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**THE IMPORTANCE OF CLUSTERS FOR THE DEVELOPMENT OF SMALL &
MEDIUM ENTERPRISES**

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To God, my guide and protector.

To my parents and brother, especially to my mother, Cristina, that supports me during this time to develop my hopes and dreams.

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ABSTRACT

This thesis aims to open a theoretical discussion on the importance of cluster for the development of Small and Medium Enterprises. The methodology applied was based on bibliographical and qualitative research. The basic questions raised by this study can be summarized as follows: How the creation of a cluster will help in the development of the SME?. Consequently, the final objective of the work is to identify which are the characteristics that help into the success of a Small & Medium Enterprises inserted in a cluster. The answer to this question led the research to a better understanding of (i) the characterization of the Small & Medium Enterprises; (ii) the clusters theory; (iii) evidence for a developed (Italy) and a developing (Chile) country that support our proposition to verify.

The main results confirm the relevance of the cluster for the development of the Small and Medium Enterprises because of the collective efficiency that generates, improving the funding conditions, the exporter capacity and diminishing the activities costs of the small companies that are part of the conglomerate.

KEY WORDS: Clusters. Small & Medium Enterprises, Development.

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INTRODUCTION

In the last years, the attention has grown to the role and importance of the territorial dimension of the development. In particular, the promotion of the clusters of SME has become part of the “mainstreaming” of the decisions of the economic policies of numerous countries. The OECD, through the Program LEED¹, it has been pioneer in stimulating this interest for the local development. In the case of the European Union, the Company General Address of the European Commission has taken more attention to the regional clusters and the systems of territorial innovation. As for the countries of Latin America and the Caribbean, the most evident indicator in the importance of the SME in the public policies constitutes the proliferation of institutions, structures and instruments that have been established for this purpose.

It is well known that Small & Medium Enterprises (SME) have an essential role in the economy of any country. In special in developing countries, SME have real importance because they generate the biggest percentage of employment in the economy. Since one of the tasks of any government in a country, it is to keep low levels of unemployment and considering the multiple obstacles that threaten the stability of the SME, as for example, the disloyal competition, the operation of the government, the macroeconomic situation and the funding conditions, among others. It is fundamental to offer supports to this type of companies with the purpose of maintain stability of employment and unemployment levels.

It is considered fundamental the Government participation entity that propel and finance these clusters and then given the comparative advantages that these generate and that makes them attractive, to allow be part of them to private entities. The evidence of this, in Latin America and in the world, as was previously mentioned, this strategy solves some of the problems of the SME, generates and stabilizes employment, and improves the productivity of the companies and promotes economic development in a country.

It should be said, however that in the Latin American case, the growing attention toward the SME has not still been translated in significant resources and vast policies for this

¹ The Program on Local Economic Development and Employment (LEED Programme) of the OECD, constituted in 1982, identifies, analyzes and discloses innovative ideas, relative to the local development, the social cohesion, the entrepreneurship and the creation of work.

objective. The promotion of these companies continues being a secondary activity inside the economic policies in most of the countries of the area, although they register important signs of change.

A first relevant factor of this new interest toward the SME should be imputed to the political impact of the serious and frequent economic, social and political crises that have affected several countries of Latin America and the Caribbean. The disappointment performance for endogenous development and employment creation, has put in discussion some of the bases of the economic pattern that, for almost 20 years, were prevalent in the Latin American policies of development. Specifically, the deepness of the economic dualism that has reached the social and economic exclusion of the some population's strata, has confirmed the necessity of accompanying the policies of macroeconomic stability with industrial and employment policies adapted to a development with justness.

It should not be surprise that the first public attention toward the small companies, in particular toward the micro companies, have concentrated on their social and political, before economic functions. In the “art of the survival” of the population's wide sectors that integrate the vast informal economy and they show capacity to create employment. The promotion of the SME has been bound, in first instance, to the plans of reduction of poverty.

This vision on the companies of small dimensions continues being dominant in Latin America and the idea that the SME can also become an excellent economic actor of development it is still a process in construction. In the European case, the new attention toward the SME has been motivated by different factors. In a certain way for an inverse process to the Latin American. These have represented one of the main actors of the European model. The current reflection on the SME has arisen for its loss of competitiveness in front of the lunge of the globalization and for the processes of reconversion of the European economies to make sustainable the state of welfare.

In the European Union the reflection has concentrated in the innovative capacity of the SME consequently, in its possibilities to face the global competition, including the discussion on the structural limits and the propel capacity of this type of companies.

A first seemingly academic key point is that the role of the SME like source of the economic development is closely associated to the idea of conglomerate of companies or clusters. These companies are characterized to contain numerous competitive fragilities that prevent to constitute relevant economic actors.

The cluster, on the other hand, has demonstrated a remarkable competitive capacity, maintaining simultaneously flexible specialization that makes them able to adapt to the market. In fact, the cluster concept contrary to that of small individual companies reflects a focus of integral development that incorporates the social, politics and cultural dimensions.

The proposition to verify of this thesis is that clusters will support economic development for the SME companies. These Clusters besides maximizing the productivity and the use of the resources by their multiple linkages, allows to solve or to partly stabilize the problems that SME faced.

This thesis is structured in the following way. The methodology chapter presents the research problem and the general and specific objectives. In the next sections it will be constructed the theoretical base of this study and it will be presented the main lifted up theoretical information on Small & Medium Enterprises and clusters, as well as the clusters evidence in Italy and Chile in the light of the literature revised. The last section presents the main conclusions of this theoretical work and subjects that emerged based from the construction of this thesis, which can be studied by other researchers.

1. METHODOLOGY

The scientific research is a systematized and rational procedure that objectifies to answer proposed problems, requested when there is not enough information to answers, or when the available information requests logical order to subsidize the answer to the problem.

With relationship to the methods, the research can be quantitative or qualitative; they have different characteristics, but complementary character.

With relationship to the research groups and objectives, they can be exploratory, descriptive or explanatory.

Exploratory researches objectify to facilitate familiarity with the problem object of the research, in the way to allow the construction of hypotheses or to turn the clearest subject, being the clearest examples the bibliographical research and the case study.

The investigation process of this thesis is characterized, inside of the scientific and methodological patterns, as a bibliographical research, once it was not made a collection of primary data, nor analyzed secondary data. Its main objective is to lift specific theoretical information on several subjects related to Clusters and Small & Medium Enterprises.

The bibliographical research is, without a doubt, one of the most important sources of research and it constitutes previous stage to be done in a research process. This is due to the fact that is absolutely necessary a previous knowledge of the apprenticeship in the subject to investigate before beginning any study, for not running the risk of researching a theme that was already thoroughly researched.

The bibliographical research provides insights and research questions about a certain object or situation when analyzed in the theoretical perspective, by means of primary or secondary sources. In agreement with Vergara (2007), it is " a systematized study developed in the light of published material [supplying] instrumental analytic for any other type of research".

The bibliographical research already embraces the whole bibliography turned public in relation to the study theme, from separate publications, bulletins, newspapers, magazines, books, researches, monographs, theses, dissertations, internet etc., even means of oral communications: radio, recordings in magnetic and audiovisual ribbon: film and television. “Its purpose is to place the researcher in direct contact with everything that it was said, written or filmed on certain subject”, (Lakatus and Marconi, 1985).

In that sense, Köche (1997) reinforces the aspect of the objective of the bibliographical research: “to know and to analyze the main existent theoretical contributions on a certain theme or problem, becoming indispensable tool to any research type.”

That initial contact propitiates the researcher the exam of a theme under a new focus or approach, not owing in any assumption to be a mere repetition than it was already said or written, fact usually happened in the analysis of monographs.

A curiosity regarding the bibliographical research is referred by Vergara (2007). The author agrees that the bibliographical research supplies instrumental for any research type, but also affirms “it can be drained in itself.”

Also Gil (1991) affirms that, in a general way, the bibliographical data are complementary data. “There is, however, researches in that the data obtained starting from bibliographical sources are used in an exclusive way.”

Gil (1991) brings us an important contribution with relationship to the advantages and limitations of the bibliographical research. According to the author, the main advantage of this research type resides in the fact that allows the investigator the covering a range of phenomenon much wider instead of a direct research. The main disadvantage refers to the use of secondary sources, that can commit the quality of the research for presenting collected data or processed in a mistaken way. To minimize that possibility, becomes highly advisable to make sure of the conditions in that the data were obtained, to analyze in depth the information to discover possible incoherences or contradictions and to use several sources, with plenty of care.

In spite of that, cannot be deny the importance of the bibliographical research in the investigation process. Fachin (2001) summarizes the importance of the bibliographical research, when affirming that “it is the base for the other researches and it can be said that is a constant in the life of who intends to study.”

The research problem of this thesis is: in a theoretical perspective, how the creation of a cluster will help in the development of the Small & Medium Enterprises? Consequently, the final objective of the work is to identify which are the characteristics that help into the success of a Small & Medium Enterprises inserted in a cluster.

Specifically, it is the objective to understand: (i) the characterization of the Small & Medium Enterprises; (ii) the clusters theory; (iii) evidence for a developed (Italy) and a developing (Chile) country that support our proposition to verify.

2. CHARACTERIZING THE SME

In Chile, as in almost all the countries of Latin America, the small and medium companies (SME) are an economic and social relevant reality. Its contribution to the employment generation and the production is important, and in general, these have increased along the last years.

2.1 What is a SME?

Several definitions of the category “Small and Medium Enterprise” exist depending on the variable used to measure their size (sales, employment or invested capital). For example in Chile the Ministry of Economy classifies the companies according to the level of sales. It is considered that the companies with annual sales until approximately 80 thousand dollars are micro companies. The small companies are those that sell between approximately 80 thousand and 850 thousand dollars annually. The medium companies sell more than 850 thousand dollars a year, but less than 3.5 millions dollars. Companies with sales above this amount are considered big (see table 1).

Chilean Classification of Companies Sizes

Size	Annual Sales USD
Microcompany	Less than 80,000
Small Company	From 80,000 to 850.000
Medium Companies	From 850,000 to 3,500,000
Big Companies	More than 3,500,000

Table 1: Chilean Classification of Companies Sizes

Source: Chilean Ministry of Economy

It is useful to classify companies by size, since it allows to have an idea in order of magnitude; information important to carry out an analysis that involves them. The category of the SME is too wide and in analytic terms, it should be carefully taken by the heterogeneity that characterizes at these groups of companies.

2.2 Determinants of the Relative Importance of the SME

The literature about the relative importance of the small and medium companies has been developed on three main investigation areas (Acs and Audretsch, 1990).

The first one is related with the factors of the distribution of sizes of companies inside each industry. In this environment, it can be found the model of Lucas (1978) that try to explain the simultaneous presence of big and small companies in an industry, through the existence of an exogenous stock of managerial abilities and of limited endowments of time for the manager, respectively.

In both cases, since the managerial abilities and the endowment of time to organize and to administer companies are heterogeneously distributed among the agents, the conclusion is that inside an industry can exist companies of different sizes. Indeed, agents endowed with more managerial abilities or more time could organize and manage big companies, (Alvarez and Crespi 1999). However, this type of models would only explain the existence of different sizes companies inside a particularly industry, but not the variability that is observed through industries.

A second are of investigation emphasizes the importance of the cost structures of enterprises in the determination of the scale or optimum size of companies. If average long-term costs present the traditional curvature, there will be a production level that exhaust the scale economies and define the optimum size of companies. In this case, while bigger is the production level, fewer will be the presence of small companies in an industry. Also, it can be expected that differential between the average minimum cost and the average cost experienced by companies of suboptima scale are bigger, the presence of small companies will be more reduced, (Caves, et. al., 1975)

The empiric evidence tends to support this type of proposition to verify. In Acs and Audretsch, (1990), it is obtained that in industries where the size of minimum efficient plant is bigger; the presence of the small companies is fewer. In the same way, White (1982) shows that in industries that have a higher capital-work reason, which would be related directly with minimum efficient size, the small companies have a lower participation.

Finally, a third line of investigation explores the relationship between the size of the company and management strategy, that is to say, tries to explain how the small companies can compensate their size disadvantages of size or scale. According to Mills and Schumann (1985), companies face a “trade-off” between static efficiency and flexibility, so small companies would exist if they can develop production technologies or more flexible management strategies that allow them to absorb a relatively bigger proportion of the fluctuations of the product.

In this respect, some studies like Acs and Audretsch, (1990), show that a bigger intensity in innovative activities of small companies regarding the big ones, affects the participation of the first ones positively in the industry. That is to say, the small companies can compensate their size disadvantage, for example, intensifying their investment activities in research and development.

2.3 The Chilean SME universe

The data of the SII (Chilean IRS) show that in the year 2001, 652.445 companies existed, and of them 110.439 were SME. Then the SME were 16,92% of the total of companies of the country. A great part of them were small companies (14,84%), and a less proportion were medium enterprises (2,08%).

The SME are not the most numerous group of companies in the economy (the micro companies were more than 82% of the total), but they have an important participation in the total sales. Their sales represented 18,4% of the total sold, with a participation of 9,5% of the small companies and 8,9% of the medium ones.

The most distinctive feature in the SME, is maybe, its importance in the employment added. The data obtained by MIDEPLAN, through the Survey of Characterization and Employment (CASEN), shows that in the year 1996, 49,6% of the labor force worked in an SME (See table 2).

	Micro	Small	Medium	SME	Big	Total
N° of Companies	535.537	96.842	13.597	110.439	6.469	652.445
Participation (%)	82,08	14,84	2,08	16,92	1,00	100,00
Participation in sales (%)	3,35	9,49	8,87	18,36	78,29	100,00
Employment (%)	40,4	NA	NA	49,6	10,1	NA
Exportation (% companies)	9,57	28,7	26,07	54,77	35,66	100,00

Table 2: The Chilean SME and the rest of the companies

Source: Bravo, D., G. Crespi, I. Gutiérrez, (2002). **“Desarrollo se Escribe con PyME: el caso chileno”**

2.4 Chilean regional and sectorial distribution of the SME

To see the sectorial and regional characterization of the SME, let's see table 3:

	Small		Medium		Total SME	
Activity	Companies %	Sales %	Companies %	Sales %	Companies %	Sales %
Mining	0,7	0,8	0,8	0,8	0,7	0,8
Industry	14,9	16,0	19,8	20,3	15,5	18,0
Construction	10,1	10,4	12,3	12,4	10,3	11,3
Retail Commerce	39,0	36,8	29,3	28,6	37,8	32,9
Wholesale Commerce	13,8	16,3	22,9	23,8	14,8	19,8
Restaurant	6,3	5,9	4,4	4,0	6,2	5,1
Transportation	15,2	13,8	10,5	10,1	14,7	12,1
TOTAL	100,0	100,0	100,0	100,0	100,0	100,0

Table 3: Percentage distribution of the SME according number of companies and sales

Source: Bravo, D., G. Crespi, I. Gutiérrez, (2002). **“Desarrollo se Escribe con PyME: el caso chileno”**

Analyzing the table 3, it can be appreciated that so much in connection with the number of companies like participation of sales, the SME is highly concentrated in three activity sectors: trade (wholesaler and retailer), industry and services (such as restaurants and

hotels). These three sectors contribute with 86% and 76% of the sales of the SME. This pattern also takes place to the interior of each substratum, the small one contributes with 88% of the companies and 78% of the sales and the medium ones with 75% of the enterprises and 84% of the sales.

Region	Micro	Small	Medium	SME	Big	Total
I Tarapaca	3,0%	2,5%	2,0%	2,3%	1,3%	1,6%
II Antofagasta	3,2%	2,8%	2,5%	2,7%	1,8%	2,1%
III Atacama	1,7%	1,4%	1,0%	1,2%	0,4%	0,7%
IV Coquimbo	3,8%	2,8%	2,1%	2,5%	1,2%	1,6%
V Valparaiso	10,6%	8,8%	6,9%	7,9%	6,7%	7,2%
VI O'Higgins	5,4%	4,3%	3,2%	3,8%	1,3%	2,0%
VII Maule	6,9%	4,7%	3,3%	4,1%	1,6%	2,4%
VIII Bio-Bio	10,7%	9,0%	7,4%	8,2%	5,4%	6,3%
IX Araucania	5,1%	4,2%	2,9%	3,6%	1,0%	1,8%
X Los Lagos	7,4%	5,9%	4,0%	5,0%	2,5%	3,3%
XI Aysén	0,7%	0,5%	0,4%	0,5%	0,1%	0,2%
XII Magallanes	1,3%	1,2%	1,1%	1,2%	0,2%	0,5%
Metropolitana	40,3%	51,7%	63,3%	57,2%	76,4%	70,3%
TOTAL	100%	100%	100%	100%	100%	100%

Table 4: Percentage distribution of the SME by sales and localization

Source: Bravo, D., G. Crespi, I. Gutiérrez, (2002). **“Desarrollo se Escribe con PyME: el caso chileno”**

In relation with regional distribution and according with the sales contribution, the 70% of the companies are in the Metropolitan Region (the city of Santiago is in this region), a 7,2% in the Valparaiso Region and a 6,3% in the Bio-Bio Region. Nevertheless, this concentration is principally given by big companies.

If it is analyzed the SME data, the Metropolitan Region falls to 57%, seeing also falls in the Valparaiso and Bio Bio Region. This reaffirmed the perception that SME distributes

more in Regions and concentrated less in the capital (Metropolitan Region) than the big companies, nevertheless the three big Regions contributed with 73% of the total sales of the SME.

2.5 The Entrepreneurial Dynamic.

It is fundamental for the object of our study to consider where, how and why new companies are created; in which sectors, regions and company sizes. A bigger growth of the economic activity takes place and what are the conditions of the crisis and the disappearance of these productive units.

In Chile, during 1996, 67.310 companies were created, of which only 40% survived until the 2001. It is born as SME, approximately 10% of the total companies. A 5% of the small ones and 9% of the medium ones are able to grow and they die around 25% of the small ones and 20% of the medium ones. The probability of surviving of a company depends mainly on the economic cycle and of the nature of the asymmetries of knowledge in each sector. Survive those that are born with a size scale of 30% above the average, those that get in debt less in the beginning and those that have higher growth of sales rate during the first year of life, (Crespi, 2003).

The process of industrial evolution observed in Chile presents compatible characteristics with the existence of knowledge asymmetries that cause a new company of those that later arises a process of experimentation, learning and selection of the best ideas. As consequence of this, the probabilities of flaws are very high during the first year of operation, but then decrease as the time pass. For example, taking an entire cohort of companies and following them from their birth, it is found that 25% die after the first year, of those survivals 17% die after the second year, of the remaining, 13 % die after the third year and 11% after the fourth. On the other hand, the growth of those that survive is particularly high during the first years of the company, but then it declines quickly toward more normal values, (Crespi, 2003).

There are characteristics of the companies that affect their capacity to survive to the selection.

The first one is the initial size. The companies that are born bigger or with more sales have bigger probability of surviving. This effect is more important to explain the long-term survival, not in the short term. Another variable in the company environment that is relevant is the level of indebtedness. The companies that enter with more financing with external resources have a smaller probability of surviving, what would be reflecting the bigger cost from the external resources to the company, (Crespi, 2003).

In second place, exists technological characteristics and industrial organization of the markets that also have influence. New companies that enter to markets where the minimum efficient scale of production is high have fewer chances. The existence of minimum scale of operation is not only an inhibitor factor of entrance, but also a decisive factor of the survival. On the other hand, in relation to the concentration of the markets, the companies survive less in concentrated structures, (Crespi, 2003).

In third place, the growth is very important at the moment to explain the probability of surviving. Contexts with growth of the market do not only generate bigger entrance rates, but also the rate of managerial survival is bigger. This also depends on the aggressiveness of the environment: to more aggressive the environments, more demanding are the initial capacities, (Crespi, 2003).

In fourth place, the companies that are born in sectors of high growth of the productivity, where presumably bigger technological opportunities exist, they have a smaller rate of short-term survival, but with a bigger long-term survival. It is necessary to have in consideration all previously mentioned, since in a future it will allow us to determine if our proposition to verify is true, (Crespi, 2003). It will be able to see if the cluster makes possible that new companies grow and develop with the resources and the appropriate technology, in such a way that are sustainable and to determine if the cluster “helps” companies to stay in time, generating the necessary environment for it.

2.6 Obstacles that faces the SME

This is of vital importance for our analyses, since it is needed to know in depth these obstacles, in such a way, of identify if the cluster would truly allow the SME, in some form, liberate of those “barriers” that limit its growth.

The obstacles perceived as high priority are, (Bravo *et. al.*, 2002):

a) Disloyal Competition

Inside of the obstacles associated to the conditions of the competition they are the prices under the cost of the big companies, fact that can be attributed not only to the disloyal competition, but rather also to advantages of scale of big companies; the non- fulfillment of laws and norms by competition (labor, environmental and mainly tributary) and the existence of informal national producers, not registered in the tax local organization.

b) The operation of the government apparatus

The hierarchization of the problems that SME businessman faces in its relationship with the public sector shows that relevant variables are the duration of the steps (especially the municipal steps), the traffic of influences and the number of steps and its complexity.

c) The general macroeconomic situation

This is the second general restriction more seriously perceived by the businessmen and it is practically in the same level of the disloyal competition. It is distinguishable the unemployment rate, the interest rate, the exchange rate, the restrictions to the consumption and the level of wages.

d) The funding conditions

Guarantees demanded for credits and the interest rates are others of the most important obstacles perceived by the entrepreneurs regarding the funding conditions.

In medium priority are located, (Bravo *et. al.*, 2002):

The labor legislation. The availability quality and costs of the human resources. The concentration of clients and the relationship with suppliers and distributors. Quality and quantity of support instruments. The technology markets the requirements and costs to reach export markets.

2.7 The importance of the SME in the developing countries

Nowadays, the SME indisputable has a great importance in industrialized countries as well as in developing countries. In a great quantity of empiric studies in different countries it makes allusion that these companies are the true employment creators. When reviewing statistics can be corroborated the numeric importance of the SME: in industrialized countries and in developing countries, more than 90% of the companies belong to the stratus SME. In Chile, if it is included the micro companies, the SME represent 99% of the total companies and, in total, create 90% of the employments approximately (Howald, 2000). Due to their production capacity, innovative potential, great flexibility, supplier function and distributor, as its capacity to generate employments.

Referring to the segment SME, often it is heard as the spine of the economy, or the motor of the economic growth or the base for the sustainable development. But the role that the SME plays is not only important from the economic point of view. It is also spoken more and more of the social profitability of the SME: that is to say that the total benefit of the SME goes beyond the sum of the earnings of all companies. With this, allusion is made to the distributive effect of the SME regarding the wealth and the growth, as well as the consolidation of the own responsibility of the initiative. On the other hand, the SME is considered an efficient instrument in the fight against the poverty, (Howald, 2000).

Small businesses are the only “machine” available capable of producing enough wealth for enough people throughout society to have to chance of springing the Latin American poverty trap –or the Asian or the African or the Eastern European traps; Schmidheiny (1993).

It is considered that in Latin America and the Caribbean, between the 75 and 80% of the small and medium managers live in the poverty and that between the 50% and the 80% of scarce resources population work in small or micro companies, (Peres and Stumpo, 2002).

The existence of a strong SME sector is a basic requirement; not only to stop to achieve an economic growth balance, but also to achieve a social and politic stability. It also allows the improvement of the equality of opportunities like social added value at of the SME. It is undisputable the politic importance of sector development of the small industry to overcome the underdevelopment.

3. CLUSTERS THEORY

It is understood by cluster a geographical concentration and/or sector of companies in the same activities or in close related activities, with important and cumulative external economies, of agglomeration and specialization of - producers, suppliers and specialized manpower, of specific annexed services of the sector - with the possibility of combined action in search of collective efficiency (Ramos, 1998).

Clusters have been focus of attention of investigations of developed countries in the last time, especially in the New Economic Tendency (Krugman), Business Economy (Porter), Regional Sciences and Studies of Innovation (Braczyk, Cooke and Heidenreich). They share a vision of companies like connected entities and they put emphasis about the local factors to compete in global markets. Investigations about clusters in developed countries also share this vision, but with a different trajectory: that grows outside of the debate from the industry of a small scale. The last one was the investigation line at the end of the 80's, and it stayed alive more for defect of the big companies in the employment creation, than for new theories or policies proposals.

In his Principles of Economics, Marshall (1920) showed why clustering could help enterprises (especially small ones) to compete. He noted that the agglomeration of firms engaged in similar or related activities generated a range of localized external economies that lowered costs for clustered producers. Such advantages included a pool of specialized workers, easy access to suppliers of specialized inputs and services and the quick dissemination of new knowledge. Such external economies help explain the growth of contemporary industrial clusters and Marshall's century-old work is a standard reference in this new literature.

It is also agreed, however, that Marshallian external economies are not sufficient to explain cluster development. In addition to incidental external economies, there is often a deliberate force at work, namely the conscious pursuit of joint action. This is what emerges from research on industrial clusters in advanced and in developing countries (Brusco, 1990;

Cooke and Morgan, 1998; Humphrey and Schmitz, 1998; Rabellotti, 1997; Tendler and Amorim, 1996).

In their works, Nadvi (1996) and Nadvi and Schmitz (1995) took the incidental and deliberate effects toward a concept of collective efficiency, defined as the derived competitive advantage of the external economies and the collective action. Calling the first one passive collective efficiency and the second active collective efficiency, one can express clearly that a clusters brings two advantages; to those that fall in the lap of the producer and to those that require a collective effort. They also suggested that the couple of active and passive components help to make theory and to explain differences in yield.

3.1 Why are clusters formed?

a) The localization and economic geography theory

The localization and economic geography theory tries to explain why activities usually concentrate on certain areas and they are not distributed in aleatory form. The emphasis of this focus is known in the relative weight of the cost of transportation in the final cost –what explains why some activities are located preferably near the natural resources, meanwhile other are located near the markets that will supply and there are others that can locate in any place. Less known, but of growing importance, it is the emphasis of this focus in the interdependences among raw materials and finished products, as well as the by-products that make easier the coordination of these flows in a single location. This is the case, for example, in the steel and iron producers companies, because there is such an interdependence that induces to vertical integration of these productions. Similar things happen when one activity (for example, cattle raising) has several by-products in simultaneous forms (for example: fresh meat, industrial products and fertilizer).

Also, as many processing activities enjoy important economies of scale, especially when it is about complex processes, these will tend to settle in the origin country only if it is nearby to important regional markets.

Finally, a critical aspect of localization, when it refers to the extraction of natural resources, it is the clarity, transparency and tradition of the legislation with respect to the

rights of property and the stability and competitiveness of the tributary legislation. Indeed, investments with high sunken costs and long periods of maturation require security and transparency, with minimum risk of changes with retroactivity.

b) The linkages back and forward of Hirschman

The linkages back and forward of Hirschman (1977) try to demonstrate how and when the production of a sector is enough to satisfy the minimum threshold or necessary minimum scale to make attractive the investment in another sector that it supplies (linkage back) or it processes (linkage forward). Certainly, all activity is chained with others. These linkages acquire significance when their existence facilitates that an investment is carried out or not. It is the possible discontinuity in the impact of such an investment decision that is decisive, because then, the realization of an investment makes profitable the realization of a second investment and vice versa. And in such a situation, the decision-making in a coordinate way assures the profitability of each one of the investments.

The linkages “backward” depend of demand factors (the derived demand of inputs and factors) as of their relationship with productive technological factors (the optimum plant size). Also, the development of linkages “forward” depends in important way of the technological similarity between the extractive activity and that of processing. While more similar are these, bigger the learning and stronger the impulse forward, while bigger the technological distance among these activities, smaller the learning and smaller the impulse. The development of the linkages forward would not only diversify the production but rather it could be extremely profitable, (Hirschman, 1977).

c) The interaction theory and “industrial districts”

The interaction theory pretends to explain the most favorable conditions so there is learning based on the interaction that according to this focus, explain the success of the “industrial districts” of many regions of Italy, Germany and others of Latin America. The interaction gives place to “repetitive games” that elevate the trust and reduce, transaction and coordination costs. Also, the interaction accelerates the diffusion of knowledge and innovation, what is “social wellness” internalized by the group of companies in the “district”. Indeed, the intense interaction in a location generates “technological spillovers”, external

economies and of scale for the group of companies in the district that could not be internalized, for being each one interacting at great distance.

d) The Michael Porter model.

Michael Porter (1990) model sustains that diversity and intensity of functional relationships among companies explain the formation of a cluster and its degree of maturity. These relationships are referred to the four points of the “diamond”, i.e., competition relationships among companies of the same activity, the relationships with suppliers, with support activities, with producers of complementary inputs and with suppliers of inputs and specialized factors (see figure 1). By the way, in the Porter analysis, clusters appear around natural resources, as well as around activities based on learning and knowledge.

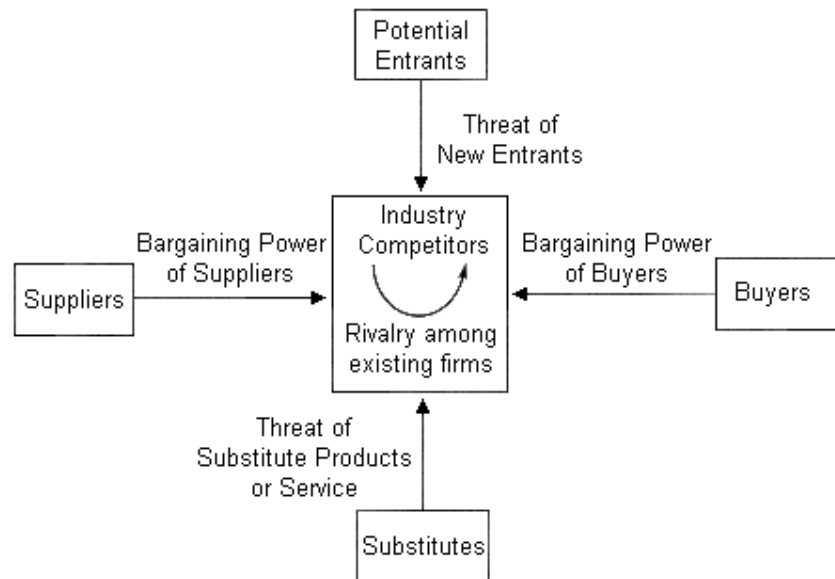


Figure 1: The five forces that shape industry competition

Source: The five competitive forces that shape strategy, Michael E. Porter, Harvard Business Review, January 2008

All the hypotheses previously mentioned about clusters formation have in common the notion of that competitiveness of each company is strengthened for the competitiveness of the group of companies and activities that conform the complex or cluster to which they belong. Indeed, this strong competitiveness derive of important externalities, agglomeration

economies, technological and innovations “spillovers” that arise of the intense and repeated interaction among the companies and activities that conform the cluster. The different companies and activities that constitute the cluster are mutually reinforced. The information flows almost without interference, transaction costs are smaller, new opportunities are perceived before and the innovations spread quickly along the net. There is strong competition in price, quality and variety. This gives place to new business, it strengthens the rivalry among companies and it contributes to maintain the diversity. The pre-competitive cooperation also arises between companies and then the competitive cooperation, (Porter, 1990).

Even more, once the cluster is constituted the active and aware cooperation is facilitated among its members looking for an efficiency production, what reinforces and makes cumulative the initial externalities. The collaboration is facilitated among companies to open new markets, to develop new products, to share teams, to finance programs of manpower training, among others.

3.2 The meaning of industrial Clusters in incipient economies

For poor regions that want to be industrialized it is necessary that happen at least two things: the mobilization of local resources without use (financial and human), and the effective use of these resources. In the first stage, as much the mobilization as the use of resources, happen in small lapses of time. Here it is when the cluster turns significant, because it facilitates the specialization and the effective investment taking small steps. The producers do not need to acquire equipment for the complete production process; they can concentrate on particular stages leaving other stages to other entrepreneurs. Specialized shops inside or outside of the company can repair and improve the existent machinery, helping to reduce the technological discontinuities. Also smaller capital is needed. Even more, the cluster affects requirements of working capital.

In Harrison (1994), for example, suggests that the success of small enterprise clusters has been over-rated and the strength of the large corporation under-rated. In his view, the dominant form of industrial organization is the large company controlling networks of (often small) suppliers.

Since the specialized suppliers of gross materials and components are closer, there is less necessity to store inputs. In a same way, small amount of human capital is needed. The investment of a producer in specialized abilities has returns because others have invested in complementary abilities. Specialization does not imply isolation; less still when at this moment the necessary technologies are available for interact in virtual form (Internet) to sell their products or services.

To complete the argument, the mobilization and the use of managerial talent should be considered. Really visionary entrepreneurs with big amount of capital and/or willingness to take big risks are less and less common. The clusters include the less exceptional and more common of entrepreneurs. This happens because the clusters allow advancing taking small and calculated risks. The steps are small and free of risk due to the division of the work (focusing particularly on aspects of the capacity of the manufacturing) and the capacity, already commented, of generating local external economies. The collective action also helps to reduce the size of the jump for individual entrepreneurs.

This emphasis about free risk steps (Schmitz, 1997) is supported by observations on the industrial structure in developed countries, being a frequent feature the “medium companies lost”: some big companies to the top and many small companies to the bottom that are unable to classify inside a category of medium size. They cannot grow due to “problems of information and to other market flaws associated with the financial provision, technique and support of the market to the small companies” (Levy, 1994). One of the most remarkable aspects of most recent cases of clusters is that it shows companies of all sizes, including a strong medium segment (for example, Brautigam, 1997, Knorringa, 1996, Nadvi, 1996, Rabellotti, 1997, Tewari, 1996). It seems to be that the limits of growth faced by individual manufacturers of small scale are less severed in clusters.

In summary, the argument is that clusters facilitates the mobilization of human and financial resources, that reduce the investment toward small steps free of risk, that the company of one are a support for the other ones, that hierarchies are built with small companies able to advance and grow. This is a process in which companies create for other companies possibilities (sometimes involuntarily and sometimes intentionally) to accumulate human capital and abilities. Probably the best example is the Taiwanese computer industry

that gave rise to global players but started as a cluster of small firms pursuing what Levy and Kuo (1991) call the ``bootstrap strategy".

While clusters facilitate this strategy, similar evolution is not necessarily followed. For example, in the study of African clusters McCormick (1998) shows that capital and abilities accumulation remain low. In its contribution uses something of their material to show that the proposal of the collective efficiency provides certain revelations, but that they turn out to be insufficient.

Clusters that are limited to local markets are likely to experience involutionary rather than evolutionary growth. Clustering tends to attract traders but we cannot simply assume that effective trade links to larger (usually distant) markets exist. For example, Weijland (1994) contribution shows that trade networks in Indonesia are highly developed but not ubiquitous. In an important earlier paper she shows that rural clusters, which are well connected to distant markets by traders have higher incomes than those, which are not (Weijland, 1994). In a similar vein, Pedersen (1997) has stressed that the poor distribution networks in East and Southern Africa are a major factor in accounting for the inferior growth performance of small producers.

Sanctions and trust are important both within clusters and their trading connections (Humphrey and Schmitz, 1998; Knorringa, 1996; Mead, 1984; Nadvi, 1999). Where sanctions and trust are missing, a production system requiring deepening specialization and interdependence of formally independent firms is unlikely to develop, McCormick (1998) stresses that contract enforcement and economic cooperation are often hampered by institutional failures and that this explains in part the dearth of successful clusters in East Africa. One of the rare African success stories -Nnewi in Eastern Nigeria- supports this emphasis on institutional factors. According to Brautigam (1997), the socio-cultural networks of Nnewi's entrepreneurs reduced transaction costs, enhanced trust and were, thus, critical to the cluster's success. Similarly, Weijland (1994) suggests that socio-cultural networks furthered the growth of rural Indonesian clusters. Lack of trust also brings discontinuities in the learning process. Knorringa (1996) has shown most clearly how distrust between producers and traders, due to existing socio- cultural barriers, can hamper the process of local learning and retard a cluster's technological development. Similarly, socio- cultural divides between Asian and African business communities seem to explain the lack of upgrading in the

Kenyan fish cluster studied by (Mitullah, 1999). This experience appears to have wider significance, explaining- to some extent- why many East African clusters remain rudimentary and, more generally, why there is a missing middle in much of African industry (Ferrand, 1997).

In conclusion, if one takes seriously the task of understanding the trajectories, which is the process that leads to the success or to the failure, is important to distinguish among incipient and more advanced industrialization stages. Even when evidence exists that clusters are particularly significant in the incipient stages as in the maturity ones. Small capital amounts, abilities and managerial talent can be included tentatively. But clusters in general experience an industrial growth when effective trade nets connect them with considerable distant markets, when the cluster evolves to a bigger proportion added value derived of the most complex, sophisticated and more intensive in specialized knowledge and where the trust sustains the relationship among-companies.

3.3 Origins and Growth of Industrial Clusters

When mentioning about the origins and growth of industrial clusters, lot of investigators recognize the importance of external economies, of the local division of the work and the influence of the social structure about the nature of the competition in an area (Piore and Sabel, 1984; Brusco, 1982).

Other investigators points out that lot of regional clusters were created because of particular conditions of some local factors, local demand and the presence of related industries (Enright, 2000). They mention that forces that gave the initial vantage to the location factor could lose their power through the time. Therefore, new forces could foment the growth of the industrial clusters.

Others suggest, that different reasons for the location of companies exist: the co location of different companies provide a variety of qualified manpower, this offer opportunities for companies and employees, the location of the market of non tradable goods generates potential economies of scale and more efficient infrastructure and the location of the information flows provide the spill over and the support for the development of new products and services (Krugman, 1993). Though, some authors tend to minimize the importance of

materials, climate, university investigation and other factors of location in the creation and develop of geographical concentrated industries, usually the explicative models are based in the scale economies in transportation and cost of transport, therefore, it has in consideration efficiency considerations (Porter and Solvell, 1998)

Others suggest that there are different reasons for the localization of companies: the co-location of different companies provides a variety of qualified manpower, which offers opportunities for companies and employees; the location of the market of non sell goods generates potential economies of scale and more efficient infrastructures; and the localization of flows of information provides the spillover and the support for the development of new products and services. Although some authors tend to minimize the importance of materials, climate, university investigation and other location factors in the creation and development of geographically concentrated industries, the usual explanatory models are based on economies of scale in transport and costs of transport, therefore, they keep in mind considerations of efficiency.

4. EVIDENCES FOR A DEVELOPING COUNTRY: AN ITALIAN CASE

4.1 Industrials Clusters, Small Firms and Economic Dynamism.

The northeast and the central regions of Italy contain a great number of industrial agglomerations of small companies. From these clusters have grown several of the most well known export products from Italy, including: Luxury clothes, furniture and packing machines.

When it is referred to the industrial organization of a cluster, it should be mentioned that this is based principally in outsourcing at the interior of the production chains vertically disintegrated. Even though, vertically integrated companies are not unusual, the intercompany relationship is a general characteristic of the most successful Italian industries. It is worth to mention that the nature of the intercompany relationship and its evolution, are other important factors that support the SME dynamism, (Brusco, 1990).

The dynamism of the Italian SME is caused by a limited number of companies that were capable of identifying markets and products and managing a great and different set of relationships with enterprises inside and outside the cluster, (Boari, 2001).

4.2 Industrial Clusters in Italy

In 1991, the ISTAT, Italian Statistics Institution, identified 188 industrial districts. The criteria used by the ISTAT to identify these districts was, the concentration of local employment and the industrial specialization of the companies. These districts are principally located in the north and centre of Italy. A great number of regional clusters already exist, combining several firms that belong to different industries but use and develop common technologies. It must be mentioned that can be found clusters in different industries, and these in general, are heterogeneous in size and intercompany relationship patterns.

Most of the clusters show a high performance in terms of exportation. Comparative studies show that international competition of Italian industries, coincided with industries that have SME clusters in industrial districts and regional networks (Porter, 1990).

The distribution of employees and companies inside and outside the clusters in two different years is compared in tables 5 and 6.

Size Of The Firm	Inside The District		Outside The District	
	1991	1996	1991	1996
1	113.077	131.424	61.993	60.786
2	112.670	115.684	77.298	73.940
3-5	265.594	238.690	195.194	182.638
6-9	236.616	210.546	223.749	201.879
10-15	246.098	231.879	264.356	254.653
16-19	124.423	118.018	141.185	145.414
20-49	388.272	375.973	415.613	424.290
50-99	224.639	211.925	243.473	239.688
100-199	219.360	201.262	204.538	207.036
200-249	67.992	60.125	58.805	54.589
250-499	205.039	168.888	130.324	137.535
500-999	184.100	159.297	80.171	70.131
1000+	796.636	527.663	71.340	83.611
TOTAL	3.184.516	2.751.374	2.168.039	2.136.190

Table 5: Distribution of employees by year

Source: ISTAT (1999)

Size Of The Firm	Inside The District		Outside The District	
	1991	1996	1991	1996
1	113.077	131.424	61.993	60.786
2	56.335	57.842	38.649	36.970
3-5	70.547	64.250	51.420	48.687
6-9	32.550	29.139	30.598	27.708
10-15	20.308	19.141	21.691	20.918
16-19	7.182	6.805	8.135	8.384
20-49	13.265	12.948	14.447	14.786
50-99	3.277	3.063	3.566	3.440
100-199	1.611	1.453	1.497	1.537
200-249	305	271	265	247
250-499	598	494	386	406
500-999	268	227	123	106
1000+	205	165	36	44
TOTAL	319.528	327.222	232.806	224.019

Table 6: Distribution of companies by year

Source: ISTAT (1999)

4.3 Main Keys in the Formation of a Cluster: The Packing Valley Cluster

The cluster known as the Packing Valley is one of the most successful in Italy. It is located in northern part of Bologna and has the highest concentration of production of packing machineries in the country. In this cluster it is observed the unite presence of the biggest manufacturers in the industry, to an Italian level, and a great number of assemblers and specialized suppliers of parts and components, mainly small and medium companies. The participation in the patents registered in Europe of producers of packing machineries of the area of Bologna as a percentage of the Italian patents grew from 11% in the period 1979-89 to 21% in the period 1990-98. During the same period, the participation of patents registered in the U.S. office of patents of Bologna of those producers of packing machineries grew from 31% to a 40% of the registered Italian patents. This tendency suggests the technological competitiveness of companies of the Packing Valley cluster. The Italian producers of packing machineries are in the upper limit in the international environment in terms of technology.

They have grown quickly during the last 15 years and they exported more than 85% of their sales (beat by Germany). Contrary to other companies, the firms of the Packing Valley began as small shops. The cluster is still dominated by a great number of small companies, with a limited number of big companies, as IMA (more than 1.000 employees), ACMA (more than 500 employees) and GD (more than 1.500 employees), (Brusco, 1996).

The Italian industry of packing machineries had its origin in 1924 with the foundation of ACMA, in the city of Bologna, by Gaetano Barbieri. This was partner in Gazzoni, a pharmaceutical leader firm located in the area; Barbieri was boosted to manufacture a machine to pack one of the most successful products in Gazzoni. The production of ACMA began in small shops; it grew quickly, and differentiate covering the necessities of several producers of chemical, pharmaceutical and foods products, among others. Due to the limited size of their domestic market, it began to export to European countries and the United States. The key factor of the success of ACMA in the international competition was its ability to design and to assemble packing machines that could be adapted to the client's diverse necessities. For 1939 ACMA had already 100 workers.

In 1937, SASIB, the producing equipment leader for railroads, began the production of packing machines for the tobacco monopoly of Italy. After few years, the company was able to design and to manufacture its own packing machineries for the tobacco industry.

These initial phases in the Packing Valley emphasized the role of two important factors in the origin of this industrial area. The first one is the role of clients: The high demands of costumers, some of them located in the same area, demanding new and improved products, stimulated the innovative process and increased the variety of products of the company. The local demand had a significant role, especially in the beginnings. The processing food industry in the proximities of Parma, is another example of the importance that play costumers and its demand, (Brusco, 1996).

The second factor is related to the presence of local technical expertise. At the beginning of the last century, in the surroundings of Bologna there were five big mechanical companies (with more than 100 workers) and a great number of small shops specialized in works with metal. They worked for different industries, as motorcycles, the agricultural and the automobile. The big companies and the small shops shared a flexible and creative work

force. Even though, it is necessary to highlight that in the big companies there is always a group of workers very trained in design and mechanics. This situation was due to the history of the area of Bologna and to the existence of a technical school, the institute Aldini Valeriani.

The scholar culture (which maximizes the manual abilities, empiric tests, the use of drawing tables and the systematic use of creativity) fitted perfectly with the requirements of the industry of packing machines of Bologna, particularly in what concerns to the process of development of new products. Due to the learning process based on the test and error, frequent interaction exists between the designers and the assemblers.

The assemblers usually prove the product in the client's factory, they adapt the machine to their necessities and they rescue information for the designers. It is through these interactions that new products are created and that machines are made to the client's necessities. Most of the employees in these initial phases have technical expertise, creativity and an attitude to learn by doing that support the process of development of new products. The same capacities and attitudes to the interior of the small shops, allowed the pioneers to be able to count on them to make products to the measure and other operations. The subcontracting expanded in a great way in the Packing Valley after the Second World War, and the readiness of technical abilities was a dominant factor in the creation of different districts in Italy, for employees and part suppliers, components and machinery.

4.3 Growth of the Packing Industrial Cluster

Many of the mechanical companies that were used in the production of ammunition during the war (ACMA and SASIB were later dedicated to other things. It is estimated that in Bologna, in the 1948-54 period, more than 9.000 workers were fired. Of this specialized labor force, appear the men that founded the numerous local shops. They built a subcontracting net that was the base of the later development of the industry of packing machineries in the area, (Brusco, 1996).

In the post war period, a great number of new companies entered into the cluster of packing machineries. Most of the new participants were derived actors of ACMA: former workers with ideas of new products began their own business, driven by their technical ability

and their managerial spirit. Usually, they were young technicians with experience in design due to the collaboration that gave to senior designers. The early and frequent interactions with other technicians (designers and assemblers) made them aware of the necessities of costumers.

During the following years, the 60's, 70's and part of the 80's, new companies derived of ACMA and others derived of their other companies appeared. Some of these new companies focused their production in machines that were improved by previous companies. Anyway, the new participants frequently positioned their products in different market niches, avoiding the direct competition with the oldest ones. Later, they moved down in the chain of production of machineries, operating at the end of the packing line, which allowed them to find new industrial applications for old machineries. The new companies forced established firms to continually improve the quality of the existent machineries and to develop new models and products.

The new companies of the industrial cluster also shared other behaviors. Consistently with the expertise of their founders, they were focused in the design and assembling phases. Since there was a great number of small and micro companies specialized in the production of mechanical parts and of work with metal, it was easier to subcontract the operation and production of parts to these companies, being able to be focused internally in activities that took better advantage of the managerial capacities, (Brusco, 1996).

Still when all of the beginnings are strongly connected to the client, most of them are guided to the export, from the beginning of their activity. As soon they are able to assemble their first machine, they participate in fairs or national exhibitions. The international fairs continue immediately, this allows them to contact new potential clients, and the new interaction with costumers offers them ideas and opportunities for new products.

Later developments of the Packing Valley highlight factors that are similar in part with those mentioned in their origins. The readiness of technical local expertise is again an important factor, even for those companies that were developed later in the area. The role of the local technical school, in the diffusion of designs and engineering capacities, and other significant attitudes, as creativity, was previously mentioned. It is not surprising that school continues playing a significant role, even in later developments of the cluster. The net of small

shops, administered by former workers of the mechanical companies of the area, made possible, to enhance the growth of the packing companies, having subcontractors to full fill the growing demand for its products.

In the other direction, the local demand had a tiny role, since the demand for the product of the industry, was mainly provoked for other Italian and foreigners companies. The forces that promote the subsequent growth of regional clusters; are not necessarily those that gave the location factor their initial advantage.

To complete the revision of the factors that influence the growth of agglomeration, it should be noticed that most of the mentioned companies share the same incubators, in terms of as of company. This suggests an additional factor that is the coexistence of educational institutions and firms among which synergy happens. The school and the company form what is known as “practice community,” where they take place different learning processes, accumulating and combine and create new knowledge. For example, in the Packing Valley the school supports the process of future manager’s learning, training them in theory and promoting experimentation in laboratories. The company provides technical knowledge: the design rooms and the experimentation rooms in ACMA work as schools for technicians of the industry. Evidence exists that suggests that the lack of location coexistence of educational institutions and companies could be responsible for the inability of some Italian clusters to grow and to recover, (Brusco, 1990).

4.4 Growth of the SME and Evolution of the Intercompany Relationship

To understand how the SME at the interior of a cluster are developed, the analysis should be focused in how the local companies grow and manage the relationships with their suppliers. It is possible to follow different stages, with different roles played by the local companies and the suppliers, and to include the different processes of transfer knowledge and creation among them. It is identified 4 stages: Initially, the relationship with the suppliers was vertical and very little planned or programmed, becoming to be planned in a second stage; the third stage is characterized by the emergency of horizontal relationships among suppliers; and in the fourth it registers an increase in the hierarchical character of the net.

Until the beginnings of the 80's, the growth models of companies that produced packing machines were based on great measure in the external growth. During the 60's, the product was expanded. Instead of being devoted exclusively to the acquisition of additional inputs, new investments or new employees, companies grew when integrating parts and operations developed by available SME in the area. Sometimes, they encouraged employee's groups to begin their own business, production of parts, or to be focused in particular operations. Usually companies that were located in the proximities of the incubator that could possibly provide them guaranteed orders, services, instruments, and, less frequently, financing. A company is an independent firm or a part of a group of companies that belong to a main company or its founder, (Brusco, 1996).

Initially, local companies manufacture most of the critical components internally. To subcontract local companies and their derived firms are considered a short-term strategy to face (in the short term) the boom of the market. In this stage, the local companies consider the subcontractors mainly as a passive participant that completes their breach of capacity. (Stage 1 in figure 2).

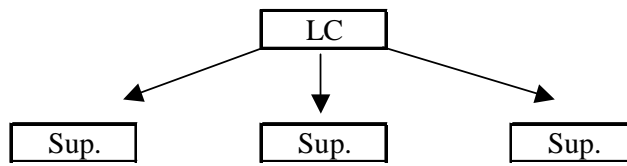
During the 70's, the companies began to subcontract more complex parts, more complex components, and groups of components to external companies. The process of decentralization was planned largely. A great number of SME passed of being suppliers of simple parts, made to the specification of the local firms, to be manufacturers of components and groups of highly specialized components. At this stage of development, some SME was self-sufficient in their engineering, they had financial autonomy and investment capacity, and they offered their production to different clients, (Brusco, 1996).

The relationship between local companies and the suppliers was more stable, because the repeated and systematic relationship tends to promote cooperation and trust among them. Gradually, interdependence arises between local companies and a select group of suppliers; that is appreciated in the decentralization of parts and the increase of operations (as percentage of a machine costs). The suppliers begin to invest at low costs and they improve the quality and the level of services. Its willingness to invest; is a sign of trust in the local company as in its own technological and administration expertise. The trust in the local company depends on its commitment with the leadership, on its superior information on the

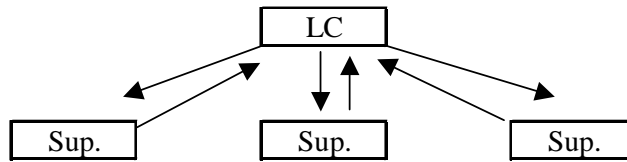
client's necessities and the tendencies of the market, and on its strategic relationship with other organizations, as clients, competitors and distributors.

The trust of the suppliers in their own technological and administration competences, depends on their own relationship with the numerous and heterogeneous clients who make them possible to invest in big production volumes, limiting their risk and improving their knowledge through varied relationships. The local companies tend to promote the multi-clients relationships with their suppliers. In this development stage, local companies have multi-structure nets of suppliers and subcontractors (Stage 2 in figure 2).

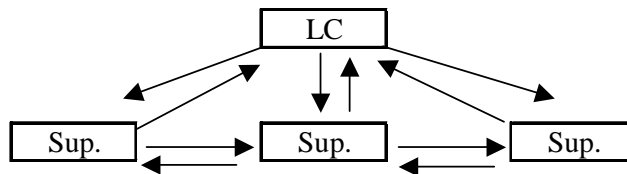
In the 80's, most of companies that remained continued growing and some of them were involved, actively or passively, in a series of acquisitions. The company IMA bought several firms of specialized packing machineries in the pharmaceutical and nutritious industry. Excepting one, all the acquisitions were carried out in the area of Bologna. On the other hand, other firms became target of acquisitions of other Italian and foreigners companies. There are indications that companies' buyers chose the area of Bologna to have access to the qualified nets of local SME, so they can conserve solid bonds with the district, (Brusco, 1996).



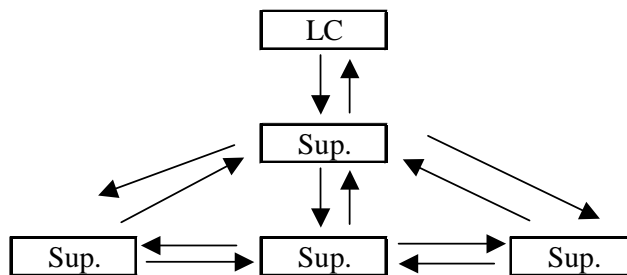
Stage 1



Stage 2



Stage 3



Stage 4

Figure 2: Evolution of the relationship of a leader company and suppliers
 Source: Adapted from Barney, 1999

Most of the companies that subsisted made a turn in their strategy, toward a great dependence of external nets of suppliers and subcontractors. They concentrated on the design and the final assembling, outsourcing most of the operations and the production of parts and components. They even, began to co-develop together with experienced suppliers a new machine, resting on the outsourcing in sub-assembling or complete machines. The process involved a careful selection of suppliers; this is, to look for suppliers that were able to design and to give a system of parts. During this period, companies that subsisted depended on certain types of suppliers for some critical components and the co-design of parts, assembling and even for the complete machine. Some suppliers today play an important strategic role so companies that subsisted could find difficult to develop a packing machine without them. The suppliers on the other hand, know that they won't be able to survive for their own if they do not cooperate with other suppliers and local firms. Suppliers and local companies invested jointly in specific assets, and now their commitment is based in (1) the mutual expectation of future benefits, (2) the conscience of exchanging costs and (3) the consolidation of its bond in the process of development of new products.

To better understand this phase of development of the SME in the industry of packing machineries in Bologna, it should be remembered that the product is a highly interdependent system of components and interactive subsystems. Each one of the main components is a system. An important matter is, the importance of the quality of the interaction among the parts, as well as the quality of the individual parts. The empiric evidence suggests that the contribution of the suppliers to the development of a new product can be easily increased (reducing the internal costs, or by marginal improvements in the existence products), but with more frequency it involves ideas and inputs that offer design innovation (reengineering of existent products and bigger and better changes in components and subsystems) finally, deliver radical innovation (i.e., radical realization of new products). Therefore, the suppliers are no longer passive producers, but partners in the development of new products.

The premature integration of suppliers in the process of development of new products brings a growing interaction among suppliers. The relationship between the local companies and the suppliers passed of being controlled mainly by the local company, in a first stage, to a reciprocal relationship in a second stage, and to be reciprocal among them, and horizontal among the suppliers in the third stage. The suppliers are encouraged directly by the local firm to interact among them, beginning with the initial phases of the innovation process.

The suppliers now serve as coordinators and communicators between secondary subcontractors and the local company. At the moment, they are qualified to select and to help their own subcontractors to develop competences and to commit resources to maintain the competitive advantages of the final product. The local companies are able to reduce their coordination efforts and to be focused in combining resources and competitions creatively. They define and redefine their limits, according to their abilities and capacities of their suppliers (Barney, 1999). The improvement in the quality of the abilities and competences of the suppliers, allow local companies to be decentralized toward suppliers that previously developed internal activities, as pre-assembling and even assembling of machines, being focused in what they consider its strategic capacities. Evidence of similar development processes of SME, can be easily obtain in different industrial clusters.

During the 90's, a bigger evolution is observed in the relationship between local companies and suppliers, encouraged mainly by the new demand of clients, in terms of time of delivery and products. For example, leaders companies in the Packing Valley are able to obtain the complete packing line, instead of simple machines. To satisfy these requirements, the company IMA has restructured its strategic objectives, when choosing only a supplier and giving to this the complete responsibility in the production of individual machines and in the coordination of other suppliers of first level. They are located about 25 Kms. of the company IMA. The proximity allows them the development of the projects and its implementation. The frequent interaction, the immediate feedback, and the drop in the times of delivery to the clients of IMA, between other, allow the transfer of technical and management knowledge toward the suppliers, (Brusco, 1996).

The emergency of a hierarchy of character moderated in original relationships without structure, forces the process of learning of different actors (leaders companies and suppliers) it has a bigger inference in the growth of the SME included like it is shown in the stage 4.

5. EVIDENCES FOR A DEVELOPING COUNTRY: A CHILEAN CASE

In spite of the fact that there is already evidence in Chile regarding agglomerations or clusters, this is moderate, in the sense that they are still few sectors of the Chilean economy that are being able to take advantage of the advantages of a strategy like. Inside the sectors that have already embraced this strategy are: the salmon sector and the milky sector, among others. However for our purpose, the sector that is more adjusted, given its characteristics, to the proposition that wants to be demonstrated in our work, is the raspberries industry, (Comité de Fomento de la Micro y Pequeña Empresa, 2003).

The cluster around the raspberry production is a productive conglomerate that was consolidated as an important producer and world exporter of fresh and frozen raspberry on a relatively short period of time. In 1999, Chile was the fourth world producer of raspberry, and the main of the south cone; it was also the third supplier of fresh raspberry to the United States market, and second of frozen raspberry of the European Union market. Nevertheless, until the final of the 70's decade, their production was limited to small homemade orchards dedicated to satisfy the scarce domestic demand. Then any possibility of exporting raspberry did not exist. There were no varieties, technical of cultivation, handling and harvest, required for the export, neither the system of transport had been developed to export in fresh to distant markets, and finally, there was no enough production volume a with homogeneous quality. (Bravo and Crespi, 2002).

The conglomerate was born like an activity of export of fresh fruit; nevertheless, it went to another direction and opened the path for the consolidation of the export of frozen fruit, like an independent activity.

The present analysis is focused in the participation of the public sector and in the interactions inside the cluster like decisive determinants of the development of the activity. Also, it is presented a summary of the conglomerate; the economic importance are pointed out, it's productive structure, its natural advantages, and its bifurcation toward the export of fresh and frozen raspberry. Later on, also, the main determinants of the birth and development of the conglomerate are discussed that include the public politic influence, the participation of the big companies, and the inclusion of the small producers.

5.1 How was built the Cluster?

The cluster of the raspberry arises like an extension of a peak of the national fruit sector motivated for public policies, and happens during the full validity of an economic model based on the market. In the middle of the sixties, the Chilean State with the objective of developing activities with an exporter potential, implemented a fruit program, by which invested important resources in the formation of professionals specialized in the fruit industry, in the experimentation with fruit varieties and in its adaptation to the Chilean conditions. Ten years later, the program was eliminated when a liberal economic model was established by the military government, in which a program of such a magnitude lacked foundation. Although the peak fruit industry coincides with the elimination of the program, it is well documented that this was its main decisive factor.

In spite of the decrease of the public expense and the retirement of the Government to numerous activities, the public policies continued investigating the exporter activity of the big companies and especially, promoted the realization of private community projects using new instruments implemented through new public institutions and also through the old ones. In this context the activity of the raspberry arises to the beginnings of the eighties by means of the private investment of medium and big producers.

The original productive structure of the conglomerate, based on medium and big companies, changed by the middle of the nineties as a result of the necessities of the private sector and of the support of the public sector. Although in the beginning of the activity the production and export relapsed in big companies, during the decade of the 90s small producers were incorporated in the production phase, increasing its participation quickly, nowadays they represented half of the cultivated surface. These small producers arose in moments in that the big companies pass over financial difficulties and they needed bigger flexibility in their offer, besides of reducing their costs. Although the Government has supported the participation of the small producers, its main source of knowledge, technology, credits and commercialization has been the big companies, with which many of them have contract agriculture.

5.2 The Cluster of the Chilean raspberry

In 20 years of existence, the activity of the Chilean raspberry has acquired importance in the local environment through the employment generation and with the inclusion of a numerous small producers in the national environment with a wide participation in the international markets, result of the increase of its exports that has also been accompanied by increased in the productivity. The conglomerate was born like an activity guided to the export of fresh raspberry, however opened the way to the consolidation of the export of frozen raspberry as an independent activity that includes new companies, articulating small producers, attending new markets, and at the present time it generates as many foreign currencies as the export of fresh fruit. In sum, it is a conglomerate exporter that contains two types of business that although have the same origin, they present more differences than similarities. Their main similarity is that both face a low domestic consumption, therefore, they were conceived to export.

5.3 The Raspberry and its relationship with the international market

The cluster of the raspberry has acquired economic importance for the rural sector through the employment and for the country through the export. During the period of crop that goes between December and April, the activity generates near 100 thousand employments in the rural sector. On the other hand, 90% of the production is exported as fresh or frozen raspberry (See Table 2); its main markets are respectively the United States and the European Union. According to data of the Federation of Processors of Foods and Agroindustrial of Chile (FEPACH) in the year 2000 the raspberry generated for concept of exports, in fresh and frozen, approximately 50 million dollars. According to figures of the Fundación Chile, in 1999 the whole sector generated 75 million dollars. The last fact includes the use of the raspberry for the domestic consumption and for the production of juices and marmalades.

Raspberry Destinations	
Local Consumption	7%
Juice	13%
Fresh Exportation	13%
Frozen Exportation	67%

Table 7: Raspberry Destinations

Source: FEPACH

The cluster is compound for small, medium and big producers that cultivate 5.500 hectares approximately, 70% of which are concentrated on the VII and VIII Chilean regions. Around the plantations there are companies that have facilities for packing, freezing and processing (juice and marmalade). These companies are generally integrated with big producers and in general they are also supplied from small suppliers. The exporter, generally, acts as an agent of the small producer who maintains the property of its fruit until the moment of the sale in the international market, after that receives its payment that is equal to the price of sale of the raspberry discounting export costs and the exporter's commission. The transportation of the plantation to the company (exporter or processing) and from here to the shipment ports is hired to a third party. In the production area they are also supplying companies of inputs, state agencies of training and credit, and small offices of the big companies dedicated to coordinate the cultivations and the purchases with the suppliers.

Two types of clearly differentiated producers compose the productive structure of the conglomerate: big producers/exporters and small producers. The first ones have plantations of great scale, export their production directly and many of them also market production of small suppliers, have managerial and financial capacity, have infrastructure to pack, to store the fruit in cold, have information of the international markets, and receive permanent international buyers' commercial information. In contrast, the small producers (two thousand according to estimates of the Office of Studies and Political Agrarian, ODEPA) produce in extensions that do not surpass the 2 hectares, they lack managerial and financial capacity, their innovations depend mainly on the relationship that they settle down with the exporters companies and processors to which provide raspberry, and in general they offer their

production to the frozen industry or of the processing (juices, marmalades) that has smaller demands of quality.

Additionally, the area in which is settled the conglomerate has important natural advantages that not only favor the raspberry production but also its exportation. The Chilean regions VII and VIII have ground and appropriate water and a relative absence of plagues and pests. Its location in the south hemisphere makes that the main period of raspberry crop happens between October and April, therefore it can be exported to the markets of the north hemisphere when they have a minimum of local production. Also, the narrowness of the country makes that cultivation areas are relatively near to the ports, that which diminishes the time and cost of the transportation of the production.

5.4 The fresh and the frozen fruit businesses two different perspectives into the same cluster

The business of the raspberry, initially had as main objective the export of fresh fruit, and took advantage of the remainder of the production, that did not comply the demands of quality of the export in fresh, exporting it as frozen fruit. However, the export of the frozen raspberry has grown with bigger rates that of fresh raspberry, since it is a business with less barriers to the entrance and smaller requirements, although it receives smaller prices. At the moment, although the business of the fresh raspberry continues leaning on the export of frozen raspberry as an exit for its remainder production, the conglomerate is characterized by the coexistence of clearly specialized exporters in one of the two businesses. The most surprising thing is that they are two businesses that have more differences than similarities: they face different entrance barriers, supply different markets, use different transport roads and they are composed by different productive structures.

Although the incorporation of processes is usually associated to the incorporation of added value, in the fruit industry happens exactly the opposite: the added value of the fruit consists on being able to market it in fresh. In correspondence with the presence of added value, the business of the fresh raspberry presents bigger barriers to the entrance that of the frozen raspberry. Their production, packaging, fumigation, cooling and storage require bigger cares, knowledge and investment. The most complicated part in the business resides in the transportation. The export of fresh raspberry can only be carried out by air, alternative that

implies bigger complications for the reduced readiness of load space in the airlines besides being expensive. Also, the high perishable of the fresh raspberry demands a complex logistical organization that guarantees the location of the fruit with great precision to optimize time. On the other hand, the business of the frozen raspberry is less demanding in terms of quality and its transport is carried out by ocean and does not demand bigger logistical sophistication neither a precise coordination to optimize time.

The biggest entrance barriers make that the production and commercialization of the fresh raspberry is concentrated on few companies. The four bigger companies market near 90% of the fresh raspberry one of them, Hortifrut, is responsible for 47% of the exporters activity. In contrast, in the export of frozen raspberry participate more than 45 companies.

Two important differences between both businesses are in the degree of vertical integration in the markets that they supply. The export business of fresh raspberry is very integrated toward the production the high level of demands that faces makes the exporters to participate also in the production, directly or by participation in the property of producers companies. This contrasts with the business of the frozen fruit, in which a numerous of small producers are articulated as suppliers. Finally, both business supply different markets. 80% of the fresh raspberry is dedicated to the United States, while 65% of the frozen one goes toward the European Union.

5.5 The role of the public and private sector

At the end of the sixties the Corporation of Development of the Production (CORFO), developed a fruit plan that induced the University of Chile and the Institute of Agricultural Investigations, INIA, to the formation of human resources for the sector. (Cabrera, *et.al.*, 2002).

The program also included public investment in the experimentation with different species and fruit varieties, the construction of the first fruit centrals (packers, selectors and refrigerators) of regional reach, the analysis of the demand of the external markets, the establishment of soft credit lines for investment and work capital, and fiscal incentives to the export of fruits. The University of Chile established an agreement with the University of California that generated a critical mass of fruit knowledge when allowing students and

Chilean professors were trained in California, area that has a similar climate to Chilean and that it also has a wide scientific experience in the matter. The INIA, attracted with high wages local investigators and it began the program of fruit investigation. Through this fruit program, Chile developed the scientific personnel and the knowledge necessary to transfer foreign technology (mainly of California), identified and began to plant new varieties directed to the external markets (especially the United States), improved the cultivation works and post-crop, developed the necessary infrastructure to export fruit, and increased the profitability of the production and fruit export.

The fruit program was eliminated by the middle of the 70s when the military government broke the economic model introducing deep reformatations that liberalized the markets and reduced the public intervention. The Government cut the budget of CORFO, INIA and the Universities, and gave instructions of not using public funds for the investigation of fruit varieties. Nevertheless, the new economic model favored the fruit sector when diminishing the restrictions to the import of inputs and its tax rate, and devaluating the exchange rate. Simultaneously with the new economic model's setting-up and the consequent elimination of the fruit plan initiated 10 years ago, a numerous of medium and big producers increased the fruit production and began the peak of fruit exportation. (Cabrera, *et.al.*, 2002).

Although the turnaround of the production and export of fruits coincided with the reduction of the public action and with the reformulation of its support policies for the sector, it was the early public investment the one that facilitated the take off of the fruit industry. The fruit program developed in the middle of the 60s and 70s generated a critical mass of knowledge that attracted the entrance of private companies in the fruit production, when diminishing the risk of the activity, as well as the necessary initial investment. The knowledge generated by the implementation of the fruit plan moved to the private sector not only by means of the developed varieties and adapted to the local, but through the own investigators formed with the program that were stimulated by the State to look for private financing for their work with the economic model's change, with that their work was guided toward the demand. Even, 70% of them left completely the weakened public institutions and they moved to work in big private companies. The change of the pattern diminished the public investment to the sector and guided it toward the demand, through the linking of the work of the investigators to the private sector, and through the public financing of collective private projects.

As part of the fruit peak initiated few years ago, and in the economic context of a liberal model, the commercial activity of the raspberry began at the beginnings of the 80s with species introduced by the “Fundación Chile”, quasi-private institution settled down in 1977 to identify and to develop new businesses. The raspberry production began like an activity productive-exporter of medium and big producers that were favored from subsidies to raw material and imported inputs that the Government settled down in the beginnings of the 80s to support the beginning of the non-traditional exports. The later actions in investigation, development and technology adaptation were practically private.

The new public policy promoted the protagonism of the big companies in exporters activities, as well as the cooperation inter companies, by means of the partial financing of private communities projects channeled through new and old public institutions created and transformed for this purpose. ProChile, state agency created in 1975, settled down credit lines that financed 50% of projects of the private sector. The intention was to improve the quality of the production, with the adoption of the international requirements and standards, and with the diffusion of productive practices and other existent products in the world market. Same work approach was adopted by the INIA at the beginnings of the 80s when was implemented an extension program and technology transfer to big producers organized in groups of 10. This program ceased in 1990 when the INIA received instructions of the State from giving priority to the small producers.

The own market in small measure and the public policy, promoted the horizontal cooperation of big companies. Of the alliances promoted by the State the Federation of Processors of Foods and Agro industry of Chile, FEPACH, that it is the private association that has had bigger repercussion in the cluster of the raspberry. The FEPACH controls the practices of quality of the conglomerate and it has achieved scale economies in the purchase of inputs and in the marine transportation. Also, generates and diffuses information on the international trade, production volumes and exports, destinations, clients' identities, new products, and provides companies a discussion space about international requirements and production practices. On the other hand, the insert of the cluster in the international markets has stimulated its cohesion before external threats. An example constitutes the collective defense of the cluster carried out through the Union Association of Exporters of Frozen

Products, AGEPCO (member of FEPACH), before the accusation of dumping of the North American producers of raspberry.

At the moment, the participation of the Government in the development of support investigation to the cluster is very weak. The main public investigation initiatives are in the creation of several programs of funds, as the National Fund of Technological and Productive Development, FONTEC, of the CORFO, established in 1991 that supports to the technological innovation of the industry. However the fund is relatively small and the part dedicated to investigation of fruits is insignificant. At the moment it carries out two projects in the sector of the raspberry, one is related with the improvement of the conservation and increase of the post-crop life through the use of modified atmosphere, and the other one with the implementation of molecular markers for the varietal certification. Another institution that supports the sector is the Foundation for the Agrarian Innovation, FIA, now is developing a quick methodology for the detection of “Cyclospora”, to be used as insurer of quality and hygienic security in the raspberry commercialization. Also, the Agricultural and Cattle Service, SAG, are implementing the system of insurance of quality massively HACCP. Nevertheless, all these do not pass of being limited efforts that are practically not even perceived by the private sector, (Cabrera, *et.al.*, 2002).

5.6 The deadlock of the small producers and the upgrading of the cluster

The upgrading is a concept that mentions at the displacement of a company or a cluster toward activities of more added value and therefore more income. The upgrading is a consequence of the innovations in: to) Processes: increasing the efficiency of the internal processes; b) Products: developing new products or improving the existent ones; c) Functions: moving toward other functions inside the chain; d) Chain: moving toward other chains of value.

The productive structure of the conglomerate gave a turn by the middle of the nineties. Until the end of the 80s the cluster of the raspberry was constituted basically by medium and big companies. The small producers lacked the necessary technological, financial and commercial conditions to be able to interact with suppliers of inputs, banks and fruit exporters. Until that moment neither were object of the support of public institutions, which worked with the big companies. Nevertheless, during the 90s were incorporated to the activity

with quick rhythm, to the point that today covered 50% of the Chilean surface planted with raspberry. Their inclusion in the activity, was supported by a reorientation of the public policies to their favor, but for overalls it is explained by the necessity of the exporters of the cluster of having a flexible offer and diminishing their average expense, especially in periods of financial difficulties. In spite of the benefits that achieved the small producers in terms of revenues, their participation was articulated in the activity of the cluster of lower income: the raspberry production for the industry of the freezing and processing. Their inclusion then, has had an “impasse” with the upgrading of the cluster.

Although the public policies promoted the participation of the small producers in the raspberry production, it was insufficient to impel toward activities of more added value. At the beginnings of the nineties the State reoriented its policy, focusing its action toward the small producers through two institutions the INDAP and the INIA. Although a specific program did not exist for the raspberry sector, the small producers had access to public programs of general nature that include technical assistance and credit, and stay until today. In a similar way to the case of the big companies, these programs try to promote the associativity among the small producers. To obtain the support of the INDAP the farmers should be associated and present a project of technical assistance, this need to be approved, and covered in 90% of their costs. As part of its policy a program of suppliers' development is working with the objective to improve the production conditions through different actions (as the installation of bathrooms in the orchards) that will allow that the offer of the small producers can be marketed in the external markets. Although these public initiatives have supported many small producers in the raspberry production, the covering of the programs and the investment amounts have not been enough to generate an upgrading in their processes, products or functions to the interior of the cluster.

The public policy was able to promote the associativity among the small producers, however, it did not achieve the most important thing: to promote impact collective actions in their upgrading. The small producers have not reached levels of collective efficiency that allows them to be developed competitively. The little groups formed by small producers have been limited to the objective of fulfilling the associativity required by the INDAP to grant their assistance and they have not been able to orchestrate some combined action of impact. Then the cooperation of the small producers has been insufficient to allow them to reach scale economies deliberately, to exchange information, and other advantages related to the clusters.

The main source of knowledge and technology of the small producers have been the big companies, producers and exporters. This diffusion of knowledge first happened without a clear premeditation; the single production of medium and big companies generated, in its cultivation areas, a culture of raspberry production. The field workers of the big companies, the seasonal manpower used for the crop, and the neighbors of the area, owners of small parcels cultivated partially with fruits and vegetables for the self-consumption, began to cultivate raspberry taking advantage of the knowledge diffused in the area, besides the presence of suppliers of inputs. However, the main source of learning of the small producers arises of its linking with the big companies like suppliers of them by means of the contract agriculture, 90% of the raspberry production is carried out by means of contracts that include advances, consultant, and an entire technological package toward the small producers.

It is clear that the small producers were able to participate in the cluster of the raspberry because their presence benefits exporters giving bigger flexibility to its offer and to diminish its average expense; nevertheless, this massive inclusion of the small producers that happened in the nineties also improved the entrance of the rural sector of the geographical area of the cluster. Especially because it is an activity that generates a lot of employment being so intensive in manpower use, overall in Chile where 90% of the crop is carried out in a manual way. Generally, the small raspberry parcels are worked by family manpower that generates an extra entrance to the family father that is usually employee of the big agricultural company or is devoted to another activity. In the activity the family mothers and the children of the house whose school vacations coincide with the period of crop participate mainly when more manpower is required.

Although the small producers began to produce raspberries, they have not been able to extend their participation beyond the production phase that restricts their revenues to an activity of low income inside the value chain of the raspberry. In fact, one of the efforts to reach functions with more income (functional upgrading) it was a complete failure. By the middle of the 90s the INDAP supported small producers so that they are able to capture bigger income levels, by means of the installation of community plants of freezing. The program did not arrive very far before failing. The reasons are that it was executed in a period of overcapacity of infrastructure of freeze in Chile and in the own limitations of the small

producers in topics of administration of resources, commercialization and knowledge of markets.

At the moment, the small producers do not have more option that to be articulated as small suppliers of the exporters companies in spite of the disadvantages that this can represent to them. In the relationship between the exporter and the small producer, the last one has a low negotiation power that harms him in the income appropriation. The domestic consumption of raspberry is so low in Chile that the only exit for a production increment is through the export. Who control the raspberry export are the exporters, many of which are also producers or, at least, they maintain participation in the property of producers companies. Therefore, the incorporation of small producers is viable in the measure that they can reorganize like suppliers of the big companies. The problem of this articulation is the disparity in the distribution of the income between the production and the export. The asymmetry of information on the international markets between the small producer and the exporters gives the last one a better negotiation position. This position of control of the exporters in the local environment is still more strengthened for how is the relationship commercially with the small producer. The exporter acts as an agent of the small producer, which maintains the property of its product until the moment of its final sale in the external market, and receives its pay once discounted of the effective price, the costs associated to the export and the commission of the exporter. With this work outline, the producer is subject to receive a price of last minute that is in function of an external market to whose information does not have direct access.

7. CONCLUSIONS

During our work it is reviewed who are the SME companies and which are their characteristics, it is also reviewed what constitutes a cluster, how this is formed and it is been revised the existent empiric evidence that is closer to our objective: to determine the role SME plays inside a cluster, is it beneficial for them to belong to a cluster?, what are the advantages and disadvantages of participating in a cluster? Since this was developed, we are already under conditions of presenting the conclusions.

We presented a Chilean and an Italian cluster example in order to explain the importance of the cluster for the development of the SME. In those examples different trajectories were found, that is logical because of different stages of country development exists, one from a developed country and another from a developing country. Analyzing the two cases presented, in order to determine similarities and difference in the trajectories followed, a table was constructed that summaries the results found.

Key components	Clusters	
	Italy	Chile
Industry	Packing Machineries	Raspberry
Geographical Area	Northern Bologna	VII and VIII Regions
Participants	Big Manufactories. Small and Medium assemblers and part and components	Big producers and exporters. Small producers of fruit
Government Role	There is no government relevant intervention in the creation and development of the cluster	Government institutions support and public policies in the beginning of the cluster creation, giving qualified human resources, credit lines, experimentation and infrastructure. In the second phase only help to small producers
Competitive Advantages of the cluster	In the upper limit of world technological innovation. Readiness of local technical expertise in the Bologna area	Natural resources advantages, access to water and absence of plagues and pests. Geographical location in the Southern part of the world permits to export to northern hemisphere when a minimum local production exist
SME advantages inside the clusters	A subcontracting net, easier to subcontract the operation and production of parts, so an stimulus to SME creation. Synergies between educational institutions and firms. Repeated and systematic relationship among big and small firms tend to promote cooperation and trust among them and help in the SME survival.	Small producers, depend of Government policies and institutions also the big producers give working capital, knowledge, technology and help small producers to market is product to international markets

Table 8: Comparison between Italian and Chilean cluster

Source: Constructed from Italian and Chilean evidence in chapters 5 and 6.

As we can see in Table 8, different industries in different stage of development but a common pattern relating SME and its creation, survival and development. In the Italian Case no government relevant help, intervention or promotion, contrast with the Chilean case where government took an important role in the creation and survival of the SME.

In summary, taking apart the difference of country development between the two cases presented, the evidence suggest the importance of the clusters for the SME creation first and development and survival afterwards.

In the same line, one of the most important obstacles that the SME faces and stops its development it is the disloyal competition. In this point, the cluster can help companies, especially the small ones, to compete, since the agglomeration of companies related in similar activities (relatively similar) generates a series of external economies, which diminish the costs of the participant producers of the cluster (this could be appreciated in the chapters of empiric evidence). These advantages include a range of specialized workers, easy access to suppliers of goods and services and a quick propagation of new knowledge (Marshall, 1920), this last, in turn, allows them to improve the situation of the SME in front of problems that although they are of medium graveness they continue to be important, such as the readiness and quality of the human resources, the relationship between suppliers and distributors and the technology markets.

Considering the second more important problem that an SME face, the general macroeconomic situation, can be said that by means of the participation of the companies in a cluster, the relative exporter capacity of these companies increases, since the cluster makes possible in a simpler and more direct way the coordination among companies, making that companies that only produce relate as suppliers of companies that market directly to the exterior. Also, if the exports are diversified then the negative impact that produces a bad economic situation, either internal or external, diminishes, because the production is not only dedicated to the internal market and therefore, a fall in the internal demand does not affect the sale of the total production and when diversifying arrival markets, if one of the countries with

those that trade presents an imbalance, it is not only depend on that market for the destination of its production.

As it was mentioned in chapter I, that other of the obstacles that SME faces are the financing conditions and the operation of the State apparatus. Regarding the first one, It is thought that the cluster supports the belonging companies to obtain financing, especially in the event of a mature cluster, since the steps that they should give the investors or financial institutions are small and free of risk due to the division of the work. Although to highlight that this is not so clear when it is about an incipient cluster where the participation of state instruments is fundamental. Now then, taking into account the problem of the operation of the state apparatus, is not too much that a cluster can make, more than to behave as group of pressure to try to satisfy their demands and to facilitate the incorporation of new companies in case it is required.

Keeping in mind the managerial dynamics and those “conditions” that should complete the companies to survive in the time, such as the minimum scale, the technological characteristics and the industrial organization, the growth of the market and the productivity, can be thought that the cluster helps companies to present the necessary characteristics. It is known that the probability of a company to survive depends mainly of the economic cycle that, it is already mentioned that it is attenuated when a cluster exists, or helps to attenuate the effects of the economic sways, because develops exporter capacity in the companies, what makes them less vulnerable to the negative fluctuations of the country in which is located, more important is to maintain the level of sales, and it also depends on the asymmetries of the knowledge, where in this case the cluster allows the transfer of knowledge, making that the asymmetries are smaller, increasing, therefore the probability of surviving of the companies.

When it is considered the great role that the SME plays in employment, they represent in total almost 50% of the labor force, their survival is important for the quantity of employment that involves. The cluster in general, requires of qualified manpower, demanded by most of the existent companies, as more value is added to the production, the necessity of specific knowledge and this way the demand for qualified manpower increases, what produces an increment of the salary breach among qualified and not qualified workers, producing a negative effect in the distribution of the income. Can be said that if investment does not exist in human capital, either on the part of the same worker (general training) or on

the part of the employer (specific training) or a mixture of both, would worsen the equality of opportunities like added social value of the SME.

For the above mentioned, in incipient stages of creation of a cluster in a sector or specific area, it is justified the intervention of the State, by means of the support through appropriate instruments and collaborating in the investment in human capital.

Finally, It can be concluded that the collective efficiency is the base to understand why the participation of the companies in a cluster turns out to be beneficial, for the collaboration among companies by means of the associativity and the external economies that are derived of its interaction, by means of linkages back and forward, just as it outlines the focus of Hirschman on the clusters formation.

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