

# A METHODOLOGY TO INVESTIGATE THE EFFECTS OF GLOBALISATION ON LOCAL TERRITORIAL STRUCTURES

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## **Résumé**

*Cette étude a pour principal objectif d'identifier l'existence et l'influence des mutations économiques sur l'organisation territoriale au niveau global en termes d'organisation des systèmes productifs et le choix de localisation. Peu d'études ont été menées dans ce domaine, sans doute à cause de l'insuffisance de données et le caractère spécifique des nombreux systèmes territoriaux locaux. Ce constat nous a amené à proposer une méthodologie apte à enrichir les connaissances dans ce domaine.*

*Les travaux ont porté sur :*

- les aspects théoriques touchant aux nouveaux modèles d'organisation territoriale, tels le paradigme des réseaux, l'impact de la globalisation économique sur les systèmes de production, l'internationalisation.
- les aspects empiriques par le biais de l'analyse des systèmes productifs de deux régions italiennes (Latium et Abruzzes), très peu étudiées mais pour lesquelles l'évolution récente a montré des mutations profondes, notamment au niveau des petites et moyennes entreprises avec une adaptation des systèmes locaux à répondre aux ajustements induits par l'évolution du système économique global.

*Ces deux cas ont été analysés par le biais d'un questionnaire adressé à un échantillon d'entreprises. La nouvelle loi sur la confidentialité limitant étroitement l'exploitation de nombreuses sources, les travaux se sont essentiellement appuyés sur les données fournies par les grands organismes officiels (Institut central de la Statistique, Union des chambres de commerce). Un certain nombre d'indicateurs ont pu être identifiés dans le but :*

- de fournir des données aux cas étudiés,
- de permettre une simplification du champ statistique et d'en extraire l'échantillon.

*A terme, le questionnaire a permis d'identifier les caractéristiques générales des entreprises, les relations dans lesquelles elles sont impliquées, d'identifier et d'évaluer la pertinence des facteurs de localisation.*

## **Abstract**

*The general aim of the study is to verify if and at what extent economic changes at global level influence territorial organisation, in terms of organisational models of the productive system and of firms location choices.*

*The general lack of studies in this direction, due mainly to insufficient systematic information and to the specific features of many local territorial systems, led us to build a methodology aimed to increase the level of knowledge on these issues.*

*In particular we worked on :*

- theoretical aspects, concerning both new models of territorial organisation, such as the network paradigm, and changes of the productive systems due to economic globalisation, such as the internationalisation ;
- empirical aspects, by analysing the productive systems of two Italian regions (Lazio and Abruzzo), which have been less analysed than other regions, but showed in recent years relevant changes, mainly concerning Small and Medium Firms and the formation of local productive systems able to ensure the adjustment to changing economic conditions.

*In order to analyse these two case studies, we chose to carry out a direct survey, based on a questionnaire direct to a sample of firms.*

*The choice of data sources was not quite wide, because the new "privacy" law strongly limited the use of many data sources, so that we try to extract as many data as possible from available sources (data bases of Central Institute of Statistic and Italian Changes Office), and we construct some indicators in order :*

- to provide an adequate knowledge of the case studies ;
- to allow the simplification of the universe and to extract the sample.

*At the end we construct the questionnaire aimed to :*

- verify the general characteristics of firms and of their markets, and the level of external relations and the type of relations in which they are involved ;
- individuate and to evaluate the location factors' relevance.

## **Mots-Clés**

*Facteurs de localisation, globalisation, modèle d'organisation territoriale, systèmes industriels*

## **Key-Words**

*Location factors, globalisation, territorial organisation models, productive system*

The general aim of the study was to verify the following hypothesis :

- if and at what extent economic changes at a global level (markets globalisation, shift from a “fordist economy” to a “services economy”) influence territorial organisations ;
- if and at what extent these phenomena can be influenced and driven by territorial policies.

To this end, we subdivided the analysis in three main steps :

- comprehension of the effects of “economic globalisation” on local economic systems, based mainly on bibliographic research in order to individuate new points of view and/or new models representative of a more efficient interpretative theory of reality ;
- comprehension of the relations between the organisational model of firms and the urban and territorial structures. To this end, we developed two case studies : Lazio and Abruzzo Italian regions ;
- individuation of adequate management forms aimed to co-ordinating and driving interventions, investments and territorial policies in the study areas.

The present paper contains a synthesis of the work carried out till now : in particular, the development of step n° 1 and the organisation of the surveys and analyses for the two case studies.

## **1. The effects of globalisation on local economic system : new location/organisational model of firms**

The step n° 1 was developed in three directions :

- a. the building of a synthetic framework of different disciplinary assumptions about the globalisation’s phenomenon ;
- b. the building of a taxonomy of the firms’ location choices, based on the assumption that there are identifiable relations between :
  - organisational level of the firms and their interaction with local or global economic systems (network type) ;
  - economic sector of the firms and their interaction with local or global economic systems ;
  - economic sector of the firms and their location choices.

This last task was required because, nevertheless some other authors analysed issues similar to ours, they worked on particular territorial systems, whose characteristics do not allow to generalise their findings [5] [3] [1] [6] [7].

Therefore, the lack of a general sound knowledge on the relations at study led us to the choice of carrying out a direct survey on a sample of firms in the study areas : this is the work which is being developed in step n. 2.

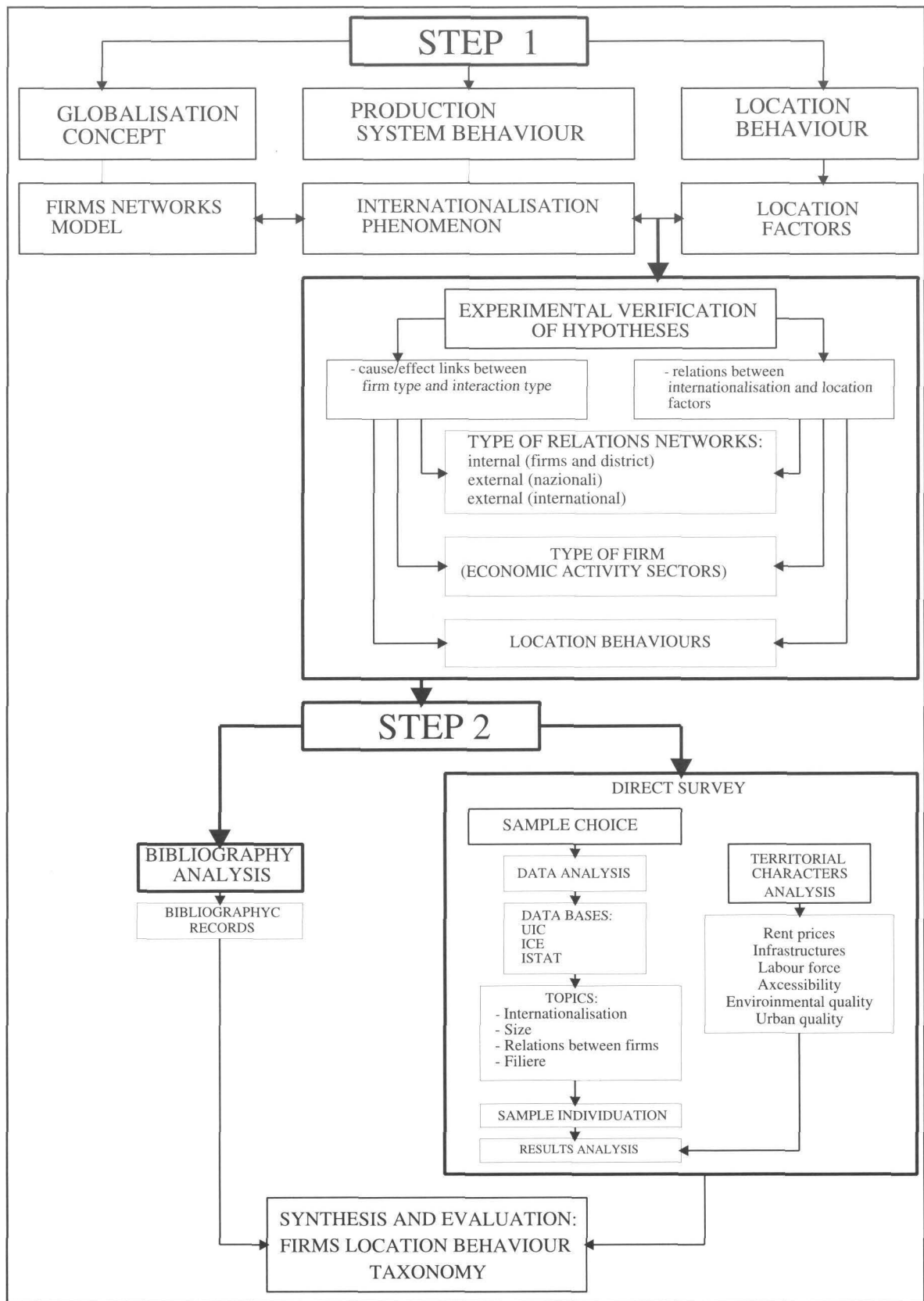
The organisation of the first and the second step are synthesised in figure.

### ***1.1. The globalisation : network model as interpretative theory of reality***

The last twenty-five years saw many global economic changes.

It is generally acknowledged that the causes of such changes can be found in the decrease of restrictions on capital flows and in the rapid development of telecommunication technologies.

However, it’s difficult to find a general theorisation on globalisation phenomenon which consider all (or the most part of) its aspects, as the reasoning on this issue are generated separately in different disciplines (e.g. economics, politics, sociology, history).



In this framework, the main aim of this research is to analyse the effect of globalisation from the point of view of geography and of urban planning, hoping to gain some more knowledge on the relations between globalisation and territory.

The study of such relations implies relevant difficulties due to :

- scales of analysis varying from world level to local level ;
- need to define models of territorial organisation able to represent situations ranging from concentration in large urbanised areas to dispersion in wholly urbanised regions.

We think however that the relation between the phenomenon of globalisation and territorial organisation can be efficiently read by means of the network point of view.

It is indeed a model able to represent quite well the present context, characterised by inter-activities dynamic relations and to be extended to many scales and to many disciplinary fields.

In particular, in the field of territorial studies, the network paradigm is viewed from two points of interest :

– Geography and Urban planning : it analyses settlements organisation (network of cities). Since the formulation of Location Theory, the idea of a city as a mere market area has evolved and has recognised the emerging phenomenon of de-territorialisation : the city is the node of a circuit of relations with a non-traditional link with the territory. Coupled with “territorial” principles of spatial organisation (gravity model and hierarchical model), there is a principle of network organisation [2].

– Territorial economics : it analyses productive organisation (network of firms). Also as to the changes of the industrial system, the network paradigm represents allows to build models more adequate for describing the market new features (demand fragmentation, markets segmentation, increase of transaction and of non-vertical interactions, etc.).

In this paper, we will focus on the latter point of view (network of firms), because, in the framework of economic globalisation, the firms network model represent quite well the constraints and the relations implied by the new organisational model.

In fact, this model, which is based on a marked division of labour, on a wide use of external supplies and on a marked responsibility assumption by each actor, allows a relevant flexibility, the production diversification and its personalisation and promotes a faster adoption of products and process innovations.

In particular, the network model allows a joint exploitation of scale and scope economies and tends to reach an efficiency that can be verified at a global scale rather than for every single actor or product [4].

The supply organisation crucial factors at a global level are : the reduction of customs barriers, the emerging of specialised broker services and the improvement of communication networks (transportation and telematics). But some of such factors are not distributed in a homogeneous way on the territory and affect the location choices.

The network model appears also representative of the change of the production organisation in relation with the demand. It's characterised by a strong market fragmentation and by the need of an high products' diversification : each firm needs to develop its own distribution and assistance network, which becomes a consistent part of production process [4]. All this led to the need of more and more efficient services and to a marked level of co-operation with specialised operators (also foreign operators).

The development of service activities sometime corresponds to the specialisation of some internal offices of the firms, so that two facts are evident :

- the emerging of a service internationalisation process inside the firms (the level of service internationalisation depends on firm's internationalisation) ;
- the development of service sector as an autonomous sector with its own organisation and features (its internationalisation depends on global dynamics).

Therefore there was the need of separating these two processes. In order to reduce the “size” of the analysis, for the moment the focus of the two case studies relates to firms belonging to the industry sector and to the factors which influence their location.

### ***1.2. The production system behaviour : the internationalisation phenomenon***

The above considerations suggest the possibility to analyse the industrial system’s territorial dynamics in relation to the level of relation with the global network system, that is in relation to :

- level of productive process organisation ;
- type of internationalisation adopted.

With regard to specific aspects of industrial system, we made a first general distinction between Big Firms (BF), Small and Medium Firms (SMF) and local productive system (district). Such distinction derives from the observation that the BF and the SMF take part in the global network in different ways (because of the different internal resources and adaptation capacity to economic changes) so that probably they evaluate in different ways local factors for their location choices. Districts were created because inside such territorial areas major (both structural and functional) changes took place. Such changes were aimed to allow such systems to survive by being able to answer efficiently to external inputs.

As the objective of this step of the study is to verify if firms keep relations at a local or at a global level, it’s necessary to investigate on what kinds of internationalisation are developed both at firm and at district level.

“Firm internationalisation” is intended as “participation of the firm in abroad activities which imply an investment of risk capital [5] : creation of subsidiaries abroad, participation in foreign companies, creation of joint-ventures, etc.

At firms level, the individual firm, linked with other firms by sub-contracting relations, chooses to refer to an external firm. In this case internal relations’ strength decreases, while external relations’ strength increases.

At district level, indeed, internationalisation takes place trough the progressive shift from productive processes’ phases developed inside, to productive phases supplied by external firms. In this case is possible to note the shift from a strongly inside connected system to one in which strategic connections abroad increase.

### ***1.3. The location behaviour of firms : building a taxonomy***

The main problem, in the complex system emerged in the previous chapters, is to individuate the connection between location behaviour and typologies of firms. More specifically, we posed the problem as that of classifying location choices depending on the interaction level between firms or on the network type to which they belong. In other word, we tried to individuate the relevant location factors for globalising firms.

As to the interaction level, we individuated two types of firms behaviour, depending on their prevalent relations :

- internal relations : horizontal interactions (between different firms belonging to the same district) and vertical interactions (inside the firm itself) inside national boundaries. Such relations involve the networks of local market for labour, products and financing flows ;

- external relations : interactions that the national firms engage with firms outside national boundaries (because of the particular structure of Abruzzo’s districts, this class includes also the relations between firms located inside and firms located outside the district). Such relations involve in the international market for labour and products.

As far as location factors are concerned, we can assume that, while the former class expresses a traditional location demand, the latter requests particular innovative contexts. In particular, for the firms developing what we called internal relations, local territorial factors are relevant. Among them, the prevailing ones seem to be territorial infrastructures and floor space availability, beside, of course, factors relating to local economic sectors, such as productivity and innovation push and degree of labour specialisation and division. These are indeed the key-factors for the development of local productive systems, where territory is not any more only the physical support for firms location, but itself becomes a development factor [8]. For global firms, besides more traditional factors (for example agglomeration economy) factors linked to the symbolic value of the site, to the presence of advanced services, to the infrastructures, etc. become relevant.

In conclusion, it seems possible to individuate new location factors to be added to the traditional factors (agglomeration and scale economy). The factors which assume different relevance, in different cases are :

- accessibility ;
- presence of qualified labour force ;
- supply of telecommunication infrastructures ;
- symbolic value of the site ;
- urban and environmental quality ;
- rent prices ;
- travel and telecommunication costs ;
- congestion.

## **2. The relations between the organisational model of firms and the territorial structures : cases studies Lazio and Abruzzo Italian regions**

As there is not a clearly identifiable direct and general relation between internationalisation and characteristics of firms, indeed internationalisation is strongly influenced by the activity sector, but the activity sector characteristics depend on local structural factors [5], a taxonomy can be built only in relation with case study direct sample survey.

In order to carry out such survey, first of all we had to reduce in some way the size of the statistical universe, which, being very "variegated", would imply a size of the sample too big to be managed in this study ; to this end, we carried out some preventive analyses and surveys.

The analyses, referred to SMF and districts, comprehend two phases :

- A) Direct analysis : elaboration and evaluation statistical data ;
- B) Indirect analysis : territorial analysis.

The main objectives of the former (A) are :

- to provide an adequate knowledge of the case studies in relation both with the economic system size aspects and with qualitative aspects ;
- to allow the simplification of the universe.

The latter analysis (B) is aimed to find a relation between production systems and territorial systems characteristics : the analysis of the match between territorial and productive factors should allow to formulate some hypotheses on the influence of certain location factors on firms linked with external production systems.

In the following chapters we present a synthesis of the criteria adopted in order to individuate the universe and to extract the sample, and we will illustrate the questionnaire used.

## 2.1. The sample survey on firms

The statistical universe considered includes firms with the following characteristics :

- size : Small and Medium Firms with a number of employees between 10 and 499 ;
- economic activity sector : the most representative (with an high number of employees) of the study areas ;
- the relations between firms : internal relations (inside the national boundaries and inside the district) and external relations (outside the district for the firms that are in it and abroad for the other firms) ;
- location : municipalities belonging to Abruzzo's districts and Lazio's industrial concentration areas<sup>1</sup>.

To build the data-bases and the indicators we would need information related to :

- a. size aspects : number of firms, number of their offices, number of employees ;
- b. internationalisation level : export flows, level of Direct Investment Abroad (DIA) ;
- c. functional aspects : specialisation with regard to economic activity sectors ;
- d. relational aspects : location of each firm and of its offices, territorial distribution of all firms, quote of activities developed in different sectors.

The choice of data sources was not quite wide, because the new "privacy" law strongly limited the use of many data sources, so that we try to extract as many data as possible from available sources, "crossing" them to extract as much information as possible.

In the following matrix is presented a schema of the available sources and their contents.

FONTS	CONTENTS	TERRITORIAL AGGREGATION	FUNCTIONAL AGGREGATION	YEAR
UIC <sup>2</sup>	Direct Investment Abroad (DIA)	Province	Activity sectors	1994-97
ICE <sup>3</sup>	IMPORT flows EXPORT flows	Province	sectors of product	1991-97
ISTAT <sup>4</sup>	n. of firms n. of employees n. of offices	Province Municipalities	Activity sectors	1991

The analysis are related to three different scales :

- a territorial scale : from provinces, to sub-province areas, to municipalities. The sub-province areas are made by 3 districts with 52 municipalities for Abruzzo and 17 areas (Industrial Concentration Areas) with 76 municipalities for Lazio ;
- a functional scale, which regards increasing disaggregation of economic activity sectors ;
- a firm size scale which is represented by three general classes (Big Firms - BF - >500, Small and Medium Firms — SMF - >10 and < 499, Small Firms — SF - <10 employees) and by three sub-classes for SMF (small firms >10 and <49, medium firms >50 and <199, medium firms >200 and <499 employees).

To individuate the universe we conduct two level of analysis :

a - general analysis, aimed to the identification of some general aspects.

In particular at the province scales we used the following variables :



- size aspects : number of firms, functional units and employees ;
- internationalisation : export flows and Direct Investments Abroad ;
- relation : volume of relations between firms in function of the central units location ;
- activity filière : the ability of the firms of having offices specialised in different activity sectors.

At the sub-province scale the analysis was directed to the following aspects :

- productive activities size : selection of the municipalities with a relevant number of employees ;
- functional organisation : selection of the sectors with a relevant number of employees ;
- relations : selection of the municipalities with a relevant number of multi-location firms (firms with more than one functional unit).

#### b -. details level

- First level, aimed to make a first selection of municipalities and firms so, at the sub-province areas scale we chose the municipalities with the highest number of employees in the emergent sectors, and at the municipality scale we made :
  - a selection of the prevailing sectors (the strongest among sectors and among municipalities) ;
  - a check on the size of firms inside such sectors and such municipalities (are they mainly small-medium firms ?) ;
  - the individuation of more representative sub classes of SMF.

In conclusion the universe is made by 102 municipalities with 34 692 firms, belonging to one or more than 16 activity sectors.

In order to extract the sample it was necessary to develop a second level of detailed analysis. To this purpose the characteristics of the firms belonging to the sample are related to the following indicators :

1. *multi-location level* : central units on which a number of local functional units depend (number of employees above a threshold) ; this is considered an indicator of the production organisational articulation (a good articulation, probably, means a good network of relation) ;

2. *prevailing relation* : the prevalent location of central units inside national boundaries (number of employees, above a threshold, working in central units localised in other municipalities, or provinces, or regions). This indicator gives informations about the direction of the prevailing relations also for the municipalities which didn't show an high number of multi-location firms, in fact it is possible that, although there is not a general strong multi-location phenomenon, there is an activity sector in which this phenomenon is relevant for the Medium and Small firms. Because this variable doesn't give information about the activity sector we needed to build the following indicator ;

3. *sectors in which small and medium firms are prevailing* : all the industrial sectors in which the SMF are more numerous than the BF and SF. In this case we individuated not only the emerging sectors (with an high percentage of employees), but we also verified if there are some activity sectors representative of the SMF, even though they have a little percentage of employees. For example, in a number of Lazio's municipalities, the prevailing sector is represented by services, indeed the activity sectors in which the SMF are prevailing have a percentage of employees very little. If we didn't consider them, we would have lost a large part of SMF ;

4. *classes* : the most representative SMF's sub-classes as to previously identified sectors ;

5. *difference between the number of employees working in the firm as a whole and the number of employees in its functional units*<sup>5</sup>. In the precedent analysis we took informations related with both the emerging sectors for the SMF and the municipalities' ability to engage relations with outside, but we didn't have informations about the relations between activity sectors and the networks in which the firms are



involved. Although it is not possible to individuate what are the activity sectors related to the multi-location phenomenon, comparing the indicators number 1, number 2 and this one, we can make some hypotheses :

- in the case that this difference is  $=0$  and there is an high percentage of multi-location firms, we can suppose what's the activity sectors which engage representative relations outside ;
- in the case that this difference is  $<0$ , we can find, by the indicator n. 2, a correspondence between the activity sectors and the central units' location (other municipalities, or provinces, or regions) if there is an high level of multi-location (indicator n. 1), and we can suppose that the localisation of central units is outside national boundaries if there isn't multi-location ;
- in the case that this difference is  $>0$ , we can individuate the sectors in which the functional units are localised outside the municipalities and depend on internal firms (unfortunately there aren't any sources that gives information about the localisation of these units).

6. *degree of internationalisation* : level of Directed Investments Abroad. An high level of this indicator represents the firm's ability to participate to the international networks. We can also verify if the activity sectors, as previously identified, correspond to that sector which presents an high level of DIA.

In conclusion, the sample is made by 100 cases, referred to 61 municipalities. To these cases we proposed a questionnaire.

## 2.2. The elements of questionnaire

The questionnaire is made of two parts :

1. preliminary Investigative Questionnaire : it contains a few questions, aimed to verify the general characteristics of firms and of their markets, and the level of external relations and the type of relations in which they are involved ;
2. specific Location Questionnaire : aimed to individuate and to evaluate the location factors' relevance.

### 2.2.1. Preliminary Investigative Questionnaire

About the firm's characteristics, it contains questions aimed to individuate the developed activity. In particular they refer to the year of activity beginning and of installation of the productive units, to the activity sectors and to the type of production both of the central units and of the other functional units, to the size (number of employees in the year 1997 both of the central units and of the functional units ; variation of the number of employees 1991-97 ; number of functional units).

About the market and relation characteristics the questionnaire investigates :

- the functional units' localisation (number of units in relation with localisation in the same or other municipality, in an other provinces or region, abroad) ;
- market geographical size (municipal, provincial, regional, national and abroad) ;
- if the firm sells to other firms which export their own products ;
- if the firm has relation with other firms (national or international) and the type of relation (financial, commercial productive integration, Research and Design).

### 2.2.2. Specific Location Questionnaire

This specific questionnaire contains a selection of eight sets of questions, each related to a different location factors :

1. The entrepreneur, aimed to investigate the relation between his/her residence and firm location (influence on location choice and travel time from home to office).
2. Relations with other firms, in order to recognise the influence of the presence and of the type of other firms and the general accessibility. In particular the questions are directed to investigate :
  - if the location site is a multifunctional zone ;
  - presence of other firms and the type of their production in relation with firm's production (different, complementary or similar) ;
  - distance from the nearer firm with similar production ;
  - influence of the presence of other firms ;
  - level of accessibility in relation with the presence of highway or big distribution streets, railways and airport ;
  - transport system commonly used for supplies, selling and business trip ;
  - influence of the level of accessibility.
3. Type of relations, directed to the knowledge of consumers', supplies' and exchange's relations. In particular the questions investigate :
  - market areas concerning both consumers and suppliers (municipalities, provinces, nation, abroad) ;
  - relevance of the supply production distance ;
  - relevance of the consumers distance ;
  - type of selling modality (direct, by intermediate, buy in factory, other) and it's influence ;
  - type of relations with foreign, national, regional, municipal firms ;
  - type of relations as to five levels : product level (patents, innovations), information level (programs), technologic level (patents), services level and for marketing studies ;
  - frequency (regular or not in relation with the firms type).
4. Studies carried out on location and production, in order to investigate if there are programming strategies derived by developed studies. In particular we asked :
  - if had been made studies for supporting the location choice (demand location, cost-benefits analysis, others) ;
  - if the studies related to the selling and production optimisation and to law's constraints are carried out inside or outside.
5. Composition of labour market. In order to investigate the influence on localisation of the qualified labour presence the question are related to :
  - composition of labour (% of simple and specialised workers ; of first job employees ; of commuters and of the employees that live near the firms) ;
  - influence of employees home location ;
  - firms accessibility in terms of public transportation system (transport type used and number of public transportation services) ;
  - need of specialised labour ;
  - influence of the presence of qualified labour ;
  - if the localisation (in the district for Abruzzo's firms and in the Industrial Concentration Areas for Lazio's firms) made easier the engagement of employees.
6. Image, in order to investigate the level of image's dependence on location site features both in relation with the specific location (region, municipalities, district or Industrial Concentration Areas), and in relation with the presence of other firms and services. At the end we asked also if there is (or there will be) the need to decentralise functional units and/or directional units (directional in urban centres and productive outside) and to specify the cause.

7. Presence of services, aimed to individuate the influence of (and the dependence on) the presence of services, both R&D and other services. To this end, the questions are directed to know if :

- there are these services and if they are internal or external ;
- in which sector the firm has an internal activity's service (in relation with : marketing, advertising, workers formation, legal, financial and software consulting) and the size of them (n. of employees) ;
- what is the type of agency (or firm) if the firm requires external services ;
- if the firm uses public or private institutions and with what frequency (regular or not in relation with University, private agency and others) ;
- if is possible to individuate a dependence (and its size with respect to the categories of much, less or nothing) on other urban centres or other similar areas (both in national boundaries and abroad).

8. Political-economic factors, in order to investigate the level of knowledge and the influence both of urban planning regulations and of political and economic incentives :

- if the actual location was influenced by the urban planning regulations and if benefited of specific incentives ;
- knowledge of the future planning industrial regulations and their consequences ;
- influence of the above factors on a possible location change.

The questionnaire contains also a sets of questions aimed to verify the location factors previously investigated. To this purpose we asked to order these factors in relation with the relevance and with the location and to specify if there is a need of a location change, the causes, the possible place (same municipality, other municipality, other provinces, other regions, abroad) and the factors which, in this hypothesis, would be more relevant.

The complexity of the classification methodology adopted and of the qualitative and quantitative evaluation of the studied economic-territorial phenomena derives unfortunately :

1. from the complained unavailability of some data sources (privacy law) ;
2. from the lack of studies which investigate with the some level of deepening both economic and territorial factors ;
3. from the choice of study areas, where the above mentioned problems and lacks are much greater than in the regions of North of Italy.

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## Notes

- 1 - The industrial district have been instituted by the Abruzzo's region in 1996 ; the Industrial Concentration Areas have had individuated by Confindustria del Lazio in relation to the consistence of productive systems
- 2 - Ufficio Italiano Cambi
- 3 - Istituto del Commercio Estero
- 4 - ISTAT (Censimento dell'Industria e dei Servizi) del 1991
- 5 - In the firm as a whole are considered all the employees, even though they work in a functional unit localised in an other municipality ; indeed in the functional units are considered only the employees working in the same municipality