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THE PERFORMANCE OF IDS. SOME INSIGHTS FROM THE ITALIAN CASE.

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Abstract

Behind the term ID, extensively used in various disciplinary fields, different organizational arrangements and firms' endowment can be recognized. However, the attempts to offer a sound measurement of their performance on a comparative basis are still few. This paper explores the conundrums of defining and measuring the performance of IDs, taken, in general terms, as complex socio-economic systems, as meso-organization between the firm and the industry. The discussion is based on a first attempt to measure the performance as well as the socio-economic structure of 24 Italian local/subprovincial areas. Performance is then related to the structural factors that literature has highlighted. The results show how a large variety of institutional arrangements in Italian IDs is combined with a positive social or economic performance. New organizational forms, such as larger firms, networks, or constellation of firms may as well generate external economies for the local environment.

Keywords: division of labor, factor and cluster analysis, IDs, social and economic performance, SMEs.

1 Introduction

The literature on IDs counts a so wide number of contributions that it has become difficult to denote with only one term a large variety of phenomena. In fact, behind the term ID, extensively used in various disciplinary fields, different organizational arrangements and firms' endowment can be recognized.

However, the attempts to offer a sound measurement of their performance on a comparative basis are still few. The contribution of IDs to Italian economy, employment and export, is largely acknowledged [30] and it is also one of the easiest way to look at the ID' performance. However, much finer measures of performance are difficult to be found.

This paper explores the conundrums of defining and measuring the performance of IDs, taken, in general terms, as complex socio-economic systems, as meso-organization between the firm and the industry. The discussion is based on a review of the few works focused on IDs' performance and in a first attempt to measure the performance as well as the socio-economic structure of 24 Italian local/sub-provincial areas. These areas are specialized in one or few complementary industries and show a prevalence of small and medium sized enterprises (henceforth SMEs)¹. Performance is then related to the structural factors which literature has highlighted. An assessment of to what extent these areas abide to the conceptual framework developed by Becattini [6, 7, 8] and other scholars [9, 14, 15, 19, 49, 52, 54]- who have paved the way to research on IDs - is also offered as a first attempt to test the normative value of that framework.

The following paragraph gives an instrumental definition of ID, as a starting point for the empirical section. Paragraph 3 discusses the main characterizing features of IDs, as stressed in literature. Paragraph 3 and 5 illustrate the strategy of "operationalization" and methodology used for the empirical research, whose results are discussed in paragraph 6 (results of the multivariate analysis) and 7 (the relationship between clusters and performance).

2. An 'instrumental' definition of ID

A clear definition of ID is a necessary and preliminary step for the following discussion; a practical notion of ID that is comprehensive enough to include areas possibly showing different organizational arrangements is therefore assumed. This step avoids qualifying the ID with precise socioeconomic features (e.g. horizontal and vertical networking, innovativeness, cooperation, trust, etc.), as suggested by some literature, which instead should come out from empirical scrutiny. Along the lines set by Marshall, the invariant traits of IDs are agglomeration of firms, wide diffusion of firms of relatively small size, specialization in one industry and self-containment. As a consequence our research takes as unit

¹ Small firms are defined as the firms employing less than 50 people, and medium-sized firms as those employing less than 250 people.

of observation the notion of local labor market area (henceforth LLMA), which is a relatively self-contained area as far as labor demand and supply are concerned [32, 53, 54]. The extent to which these areas correspond to the model supplied by Becattini, the pioneer of studies on IDs in Italy, will be a subject of research. The aforementioned traits of our LLMA's are something less than those necessary to qualify the ID according to Becattini, who defines them as "a socio-geographical entity which is characterized by the active presence of both a **community of people** and a **population of firms** in one naturally and historically bounded area" [8, p. 39]. In this definition many pieces of economic and sociological theory converge, while in other definitions the author emphasizes the distinctive features of competition and co-operation which have been largely discussed in literature [6, 8]. The definition provided by Becattini is what we call the 'canonical' model.

Here we succinctly review the conceptualization of Becattini as a canvas to discuss other contributions with the specific aim to highlight causal relationships between the structural elements of IDs and performance. Becattini offered a stylization or a framework for analysis rather than a theory as he himself declared; however, as we will shortly review, very different theoretical approaches can be applied to IDs. They range from industrial organization (from new institutional economics [43, 59, 60] to industrial economics[5]) to organization science (network approaches [42] and sociology [26, 27]).

3. Competing theories on IDs

The analytical framework provided by Becattini has a clear and declared ancestry with Marshall's idea of external economies. According to Marshall, these are advantages deriving from/accurring to the firms from the concentration in the territory of a given industry. As examples of external economies, Marshall mentions the advantages of splitting the production process into specialized phases, the increasing knowledge of markets accompanying the expansion of industrial output, the creation of a market for skilled labor, for specialized services and for subsidiary industries, and finally, the improvement of physical infrastructures such as roads and railways [38, 39]. The economies so far described consist of the localization advantages considered from the point of view of the economy of production [39]. But the author suggests considering the convenience to the customer too, who will economize on what, a century after, were called transaction costs [59, 60]. Indeed the approach of Williamson has been used to describe the economies of IDs [21, 22]

Marshall himself did not forget to warn of the diseconomies of industrial concentration as well, these consisting in the higher cost of labor of one kind of work or in the high cost of land. Recent literature on agglomeration in big conurbations has also stressed the high social costs in terms of air and water pollution or traffic congestion. In addition,

the attractive power exerted by a growing area may group together a mass of population which may be out of scale to represent a coherent community with a shared language, culture or identity.

The notion of external economies, here so briefly recalled, is popular among economic scholars as well as controversial. It is useful to the purposes of this paper to mention the further distinction introduced by economists and geographers between monetary economies and non-monetary external economies, economies of localization, economies of urbanization and economies of agglomeration.

The logical pair of external economies and of economies of agglomeration enables us to better define IDs. Asheim defines external economies of scale as a necessary condition for the existence of IDs, and economies of agglomeration as the sufficient condition [2]. In fact, the fruition of external economies of scale does not necessarily require the proximity of firms. We are thus obliged to recur to the notion of economies of agglomeration, as an additional one, to cast the economies deriving from the localization of an industry in a given territory. In this view, economies of agglomeration are seen as a specification of external economies of scale, as depending on the concomitant decisions of different entrepreneurs to concentrate in a certain area.

The classification of different kinds of economies helps distinguishing between different models of local development: the localization model of Weber, the pole of development of Perroux (46), the Japanese just-in-time production systems or the networks of subcontractors that can be observed in Italy (the Benetton nation-wide system) and the ID.

However, the juxtaposition of different categories of models of development risks not acknowledging how they evolve and may flow one into another. As long as the local industry evolves, different types of economies may appear, depending on technical and historical circumstances. In fact, the concept of external economies as well as economies of agglomeration have a static and a dynamic dimension. An evolutionary approach is appropriate [41], but very few empirical applications can be found in the literature. On the contrary, a static approach such as transaction cost theory has been applied to explain the higher efficiency of IDs [21] while evolutionary theories have been used to explain the propensity to (incremental) innovation in IDs [10] only.

In modern innovation theory is clearly stressed how territorial agglomeration is fundamental for innovative processes. In the theory of technological competence [17, 18], technology is defined as partially tacit, specific to the context in which it has been created or adapted, and tied to the skills and routines of those who have developed and operate it. The relations with information sources external to the firm, as for example with scientific infrastructures, or between producers and users at inter-firm level, are strongly influenced by spatial proximity mechanisms that favor processes of polarization and cumulativeness [36, 37]. Furthermore, the employment of informal channels for knowledge diffusion (the so-called tacit or uncodified knowledge) provides another argument for the tendency of innovation to be geographically confined [37].

The cumulative creation of professional know-how implied in agglomeration processes and in specialization allows skilled workers to leave the factory and found a new firm, for which activity they are better rewarded. Social mobility within the areas characterized by agglomeration realizes an efficient allocation of resources. In Becattini's view, the 'interdependence between the community of people' and the 'population of firms' creates the perception of a superior local interest. Such an interaction is the main basis for the formation of a local identity [13] and consequent trustworthy, citizenship and committing behaviors into local community. The sense of belonging may have different effects on the behavior of the local protagonists. For example, according to Becattini, it makes the clash of interests between conflicting parties such as workers and artisans, on the one hand and employers on the other less acrimonious. Conflicting parties find in IDs strong representative organizations. Trigilia [56, 57] highlighted the peculiar collaborative style of industrial relations in IDs. The result is that prices of local inputs (fees paid to subcontractors and wages to employees) are *fair* and more stable than normally. The expectations/implications for the absolute level of wages in IDs are not clear and the evidence is controversial. Whereas trade unions are strong – as in the 'canonical' model - higher wages should be negotiated (²). However, even if wages are higher than the average (with qualifications being the same), because of the high skill of workers, the productivity is higher as well, and hence the cost of labor lower.

If the local environment is not perceived as the main source of the competitive advantage of the firms or of the competence provided by individuals, the sense of belonging of the local protagonists weakens. This, in turn, might weaken the sense of commitment to local community and as a final result, the performance will be affected.

The specialization of firms in different tasks realizes an extended division of labor.

The way that a production process is organized has obvious implications on the degree of efficiency and of effectiveness of the industry concerned. Efficiency derives from the principle of specialization that may regard human or physical assets, and from competition conditions.

The kind of specialization of firms may differ according to whether a vertical or horizontal division of labor is applied. Very roughly, the former coincides with a specialization of firms in different tasks, while the second concerns a specialization in the same task [34]. Supporters of this distinction hold that the former leads to a reduction in the human-capital requirements, that is, in the craft skills or capabilities (à la Penrose). This view may contrast with some conceptualization of the ID as a model of organization alternative to mass production, where a social rather than a detailed (à la Smith) labor division is achieved (50, 51). But, a vertical division of labor may also be compatible with the integration of conception and execution at each

² However, as employers' associations are strong as well, where there is a myriad of firms the bargaining game may give rise to different outcomes.

task stage. What differs is that the governance or the 'intelligence' of the de-verticalized structure is the principal function of the coordinators. Provided they are included in the same environment of the subcontracting firms, the local territory is undoubtedly the recipient of capabilities. In other words, even if single firms do not own the overall knowledge and capabilities to govern the entire process, the inclusion of co-ordinators and local social mechanisms of sanctions and rewards ensures that these capabilities are produced and transmitted on a strictly local level.

A horizontal division of labor may be considered to have the same efficiency effects of a vertical one, as the specialization principle holds in both cases. In addition, the extended presence of a myriad of small firms realizes an even model of society. Two radical academics as Piore and Sabel [51] saw in a flexible system of production and in IDs the realization of the promise of a democratic world, the community of equals. As Perrow stressed, speaking of small-firm networks, "The heads of 1,000 firms related to furniture production will receive a great deal less in salary and benefits than the two heads of the two large firms. ... Furthermore, one of the problems of uneven development and uneven economies associated with multidivisional and giant firms is that locally generated wealth is spent or invested non-locally" [47, p. 462].

In the vertical division of labor there are some further implications for effectiveness which the horizontal one does not have. Firstly, vertical division of labor realizes a flexible system of production, because each task can be re-organized with a different mix of specialized producers. Flexibility, in turn, has two other effects: it enables quick response to variation in degree and quantity of final demand and gives a spurt to innovative processes. Secondly, it has effects on the welfare of some of the *stakeholders* in the industry concerned.

Concerning welfare effects, an Italian author has illustrated the outcomes of a demand reduction on an extended division of labor, which is vertical in its nature: "the impact of a fall in demand for the products of a particular firm depends on its level of vertical integration: where this is high, such a fall in demand will produce unemployment; where it is low, the workers employed in subcontracting firms will simply receive their orders from more successful competitors" ⁽³⁾ [14, p. 175]. According to Piore, the allocation of external demand (positive or negative variation) among different firms is ensured by a set of rules and standards of behavior rather than (only) by the organizational structure of the industry. A peculiar attitude to co-operation of local protagonists would ensure that the full employment

³ "Imagine a firm with 1000 employees in which a production decrease of 10% would cause 100 redundancies. This level of redundancies would be highly problematic in the primary sector. Imagine instead a firm which decentralized 80% of the same volume of production, which would therefore be left with 200 workers. This firm would still belong to the primary sector, while the other 800 workers would be scattered among the small enterprises of the secondary sector. This time a fall of 10% would require 20 redundancies in the primary sector and 80 in the secondary sector. The first poses no great problems, both because 20 workers are few in absolute terms and because the unionization is weaker in a firm with 200 employees than in one with 1000. The other 80 redundancies would pose no problem at all since they belong to the secondary sector. In this case, too, it is ultimately the secondary sector which absorb the tensions coming from the large firms. The difference is that in this case the small firms perform this role by assuming responsibility for the major portion of the redundancies, while in the first case they coordinate the flow of subcontracted

of the communities' resources or the sharing of the burden of unemployment, and the like [15, p. 58]. Co-operation fosters innovation and entrepreneurship also in the argument presented by Dei Ottati [21], a collaborator of Becattini.

The resulting hypothesis is that the more extended the vertical division of labor the lesser the extent of the unemployment rate and the reduction of employees in face of a negative external factor.

In the ID everyone finds his/her own place in society. This means that the district manages to allocate each individual to his/her optimal place, at least to a certain extent. As a result we observe in IDs high activity rates, very low rates of unemployment, and a strong trend towards entrepreneurship and self-employment.

The allocative efficiency concerns also financial markets. In fact, one of the best known disadvantages of small firms is the difficult access to credit. In IDs, the crucial resource of credit for continuous development is ensured by the 'benevolence' of the local credit system deeply involved in local community life. Lending money is made easier since bankers may easily assess the financial and business reputation of their clients and because the large number of small firms enables to spread risks on a wide range of operations. If the area is characterized by traditional economies of localization (e.g. low labor costs), it is likely that firms will generally exhibit a cost advantage; on the contrary, if the area stands for a well-established tradition in the manufacturing of a given product, the competitive advantage will rest in the quality or uniqueness of the product with respect to other competitors. This also authorizes us to identify the sources of the competitive advantage of IDs in local knowledge, savoir faire and competencies. This is also coherent with the theory of the resource-based firm [33, 58]. The competitiveness of an area may also rest in the way production is organized. The so much celebrated flexibility is a product of the organization structure of IDs. Following this view, IDs represent an innovation as defined by Schumpeter, as they represent a form of organizational innovation very suitable to customized productions [13].

As we have tried to illustrate, the ID – as conceptualised by Becattini - is a socioeconomic complex having efficiency and welfare effects. Because of its nature, it cannot be assimilated to a pure market representation as competition conditions affect either the competitive advantage of the industry or the welfare of the local community. Similarly, the transaction cost theory, owing to its static nature, may explain why the sourcing of raw materials or intermediate inputs or the hiring of human resources occurs at lower cost, but it may not give full account of the dynamic effects of agglomeration in IDs. The emphasis given to opportunism also impairs to appreciate the real nature of co-operation [45]. However contrasting the different theories are, even the more promising approaches, e.g. the evolutionary one, still appear to be at their initial stage and have produced few empirical studies [12].

Taking IDs as a single object of inquiry requires the researcher to look at their overall performance. However, the competitiveness or efficiency of the ID is ensured by different rewards accruing to the different operators. The interaction between the different communities, markets and single actors affects the overall performance of the system. At the same time, different rewards give dissimilar incentives to the operators affecting their behavior and their sense of belonging to the local community. We may expect that whereas the level of reward is perceived as unfair by the other participants, a lower sense of commitment (and of identity) may be generated with negative effects for the local economy.

Reasons ensuring a higher efficiency and effectiveness of IDs are summarized in Fig. 1.

Fig. 1: explaining factors of performance in IDs: a scheme-

(Insert Fig. 1 about here)

4. Testing the concept of IDs

4.1. The measurement of IDs' performance. A short review

The literature on IDs in the last 20 years has been mostly of a qualitative nature. Very few attempts have been made to measure the performance of IDs; in other words, although most of the case studies did not fail to highlight and in many cases to offer figures on export, employment or productivity of IDs, few comparative studies of performance groups of IDs are available. The sociological literature has stressed the welfare effects such as the mobility or the labor conditions. However this literature mainly consists of case studies.

In general, there is no integrated approach looking at both economic and social performance based on quantitative measurements.

An initial attempt to measure the performance of firms in IDs has been provided by Signorini [55]. The research is based on the balance sheets of firms specialized in woolen cloth industry located in the province of Florence (which includes the district of Prato) and compares their financial and economic ratios to the average of woolen cloth manufacturers located outside the province. Recently, the Bank of Italy Research Center, has devoted most of its financial and human resources to the measurement of the performance of firms belonging to an ID, the so called ID effect. An initial result of this research is available in a very recent (draft version) work, where the profitability and

productivity ratios of firms belonging to those areas defined as IDs by Istat and Sforzi [30, 54]⁴ are analyzed in comparison to a control sample of firms having the same characteristics in terms of size and specialization [24]⁵.

The analysis confirms the existence of positive externalities in belonging to IDs, such as a higher profitability measured by ROE, ROI, and gross operating margin over sales, and superior technical efficiency, as measured by using a parametric function. Profitability always appears higher even when different industries and average size of firms are taken into account. The area-specific factors, such as the proximity to outlet markets, are not significant. The authors conclude that the ID is an efficient organization mode. These external advantages are higher for the firms belonging to specialized industry rather than for those belonging to different industries in the same ID. Another result of agglomeration is a lower per capita cost of labor. However, in these works there is no structural analysis of the areas selected. We are thus left with the doubt whether such results are due to agglomeration factors only or to other additional conditions such as co-operation, extended division of labor, sense of belonging, etc. Secondly, these works look at the economic performance only, neglecting the welfare effects. In addition, a doubt may also arise about the representative nature of a sample deriving from a balance sheet database including only data on limited companies.

According to Becattini's approach, a superior performance is associated to the 'canonical' ID. But if such correspondence qualifies the ID as a normative model, the conceptualization of Becattini - as he intended it - is only a 'framework for analysis', and not yet a model or a theory. Indeed, Becattini is reluctant to use the term model. In fact, in canonical literature a formal treatment of the relationship between the distinctive characters of the model and the performance is not offered, neither there is a clear (hierarchical and structured) logic arrangement of concepts with linkages of inclusion/exclusion, opposition/consistency. In particular, it is not clear whether all the listed characteristics are necessary or just sufficient conditions for ID success. The listed distinctive features all appear to be equally indispensable for achieving the ID's effect. A reasonable distinction between 'necessary' and 'secondary' or sufficient conditions is not present. Indeed, a confusion between 'structural' and 'behavioral' or performance conditions of IDs does persist⁶.

If the 'canonical' ID is a normative model, a problem appears when a superior performance is shown by those empirical models that do not share all the requisites of the ID model.

⁴ The classification is based on the notion of LLMA. Those LLMA's which show the following characteristics are considered ID: rate of industrialization higher than the national average; rate of specialization in one dominant manufacturing industry higher than the correspondent national average; and a presence of SMEs higher than the national average for manufacturing industries.

⁵ The analysis is based on the whole universe of the IDs as defined in the previous note.

⁶ This is particularly evident when Becattini claims that IDs are characterized by a continuous tendency to change which ensures their survival peculiar characteristic of ID. It is hard to accept this claim on an objective basis, as we expect the structural characters of the ID to ensure the conditions for survival.

4.2. Methodology of our research

We are rather convinced that operationalization may help provide a theoretical grounding for the concept of ID. Comparison on the basis of controllable criteria may allow the emergence of functional equivalents, that as to identify the mechanisms which ensure some results without their being linked to given static, historical and contingent forms.

Operationalization may also enable us to distinguish between those conditions which are responsible for the peculiar effects of the ID, such as competitiveness, as well as some positive welfare effects, or which instead do more and ensure their stability, survival or other characters still to be determined. In addition, the attempt to measure and to operationalize the list of criteria helps to recognize that some requisites are implied in others and thus their listing is valid on a narrative rather than explanatory field.

For this purpose, operationalization, as well as a measurement of the concepts, is necessary. Once data are available, a comparison of different local systems of firms and SMEs, and an assessment of the explanatory factors of their performance will be possible

By operationalizing the ID concept we are concerned in the process of linking abstract concepts to empirical indicators. However, the task is quite complex, as abstract concepts do not have a one-to-one correspondence with empirical indicators; they can be operationalized and measured in an almost infinite variety of ways. The selection may in any case be guided by previous choices in the same or germane disciplines.

We here propose the strategy of operationalisation used in our research. Becattini's ID conceptualization can be translated into testable hypotheses, although the choice of variables has often been the result of a compromise between the desire and available data. In this attempt we are also aware that the translation operation may involve misunderstandings or the use of inappropriate indicators (the 'words'), which may for example have a semantic content which goes beyond that meant by the 'translator'. In this sense our choice is a proposal and not a definite statement. The strategy starts from propositions, then we try to derive some testable relations among phenomena and, finally, to associate indicators and parameters to these phenomena.

The methodology followed in our research may be summarized as follows:

- Territorial identification of units of analysis
- Selection of the sample
- Operationalization of the concept of ID;
- Collection of data and surveys on a local level;
- Interviews and mail questionnaires to selected 'qualified' observers;
- Calculation of indexes;
- Multivariate and economic/correlation analysis.

4.3. Object of inquiry and data source

As already mentioned, the notion of LLMA is assumed as our object of inquiry. Because of the limited area in which people tend to live and work, we are close to what Becattini describes as ‘the merging of people and economy in a self-contained area’.

To the purpose of objectivity and comparability, it is very crucial to choose a data source that is reliable and homogeneous for all the units of observations. Census data fit the requisites of reliability, homogeneity in space and time and subdivision at municipal level. However, the number of indicators that can be built from it is limited. No data on firms’ linkages or on overall or firms’ profitability are given in the census. We thus had to integrate it with other more qualitative sources (interviews to qualified observers, secondary sources). For the purposes of this paper, only the 1991 (however, all the dynamic variables are referred to the inter-census variation 1981-1991) census year has been considered.

4.4. The sample

As useful and general criteria of discrimination between LLMA of SMEs, we chose two critical factors: industry and space. The idea is that the industrial sector sets the technical constraints (and therefore the range of variability) of different forms of organization of labor within firms, while the local space is the geographical *locus* where particular relationships and systems of values develop influencing the linkages between firms, people and institutions.

We thereby obtained a sample of industrial systems located in different regions of Italy and specialized in different industries. Unlike Sforzi, we also included in the sample areas specialized in more than one industry, such as Bassano (specialized in ceramics and furniture industries), thus refusing the criterion of ‘dominance’ (that is, only one industry with high specialization rate) as selective. In addition, a third of our sample consists of LLMA where medium-sized to large rather than small firms are prevalent.

We divided Italy into three different macro-areas according to a classical distinction: North, Center-North, and Center-South. As regards industry, we distinguish between fashion-led (or traditional) and innovative (but not science-based) industries. Relying on Sforzi’s work, some of them correspond to the model of the Marshall-style IDs. We prefer to term these IDs as ‘canonical’, as they correspond to the features listed in the previous paragraph (Fig. 2).

(Insert Fig. 2 about here: Map of Italy with the localization of the 24 LLMA)

4.5. The indicators

Here we present a short list of the indicators and of their explanatory value (⁷). The source of data is in any case Istat, unless differently specified.

The features of 'extended labor division' and of economies of agglomeration have been labeled as follows (name of the variable in Italics):

- firms' density: local units ⁸ in leading industry by inhabitants (finh);
- absolute number of local units and employees (firm, empl);
- rate of specialization (by number of local units or employees) in the leading industry (spcf, spce);
- rate of specialization (by number of local units and employees) in machinery ancillary industry (mech);
- percent of small local units having less than 50 employees (C2) and the percentage of those between 50 and 99 (C3) over total local units. We also calculated an index of the distribution of firms by size calculated as a Gini's concentration index (gini);
- average size of local units (size);
- percent variation in the number of employees and local units between the two census years 1981 and 1991 (vale, varf);
- distribution of population in industry by employment status. The categories are self-employed people (isem), entrepreneurs (professional + owners of companies) (enti), dependent workers (work), clerical workers and managers (icle), ancillary workers (ancy) ⁹;
- ratio between companies (legal units) and local units (grup);
- degree of concentration of the production (% of local production controlled by the first 5 firms: C5).

The first indicator and the absolute number of firms and employees (in leading industry) grasp the concept of firms' and people proximity.

The hypothesis behind the choice of the first five indicators is that higher the specialization rate, and the higher the quota of small firms (C2 and C3), that is lower is the value of the Gini index, the more the local industry is fragmented, the more extended the labor division is. Similarly, the higher the number of independent firms, the higher the proportion

⁷ A wider description of the indicators used to operationalize the definition provided by Becattini is offered in a previous paper [44].

⁸ A local unit coincides with a single-unit firm. Several local units may belong to one company, which is the legal entity that can include different local units financially owned by the same person or group of persons.

⁹ Entrepreneurs: people who run their own business, where they do not employ their own or family manual work but those of employees only.

Professionals: people who practice a liberal profession (doctors, engineers etc.).

Ancillary workers: people who collaborate with a member of the family who own his own business, without having a regular labor contract.

Managers: people having a supervisory position.

Clerical workers: white-collars workers, e.g. secretaries or book-keepers.

Workers: foremen, skilled workers, unskilled workers, auxiliaries, apprentices, homeworkers, members of corps.

of a) entrepreneurs and professionals and b) self-employed. Small firms and a high proportion of independent work (in industry) also point to low barriers to entry in the industry and to high work mobility.

In addition, the weight of entrepreneurs and self-employed people over total employed people is a variable of a crucial importance in the Piore view of the ID as a 'community of equals', especially.

The variable *C5* measuring the degree of concentration of production has been inserted to take into account likely processes of concentration in the LLMA. Unlike the other indicators, it has been extracted from secondary sources or from interviews.

Other indicators depicting the economic and social features of the areas have been calculated:

- rate of specialization to the services sector: quota of population employed in services' activities (Public Administration) over total employees (serv);
- density of social services (amenities): quota of firms and employees in social services (sports, cinemas, gyms, etc.) over inhabitants (sosf, sose);
- rate of specialization in business services: quota of employees and firms in business services (financial, marketing, accounting, etc.) over total employees or firms ();
- rate of specialization in banking and financial services quota of (employees and) firms in banking and financial services over total industries (bank);
- rate of industrialization: quota of employees in industrial activities over total industries (indp);
- rate of manufacturing: quota of employees in manufacturing industries over total activities (mane);
- rate of inactivity: population economically inactive over population in working age (inac).
- distribution of population (aged six and more) by education: higher education (diploma, bachelor degree), compulsory education (primary and secondary school), illiteracy; this indicator is relevant to grasp cultural views of local population and at the same time gives clues on the diffusion of skills & abilities among population.
- rate of unionization: members of Italian main trade unions (Cgil, Cisl, Uil) over total employees (unio);
- plurality of votes: quota of votes of the larger party or coalition in national polls in 1992 over total votes; it measures the presence of a dominant political subculture (poli);
- rate of housekeeping: percentage of housekeepers over female population aged 14 and more (hous);
- proportion of young people involved in industrial activities (variables ap19 and ap29)
- rate of emigration: quota of absent population over total population (em91)
- quota of 'extended families' (as those enclosing grandparents, nephews, and aunts) over total family classes/typologies (famy).

The aforementioned indicators do not exhaust the cultural dimension of a local area, for which we collect other

evidence from secondary sources which cannot, however, be easily quantified.

4.6. Measuring performance

Performance is a multifaceted concept, which can be measured at a firm or system level. While company's performance has its standardized indicators, it is more difficult to select the indicators of the performance of a system of firms and people, as in our case. Indicators of social performance are very difficult to build. This may reflect the subordination of measurement and statistics to the dominant paradigm in economics. In addition, empirical testing of ID performance and structure finds an insurmountable constraint in the scarce availability of data at a sub-provincial level. However we decided not to look at data at corporate level for two reasons. Firstly and more crucially, because the nature of the concept of ID and of local system of SMEs in general requires us to look at collective, that is social performance. Secondly, we have already illustrated how data available on companies is not very representative. We have thus restricted our definition of performance to turnover per capita, competitiveness on export markets, social welfare and growth indicators - for the whole of the productive system included in the LLMA. We thus look at the following features:

given i as the specialization or leading industry,

- competitiveness: variation of export in industry i in the period 1986-1990 (exp0) and 1990-1996 (exp6)¹⁰;
- per capita turnover (pcsale)¹¹;
- growth of employment between the inter-census period: 1981-1991 (vale);
- inclusiveness of local production system measured positively by the rate of economic activity of local population (inac) and negatively by the rate of unemployment (unem);
- welfare: per capita income (inco)¹² and housing facilities (M2in: average square meters per building occupants);
- infrastructure's endowment (infr) [30].

Each of these indicators has its rate of ambiguity, as they have a meaning which goes beyond the object which they describe; this suggests using them in combination rather than relying exclusively only on some of them.

The concept of competitiveness is generally linked to export performance, but this feature is particularly pertinent in the case of IDs as they are deemed to be responsible for Italy's leadership position on foreign markets. Regarding export, we have to recall that data are in this case referred at the provincial level as data at municipal or LLMA level are not yet

¹⁰ source of data: [31].

¹¹ Data on sales have been collected by asking to local organizations of employers or local institutions (Chambers of commerce, local trade unions, district clubs). Where more direct information was not available we relied on a survey carried out by the newspaper Sole24Ore between 1990 and 1991 [40]. They all refer to 1991, unless otherwise specified.

¹² [Source of data:4]

provided by Istat. Whereas most of the provincial employment of one industry is located in the observed ID, data may be taken as a good approximation of the area's export.

The variation in the number of employees and of firms has a twofold meaning, as it may point to a growth/decline process or to a process of evolution towards a different organizational form.

With regard to income, as well as production and sales, few objections can be made on a theoretical basis, as they are typical economic performance indicators. Objections may be valid according to the way they are calculated. The income indicator is, in fact an average value (million lire per capita), which may conceal major inequalities in the distribution of wealth among the local population. Concerning the variable on the average square meters per building occupants, one objection is that this variable may well reflect certain cultural attitudes, rather than the actual welfare of population. In this regard, when evaluating the results it should be taken into account that the desire to have a home larger than people's real needs may be typical of certain cultures.

Infrastructure endowment may, to some extent, be conceived as an indicator of the context-related performance. The sense of belonging of a population should create the political instruments to equip the local area of the necessary infrastructures. It is also a proxy measurement of economies of urbanization.

Unemployment and people seeking a first job are both indicators of structure and of performance¹³.

One of the main and distinctive characteristics of the 'canonical' ID is cooperation, and many researchers in the field assume a definition of them as networks of firms based on trust and cooperation. As we illustrated in a previous paper, cooperation is a dynamic phenomenon affected by structural and contingent facts, which must be not taken for granted in any place where SMEs are agglomerated. For this reason, either because it is a structural dependent variable or because it is not the specific aim of our paper, as an independent variable, we did not calculate any cooperation indicator.

To the extent our measurements of external economies of agglomeration, efficiency and effectiveness are the most appropriate, the second step was the assessment of their causal relationships.

4.7 The adequate technique for analyzing ID performance

For hypothesis or causal relationships testing, at least three instruments are available: multivariate analysis, correlation analysis and econometrics. From what has been said before, it should be quite clear that the performance is the result of a complex interaction of different factors. Hence, to proxy these explanatory causes with only one variable may be

¹³ Performance may be also analyzed in terms of innovative capacity; because of the high competition in IDs, firms are induced to continuously innovate and improve their performance. In the dynamic context, external economies stimulate technological spillover. However, we did not find appropriate measurements of innovation as this process in IDs is mainly of an informal nature. In fact, data on patenting are aggregated at provincial level, while data on R&D expenses are absolutely inappropriate for small firms [1]. It could be objected that the similar argument used to select export data at provincial level could be used for data on patenting. However, patenting data are classified according to a high level of aggregation which make them less able to capture the LLMA specialization.

misleading or disappointing. To this respect, multivariate techniques may be appropriate. However, they are conceived mainly as descriptive tools of analysis by economists, more suited to social or natural sciences, who prefer 'harder' and more robust tools of analysis, such as econometrics, which are believed to have an explanatory value.

However, multivariate analysis may also have a predictive value, provided that certain conditions are satisfied. In our case, cluster analysis certainly has a taxonomic aim, but is also intended to verify if the conceptual category of ID, which is indeed a theoretical classification, corresponds to an empirical unit or group and then if to this cluster is associated a similar and superior performance. For this reason, the cluster and factor exercise will consider only 'independent' variables.

We use both the research instruments of multivariate analysis and econometrics, which we believe to be more complementary than alternative. For the purposes of this paper we illustrate only correlation analysis results, also because the signs of the correlation values do not differ from B coefficient obtained from regression analysis. Factor analysis enables to reduce the number of explanatory variables, which is recommendable if the aim is to test a socioeconomic notion like ID, where a high correlation among variables is quite foreseeable. Factor analysis yields factors that are linear combinations of variables orthogonal and thus non-correlated.

4.8. Multivariate analysis

Multivariate analysis has been carried out on the variables used to operationalize the distinctive features of 'canonical' IDs. We included only 'independent', i.e. 'structural' variables in order to obtain the explaining factors of performance, whose indicators have been considered as dependent variables, and the clusters associated to these factors.

As a preliminary process, we excluded dynamic variables, such as the variation in the rates of industrialization, activity, and so on, as they may be considered a performance result. According to the results of the correlation matrix, we also cut off those variables showing a high correlation value among them, keeping only one, as for example the rate of industrialization (*indp*), which proved to be highly correlated with the rate of manufacturing.

The analysis was carried out by a French software program: SPAD (*Systeme Pour l'Analyse de Donnée*). The procedure followed the principal component method for factor analysis and then a hierarchical method of clustering. The number of relevant factors was set at three, according to a common criterion, which requires the eigenvalues of the factors to differ from one another by more than 10%. The first 3 factors explain 52.1 of the sample's variance (Table 1).

Table 1 Histogram of eigenvalues

The resulting factors have been interpreted as a coherent combination of economic and social features, each roughly describing a class of local economy. Factor analysis partitions the variables between a positive and a negative quadrant

of the axis (factors). A summary description of the positive and negative variables combined in each factor is provided below. Factor loading (that is, correlation between factors and variables) are given in parentheses.

An ideal factor analysis would have yielded only one single 'pure' significant factor, and cluster analysis would have distinguished two groups: canonical and non-canonical IDs. On the contrary, our results show the existence of a multidimensional space of analysis in local economies, which probably requires a richer lexicon than the distinction between Marshall-style, canonical or non-Marshall-style, non-canonical IDs.

Factor 1

Factor 1 combines most but not all of the indicators of economies of agglomeration (but not the rate of specialization in mechanical ancillary industries). It is positively correlated with rate of industrialization (value of the loadings on the variables: .86) as opposed to rates of inactivity (-.81), rates of specialization (.56), size of the leading industry (empl: .51), working young people (.53), people with a basic education (.45), and negatively correlated with unemployment rate (-.84), density of firms (-.82), inactivity rate (-.81), housekeeping rate (-.52), emigration rate (-.66), illiteracy rate (-.63), and concentration of firms (-.52).

Self-employment is a characterizing feature of the social structure, but not all the 'expected' features are summarized in one factor only, as for example political subcultures or rates of unionization or complementary links with ancillary industries are not so dominating in this factor. Hence, on the positive quadrant all the features of industrialization are present, while on the negative one, marginality indicators are combined. For what concerns the structure of the industry, concentration of production - placed on the negative quadrant - is the characterizing feature.

We call this factor the agglomeration/marginality factor (henceforth, the first name of the factors label is related to the positive variables, while the second one to the negative ones).

Factor 2

This factor combines social and economic features apparently in contradiction. It is positively correlated, on the positive quadrant, with rates of industrialization and of specialization, rates of emigration, inclusion of very young people in industry (.45), quota of dependent workers and illiteracy. On the opposite side, we find specialization in the service sector, both at the industry level (-.53) and for the local economy on the whole (-.51), and which is linked to social services' density (-.40). Interestingly, on this axis, rate of specialization in the leading industry and rate of specialization in ancillary industries are placed on the opposite quadrants.

Looking at the higher loading only, that is those above the cut-off value of 0.60, this factor contrasts the high specialization against the tendency towards the service sector and plurispecialization. We call this axis the monospecialization/teriarization (specialization in the service sector) (or /plurispecialization) factor.

Factor 3

Factor 3 is the axis clearly depicting, on the positive side, a model of labor division or of economic organization, typical of industries where the number of firms is low (firm:-.50) the average size of firms is high (size: 0.46) and interrelations with mechanical industries are significant. The indicators of social structure which are positively associated with are the proportion of workers (work: .38) and ancillary workers (ianc: -0.37), while those negatively related are the percentages of autonomous workers (entr: -0.58; self: -0.43), rates of specialisation in tertiary activities, either (serv: -0.42). The kind of specialisation also explains the inclusion of young people and female population. The reverse, on the negative side, is a model of a small firms economy with relatively high rates of specialisation (spce: -0.43) based on the active role of the family, but not of women who tend to be employed as housekeepers, and with scarce interrelations with mechanical industry.

Unlike factor 1, the organization based on small firms is not distinctively associated to a low rate of unemployment, as no related variable appears on the factor. We call this axis the inclusiveness/small firms' economy (or non inclusiveness/large firms' economy) factor.

4.9 Cluster analysis 1991

Hierarchical clustering techniques are very common in multivariate analysis and with respect to optimization techniques they present less arbitrary steps. According to this technique, data are not partitioned into classes in one step. Rather they are first separated into a few broad classes, each of which is further divided into smaller classes, and each of these further partitioned, and so on until terminal classes are generated and not further subdivided. By using an agglomeration method ⁽¹⁴⁾ a distance matrix between the entities is accordingly selected. According to the method of Ward, the units of observations are clustered in a manner which results in the minimum increase in the error sum of squares (ESS) [23]. The infra-cluster inertia must be low in order to have an homogeneous cluster, while the inertia between clusters must be higher, if they are dissimilar or distant. Thus, with the technique used, the observations are grouped in k clusters in a way that they are the most similar within a cluster and the most dissimilar between clusters. The result must also minimize the infra-cluster inertia and maximize the inertia between clusters.

¹⁴ Essentially hierarchical techniques may be subdivided into *agglomeration* methods which proceed by a series of successive fusions of the N entities into groups, and *divisive* methods which partition the set of N entities successively

Cluster 1: Arzignano, Santa Croce, Marostica, Cossato, Montebelluna

Cluster 2: Sant'Elpidio, Prato, Carpi, Civitanova

Cluster 3: Vigevano, Bassano, Sassuolo, Ostiglia, Pesaro, Suzzara, Guastalla, Cento

Cluster 4: Solofra, Casarano, Civitacastellana, Giulianuova, Val Vibrata, Barletta, Matera.

Cluster1: inclusive IDs ?

The first cluster is mostly positively correlated with factor 3 (2.25), the factor of inclusiveness/small firms' economy, with factor 1 (1.90), the factor of agglomeration/marginality, and with Factor 2 (1.64), the factor of mono-specialization/specialization in service sector. The loading on the factor of small firms family economy adds the specific character of inclusiveness (ap19, ap29) to the variables related to economies of agglomeration combined in factor 1. They also show a strong specialization in ancillary mechanical industries. In other words, this cluster is a variant of the model of ID, where, on one hand, the average size of firms is relatively high and the model of labor division is more hierarchical or less extended, as indicators on social structure show (high weight of workers and large average size) and, on the other side, family economy characters (e.g. ancillary workers) or specialization in ancillary mechanical industries are not present.

These local systems appear as very inclusive. The young generations are largely involved in local economic activities; indeed, these variables are the most significant. This is less true for women, as the housekeeping rate although lower than the national average is higher than in the other two clusters (with the exception of Cossato). This result has to do with cultural factors and with the nature of specialized industries which most employ male workers (while, for example, the textile area of Cossato-Biella shows extraordinarily low rates of housekeeping: 12%).

The participation of local population to economic activity has also as a prerequisite a basic level of education (a smooth distribution of degrees of education). A third distinctive variable of the cluster is in fact the quota of population with a compulsory education.

Another interesting feature of this group is the low quota of self-employed people, even lower than the national average, as contrasted with the high quota of entrepreneurs. An explanation of this feature is related to the high quota of concentration of production of this cluster and to the more hierarchical model of labor division, where the presence of formal or informal networks ⁽¹⁵⁾ require more clerical workers and entrepreneurs than self-employed people. This is a relevant result, as it points to a major role of entrepreneurs rather than self-employed people whereas a more structured division of labor is achieved. In the 'canonical' IDs identified by Sforzi on the basis of 1981 census data, self-

into finer partitions [23]. As the two methods are equivalent, we chose the agglomeration one.

¹⁵ This phenomenon is known in Italy with the name of Groups. Other authors prefer to call them constellations of firms

employment was one of the main distinctive social feature of his Marshall-style IDs. This cluster is also characterized by a relatively high density of amenities.

This group is between cluster 2, which includes areas very close to the model of 'canonical' ID, and cluster 3, which groups together very service-oriented areas (Table 3). The negligible features of a family economy are combined with a strong specialization in ancillary mechanical industries.

Cluster 2: canonical IDs?

Cluster 2 is positively correlated with the 'agglomeration/marginality' factor (3.66) and negatively with factor 3, inclusiveness/small firms' economy (-2.56). This group of local areas shows the higher number of 'canonical' IDs features. Indeed, this cluster group is the most well-known and studied ID, with Prato often assumed as a typical example. Because of its negative correlation with factor 3, it proves not to be characterized by mechanical engineering industries. The structure of the industry is very fragmented consisting of a myriad of firms, mainly of a small size (the quota of employment in local units having less than 50 workers is over 80%) meaning that there is an extensive division of labor.

The areas are mono-specialized and do not host significant mechanical ancillary industries. This is particularly true for local economies located in Marche region (Sant'Elpidio and Civitanova Marche), whose industrial origin dates to after World War II, whereas the other two have a century-long tradition. The degree of inclusion of young generation is not so high as in the previous cluster, as well as the presence of political subculture is not a homogeneous character.

The small number of areas more similar to the Becattini model shows how such a conceptualization requires a set of conditions that are quite difficult to achieve. Similarly, a deeper scrutiny of Italian specialized LLMAAs would show that the empirical relevance of the so-called 'canonical' ID is less relevant than expected.

Cluster 3: service-oriented IDs?

Cluster 3 is negatively correlated with factor 2 (-2.59), the specialization in the service sector factor.

This is the more homogeneous cluster according to the values of the infra-cluster variance. With respect to the dominant model of labor division, less 'extended' division of labour is realised, as also the variable C5 confirms. It groups together all the areas where different mechanical specializations (ceramics, wood, metalworking machinery, etc.) are present.

This cluster is characterized by very low unemployment rates, but the social structure is quite different from the one represented by the other clusters. In fact, these areas show a high tendency towards the service sector whether referred

[35]. Differently from a previous paper [45], we prefer here to call them networks.

to the local economy on the whole or to the internal structure of industrial activities, thus indicating the internal complexity of local firms; also the concentration of production is higher than in the previous clusters. In this group a less 'extended' division of labor is represented. As corroborated by secondary sources [17, 21] a substitution of spontaneous or informal relationships with final subcontracting relations, networks or constellation of firms, leading or 'interconnecting' firms is achieved.

Cluster 4: Embryo IDs ?

Unlike the other clusters this one shows a geographic homogeneity as it groups together all the areas located in the south-central Italy.

Cluster 4 is negatively correlated with factor 1, the agglomeration/marginality factor, by the highest value (-4.37) in the sample. To some extent, it is opposite to cluster 2 in that a economic organization based on relatively large firms is associated to indicators of marginality, while the reverse is true for the former (as the sign of the correlation with factor 1 shows).

The most significant and characterizing variables in cluster 4 are rate of unemployment, rate of inactivity, rate of illiteracy as variables positively correlated, and %pop with people with compulsory education certificates (comp), rate of industrialization, as variables negatively correlated. Concerning the dominant model of labor division, the cluster is quite homogeneous. The average size of firms is generally higher than the corresponding industry average, while the degree of concentration of production (C5) on average is higher (Table 2) in the sample. At a finer level of analysis, two dominant models of labor division, which may be quite clearly extended to southern Italian areas [30] [31] (Baculo, 1995) can be observed. In one group of areas (Casarano, Solofra, Matera and Civitacastellana), the average size of firms is high and they are generally vertically integrated. There is little physical interchange of goods between firms, although in some of these cases, information flows are consistent. Small firms are also present in these areas, but they represent a small proportion and work either as subcontractors or as final producers generally for clients or traders located outside the areas. On the other hand, Val Vibrata, Giulianuova, Barletta are characterized by a wider diffusion of small firms, although the average size is anyway higher than the industry average. Also in this case, the quota of small firms working for external clients/commissioning firms is large. Indeed there are several linkages between the LLMAs in the north of Italy and those located in the south. A national network can be viewed in the case of Italy as another source of external economy.

(Table 2 Distinctive characters of the clusters)**5. The relationship between cluster and performance****5.1. Correlation between factors and indicators of performance**

In the previous section we presented a descriptive analysis of the characteristics of the 24 LLMA's in the 4 clusters. In what follows with correlation analysis we assess if the indicators of performance are related to the factors we have obtained. For each of the three most important factors, factor score coefficients for each observation are correlated to the dependent variables (**Table 3**).

(Table 3 Correlation values between indicators of performance and factors)

The most significant correlation is between income and agglomeration/marginality and mono-specialization/specialization in service sector factors are statistically significant. This is meaningful as the first factor combines indicators of marginality on the negative quadrant. The less extended is unemployment, inactivity rate, emigration, etc, and higher the industrialization rate, the number of firms, the higher the income per capita. Income is also positively related to the presence of services-oriented activities and with a higher content of information (on the negative quadrant of factor 2), which require a higher degree of education (as confirmed by our correlation analysis), as the high correlation between the single variable of higher correlation and of income shows.

Measures of productivity (sales per capita) or export indicators (growth, propensity, etc.) are more directly linked to industry-specific or macroeconomic factors than to ours. The latter summarize socioeconomic influences and are more able to explain the overall wealth locally produced rather than industry performance results. As a result, the variables related to variation of number of firms and employees and export performance show a high variability inside each cluster.

5.2. The performance of clusters

In cluster 2, which identifies 'canonical' IDs, the average income per capita is higher than the national average and higher than in the other clusters, although by few decimal points than cluster 3, while cluster 1 is just on the national average. Infrastructure in 'canonical' IDs are less adequate than in cluster 3, while dwelling's welfare is lower than in cluster 1 and 3.

Low rate of unemployment and of people seeking a first job are not distinctive performance of cluster 2 as Cluster 1 and 3 have even better social performance and welfare conditions.

(Table 4 The performance of clusters. 1991)

In any case, 'non-canonical' southern areas in our sample have still bad social performance - although better than the southern Italy average. The southern heritage is strong: even 'deviant' behavior, as the areas included in our sample, which offer a new representation/image of the South is not able to dismiss the serious 'gap' from the north. But it is also true that generally these areas start their industrial development from very different 'initial conditions' and need to do further steps in industrialization.

Regarding indicators of productivity and export, the picture is quite different. From the table above, we can observe that cluster 3, which includes the LLMAAs showing the higher specialization in service sector and the more structured models of labor division, are those exhibiting the better indicators of productivity and export growth, and in general appear to exhibit the better overall performance. A higher per capita turnover may be related to the technological processes used in these areas. This is confirmed in the cases of Montebelluna, Arzignano, Sassuolo, Suzzara, Guastalla, according to our secondary sources and as illustrated in a previous paper [45]. The cluster of southern areas too, shows good export performance, which become absolutely brilliant between 1990 and 1996, and satisfactory productivity ratios.

The variation in exports between 1990 and 1996 occur above all in the areas where the density of firms is lower and where the average size of firms is higher. Looking at the average values inside each cluster, we can observe that the most dynamic cluster in the same period is cluster 3, which includes the most services-oriented and structured firms. The significant correlation of export with the factor of mono-specialization/specialization in service sector confirms the higher competitiveness of the areas located in cluster 3.

From a dynamic point of view, the areas which share the minor characters of the 'canonical' model are those where employees (and also export) grow faster, while for the whole sample the correlation matrix does not show a significant correlation between growth of export and employment growth in 1991. More specifically, the most dynamic areas are the youngest, those where the industrial tradition is more recent. The older industrialized areas, on the contrary, show a negative variation of employment which must, however, be taken as an indicator of restructuring processes rather than of decline ¹⁶.

We did not find a strong confirmation of the hypothesis that the more extended the division of labor the less dramatic the loss of employment in face of a demand slump. On the contrary, the areas where the production cycle is more fragmented are those where deeper processes of rationalization and concentration are in course.

¹⁶ In this respect, Becattini excludes that a structure of relationships between firms of an asymmetric nature, where some firms may have a major role than others, can be considered as an ID: "Coalitions and agreements of various types and importance between firms in the district also occur, but whenever the weight of those which take a financial form increases too much, or the growth of some firms sends it "out of scale", as it were, we are already out of the canonical form of the Marshall district"[8, p: 41].

Concerning infrastructures, all southern areas show very bad performance (the range of variation of the indicator is between -100 and $+100$), while in the other areas they are positive. However, especially in the Veneto region physical endowment is always considered inadequate by local operators [48].

Economies of urbanization and the creation of ancillary industries are not always a result of agglomeration processes.

6. Conclusive remarks

Our results show that external economies of agglomeration have a positive effect on the performance (Factor 1). However, in a dynamic perspective the growth of export, employment, firms or production does not happen where they are strongest. This suggests that we look at the relation in an evolutionary perspective, imagining possible cyclical processes rather than the dictatorship of 'initial conditions'. These affect the structure of the area, the dominant rules of behaviors and the structure of the industry, but not strictly the performance.

Monospecialisation is neither a dominant and empirically relevant feature nor a factor able to ensure the future survival of the ID. The effects of agglomeration are more linked to the absolute size of the leading industry, rather than to the specialization rate. In Italian southern areas, the high specialization is not sufficient to generate the economies of agglomeration and, as a result, the areas suffer from high rate of unemployment and show many signs of social hardship. Indeed, the agglomeration generates positive effects only after a given threshold. Causative circle of development can be only activated after a 'critical mass' is generated. This result has implication for industrial policy also.

The results show that a superior performance is not strictly linked to a specific socioeconomic model, specifically characterized in its organizational or social features. The same results also allow for an evolution of the model of 'canonical' ID towards more services-oriented or more integrated organizations, where the role of the external context, the active institutions may have been different from those underlined in the literature on 'canonical' IDs (extended families, political parties, local councils or provinces). The conditions which Becattini requires for the existence of the ID, such as an extended division of labor, diffusion of local banks, the presence of a political subculture, etc, do not appear able to ensure the stability of the 'canonical' ID. Indeed, the latter does not stand out as a normative model. As we found that industry performance is not fully explained by socioeconomic factors, we have to admit that a high performance can be associated to different classes of local systems, that is 'canonical' IDs as well as less canonical ones. We did not find strong evidence supporting the idea that one model is superior to all others, as each system evolves according to its internal resources and capabilities. However, there are signs that among the first three clusters, embracing the areas located in north-central Italy, the LLMA where a more structured model of labor division has been

achieved are those showing the better indicators of productivity and export growth.

The higher concentration of production which can be observed in all the clusters with the exception of the 'canonical' one, and the replacement of spontaneous or informal relationships with formal subcontracting relations, the creation networks and constellations of firms, leading or 'interconnecting' firms does not necessarily enlarge the gap between social and economic performance. Cluster 3 is an example of how a restructuring process does not impair the social welfare of local population. However, these results should be evaluated in the long term, while our research provides only first accounts. The new organizational forms, such as large firms may as well generate external economies for the local environment. In this evolution, the role of new and single protagonists is very crucial [25]. They may introduce radical innovation thereby stimulating smaller firms to innovate their product/process, which they would not be able to reconceptualize, without an external pressure. Large firms can produce public goods which generate externalities for smaller firms (logistic infrastructures, education center). This is, for example, the case of Matera, where the leader firm, Natuzzi, has promoted several initiatives for information and technological capabilities diffusion (see [11] in this issue). Hence, the formation of protagonists out of the scale of the district: larger firms or groups, or delocalization processes do not hinder the performance of the area, at least in the period observed in our research.

However, if the more educated people, the new professionals, are required to live locally, the attraction of places in terms of quality of life must be enhanced. These people are in fact very sensitive to the beauty and the efficiency of services of their place of residence. The reconciliation between industry and quality of life is the real challenge of IDs, which may still propose them as both a model of labor organization and a model of social organization.

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