about 1/3 belong to traditional sectors such as the textile-apparel industry (50, i.e.13%), food, beverage and tobacco (38, i.e. 9.7%), leather and shoes (9, i.e. 2.3%); lumber (8, i.e. 2.1%) and paper, pulp and publishing (18, i.e. 4.6%). Conversely less (75, i.e. 19%) were modern industries: chemicals, synthetic fibres and rubber attracted 20 start-ups (5.1%), metallurgy 24 (6.2%), engineering 31 (8%), electro-mechanics and electrical equipment 14 (3.6%).

Not very different values (except for the commercial initiatives) are shown by the evidence concerning the macro-sectors in which the core activity of the sample of firms specialized after their start-ups. The manufacturing sector stays again clearly on the top (67%), followed by the financial one (8%), the commercial (7.2%), the agricultural (5.1%) and the building (4.4%). Such outcome is consistent with the one related to the sector mobility of the firms in the sample, or in other terms, the versatility of our entrepreneurs. In fact, as far as the macro-sectoral mobility is concerned, less than 10% of them abandoned their initial area of activity to move into a new one. The mobility within macro-sectors offers only slightly different results as the percentage of change grows just to about 15%.

Quite dissimilar instead is the evidence concerning the presence of multi-sectoral activities. The sample is almost equally divided between entrepreneurs that concentrated their operation in just one sector (193, i.e. 49.5%) and those who were active in various sectors at the same time (197, i.e. 55%). We have more detailed evidence for 197 cases: 101 entrepreneurs were active in two sectors at the same time, 74 in 3-4 sectors, 22 in more than 4 sectors, with a sample average of 2.98.

Finally a few sentences must be devoted to describe an important part of our database, the one concerning innovation. Innovation capacity – as known - is one of the key factors of the entrepreneurial success. In order to follow Schumpeterian suggestions and to avoid too narrow an approach, we have selected six different kinds of innovative capacity. The first two are the traditional proxies: innovation product and innovation process; then we have picked up the entrepreneur's ability to innovate with regard to sale markets and production markets within and outside the country. Finally we have considered the introduction of new raw materials in the process of production and of new organisational models in the firm. The results obtained are quite surprising: if we consider as innovative entrepreneur the individual who has at least one positive answer to the six variables related to innovation, we have that 284 individuals (72.8%) can be attributed to such a typology. Yet this outcome is probably too optimistic with regard to Italian entrepreneurship. Therefore the modality innovation deserves some more further specification. For instance, if we take into consideration each variable, we have that 31% of our sample has introduced product innovation and 36.4% process innovation. The capacity to move towards new sale markets concerns 46.4% of the entire sample, but much less (23%) outside Italy and even lesser (16%) outside Europe. As for the new markets of production, a phenomenon not very common in the past, we have positive answers in 19.5% of the total. The introduction of new raw materials regards only 7% of the total and the introduction of new organisational models about 20%.

We have then collected all the answers and attributed one point to each positive answer: thus we obtained a score between 0 (all negative answers) and 6 (all positive answers). In this way we have got a more reliable proxy of innovation, which allows us to distinguish among “no innovation” (27.2% of the total), “low level of innovation” (25.6%), “medium level of innovation” (38%) and “high innovation” (9.2%).

5. *The methodology: the multidimensional analysis*

To develop a taxonomy of Italian entrepreneurs we have carried out some multidimensional analyses: first Multiple Correspondence Analysis (MCA), then Cluster Analysis (CA) on the factors obtained from the MCA⁴. Eighteen active variables have been selected for the MCA, while other variables have been used as illustrative ones: these are mainly related to the status and personal characteristics of the entrepreneur or do not offer a primary contribution to the explanation (see Table 3).

<Table 3 about here>

Thirty-five Eigen values had been identified by the MCA, each of them can account for very low proportion of inertia because of the high number of categories involved in the analysis. That is the reason why the proportion of inertia each Eigen value accounts for had been calculated using the correction of Benzecri, which takes into account the number of categories involved⁵. Thanks to this correction, the first 4 Eigen values account for the 97% of the variance, and that is the number of dimensions considered in analyzing the phenomenon of Italian entrepreneurship.

The significant active variables for each dimension (subdivided in left and right quadrant) have been selected every time they account for a proportion of inertia higher than the average inertia, that is when the contribution of each variable is higher than the total of inertia (100) divided by the number of active variables (18). The items of the significant active variables belong to a dimension when their contribution is high and the values of the squared cosine, which represent the quality of the graphical representation, are around 0.20 (see Tables 4). Concerning the illustrative variables, their categories are significant for one dimension when the value test is higher than 2.0 (absolute value)⁶.

On the basis of the corrections suggested by Benzecri, the first dimension turns out to account for 55% of the inertia (according to the correction of Benzecri) and is characterized (see Table 4a), in particular, by active variables (left quadrant) concerning *the activity in manufacturing, the propensity to innovate* (mostly product innovation) and *the ability to open new sale markets*. Other active variables are *being owner and manager at the same time, having job relationship with the own family, being scarcely connected to the banking system*. On the other hand in the right quadrant,

⁴ The SPAD version 5 is the software used in the analysis. For these elaboration, the procedures CORMU –Analyse de Correspondances Multiples-, RECIPI – Classification hierarchique sur facteurs – and PARTI-DECLA – Coupe de l’Arbre et Description des Classes- had been used. The related outputs are available from the author upon request. For what concerns cluster analysis, see Everitt (1993).

⁵ The formula used for the correction of inertia is the following (considering lambda as the proportion of inertia each eigenvalue accounts for and s equal to the number of variables involved) (Bolasco 1999: 139):

$$p(\lambda) = \left(\frac{s}{s-1} \right)^2 * \left(\lambda - \frac{1}{s} \right)^2$$

The computing involves only eigenvalues with a proportion of inertia higher than the average inertia.

⁶ A value test higher than 2 means that the categories place themselves with statistical significance around the dimension, that is in non-casual way. See, Bolasco (1999: 152-153).

we have both some symmetrical active variables (in respect to those of the left quadrant), particularly regarding innovation, and some others variables such as financial activities. We have called this dimension “Entrepreneurial spirit” because most of the variables which characterize the dimension are relative at the capacity/incapacity to develop entrepreneurial activities through new ideas, even with/without the direct support of the family.

<Table 4a about here>

The second dimension, as shown in Table 4b, accounts for almost 28% of the inertia and is clearly linked to the entrepreneurial family tradition. Among the active variables (in the left quadrant) we have: *belonging to the upper class, having job relationship with the members of the family, inheritance of the firm, being an independent worker since the first job* and, most interesting, *high level of formal education*. On the other hand (in the right quadrant) we have belonging to the lower classes, low education level, not having family job relationship and low level of education of the father. We have called this dimension “Entrepreneurial stability” in the sense that the active variables which characterize this dimension are mainly relative to social status.

<Table 4b about here>

The third dimension, as shown in Table 4c, accounts for the 10% of the inertia and is strictly relative to innovation. There are three active variables in the left quadrant concerning *innovation*. The active variables in the right quadrant are the negative counterparts of most of the innovation variables. Also the *high educational level* appears to be significant. Consequently, we have called this dimension simply “Innovation”.

<Table 4c about here>

The fourth dimension, as shown in Table 4d, accounts for almost 4% of the inertia. Despite its low contribution to variance, this factor has to be taken into consideration because of a few aspects which appear useful in explaining the characters of the Italian entrepreneurship. The only two active variables in the left quadrant are related to *lobbying activity*: the first one with politicians, the second through participation to various kinds of association. At the same time we have symmetrical active variables in the right quadrant. We have called this dimension “Political and lobby commitment”.

<Table 4d about here>

6. The results of the Cluster Analysis

MCA describes the main features of the data as they appear in the space spanned by the four principal dimensions. In order to synthesise the phenomenon and to highlight the main groupings of individuals with respect to their most significant profiles, a Cluster Analysis (CA) had been carried out in the dimensional space spanned by the four significant axes. The CA performs the classification of the entrepreneurs: it takes into account the factorial coordinates which characterise them on the four dimensions of the MCA in order to calculate the distances among individuals and aggregate them according to a technique that minimizes the variance within classes and maximizes the variance among classes.

The CA reveals five clusters. All the items in each cluster had been selected according to their value within the cluster (MOD/CLA), as compared to their value in the global population (GLOBAL), as well as to the percentage of people characterized by the modality within the cluster (CLA/MOD) (Lebart 1994). Each cluster, defined according to significant groupings of responses, is identified by the objective characteristics of the individuals involved. The five clusters, shown in the dendrogram of Figure 1 where they are listed according to their relative position, have been named as follows: 1) Schumpeterian entrepreneurs; 2) First generation entrepreneurs; 3) Defensive entrepreneurs; 4) Well Established entrepreneurs, 5) Entrepreneurial Managers.

<Figure 1 about here>

6.1. The first cluster – the larger - includes the 29% of the entrepreneurs: we have called them “Schumpeterian entrepreneurs”, because their prevailing peculiar modalities roughly refer to the characteristics attributed by Schumpeter to his innovative entrepreneur (Schumpeter, 1993). First, the individuals within this cluster were all private entrepreneurs (MOD/CLA = 100%), whereas the cluster contains (CLA/MOD) 31.6% of all the private entrepreneurs of the sample. About 68% of the cluster’s individuals were direct founders of their firm, vis-à-vis the value of 44.4% shown by such modality in the population and that of 44.5% corresponding to the share of the cluster in the sample. Besides, the 90.3% of the people in the cluster show the modality owner + manager and this corresponds to about 36% of all the entries similarly characterized.

Second, about 96.5% of the entrepreneurs in the cluster are classified as innovative, a modality which actually distinguishes (GLOBAL) about 72% of the population: of this about 39% stays in the cluster. The attribute “high innovative” connotes only 9.23% of the sample: 52.8% of them stay in this cluster within which 16.8% of the entries are labelled in such a way. Product innovation characterizes the strategy in the cluster of 63.6% of all entrepreneurs labelled with this modality (which are 31% of the total), process innovation about 43% out of 36.4%: yet respectively 68.1% and 54% of the people in the cluster are to be identified accordingly. As a further confirmation of this tendency almost 88% of the entrepreneurs within this cluster are manufacturers while the cluster contains almost 38% of the share of manufacturers (about 67%) of the sample.

Third, 69.9% of the people in the cluster comes from the middle-class vis-à-vis the share of 51.7% in the population; the majority of the population doesn’t have any political commitment both direct (82.3%) and indirect (92.9%) versus respectively 71% and 69.7% of the entire sample and a cluster’s share of 33.6% and 38.6% on total entries. Moreover 86.7% of the people in the cluster do not entertain close relations with banks (versus 65.4% of the total) and this corresponds to a 38.4% cluster’s coverage of this modality. Finally about 77% of the cluster is not affiliated to entrepreneurial associations (versus 63.3% in the sample). This confronts with a CLA/MOD value of 35.2%.

<Table 5a about here>

6.2 - The second cluster is the thinner as it includes only the 7.7% of the whole population. Its tag – First Generation Entrepreneurs – wants to symbolize at best the features of the founders of new enterprises in a backward local environment, such as the one which characterizes large areas of Italy for most of its economic history. As a matter of fact about 97% of its members were new founders: this compares with the 44.4% share of the same

modality within the sample and a cluster's share of 16.8%. A good share of the people in the cluster is owner of her assets (63.3%). Many less are the ones who can be qualified as owner/manager (36.7%), a percentage remarkably lower than the population's share of such modality (72.6%). This specification seems to suggest that the entrepreneurial performance during the first generation didn't reach the level of a managerial organization and that can be indirectly confirmed by the highest percentage (90%) of the people in the cluster who does not have direct bank connections as compared to a fairly lower value for the entire population (65.4%)

As for the social origin, 60% come from the low-class vis-à-vis to a value of 7.4% for the entire population, whereas the cluster contains 62.1% of the individuals labelled by the same modality; almost 4/5 show a low level of formal education, a modality which in the population accounts for less than 13%, while the cluster covers about 49% of it. Similar evidence (MOD/CLA= 63.3%, CLA/MOD=73%) can be found for the category "father's low level of education", quite rare (6.8%) in our sample. Moreover the high percentage (83.3) of those in the cluster who began as employees – compared to a value of 52.6 for the entire population – seems to suggest that the phenomenon of self-employment might have been a significant component of the socio-economic determinants of Italian entrepreneurship.

<Table 5b about here>

6.3 - The third cluster incorporates the 24.4% of the entrepreneurs. As its label "Well Established Entrepreneurs" already suggests, here converges the elite of the entrepreneurs. First, the cluster contains about half of the people having upper-class origin, a modality which within the cluster characterizes 54.7% of its members as compared to a meagre 28.2% of the entire population. Second, 64.2 % of the cluster inherited the business, a characteristic shared - as already mentioned - only by the 33.9% of the sample; on the contrary just 31.6% of the well established entrepreneurs are to be considered founders, as compared to a sample percentage of 44.4%. More than half of the individuals in the group (versus less than 1/3) were politically involved and more than 2/3 were members of industrial and/or employers associations (versus 36.7% in the population). Third, the 64.2% of the people in the cluster (versus about 44% in the sample) began their entrepreneurial career as independent workers; their fathers were for the most part (76.8% versus 52.8%) autonomous workers. Moreover a large share of them (86.3% versus 57.4%) had job relations with members of their families.

Further specifications of the cluster highlight that all of them were private entrepreneurs and that a good share had been appointed to the honour of *Cavalieri del Lavoro* (40% versus 25.4% in the population).

<Table 5c about here>

6.4 - The fourth cluster includes the 21% of the entrepreneurs. We have called it "Defensive Entrepreneurs" because its prevailing modalities are almost the opposite of the ones characterizing the first cluster. First of all, the defensive entrepreneurs do not innovate or innovate very little: the label "no innovator" fits 74.7% of the people in the cluster (whose share in this modality covers 59.1% of the total) while the same modality is rare enough in our population (28.2%). Moreover just one of them has been highly innovative, a modality which characterizes almost 10% of our population: in particular they seem stubbornly resistant to innovate in products (98% versus 69% in the sample), in new sale markets (90.8% versus 53.4%), in new product markets (95.4% vs. 80.3) and in processes (92% versus 63.6%).

Most of them were independent since the beginning (about 72%) as compared to 44% in the sample, and were children of independent workers as well (77% versus 52.8%). The majority comes from the central/southern regions because the value of the modality “North born” is minor than the one in the sample (43.7% versus 58.2%). A fair share of Defensive entrepreneurs seems to be devoted to commercial activities (17.2 versus 7.2%): actually the cluster’s share in the modality was well over the majority (53.6%). A good part inherited the business (64.4% versus 33.9%), in which other members of the family were inserted (81.6% versus 57.4%).

<Table 5d about here>

6.5 The fifth cluster includes the 16.7% of the population. It has been denominated Entrepreneurial Managers, in order to emphasize the managerial functions performed by its components, who often were more talented administrators than entrepreneurs. In fact the 89.8% of the entries classified as “manager” stays in this cluster: 81.5% of the people in it were managers, versus a corresponding value of 15.1% for the entire population. Furthermore 95% of the managers working in State-owned enterprises were in the group: within it not much lower (83.3%) was the share of those working in business, partly private and partly public. The second most relevant characteristic is that the percentage of the modality “owner” is much lower in the cluster than in the sample (3% versus 12.3%) and that only 4.2% of all the owners belong to the cluster. On the other hand, these individuals: i) were involved in financial activities much more than the remaining population (38.5% versus 8%), ii) had much closer connection with the banking system (75.4% versus 35%) and iii) began their career mostly as employees (78.5% versus 52.6%). In addition almost 97% of them didn’t have job relations with member of his family, as compared to a sample value of 42.6%. About 8% of them were Hebrew, corresponding to about the 55% of all the Hebrews in the population.

As for the level of education 64.6% of them (versus 32.1% in the population) were highly educated, besides, 12.3% (versus 3.9%) taught in the university, that is the 53.3% of the university professors in the population, while a share larger than in the sample (46.2% versus 29%) was involved in politics. Finally it is worth to note that the cluster’s Entrepreneurial Managers were active particularly in financial activities – as already mentioned – and in the energy industry (respectively about 81% and 90% of all the entries characterized by such modalities), that is to say in modern sectors which required complex organizations calling for large bureaucracies; on the contrary traditional activities such as food and textiles were largely under-represented in the cluster (2.2% and 4.2% of total population).

<Table 5e about here>

Let’s now discuss briefly how the different clusters are located in the two-dimension space according to the four different dimensions we have described above (see § 5). The figures show both the position of the clusters in this space and their closeness to the active variables which contributed to define the cluster themselves. However, we have to consider that the real proximity of the clusters can be understood only by using all the four dimensions and thus by referring to the dendogram presented in Figure 1.

If we analyse the first two dimensions – entrepreneurial spirit and entrepreneurial stability - as reported in Figure 2a, we can have some further hints on Italian entrepreneurship. First, we can see how Schumpeterian and First generation entrepreneurs are located close to each other in the upper left quadrant and how they are characterized in the former case by the

innovative variables, and in the latter one by the lower educational level. At the same time Defensive and Well Established entrepreneurs are located in the bottom quadrants. Entrepreneurial Managers seem to be very different from the individuals of other clusters as they are located far from them in the upper right quadrant. In the same Figure, we have also traced two bold lines which indicate respectively education and innovation. Particularly relevant is the latter one as it shows how the different clusters are positioned according to their innovativeness. The innovative bold line goes from left to right passing from “high innovative” (close to the Schumpeterian entrepreneurs) to “no innovation” (towards the Entrepreneurial Managers). This trend is confirmed by Figure 2b, where first and third dimensions – entrepreneurial spirit and innovation – are illustrated: the Schumpeterian and Well Established entrepreneurs are located very close in the upper left quadrant. They both lie along the trajectory of the innovation line, between “high” and “medium” levels of innovation. Once again the Entrepreneurial Managers are located far away from the other clusters.

Finally we can have some further explanations by looking at Figure 2d, where the second and third dimensions – entrepreneurial stability and innovation – are considered⁷. In this case the Schumpeterian entrepreneurs are located close to the Entrepreneurial Managers in the upper right quadrant. This closeness might be explained by the fact that we have not taken into consideration the entrepreneurial spirit variable, which strongly contributes to define the two typologies. The Defensive entrepreneurs are located in the lower left quadrant, very far from the other clusters (more than in the previous figures), as they are characterized by scarce innovative level.

7. Conclusions

At this point of the research we can offer only provisional conclusions. In fact our sample covers a very large time-span: once the data-entry will be completed, almost doubling its present number, it will be necessary to divide it in subsets, each of them related to limited period. Therefore these reflections are just a first attempt at figuring out a few generalizations from what we have so far carried out.

First it has to be recalled that the general aim of our research program is to describe the main features of Italian entrepreneurship over the long haul, in order to evaluate which have been the crucial socio-economic determinants which can explain its historical evolution. This has been made possible by the availability of a new data-set built over a significant sample of entrepreneurs.

Our contribution is composed of two main parts. In the first one, a descriptive analysis of the main peculiarities of the country’s entrepreneurship has been performed on the basis of a few standard variables traditionally used in the economic analysis. In the second part, the descriptive approach has been refined by means of a methodology – Multiple Correspondence Analysis and Cluster Analysis – usual by now in standard statistics, yet not very familiar to students in economic and/or business history. This has allowed us to single out from a large set of variables a few entrepreneurial typologies of the history of Italian capitalism.

The features which emerge from such analysis only partly confirm what has been so far reconstructed by the economic and business historiography: in fact a few novel interesting aspects emerge. Among what comes out neatly confirmed by our analysis there are the supposed prominence of northern entrepreneurs, the strong relations both with the own and the partner’s families, the almost total absence of female entrepreneurs and an entrepreneurship

⁷ By crossing the 4 dimensions in a bi-dimensional space we have obtained 6 figures. We present them all in the Figures 2, but we comment only the figures (Fig. 2a-2c) relative to the three most important dimensions, as these contribute to explain respectively 55%, 28% and 10% of the inertia, as mentioned in § 5.

rooted in the middle-class. Among the novelties, the most surprising aspect is represented by the good level of formal education, which shows that a clear majority of our sample (60%) have a medium/high degree and almost one third with an university degree.

Finally the cluster analysis has allowed us to divide our sample into five groups, each of them characterized by its original entrepreneurial typology: “Schumpeterian entrepreneurs” (which groups about 29% of the population), “First generation entrepreneurs” (8%), “Defensive entrepreneurs” (21%), “Well-established Entrepreneurs” (24%), “Entrepreneurial managers” (17%).

We see this result as a necessary step toward two further objectives of our research program: first, these typologies – their characteristics, modalities, backgrounds etc. – can furnish new pieces to complete the puzzle of the process of economic growth of Italy and, second, they offer the possibility to make comparisons with the basic characters of the entrepreneurship of other countries.

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Table 1. Legenda of the data base: table of variables

<i>Who is who (entrepreneur., manager/ entrepreneur ...)</i>
<i>Sex</i>
<i>Periodization</i>
<i>Social class</i>
<i>Education</i> Graduate degree Under-graduate degree High school degree Training abroad Type and geographical location of training abroad First job Apprenticeship
<i>Family background</i> Father's educational degree Mother's educational degree Father's prevailing activity Mother's prevailing activity Job relationship with other members of the family Conjugal partner's social class Job relationship with the conjugal partner's family
<i>Information about the firm</i> Juridical Form of the start-up firm Start up sector Main sector of activity Multisectoral activity Max no of sectors at the same time No of sectors' changes Finance: internal or external Relationship with the banking system Membership of banks' boards of directors State financial support ERP financial aid Form of governance Modality of acquisition of the firm
<i>Innovating entrepreneur?</i> Product Process Sector New geographical markets New production markets New raw materials New organizational model New governance
<i>Strategies</i>
<i>Bankruptcies</i>
<i>Social context</i> Noble birth Religion University teacher Trade or industrial association Knight of labor Freemasonry Lobbies Direct political commitment Indirect political commitment Acknowledgments and awards

Table 2. Descriptive statistics

Who is				
	Freq	%	Cum freq	Cum %
Entrepreneur/owner	48	12,3	48	12,3
Entrepreneur/manager	59	15,1	107	27,4
Entrepreneur/owner&manager	283	72,6	390	100,0

Gender				
	Freq	%	Cum freq	Cum %
Male	383	98,2	383	98,2
Female	7	1,8	390	100,0

Age of first entrepreneurial activity				
	Freq	%	Cum freq	Cum %
<=20	49	12,8	49	12,8
21-25	94	24,5	143	37,2
26-30	86	22,4	229	59,6
31-35	74	19,3	303	78,9
36-44	58	15,1	361	94,0
>45	23	6,0	384	100,0

Missing values = 6

Area of birth				
	Freq	%	Cum freq	Cum %
Center	71	18,4	71	18,4
abroad	22	5,7	93	24,2
North-East	74	19,2	167	43,4
North-West	153	39,7	320	83,1
South	65	16,9	385	100,0

Missing values = 5

Year of birth				
	Freq	%	Cum freq	Cum %
before 1830	49	12,6	49	12,6
between 1831 and 1850	63	16,2	112	28,9
between 1851 and 1870	79	20,4	191	49,2
between 1871 and 1890	82	21,1	273	70,4
between 1891 and 1910	76	19,6	349	90,0
after 1910	39	10,1	388	100,0

Missing values = 2

Religion rec				
	Freq	%	Cum freq	Cum %
Atheist	3	0,8	3	0,8
Catholic	373	95,9	376	96,7
Protestant	3	0,8	379	97,4
Hebrew	9	2,3	388	99,7
Other	1	0,3	389	100,0

Missing values = 1

Involvement in politics				
	Freq	%	Cum freq	Cum %
yes	113	29,0	113	29,0
no	277	71,0	390	100,0

Level of involvement in politics rec				
	Freq	%	Cum freq	Cum %
local level	67	59,8	67	59,8
national level	27	24,1	94	83,9
international level	4	3,6	98	87,5
local&national level	14	12,5	112	100,0

Missing values = 278

Honour of Cavaliere del lavoro				
	Freq	%	Cum freq	Cum %
yes	99	25,4	99	25,4
no	291	74,6	390	100,0

University teaching				
	Freq	%	Cum freq	Cum %
yes	15	3,9	15	3,9
no	375	96,2	390	100,0

Affiliation to employers associations				
	Freq	%	Cum freq	Cum %
yes	143	36,7	143	36,7
no	247	63,3	390	100,0

Affiliation to Masonry				
	Freq	%	Cum freq	Cum %
yes	6	1,5	6	1,5
no	384	98,5	390	100,0

Financial public support				
	Freq	%	Cum freq	Cum %
yes	33	8,5	33	8,5
no	357	91,5	390	100,0

Social class				
	Freq	%	Cum freq	Cum %
low(farmer/labourer)	29	8,5	29	8,5
medium(small entrepreneur, merchant&craftsman)	202	59,2	231	67,7
high(big entrepreneur, freelance, noble)	110	32,3	341	100,0

Missing values = 49

Father main activity rec				
	Freq	%	Cum freq	Cum %
farmer	6	2,1	6	2,1
labourer	11	3,9	17	6,0
manager	11	3,9	28	9,8
technician	5	1,8	33	11,6
craftsman	35	12,3	68	23,9
entrepreneur	129	45,3	197	69,1
freelance	22	7,7	219	76,8
employee	11	3,9	230	80,7
merchant	55	19,3	285	100,0

Missing values = 105

Father main activity				
	Freq	%	Cum freq	Cum %
employee	79	27,7	79	27,7
self-employee	206	72,3	285	100,0

Missing values = 105

Family job relationships				
	Freq	%	Cum freq	Cum %
yes	224	57,4	224	57,4
no	166	42,6	390	100,0

Partner social class				
	Freq	%	Cum freq	Cum %
low(farmer/labourer)	2	3,4	2	3,4
medium(small entrepreneur, merchant&craftsman)	23	39,0	25	42,4
high(big entrepreneur, freelance, noble)	34	57,6	59	100,0

Missing values = 331

Job relations with the partner family				
	Freq	%	Cum freq	Cum %
yes	30	7,7	30	7,7
no	360	92,3	390	100,0

Education level rec				
	Freq	%	Cum freq	Cum %
illiterate	14	4,6	14	4,6
primary education	28	9,2	42	13,8
middle school	39	12,8	81	26,6
high school	96	31,5	177	58,0
laurea degree	122	40,0	299	98,0
post-laurea degree	6	2,0	305	100,0

Missing values = 85

Field of laurea rec				
	Freq	%	Cum freq	Cum %
Laws	29	23,4	29	23,4
Economics	17	13,7	46	37,1
other Arts	9	7,3	55	44,4
Engeneering	42	33,9	97	78,2
Chemistry/Pharmacology	11	8,9	108	87,1
other Sciences	16	12,9	124	100,0

Missing values = 266

Diploma or similar rec				
	Freq	%	Cum freq	Cum %
Professional school	11	8,0	11	8,0
Technical&commiercial school	42	30,4	53	38,4
Technical&industrial school	33	23,9	86	62,3
Teacher-training college	1	0,7	87	63,0
Senior high school	51	37,0	138	100,0

Missing values = 252

Education abroad				
	Freq	%	Cum freq	Cum %
yes	59	15,1	59	15,1
no	331	84,9	390	100,0

Experience abroad				
	Freq	%	Cum freq	Cum %
yes	150	38,5	150	38,5
no	240	61,5	390	100,0

Experiences abroad (area) rec				
	Freq	%	Cum freq	Cum %
developed countries	125	89,3	125	89,3
developeing countries	15	10,7	140	100,0

Missing values = 250

Typology of the first activity rec				
	Freq	%	Cum freq	Cum %
farmer	2	0,5	2	0,5
labourer	37	9,9	39	10,4
manager	46	12,3	85	22,7
technician	43	11,5	128	34,1
craftsman	28	7,5	156	41,6
enterpreneur	108	28,8	264	70,4
freelance	32	8,5	296	78,9
employee	49	13,1	345	92,0
merchant	30	8,0	375	100,0

Missing values = 15

Apprenticeship				
	Freq	%	Cum freq	Cum %
yes	54	13,9	54	13,9
no	336	86,2	390	100,0

Typology of the first activity rec				
	Freq	%	Cum freq	Cum %
one-man company/informal company/ns	125	32,1	125	32,1
società di persone	189	48,5	314	80,5
s.r.l.	9	2,3	323	82,8
s.p.a.	53	13,6	376	96,4
s.p.a. quotate	5	1,3	381	97,7
società cooperative	9	2,3	390	100,0

Starting sector				
	Freq	%	Cum freq	Cum %
Agriculture, hunting and sylviculture	21	5,4	21	5,4
Extraction	8	2,1	29	7,4
Manufacture	250	64,1	279	71,5
Energy-using products, Gas Appliances	10	2,6	289	74,1
Construction	15	3,9	304	78,0
Trade, servicing for cars, goods	43	11,0	347	89,0
Transport, storage and communications	9	2,3	356	91,3
Financial services	27	6,9	383	98,2
Property, renting, IT, services	2	0,5	385	98,7
Other public, social and personal services	5	1,3	390	100,0

Main macro-sector				
	Freq	%	Cum freq	Cum %
Agriculture, hunting and sylviculture	20	5,1	20	5,1
Extraction	8	2,1	28	7,2
Manufacture	261	66,9	289	74,1
Energy-using products, Gas Appliances	10	2,6	299	76,7
Construction	17	4,4	316	81,0
Trade, servicing for cars, goods	28	7,2	344	88,2
Transport, storage and communications	7	1,8	351	90,0
Financial services	31	8,0	382	98,0
Property, renting, IT, services	2	0,5	384	98,5
Other public, social and personal services	6	1,5	390	100,0

Number of sectors (at the same moment)				
	Freq	%	Cum freq	Cum %
two sectors	101	51,3	101	51,3
three/four sectors	74	37,6	175	88,8
more than four sectors	22	11,2	197	100,0

Missing values = 193

Relations with banks				
	Freq	%	Cum freq	Cum %
yes	135	34,6	135	34,6
no	255	65,4	390	100,0

Ways of company acquisition				
	Freq	%	Cum freq	Cum %
founder	173	52,7	173	52,7
inheritance	132	40,2	305	93,0
purchasing	23	7,0	328	100,0

Missing values = 62

Innovative entrepreneur(Schumpeter)				
	Freq	%	Cum freq	Cum %
yes	284	72,8	284	72,8
no	106	27,2	390	100,0

Product innovation				
	Freq	%	Cum freq	Cum %
yes	121	31,0	121	31,0
no	269	69,0	390	100,0

Process innovation				
	Freq	%	Cum freq	Cum %
yes	142	36,4	142	36,4
no	248	63,6	390	100,0

New sale markets				
	Freq	%	Cum freq	Cum %
yes	181	46,4	181	46,4
no	209	53,6	390	100,0

New markets of production				
	Freq	%	Cum freq	Cum %
yes	76	19,5	76	19,5
no	313	80,5	389	100,0

Missing values = 1

New raw material				
	Freq	%	Cum freq	Cum %
yes	27	6,9	27	6,9
no	363	93,1	390	100,0

New organisational models				
	Freq	%	Cum freq	Cum %
yes	77	19,7	77	19,7
no	313	80,3	390	100,0

Level of innovation				
	Freq	%	Cum freq	Cum %
no innovation	106	27,2	106	27,2
low innovation level	100	25,6	206	52,8
medium innovation level	148	38,0	354	90,8
high innovation level	36	9,2	390	100,0

Table 3. List of variables used for the MCA

Active variables	Illustrative variables
Entrepreneurial typology	Place of birth (area)
Social class	Age
Educational level	Religion
Father's educational level	Direct involvement in politics
Father's main activity	Honour of Cavaliere del lavoro
Family job relationships	University teaching
Typology of the first activity	Noble
Indirect involvement in politics	Member of aristocracy
Affiliation to employers' associations	Affiliation to Masonry
Form of enterprise	Financial public support
Modalities of acquisition of the company	Job relations with the partner's family
Sector of activity	Experiences abroad
Relations with banks	Age of first entrepreneurial activity
Innovative entrepreneur	Main sector of activity (not aggregated)
Product innovation	Business strategies
Process innovation	Innovation level
New sale markets	
New markets of production	

TABLE 4. THE FOUR DIMENSIONS

Table 4a. I Dimension: 'Entrepreneurial Spirit'

<i>Left quadrant</i>		
Categories of active variables	Contribution	Squared cosin
Owner and manager	2.2	0.39
Family job relationships	2.7	0.27
Manufacture	2.0	0.28
No relation with banks	2.3	0.29
Innovator	2.1	0.36
Product innovation	3.5	0.19
New sale markets	5.1	0.38
Supplementary categories	Test value	Disto.
No direct involvement in politics	-5.5	0.16
Cavaliere lavoro	-2.4	2.25
Age of first job <20	-4.3	5.58
Age of first job 21-25	-3.9	2.43
Food	-4.2	6.16
Textile	-3.0	5.71
Machinery	-3.1	3.67
Other manufacture	-3.1	10.11
Integration	-2.1	3.08
Integration and diversification	-3.8	5.32
Medium innovation	-8.8	1.18
High innovation	-6.3	7.95
<i>Right quadrant</i>		
Categories of active variables	Contribution	Squared cosin
Manager	14.6	0.62
No family job relationships	4.5	0.29
Financial activities	11.9	0.46
State-owned enterprise	9.0	0.34
Relation with banks	5.2	0.30
No innovator	6.5	0.33
No product innovation	2.0	0.28
No process innovation	1.6	0.19
No new sale markets	5.2	0.44
Supplementary categories	Test value	Disto.
Born abroad	2.7	13.65
Age 75-84	2.3	1.62
Hebrew	2.6	34.80
Direct involvement in politics	5.1	1.85
No Cavaliere del lavoro	5.5	0.11
University teacher	4.2	20.48
Masonry	3.7	52.70
Public support	3.1	8.76
Age of first job 31-35	2.1	3.35
Age of first job 36-44	4.2	4.56
Age of first job > 45	5.9	13.01
Energy	5.1	31.22
Financial activity	14.4	9.39
Other activities	2.4	20.48
Other strategies	6.5	0.92
No innovation	13.5	2.04

Table 4b. II Dimension: “Entrepreneurial Stability”

<i>Left quadrant</i>		
Categories of active variables	Contribution	Squared cosin
High class	6.8	0.29
Father self-employed	5.5	0.39
Family job relationships	3.5	0.28
High education level	0.9	0.04
First job self-employment	5.4	0.30
Inheriting	9.6	0.44
Supplementary categories	Test value	Disto.
Cavaliere lavoro	-3.6	2.25
Public support	-2.8	8.76
Job relationships with the partner’s family	-2.7	9.74
Job experience abroad	-2.0	1.05
Agriculture	-2.2	15.11
Commercial services	-3.6	10.51
Diversification	-3.5	2.54
No innovation	-4.7	2.04
<i>Right quadrant</i>		
Categories of active variables	Contribution	Squared cosin
Low class	7.8	0.24
Father low level of education	7.2	0.22
Father employee	6.1	0.23
No family job relationships	5.1	0.27
Low education level	8.1	0.27
First job employee	5.1	0.34
Founding	3.6	0.20
Supplementary categories	Test value	Disto.
Born North	3.9	0.42
No direct involvement in politics	3.0	0.16
No Cavaliere lavoro	6.3	0.11
No public support	3.1	0.00
No job relations with the partner’s family	2.7	0.00
No experience abroad	2.7	0.38
Start working 31-35	2.1	3.35
Machinery	3.0	3.67
Other strategies	4.0	0.92
Medium innovation	3.2	1.18

Table 4c. III Dimension: ‘Innovation’⁸

<i>Left quadrant</i>		
Categories of active variables	Contribution	Squared cosin
High education	5.0	0.16
Innovator	3.2	0.33
Product innovation	8.6	0.27
Process innovation	4.3	0.15
Supplementary categories	Test value	Disto.
Born North	2.8	0.42
Age > 85	3.8	3.24
Cavaliere lavoro	3.2	2.25
University teacher	2.5	20.48
Public support	3.6	8.76
Experience abroad	4.1	1.05
Chemistry/mining/carbon	2.9	3.60
Machinery	3.7	3.67
Other manufacture	2.3	10.11
Integration and diversification	2.2	5.32
Medium innovation	7.7	1.18
High innovation	7.2	7.95
<i>Right quadrant</i>		
Categories of active variables	Contribution	Squared cosin
Owner	10.2	0.25
No innovator	8.1	0.24
No product innovation	3.8	0.32
No process innovation	2.4	0.16
No new sale markets	2.4	0.12
No new market production	1.1	0.19
Supplementary categories	Test value	Disto.
Other religion	-2.2	321.22
No direct involvement in politics	-2.1	0.16
No <i>Cavaliere lavoro</i>	-4.8	0.11
No public support	-3.0	0.00
No experience abroad	-4.5	0.38
Building	-4.1	17.95
Commercial services	-5.1	10.51
No innovation	-11.5	2.04

⁸ To visualise the categories in this table consistently with that one of dimensions I and II, for each category the coordinate's sign had been inverted.

Table 4d. IV Dimension: ‘Political and Lobby Commitment’⁹

<i>Left quadrant</i>		
Categories of active variables	Contribution	Squared cosin
Indirect involvement in politics	11.8	0.29
Employers association	11.9	0.33
Supplementary categories	Test value	Disto.
Age 75-84	2.3	1.62
Direct involvement in politics	3.0	1.85
<i>Cavaliere lavoro</i>	3.4	2.25
Chemistry/mining/carbon	3.4	3.60
Building	2.3	17.95
Integration and diversification	3.0	5.32
<i>Right quadrant</i>		
Categories of active variables	Contribution	Squared cosin
No indirect involvement in politics	6.2	0.43
No employers association	8.2	0.44
Medium class	6.4	0.25
Supplementary categories	Test value	Disto.
Born abroad	-2.4	13.65
No direct involvement in politics	-6.0	0.16
No <i>Cavaliere lavoro</i>	-7.5	0.11
No public support	-3.3	0.00
No job relation with partner’s family	-2.6	0.00
No experience abroad	-2.5	0.38
Extraction	-3.7	39.28
Other activities	-5.9	20.48
Other strategies	-3.2	0.92
No innovation	-2.1	2.04

⁹ To visualise the categories in this table consistently with that one of dimensions I and II, for each category the coordinate’s sign had been inverted.

TABLE 5. THE FIVE CLUSTERS

Table 5a. CLUSTER 1 ‘Schumpeterian Entrepreneurs’ (29%)

Modalities	Test value	% of the cluster within the modality (CLA/MOD)	% of the modality within the cluster (MOD/CLA)	% of the modality within the sample (GLOBAL)
Product innovation	9.83	63.64	68.14	31.03
Innovator	7.61	38.93	96.46	71.79
No ind politic invol	6.78	38.60	92.92	69.74
New sale markets	6.10	44.20	70.80	46.41
Founding	5.95	44.51	68.14	44.36
No relation banks	5.82	38.43	86.73	65.38
Manufacture	5.72	37.93	87.61	66.92
Medium innovation	5.39	45.27	59.29	37.95
Owner&manager	5.19	36.04	90.27	72.56
First job employee	4.55	39.02	70.80	52.56
Medium class	4.51	39.11	69.91	51.79
Process innovation	4.44	42.96	53.98	36.41
Purchasing	4.40	73.91	15.04	5.90
Private enterprise	4.26	31.56	100.00	91.79
Machinery	3.82	49.28	30.09	17.69
Other Manufacture	3.67	62.07	15.93	7.44
No employers assoc	3.53	35.22	76.99	63.33
No direct political inv.	3.09	33.57	82.30	71.03
High innovation	2.99	52.78	16.81	9.23
Medium education	2.47	37.40	43.36	33.59
Father employee	2.35	40.51	28.32	20.26
Commercial services	-2.64	7.14	1.77	7.18
Father med educated	-2.68	0.00	0.00	4.10
High education	-2.86	19.20	21.24	32.05
Direct political involvement	-3.09	17.70	17.70	28.97
State-owned enterprise	-3.13	0.00	0.00	5.13
Father self-employed	-3.40	21.36	38.94	52.82
Employers associate	-3.53	18.18	23.01	36.67
Commercial services	-3.57	5.26	1.77	9.74
Financial activities	-4.18	0.00	0.00	7.95
Financial activity	-4.18	0.00	0.00	7.95
Manager	-4.33	6.78	3.54	15.13
No process innovation	-4.44	20.97	46.02	63.59
First job self-empl.	-4.76	16.47	24.78	43.59
Inheriting	-5.64	11.36	13.27	33.85
High class	-5.68	9.09	8.85	28.21
Relation with banks	-5.82	11.11	13.27	34.62
No new sale markets	-6.10	15.79	29.20	53.59
Indirect political involvement	-6.78	6.78	7.08	30.26
No innovator	-7.61	3.64	3.54	28.21
No innovation	-8.55	0.94	0.88	27.18
No product innovation	-9.83	13.38	31.86	68.97

Table 5b. CLUSTER 2 ‘First Generation Entrepreneurs’ (7.7%)

Modalities	Test value	% of the cluster within the modality (CLA/MOD)	% of the modality within the cluster (MOD/CLA)	% of the modality within the sample (GLOBAL)
Low education	8.93	48.98	80.00	12.56
Father low educated	8.88	73.08	63.33	6.67
Low class	8.00	62.07	60.00	7.44
Owner	6.86	39.58	63.33	12.31
Founding	6.21	16.76	96.67	44.36
First job employee	3.45	12.20	83.33	52.56
Building	3.14	35.29	20.00	4.36
No relation with banks	2.96	10.59	90.00	65.38
Father employee	2.83	16.46	43.33	20.26
No Cavaliere lavoro	2.43	9.62	93.33	74.62
Cavaliere lavoro	-2.43	2.02	6.67	25.38
Manager	-2.52	0.00	0.00	15.13
Medium education	-2.84	2.29	10.00	33.59
Relation with banks	-2.96	2.22	10.00	34.62
First job self-empl.	-3.47	2.35	13.33	43.59
Father self-employed	-3.63	2.91	20.00	52.82
High education	-3.75	0.80	3.33	32.05
High class	-4.01	0.00	0.00	28.21
Owner&manager	-4.11	3.89	36.67	72.56
Inheriting	-4.59	0.00	0.00	33.85

Table 5c. CLUSTER 3 ‘Well Established Entrepreneurs’ (24.4%)

Modalities	Test value	% of the cluster within the modality (CLA/MOD)	% of the modality within the cluster (MOD/CLA)	% of the modality within the sample (GLOBAL)
Employers associate	7.42	46.15	69.47	36.67
Inheriting	6.93	46.21	64.21	33.85
Family job relation	6.76	36.61	86.32	57.44
Innovator	6.55	32.50	95.79	71.79
New sale markets	6.32	39.23	74.74	46.41
High class	6.26	47.27	54.74	28.21
New market product	6.18	53.95	43.16	19.49
Father self-employed	5.39	35.44	76.84	52.82
Owner&manager	5.34	31.10	92.63	72.56
Indirect political invol.	5.19	42.37	52.63	30.26
First job self-empl	4.54	35.88	64.21	43.59
Medium innovation	4.44	37.16	57.89	37.95
Private enterprise	3.76	26.54	100.00	91.79
Cavaliere lavoro	3.53	38.38	40.00	25.38
Process innovation	3.37	34.51	51.58	36.41
Manufacture	3.34	29.50	81.05	66.92
Integration&diversification	3.04	43.14	23.16	13.08
Experience abroad	2.69	31.85	52.63	40.26
Integration	2.65	36.71	30.53	20.26
Father med educated	2.56	56.25	9.47	4.10
Father high educated	2.33	44.83	13.68	7.44
Age of first job 21-25	2.33	34.04	33.68	24.10
Food	2.33	40.00	18.95	11.54
No experience abroad	-2.69	19.31	47.37	59.74
State-owned entrepreneur	-2.73	0.00	0.00	5.13
Founding	-2.79	17.34	31.58	44.36
Low education	-3.31	6.12	3.16	12.56
Father employee	-3.36	10.13	8.42	20.26
No process innovation	-3.37	18.55	48.42	63.59
Medium class	-3.48	16.83	35.79	51.79
No Cavaliere lavoro	-3.53	19.59	60.00	74.62
Financial activity	-3.68	0.00	0.00	7.95
Financial activities	-3.68	0.00	0.00	7.95
Other strategies	-3.99	14.29	25.26	43.08
First job employee	-4.14	15.61	33.68	52.56
Manager	-4.97	1.69	1.05	15.13
No ind. politic involv.	-5.19	16.54	47.37	69.74
No new sale markets	-6.32	11.48	25.26	53.59
No new market prod	-6.37	16.93	55.79	80.26
No innovator	-6.55	3.64	4.21	28.21
No family relation	-6.76	7.83	13.68	42.56
No employers assoc	-7.42	11.74	30.53	63.33
No innovation	-7.56	0.94	1.05	27.18

Table 5d. CLUSTER 4 ‘Defensive Entrepreneurs’ (21%)

Modalities	Test value	% of the cluster within the modality (CLA/MOD)	% of the modality within the cluster (MOD/CLA)	% of the modality within the sample (GLOBAL)
No innovation	10.44	60.38	73.56	27.18
No innovator	10.40	59.09	74.71	28.21
No new sale markets	8.29	37.80	90.80	53.59
No product innovation	7.39	31.60	97.70	68.97
No process innovation	6.64	32.26	91.95	63.59
Inheriting	6.55	42.42	64.37	33.85
First job self-empl.	6.05	37.06	72.41	43.59
Family job relation	5.24	31.70	81.61	57.44
Father self-employed	5.12	32.52	77.01	52.82
No new market prod	4.30	26.52	95.40	80.26
Commercial services	3.58	53.57	17.24	7.18
Farming/extraction	3.58	53.57	17.24	7.18
Agriculture	2.59	50.00	11.49	5.13
Diversification	2.58	32.97	34.48	23.33
Commercial services	2.36	39.47	17.24	9.74
Owner&manager	2.34	25.44	82.76	72.56
Low class	-2.58	3.45	1.15	7.44
Founding	-2.74	15.61	31.03	44.36
Born North	-2.98	16.74	43.68	58.21
Machinery	-3.04	8.70	6.90	17.69
Father low educated	-3.06	0.00	0.00	6.67
High innovation	-3.13	2.78	1.15	9.23
Manufacture	-3.98	16.09	48.28	66.92
New market product	-4.24	5.26	4.60	19.49
Manager	-4.64	1.69	1.15	15.13
No family relation	-5.24	9.64	18.39	42.56
Father employee	-5.75	1.27	1.15	20.26
Process innovation	-6.64	4.93	8.05	36.41
First job employee	-7.03	8.29	19.54	52.56
Product innovation	-7.39	1.65	2.30	31.03
Medium innovation	-7.94	2.70	4.60	37.95
New sale markets	-8.29	4.42	9.20	46.41
Innovator	-10.40	7.86	25.29	71.79

Table 5e. CLUSTER 5 ‘Entrepreneurial Managers’ (16.7%)

Modalities	Test value	% of the cluster within the modality (CLA/MOD)	% of the modality within the cluster (MOD/CLA)	% of the modality within the sample (GLOBAL)
Manager	14.27	89.83	81.54	15.13
No family relation	10.20	37.95	96.92	42.56
Financial activity	8.18	80.65	38.46	7.95
Financial activities	8.18	80.65	38.46	7.95
State entrepreneur	7.83	95.00	29.23	5.13
Relation with banks	7.27	36.30	75.38	34.62
No new sale markets	6.23	27.27	87.69	53.59
High education	5.82	33.60	64.62	32.05
Priv/pub enterprise	4.91	83.33	15.38	3.08
Energy	4.88	90.00	13.85	2.56
First job employee	4.56	24.88	78.46	52.56
No product innov	4.35	21.93	90.77	68.97
No innovation	4.34	31.13	50.77	27.18
Other strategies	3.97	25.60	66.15	43.08
Age of first job > 45	3.87	52.17	18.46	5.90
No innovator	3.83	29.09	49.23	28.21
Father employee	3.63	31.65	38.46	20.26
Dir political invol	3.10	26.55	46.15	28.97
No new market prod	3.10	19.49	93.85	80.26
University teacher	3.10	53.33	12.31	3.85
Hebrew	2.40	55.56	7.69	2.31
No process innov	2.36	20.16	76.92	63.59
Process innovation	-2.36	10.56	23.08	36.41
Father low educated	-2.44	0.00	0.00	6.67
Medium education	-2.47	9.92	20.00	33.59
Textile	-2.51	4.17	3.08	12.31
Owner	-2.51	4.17	3.08	12.31
Integration&divers	-2.68	3.92	3.08	13.08
Food	-2.91	2.22	1.54	11.54
New market product	-3.05	5.26	6.15	19.49
No univ teacher	-3.10	15.20	87.69	96.15
No dir political inv	-3.10	12.64	53.85	71.03
No Masonry	-3.24	15.63	92.31	98.46
Age of first job 21-25	-3.51	5.32	7.69	24.10
Age of first job <20	-3.82	0.00	0.00	12.56
Innovator	-3.83	11.79	50.77	71.79
First job self-empl	-3.90	8.24	21.54	43.59
Product innovation	-4.35	4.96	9.23	31.03
Medium innovation	-4.49	6.08	13.85	37.95
Father selfemployed	-4.92	7.77	24.62	52.82
Founding	-5.25	5.78	15.38	44.36
Manufacture	-6.17	8.05	32.31	66.92
New sale markets	-6.23	4.42	12.31	46.41
No relation banks	-7.27	6.27	24.62	65.38
Inheriting	-7.38	0.00	0.00	33.85
Private enterprise	-9.69	10.06	55.38	91.79
Family job relation	-10.20	0.89	3.08	57.44
Owner & manager	-10.64	3.53	15.38	72.56

Figure 1. Dendrogram – Five main clusters from the classification of profiles

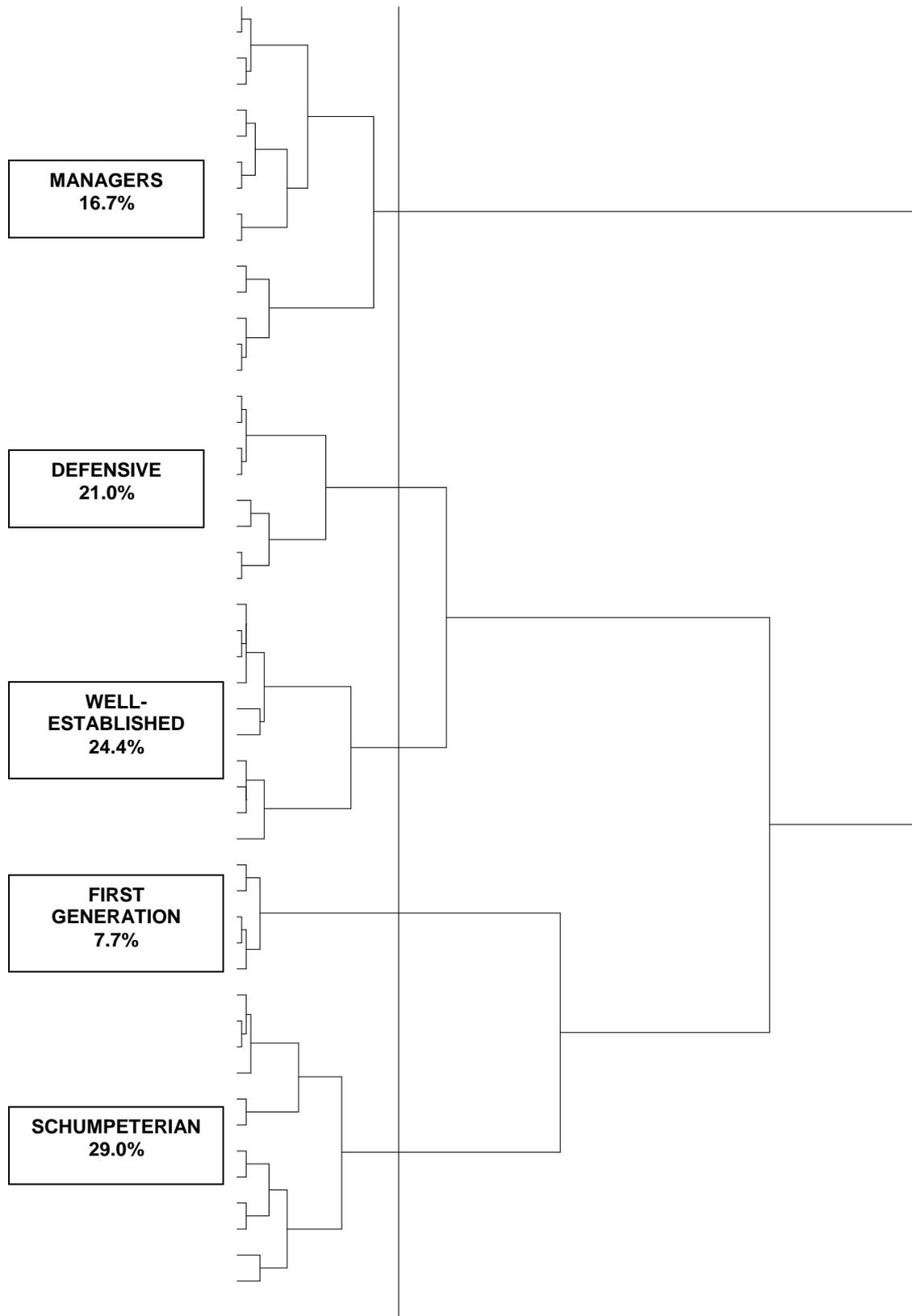


Figure 2. Crossing the four dimensions

Figure 2a. First and second dimensions

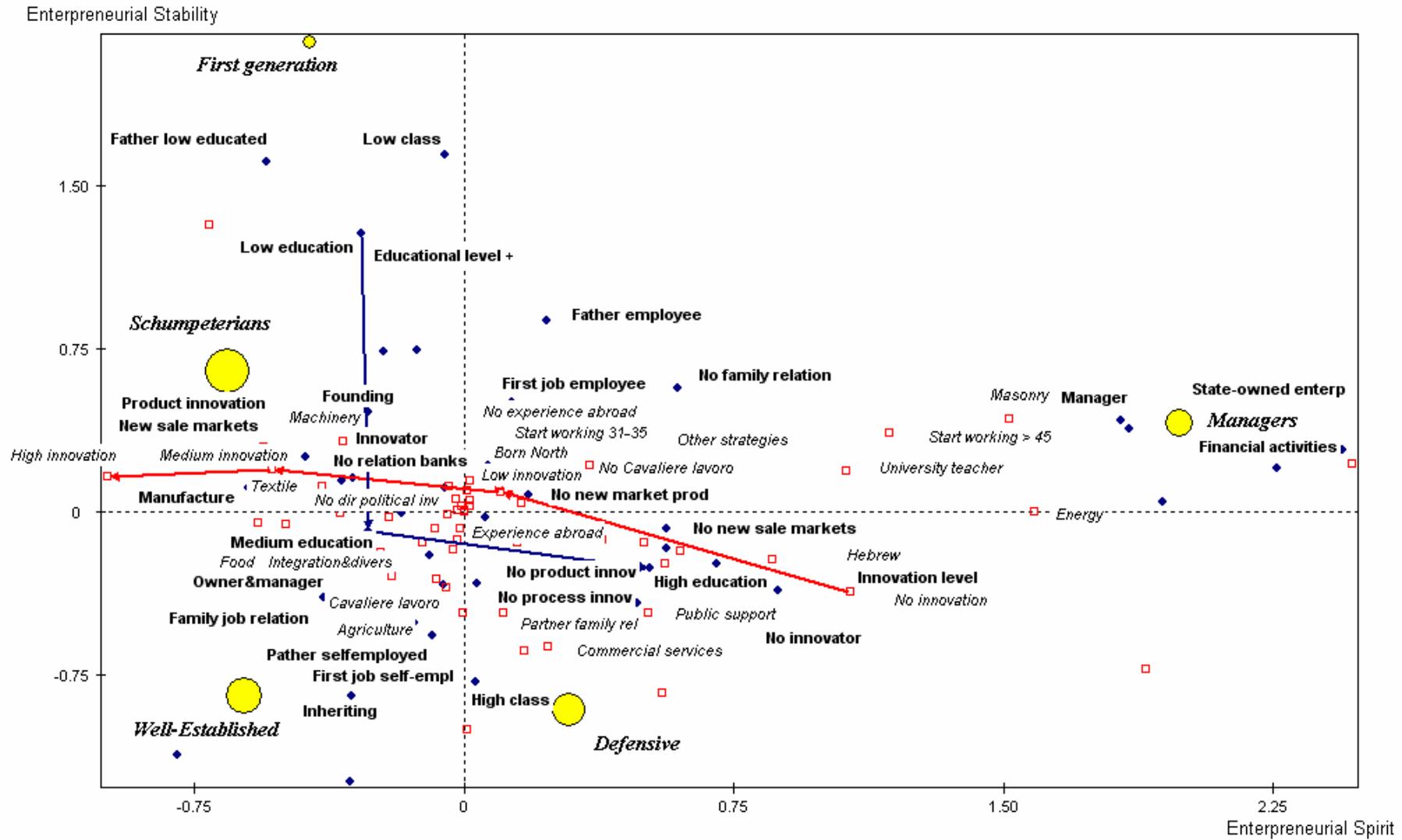


Figure 2b. First and third dimensions

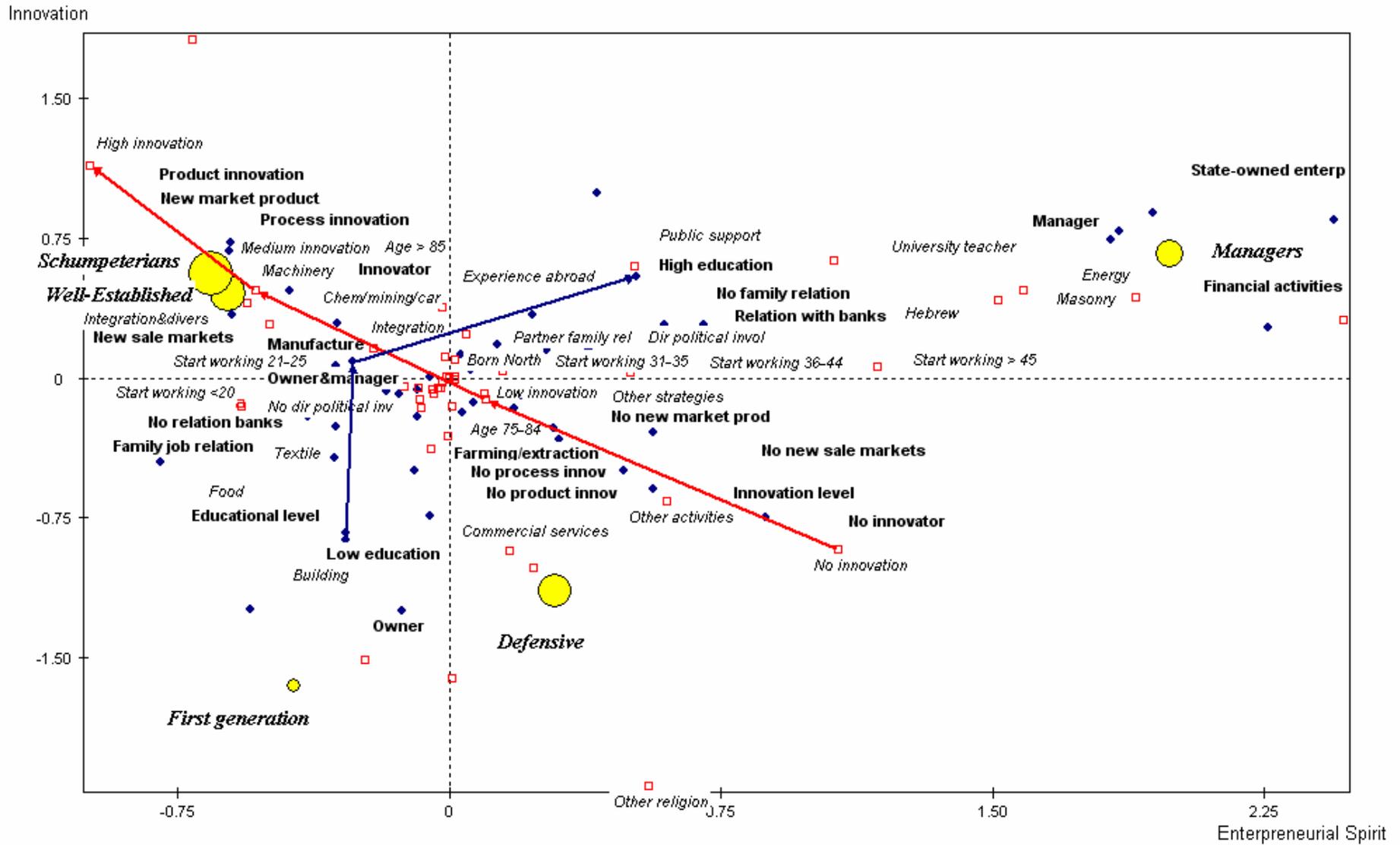


Figure 2d. Second and third dimensions

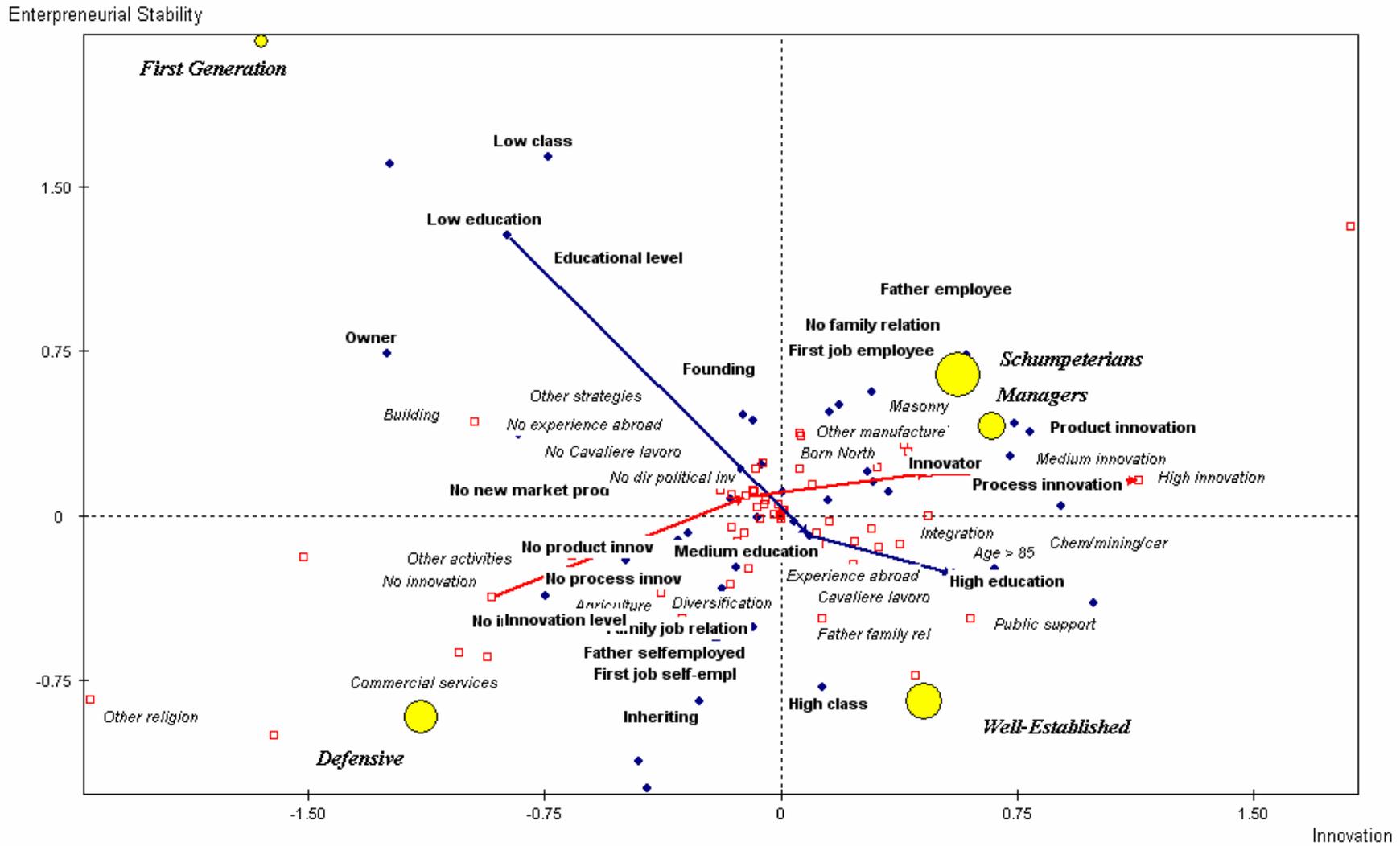


Figure 2e. Second and fourth dimensions

