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CURRENT AND FUTURE CHALLENGES OF THE CERAMIC TILE FIRMS

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ABSTRACT

The aim of the current work consists of explaining the evolution of the industrial districts, from their beginning with the Marshall theory to their evolution over time. The presentation of the different perspectives and methodologies which will be exposed along the current work, will allow us to have a clearer view of their evolution. Thus, the different joint actions which have been conducted have permitted the formation of the concept of "Cluster".

Among the different characteristics that define the diverse districts, it is remarkable the coexistence of relationships of cooperation and competition among the companies. This would involve a series of competitive advantages which would be difficult to be repeated in a different context due to everything the context of the clusters implies.

The work is structured as follows. Firstly, we will find the theoretical framework, in which the concepts of evolution, competition, internationalization and innovation will be explained. Later, we will find a comparison between Spain and Italy. To finish, we will focus on some specific areas of the previously mentioned countries, particularly Castellon and Emilia- Romagna.

Keywords: industrial district, cluster, competition, innovation, cooperation.

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1. INTRODUCTION

This final degree Project will be based on the study of the comparison of the industrial districts of ceramics between Spain and Italy since it is a current theme.

This study will allow us to have a theoretical perspective of the districts. Thus, this work aims to study the development and evolution of the clusters. We also intend to give a more accurate definition of them, since there are various theories which have been studied over the years by several authors, researchers and critics of the subject, thus allowing us to see their transformation.

The concept was set up by Alfred Marshall's theory, which defines this concept as a stable community where a strong social community is located, since it considers that, if the employees are sufficiently motivated, this will have a series of positive advantages.

This theory began to develop in the mid-70s when the first investigations started to come up. As the years went by, there were different events that allowed several agglomerations of companies to face a series of changes. This way, the concept of district had to adjust and therefore we find the definition of clusters.

This work consists of 2 chapters. The first chapter talks about the industrial district in which we find its definition, as well as the definition of competition, its internationalization and its innovation.

In the second chapter, we find the mail study of the work, in which a comparison of Spain and Italy is made, by analyzing the antecedents of each country. A brief reflection of a comparison of Castellon and Emilia Romagna will be also conducted. To conclude, an analysis of the situation of the ceramic sector in the countries previously mentioned is performed.

2. CHAPTER 1: Theoretical Framework.

2.1. Industrial District. Industrial Cluster

2.1.1. Definition.

The theory of the industrial district was firstly claimed around the year 1870 in some Marshallian manuscripts, when the firsts statements appear in which it was observed certain position, different from the one which had been predominant among the economists until then. They had considered that the district which was < Factory System> with concentration in all the productive operations of a certain place and a high degree of vertical integration, would be systematically superior to the methods of production more dispersed in the territory and less integrated (1).

Therefore, the starting point of the concept of industrial district was conducted by the neoclassical economist Alfred Marshall, who discussed such concept and its characteristics in his work "The Principles of the Economy" (1890). Thus, the industrial districts were identified as concentrations of specialized areas in some specific locality, generating advantages for the located companies, under the concept of externalities, which are external for each company but endogenous for the region in which such groups of companies are located.

Marshall completes the definition with several specifications which enlarge the concept of district. For instance, the concept of "industrial environment", which linked to those of "mutual trust and knowledge" supports the generation of the competitions which are needed by the industry and fosters the innovation and the expansion among the small and medium-sized enterprises of the district.

According to Marshall, an industrial district involves "great advantages since it counts on a constant work market". Thus, the district grows at the same time the population of qualified and specialized employees does. This population of workers provides a benefit to the district. Likewise, the location eases the growth of the suppliers, obtaining a cost efficiency thanks to some extreme social division of the work.

PROCESS MAP: INDUSTRIAL DISTRICT

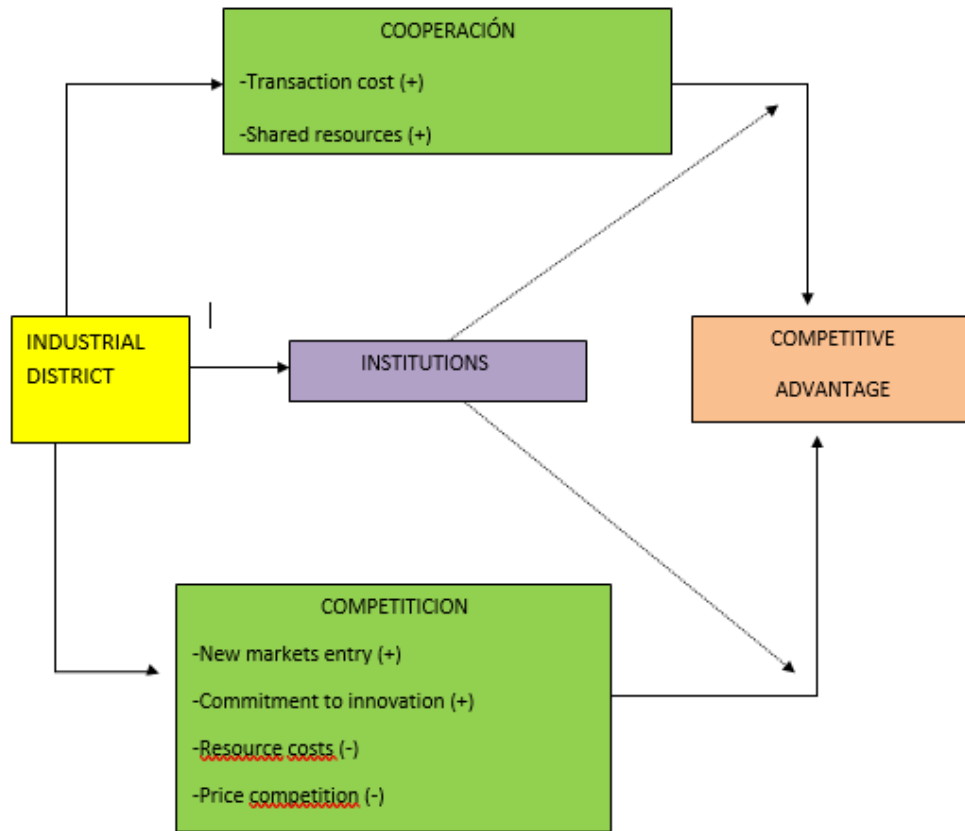


Image 1: Map of procedures of industrial districts.

Source: BARREIRO Fernández, José Manuel; LOSADA Pérez, Fernando (2004) "Investigaciones Europeas de Dirección y Economía de la Empresa". Vol. 10, N°3, págs. 111-125.

Marshall claims that inside the district:

- The individuals pass from one company to another easily, so the entrepreneurs and employees coexist in the same community, obtaining a profit from several "industrial secrets" which can be found in the area. Thus, there is an industrial environment.
- The workers are more linked to the district and the territory to which they belong, than to some specific company so the migration is minimum or even non-existent.

The industrial district is considered a stable community, where it exists a very strong local cultural identity which counts on some specific *industrial expertise*. It could be claimed that the industrial district is essentially some **socio-economic inter-weaving**, in which the social forces cooperate with the economies, and the unions of friendship

and the relationships of proximity are on the base of the diffusion and the knowledge.
(2)¹

All these statements which were developed by Marshall are summarized in the concept of "Clustering" which is explained and conducted by G. Becattini in his work "Reflections on Marshall Industrial Districts: Socioeconomic concept" (1989).

This way, Becattini, parting from the first notes of Marshall, claims that in order to find an industrial district, the companies must participate and collaborate with the local population, their culture, and their values and social rules which are adapted by some industrialization process scratch (1).

Thus, this author defines the industrial district as "some socio-territorial identity characterized by the active presence, inside a certain area, naturally and historically determined, of a community of people and of a population of industrial companies". (1)

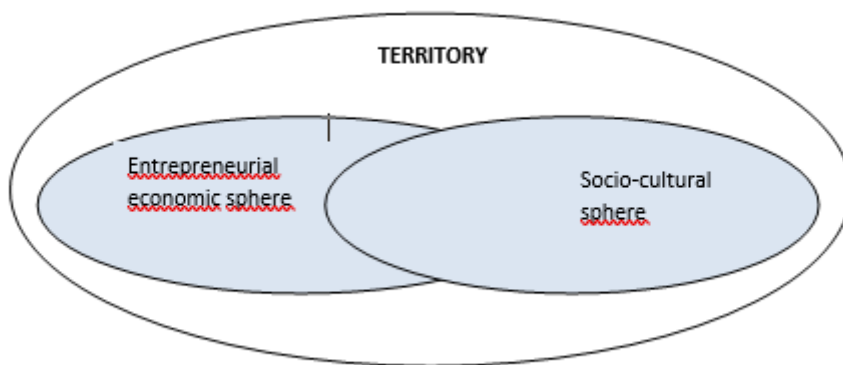


Image 2. Source: The industrial districts: models of local economic development which fosters the social capital. (CAI)

The district is considered a social and economic group although there are certain inter-relationships between the social, the political and the economic spheres (Image1). The functioning of each of the components of this sphere is given by the organization of the remaining ones.

On the other hand, one of the characteristics which distinguishes the different districts is the cooperation, given that throughout the cooperation the cost of the operations decreases by means of introducing economic benefits which ease the flexibility and the innovation

¹ Corteso, A.-Alberti, F.-Salvato C.: "Le piccole imprese: struttura, gestione, percorsi evolutivi". Carocci editore 2004, p.165

Moreover, Becattini considers that there are some features of the concept of district that cannot be reached by analyzing the traditional economy. Thus, some other tools are necessary to capture the nature of the concept.

All the facts previously mentioned were the ones which allowed determined areas around the world, with agglomerations of small companies, to have a favorable development when confronting potential changes, apart from confronting big corporations or even multinational companies. Thus, the concept of district had to get adapted to some point of view with more entrepreneurial content. We find it in the definition of Cluster which was detailed by Michael Porter (1990).

There are several aspects which are between Porter's *Cluster* and Bucatini's industrial district, which will be explained hereafter.

Porter explains from his perspective the competitive advantages of the clusters, by means of his sample <<Porter's diamond >> in which he describes four aspects in the business dimension, which are: the factors, the industrial structure and its interrelationships, the demand and the situation of the industries. The most important claim of all is that the companies do not perform their activities in a solitary environment, but they are aware of the existence of a larger environment. Moreover, the most important are the relative industries or the industries of support. This way, we find on the one hand the horizontal clusters, which are areas in which their products can share the same market in the several types of a final product and they can use the force of work, natural resources and common technologies, while on the other hand, we have the vertical Clusters, which consist of some connectivity between the sellers and the buyers.

From the perspective of Becattini, it has been previously mentioned that he defines it as some socio-territorial identity characterized by the active presence, in a certain limited area, naturally and historically determined, of a population of people and a population of industrial companies.

Behind the ideas that we have just observed, the theory of Porter is considered more modern, and more in accordance to the changes that have taken place through the years. However, the Italian and the Spanish industries consider that Becattini is the one who gets closer to the ideas or realities in which they live.

To sum up, we find authors such as Carbonara, Gionnaoccarto and Pontrandolfo (2002) who offer a complete definition of the concept of district, considering it as a

system of local production characterized by a group of small and medium companies integrated by means of a net of relationships between those companies, located at certain economic, social and cultural sphere, and with a high degree of expertise in one or more phases of the production process.

From these definitions we reach the conclusion that the industrial district is an economic system, which is made by a group of companies specialized in some industry in the same locality and by a community of people who dwell in this collectivity (Dei Ottani, 2006).

This way we can say that “A Cluster is a dense group of companies and connected institutions, which all belong to a specific field, united by common features and complementary to each other. According to their geographic dimension, a cluster may be urban, regional, national or even supranational”.

The clusters have to do with the nature of the competition and the competitive advantage. Most of their integrants do not compete to each other, but they are located at different segments, which share needs and opportunities. It has different elements which are used in stages, and for that it is necessary to start by big companies or a concentration of companies. Hereafter, the elements of a Cluster will be detailed.

- **Competitiveness:** For the companies to be able to compete it is necessary that they can understand their opponent, that is to say, getting to know their opponent's way of working, analyzing their competitive advantage, strengthens, weaknesses.
- **Geographic Area:** The cultural, geographical and institutional proximity makes the access easy. Thus, the closer they are, the more information they get, and the incentives are higher.
- **Innovation:** This is a key aspect to strength the clusters. The chance of innovating can be appreciated in the influence of the interactions and exchanges of knowledge and technological capacities, which will lead to an increase of the competitiveness of the cluster over time.
- **Structures of support:** The development of the cluster is not immediate, but it usually comes up on a spontaneous way. This can lead to failure or even success.
- **Human Resources:** It is important to count on qualified personnel, since it will be an essential element in the innovation process. The activities, tasks and procedures of the employees have a key role in the

competitive advantage, given that they are the ones who allow the development of the skills which are necessary to count on a proper work environment.

- **Integration:** The affiliation to unions, chambers or even the establishment of boundaries with big companies, allows the industry to grow at the same time the companies do, managing like that to increase the benefits.
- **Connection between companies:** The formation of new companies is important since it can give the chance to find new suppliers within the cluster. This way, the risk decreases and there are more opportunities of getting into the market.

There are some impediments which do not allow the clusters to develop properly. Some of them are due to the introduction of new companies within the area, which sometimes leads to the disestablishment of what had been previously established. We also find some obstacles which impede the development of the cluster, such as the reduction of the number of investigators and scientists. This is since some people prefer to work in big companies instead of laboratories. Another factor is the relocation of industries in other regions there are some regions in which there is qualified manpower for a lower price, but the problem is the lack of investors. On the other hand, we find some local companies with a lack of implication in projects involving clusters, because they do not have into consideration this kind of companies for any kind of project they may perform. Therefore, they consider that they are external to the sphere of political support and collaborative projects.

Despite the clusters find obstacles to complete their development, they have diverse features to succeed, such as the cooperation, which is a key factor to succeed regarding innovation. This has been fostered thanks to the working nets. Another key factor is the strong association and a clear leadership.

2.1.2. Evolution of the districts.

At the end of the seventies, after the recovery of the Marshallian theories, the concept of district has been getting consolidated as an alternative model of territorial development, which is adaptable to the changes which are being developed by the surrounding. Thus, economists and even demographers have remarked that the increases in the productivity can be obtained from the concentration in the territory of companies in various parts of the process of production. ²

Theoretically, the literature written by different Italian authors, headed by Becattini, has updated and contributed to the diffusion of the concept of industrial district. Thus, a different model of industrial concept has been set, which is characterized by the existence of a manufacturer tradition which can be linked, from a territorial point of view, to some cultural system and of social traditions.

This way, the model of industrial district analyses the conditions which are necessary to be able to identify an agglomeration of small companies. Thus, the development of different methodologies, which on the one hand combines quantitative and qualitative criteria, allows the identification of industrial districts in countries such as Spain or Italy.

There are different works which allow to claim that the industrial agglomerations which are identified as districts are currently subject to a process of adjustment, restructuring, or we could even say failure or deterioration. It is true that the change and the readjustment generated are due to the natural development of the districts (Asheim,2000), in which they are more specialists and at the same time the model is submitted to increasing pressures because of the globalization, the relocation of the economic activity plus a more important concentration of flows of production and technology.

Likewise, these works openly refute the adaptation of the traditional Marshallian concept of industrial district to be able to integrate the complexity of a more globalized world which is characterized by the speed with which the changes in the demand and the technology take place.

Approximately at the beginning of the nineties, authors like Amins and Robin (1990) addressed the critique of the industrial district as a model of industrial organization. Nevertheless, it is thought that the model of industrial district is a proper framework to explain the processes of change which have been taking place in the traditional areas.

² Scott and Storper, 2003

This way this section is focused on two questions of different nature but linked at the same time both to the impact of the changes generated in the economies. On the one hand, we find the factors that may make the restructuration to have results as a process of permanent and structural deterioration. On the other hand, the responses which may be offered from the districts.

The introduction of most complex technologies, with a high scientist level, questions the traditional model of innovation based on the cooperation and the incremental solution of the problems (Amin, 1999). While the technologies get more complex, the leader companies keep their own equipment I+D+i or even look for external specialists. It is difficult to include the most complex technologies in the productivity of the district, with regard to the remaining companies, which due to their smaller size, do not count on the “capacity of absorption” to be able to introduce the knowledge previously mentioned.

The loss of dynamism in the institutional system of the district may generate a gradual deterioration of the social relationships and cooperation within the district. These relationships may be replaced by mechanisms based on the competition, in which the territorial factor is no longer considered an influential factor. This process can be called de-agglomeration of the relationships or “disembeddedness”, which supposes “... a change to a bigger competition that gradually erases the precedent boundaries of solidarity or leads again to a minor linkage of the entrepreneurs to certain area as a result of focusing their activity on those aspects which are exclusively financial”.³

Therefore, the inner risk is the rupture of the territory as an element of cohesion of the social relationships, either by means of a very strong process of concentration of the production in a limited number of companies or by the massive entrance of capital. Bellini points that the process of globalization has led to the loss of representation of the local institutions, which made the structural basis of the district.

Other works have studied the way in which the process of global economic relocation may configure the chain of value of the district by modifying the vertical and horizontal relationships among the companies of the union, as well as the existing hierarchy. Camuffo in 2003, conducted a study in which the consequences that have taken place due to the relocation of the area were explained. A limited number of leader companies followed a strategy of internal growth and vertical integration. This dynamic may seem a return to the “Fordism”, although it is indeed a new phase of evolution of the District

³ Barabel (2007,598)

by which the companies evolve towards a more complex way of organization and at the same time keep the same system of values, their cultural identity and the entrepreneurial style of the District.⁴

Besides, there are leader companies which prefer to focus on the strategies of growth in the short term, in which we find the exploitation of the local resources and the capacities and knowledge of the districts, which will weaken the relationships among the companies and the agglomerations and the multiple possibilities of growth.

From a qualitative perspective and regarding the evolution in the latest years of the group of Industrial District of "Third Italy", we identify three processes of relocation:

- Fusions, acquisitions and formation of big groups of companies vertically integrated.
- Partial or total relocation of the production to regions and countries with cheaper manpower.
- Replacement of the Italian manpower by immigrants from countries not belonging to the European Union.

To conclude, we can claim that there are no reasons to state that the Industrial Districts are going to have just one trajectory, to confront the process of relocation originated by the economic globalization. The strategies that may be adopted will depend on several factors such as the evolution of the technology, the specialization per sectors within each territory, their institutions and the group of elements which make the social capital of the District.

⁴ Camuffo, 2003:398)

2.1.3. Competition.

For many years, different analysis of the competition has been performed. Traditionally, it has been considered that the competitor companies compete just against each other. This way, the latest investigations are focused on the study of the nets and the strategic alliances. This analysis has provided a new view of the different relationships that may exist among the companies which share the same environment of competition.

Bengtsson and Kock (1999) claim that there are four kinds of relationships that may be developed among competitors, depending on the interaction of the agents involved in the environment of the industry, in which we find competition, coexistence, cooperation and coo petition.

- *Competition:* The competition is interpreted as an individual behavior of the companies towards other companies that work in the same market. The actions that are performed to keep a certain position within the market are conflictive, since the interests cannot be fulfilled. When the interactions are based on rivalry, there are no economic exchanges, but there are exchanges of information and social activities.
- *Coexistence:* Some competitors, in different situations, do not make any effort to interact with the others. In that kind of situations, the competitors are aware of the situation of the remaining companies and even of the position in which they are, but they do not challenge them. This way, these companies are complementary, with very defined niches to conduct their operations. Nevertheless, these situations are not permanent, but they change when the position of certain potential competitors comes into conflict.
- *Cooperation:* In this kind of relationships it is shown that there is some shared interest, with the aim of working together towards a common target. The exchanges that are performed among the competitors are usually legal, economic, of information, of knowledge or even social. These kinds of arrangements may have a formal character such as, for example, the strategic alliances, or informal, with its base on the common trust and the shared interest., Even though they have a common objective, there may appear little conflicts and disagreements among the participants.

- *Coo petition*: In this kind of relationship the companies interact following two patterns: the cooperation and the competition. This way, firstly the companies will gain access to external resources, such as the know-how or financial fund. On the other hand, they are obliged to generate a competitive advantage with respect to the others.

Therefore, we consider that the competitive and cooperative behaviors may influence either positively or negatively in the companies' general interest, depending on the context in which they may be.

Several authors consider that it is necessary the presence of private and public institutions, to allow the formation and permanence within a social and economic environment in which the constructive relationships of cooperation and competition prevail over the destructive ones.

This way, the competition is understood as a dynamic reality, based on the innovation and the search of different strategies with respect to other companies, and this characteristic is considered a feature of the companies, through which they ensure their presence in the market and increase their participation in their rivalry towards other companies.

When analyzing the factors which have an influence in the competitiveness among companies, the macroeconomic, sectoral and intra-managerial variables are taken into account. This group of factors influence the consecution of sustainable competitive advantages for the companies of a certain industrial district. This way it can be observed that, due to the high rivalry among the districts, some companies find themselves having to make business in the external markets with the target of obtaining a higher efficiency.

The companies which work in the external markets can see that the chances of succeeding are high. This is because these companies have already participated in some environment of strong rivalry, as it usually happens in most of the industrial districts.

As it has been previously mentioned, the companies which are located within the industrial district are submitted to an increase of the rivalry among them, due to their geographic position, which gives them the possibility to detect the changes in their technology, their products, their marketing techniques and the tactics of their competitors. This factor is considered an incentive, for the companies to have a higher

level of commitment to the innovative activities, given that this is their advantage, with which they can face different competitive challenges.

In 1990 Porter remarks that there is not a unique definition of competitiveness, given that as it has been previously mentioned, it has been studied by different authors.

According to Cuervo (1993) there are three levels of study of the competitiveness in the companies: the general frame, the industrial sector and the company itself.

It means that the competitiveness of the company is determined by some external variables countrywide and sector-wide, and later by the performance of the company itself in the process of construction of resources and capacities. The final explanation of the competitive and sustainable advantages and the results of every company is the heterogeneity of the companies.

In the general economic frame, we find three perspectives:

- The first perspective links the competitiveness to the results which are registered by an economy in their external trade. This way, it means that the competitiveness is the capacity of the country to confront the competition worldwide. Moreover, it is observed the capacity of exporting to external markets, expressing results through their commercial efficiency.
- The second perspective has to do with the concepts which connect the competitiveness with the contribution of the external trade to the growth and the general welfare. It is important to remark that it is not the growth itself which intends to gain the competitiveness, but the contribution of the external trade to objectives of growth and welfare.
- The third perspective connects the competitiveness with the levels of efficiency and productivity within an economy, and elements of productivity, efficiency and profitability are considered as means to reach an improvement of the life-standard and the social welfare.

Regarding the industrial competitiveness, Markusen (1992) states that an industry is competitive when:

- The total production of the factors is equivalent or superior to the total production of its competitors.
- If the unit costs are equivalent or inferior to those of its competitors.

The analysis of the concepts regarding the competitiveness of the companies is based on these key elements:

- *The productivity*, which allows offering products with prices inferior to the prices of the competitors.
- *The quality* which distinguishes favorably the assets produced by a company with respect to the others.
- *The flexibility*, which makes possible for a company to get quickly adapted to the needs of the market, in volume as well as with regard to the characteristics of presentation of the goods produced.
- *Innovation*: It constitutes a central element regarding the competitiveness, either to have markets or to introduce products or services, to boost the productivity or compete with base on the prices of the market.

To sum up, it can be claimed that the international competitiveness at enterprise, region or country level, is seen as a result of the interactions of those four levels of social organization. Particularly, it is remarkable the importance of the existing institutions meso-level: "It is there where the advantages are generated and the managing and the national profiles that are the base of the competitive advantages which are difficult to imitate by the competitors".⁵

2.1.4. Internationalization.

The internationalization of the economy and the strategy of internationalization are two key aspects linked to the competitive environment of the district companies. Currently there are different definitions of the concept of "internationalization".

- It is considered a process by which the companies increase their knowledge on the importance that the commercial transactions have over their future, as well as the establishment and direction of the transactions towards other countries (Beasmish, 1990)
- The group of operations which permits the establishment of boundaries more or less stable between the company and the international markets through a process of growth, implication and international projection (Rialp, 1999)
- A process in which the companies increase their implication in the international trade activities (Fletcher, 2001)

⁵ Messner (1996)

It is important to understand that the internationalization is not just a question that affects the companies. Of course, the companies have a very important role in the integration of some economy in the new international distribution of the production and the work. We must understand that it is a matter which affects the group of systems which have an influence in the development of the economy.

It has been confirmed that the most internationalized companies are the ones which are bearing the crisis. They consist of a wide net of small companies settled and consolidated in the international market. After several studies it has been confirmed that there is a strong connection between the size, the innovation and even the internationalization. The size is a principal factor in all the areas and the activities.

The changes in the international context modify the competitive environment in which the companies perform their development and they make the companies redefine their competitive position. With the crisis it is observed that there is a process of entrepreneurial transformation in a way which makes some companies disappear and others get absorbed or form unions among them. There are some cases of companies which used to be leader in their market 20 years ago and nowadays they are not leaders any more.

Currently, the globalization does not affect just the production or the innovation but instead, according to the words of Cristina Chaminade (2012): "For many decades, the multinational companies have located production sites in underdeveloped countries to make a profit from the low costs, access to markets or even legislations".

2.1.5. Innovation.

The term innovation is referred to a new way of conducting an activity. Benoit Godin expresses in his statements that the innovation has had different changes through history until it has become what we currently know by innovation.

From the economic point of view, it has to be taken into account a little difference between invention and innovation. Thus, the invention is the first appearance of an idea for a new product, while the innovation is the first attempt to implement it physically.⁶

Sometimes, invention and innovation are tightly connected, sometimes it is even difficult to distinguish them, although in some cases the difference between one and the other is noticeable. Another difference between these two concepts is the agent responsible for them: the invention may take place anywhere, while the innovation takes place mainly in the companies, which are the ones that implement and market them the inventions.

In order to be able to make an invention become an innovation, it is necessary to combine in the company several types of knowledge, skills and resources. Therefore, it is clear that the role of the innovator is different from the role of the inventor.

The innovation as an economic concept was introduced by the economist Joseph Schumpeter (1883-1950) and within this concept it is important to remark that the innovation leads the economic development through a dynamic process in which the new technologies replace the old ones, a process called "Creative Destruction"⁷

From Schumpeter's point of view, the economic development must be seen as a qualitative process of change, addressed by the innovation, which takes place through history. This way, the argument of this author consists of explaining that, if a company belonging to certain area, introduces an important innovation, it will be rewarded with a high profit rate. This action works as a signal for other companies, which will enter massively as long as their conditions make it feasible, and will find themselves in the same situation, with the hope of sharing the profits.

Moreover, the imitators have much more chances of succeeding if they, apart from imitating, introduce improvements to the original version, becoming innovators themselves.

⁶Fagerberg, 2006 p.4, Swan 2009 p.25)

⁷Schumpeter, 1942 [1988] pp. 119-124)

It is considered a natural process, since the important innovations tend to ease or induce other innovations in the same area or some other related areas. This way, the diffusion of the innovation becomes a creative process, in which an important innovation indicates the way for the subsequent group of innovations, which is different from the passive and merely adaptive process assumed in the literature on the diffusion of innovations.

It is important to remark the wide conception of the innovation which is derived from Schumpeter, who distinguishes five types of innovation in order to make visible the introduction in the market of new proposals conducted by the entrepreneurs:

- New products.
- New production procedures (new technologies)
- New markets.
- New organizational ways.
- Use of new inputs.

From the point of view of the literature, and from the contribution that Schumpeter made to the concept of innovation, it is worth remarking two phases of analysis. One of his first works is known under the name “Schumpeter Mark I”. In this work he focused on the single entrepreneurs. Later, in other work called “Schumpeter Mark II”, he focused on the great importance of the innovative capacity of the big companies. (Fagerberg 2006 p.6)

The influence of Schumpeter over the literature devoted to the innovation can be observed in the most recent definitions of innovation. This way, for the investigator Giovanni Dosi the innovation “is the search and the discovery, experimentation, development, imitation and adoption of new products, new productive procedures and new ways of organization” (***Dosi 1988 p.222***)

The previous definition has been adapted at international level, on a way in which the OECD (Organization for the Cooperation and the Economic Development) defines it as follows:

“An innovation is the implementation of new service or a meaningfully improved product (either physical or a service), process, new marketing method, or a new managerial product in the work organization or the external relationships.” (OECD 2005 p.46)

Regarding this definition it is important to remark that it is considered that every new product or service or process which is started up by a company is considered an innovation. Even though there may be other companies with similar products in the market, for the company it is something new. Moreover, it is thought that a company can innovate by acquiring new machinery or computer programs allowing them to introduce changes in the production.

3. CHAPTER 2: STUDY I. COMPARISON ITALY-SPAIN

3.1. General characteristics.

3.1.1 Precedents in Italy.

During the postwar period, the phase of the industrialization was mainly characterized by the consolidation of the big industrial plants. Around the years between 1951 and 1981, the participation in industrial companies with less than 100 employees grew to the 60% in the structure of the employment. However, the companies with less than 50 employees had a growth which made around the 65% of the total growth of the industry. The growth of the small and medium Italian enterprises permits the establishment of a typology of firms (Brusco,1990)

- The first years after the Second World War, the **traditional artisans** were formed. They assisted the local markets. These enterprises were characterized by managing the latest methods of production, in which they used very intensive technologies in manpower and low levels of salary and productivity. The equipment they used was rudimentary, simple-kind and multipurpose. They were firms relatively inefficient, which were located in areas of the centre and the south of the country.

- **Dependent subcontractors**, they are these producers of part and pieces for bigger companies. The strategy of decentralization and productive disintegration conducted by big companies generated a specialized market. These firms were founded from employees who had been previously working in bigger enterprises. They presented an acceptable level of technology and equipment. Their production was addressed to the national market or the external market. On the other hand, the salaries and the global work conditions were very low, and they made visible the existence of

a segmented work market, not territorially but with regard to the dimension of the firm.

- ***Small and Medium Companies and Industrial Districts:*** each of the Italian clusters coincides with small urban areas. They are usually predominant the particular policies, which are the result of an ideological matrix in which their background started at the beginning of the century. This ideological matrix is made by a system of rules and values, which are led through the general policies of the community and have an influence in the measures of assistance to the small companies assumed by local governments.

Italy has been a pioneer country in the identification and study of the Marshallian industrial districts. This way several methodologies have been used for the identification of the industrial districts:

- 1) The methodology Sforzi-ISTAT (1987;1990;1996;1997;2005y20016), that in its useful application identifies 156 districts.
- 2) The 160 districts identified by the regions with base on the application and the adaptation of several laws (IPI,2005)
- 3) The 65 districts of *Il Sole 24 Ore* (1992)
- 4) The 100 districts of *Il libro della piccola impresa* (1995)
- 5) The 84 districts of the (1997)
- 6) The 110 districts of the Club Distretti (2005)
- 7) The 52 districts of the Censis (2001)
- 8) The southern districts of the Made in Italy (viesti,2000)
- 9) The **multi-variant** technology of Cannari e Signorini (2000)
- 10) The 223 districts of the Fondazione Edison (2004), adding the districts of the big company to those of the ISTAT (1997)
- 11) The proposal of Brusco e Paba (1997)
- 12) The 148 of Iuzzolini´ algorithm (2003)

The most remarkable methodology, with more continuity and evolution through time, has been the methodology Sforzi (1987 y 1990) and Sforzi-ISTAT (1997 y 2006). This methodology faces two fundamental questions for the identification of the industrial districts: on the one hand, their definition is a system of localities which interact. This suggests the use of the local systems of work as a territorial unity basic for their identification. On the other hand, the identification of the industrial district from the socioeconomic characteristics which distinguish it from the rest of local work systems.

From the nineties, period which coincides with the boom of the globalization and with the shortening of the distances between the market product of the ICT (Technologies of the information and the communication), the Italian industrial districts have face new competitors, which have an inferior salary cost. This has led to the fact that many companies have relocated part of their production and thus got more benefits. These strategies have been progressively interrupted by the relationships among local companies and the diffusion of knowledge, affecting this way the consummate circle of cooperation so characteristic of the model in its greatest years. This situation has weaken little by little the productive capacity of the area, reducing the number of companies in the sectors of the *made in Italy*.

Characteristics. Italian Industrial Districts.

According to Venacio and Becattini, among other authors, the main characteristics of the Italian districts are the following:

1. **A limited territorial system:** The district is born and grows within a delimited territory, essential to enjoy its advantages. The district is not a closed community or a static or isolated system, given that for its functioning the exchanges with the external world are necessary.

“Nowadays is the increasing net of relationships with companies out of the district what imposes an interpretation necessarily flexible of the model of local belonging: the productive decentralization and the impact of the ICT (Information & Communication Technology) introduce the possibility of developing relationships beyond the geographical proximity (Venacio Leandro, 2007,32)

2. **A community of people** is the active participation of a community with an homogeneous system of values, mainly connected with the work and activity ethics, the importance of the family and the reciprocity of the change.

According to Marshall, the reunification of the workers of a same locality involves the fact of belonging to the same cultural environment, to an atmosphere characterized by the values, languages, meanings and rules implicit to the common behavior. For the economic efficiency of the organizational model the

neighbor companies have to be part, not of any social context, but of one made by a strong reciprocal cooperation.

3. ***A population of specialized small and medium companies:*** the district is composed by a wide population of small and medium industries which are specialized in a certain productive process, related to the area to which they have specialized.

Inside the industrial district of the Medium and Small Enterprises they specialize in one of the industrial phases, which generates a horizontal collaboration, in which they can be observed different forms of vertical production. We can claim that an agglomeration of companies which interact in the same territorial area, becomes a district when it is checked together with the main production of goods of the sector plus the production of machines and tools of the same sector.

“The nature of this evolution is the confirmation of the technologic innovation in the territory. When in some industrial district, not just the companies get related among them creating a highly functional chain, but they also count on some companies specialized in the production of machinery for the same production of the goods of the district. It is created a mechanism of technologic and continuous updating, endogenous, and that generates an increase in the productivity beyond the statistical measures “(Ligabue, Vetturini, Venacio, 2007,32).

4. ***The division of the work and the quality of the human resources:*** the division of the work represents a characteristic of the district. Due to that, the companies of the districts are able to access a work market characterized by a qualified and vague professionalism, with high specific competitions which have been accumulated through a consolidated tradition.

It is very important to remark that the specialty of the workers focuses on the district in general, more than in one specialty in a company, generating a high flexibility in the local market.

5. ***The institutional members: Italy is the homeland of the exasperated individualism, creative, disorganized and a little anarchic.*** However, it is also the homeland of the big and efficient social organizations. These are the basis of

the transformation of the agglomeration of small and medium companies in the industrial district.

It consists of a contribution which may go from the distribution of services for the infrastructure, to the realization of formative initiatives for the managing of entrepreneur projects, and that in each case it gets visible the commitment of the social interlocutors in the functioning of the district.

“Some of these institutions are probably the church, the family, the school and the local authorities such as the chamber of commerce and other public or private structures, political or economic. In that sense, the local banks deserve a special place, which have developed, overcoat in the past, in the shape of popular banks and “casse di risparmio”, a crucial role for the financial support of the small and medium Italian companies”. (Loredana, Ligabue, Vetturini, Venacio,2007 ,34)

6. ***The balance between competition and cooperation***, the model of district is distinguished by the peculiarity of the economic relationships that take place between the competition and the cooperation.

This characteristic of being constituted by a big number of specialized and regrouped companies, creates a particular relationship among the companies: if they are territorially, with numerous and quite small, for each individual phase in which the economic process is subdivided, the tendency will be to form a local market in which the companies offer or demand some particular good or a service which will compete to each other. This characteristic of being constituted by a large number of specialized and re-united companies, creates some particular linkage between the companies. If they are territorially united, for each individual phase in which the economic process is subdivided, there will be a tendency to form a local market in which the companies offer or demand a particular product or service that will compete to each other.

The cooperation fosters the district dynamism, the initiatives of starting new companies or implementing innovative processes which allow the district not to get stuck.

7. ***The undertaking of the districts***: the entrepreneurs assume particular behaviors due to the structural characteristics of the district, which have to motivate the individuals, emphasize their wish of self-fulfillment and make emerge the will of transferring capacities and interests, which are expected in the work activity.

8. ***The barriers when entering and leaving an industrial district.*** The barriers when entering the district and the presence of a collective identity have worked as a filter with respect to the outside, reducing the frequency of internal and external contamination. The companies of the district appear, develop and disappear without leaving the district.

3.1.2 Precedents in Spain.

In the mid-eighties, it was introduced in Spain the theory of the marshallian industrial district, even though the history of the clusters is much more recent. The origins of the clusters are established in the decade of the nineties, in the areas of machine-tool and the area of the appliances. The administrative decentralization followed the adoption of the Spanish Constitution and this led to the formation of the Autonomies, which meant the starting point of the economic development in their respective areas. In that period, the theories of the economic agglomerations, the systems of innovation and territorial development were getting positioned at international level as the theoretical supports of the new models of economic development.

The initial success of the pioneer experiences and the increasing importance that they started to have at international level have allowed this phenomenon to get extended through the Spanish geography.

As Professor Ybarra remarks, traditionally there have always been localities and cities specialized in certain productive activities, where the physical resources or the geostrategic factors have been evolving at the same time that the changes have taken place.

The transformation of the industrial districts into important entities for the Spanish economy, took place with the international opening of the Spanish economy, which was reached by the adhesion of Spain to the European Union in 1986. Before that period we can distinguish two periods: the first one took place when the basis of the proto-ID were established within a context of economic autarchy. This way, the protectionism was the key factor which allowed the appearance of the first proto-districts. The second period took place with the consolidation of some productive centers, but in a context of a gradual opening of the Spanish economy that started in 1959 with the Plan of stabilization of the Spanish economy to the international competitive context. It is worth remarking another important fact, which is the official recognition of the Spanish

territorial diversity and the political and administrative decentralization, which led to a potential beginning of industrial policies, adapted to different territorial realities.

We can identify three types of generations of the Industrial Districts in Spain (Ybarra 2009 p.513-4):

- The first generation consists of traditional industrial productive systems which spontaneously develop depending on the historical characteristics of the place where they begin.
- In the second generation, the SPL appear as a response to the dynamic of change which experienced the Spanish industry from the seventies.
- The third generation consists of the more advanced activities getting specialized.

The industrial districts have been evolving on a way in which their competitiveness was based at the beginning on the price and was favored by the least unitary labor cost respect the competition of the remaining European countries. This competitiveness was aimed to be reduced in the measure in which the economy opened to the international competition.

Ybarra groups the responses of the companies to the challenges of the globalization in three groups (Ybarra 2009 p.518). In the first group we find the responses which expounded their incapacity to get adapted and that led to the elimination of the job positions occupied by the employees less adapted to the new activities. The second group has responses opposite to the response of the first group, that is to say, they are focused on the innovation. The third group is the one which collects the responses based on the complete relocation or the relocation of some of the phases of the productive process. The problem of this kind of solutions is that the net of entrepreneurial, social, institutional and quotidian relationships take place in a district which cannot easily be transformed into an international structure.

The Spanish government, in order to confront such difficulties, started up in 2006 a new industrial policy that for the first time included a strategy to foster the actions of groups of innovative companies. This way, by means of these actions it is intended to promote the innovative dynamic, develop processes of change and expand experiences at the territory. With the implementation of such policies which are based on the capacity of innovation, the territory and the small companies are finally considered worthy.

We can claim that the sector was mainly concentrated at Castellon, due to the increase of the amount of companies and their growth in the latest years, being remarkable the fact that their success keys were the design and the quality. Currently it is a more consolidated cluster within the area of the Autonomous Community of Valencia, particularly in Castellon, area delimited to the north of Alcora and Borriol.

According to Budí (2008), in his study “The district of the Ceramic in Castellon” explains the following: a clear example of organization of the productive activity in the shape of industrial district. In its model we can observe all the quantitative aspects related to the geographical concentration of the activity, as well as those of qualitative character, which mention the group of relationships which are established among the integrants”.

Characteristics of the Spanish Districts

According to different investigations, we can find the following characteristics of the Spanish districts:

- **General results:**

According to the investigations of Boix y Galleto (2006a), in the year 2001 we can identify in Spain 205 working local systems (SLT) with characteristics of industrial district. This way, the industrial districts contain a 20% of the population, the occupation and the productive establishments in Spain.

- **Results per sector.**

The areas with a larger number of occupied of the industrial districts are those regarding home, textile and confection products, food industry ones and leather and footwear products.

- **Sub Specializations within the main industry.**

The sectoral aggregation of the ISTAT does not allow to identify in great detail the sub- specializations within the main industry. However, the census data do permit to specify them in detail with three digits.

- **Territorial distribution.**

The districts show a defined pattern of territorial distribution. Most of them are concentrated on four arches. The main one is concentrated from the north of

Cataluña to the South of Murcia. The second arch starts in the South of Cataluña and it continues to the Basque Country and the northwest of Castilla y León. The third holds from the south of Madrid to the south of Cordoba. And finally, the fourth arch is distributed around Pontevedra and La Coruña.

Some districts are identified outside these previously mentioned four arches, but the amount is inferior. Per Autonomous Communities, regarding the level of occupation, they are concentrated in the areas of Comunidad Valenciana and Cataluña.

3.2. Differences and Similarities between the Italian and the Spanish districts.

3.2.1 Differences between the districts of Spain and Italy.

Spain has a surface of 505.370 Km² and a population of 46.468.102 inhabitants according to the latest report of the National Institute of Statistics (INE) 2016, in which it is divided in 17 autonomous communities. The density of the population is of 92,19 inhabit/km². However, Italy has a surface of 301.340 Km² and a population of 60.666.000 inhabitants divided in 20 regions. The density of the population reaches the amount of 201 inhabit/km².

Depending on the value which the ID have over the total occupation in each sector, there are different comparable typologies (Table 1):

- a) Sectors in which the percentage of the occupation of the industrial districts over the total of their sector and the amount of districts is very similar between Spain and Italy.
- b) Sectors in which the percentage of the occupation of the industrial district is completely different.
- c) Sectors in which the Spanish industrial districts have a higher value than the Italian ones.
- d) Sectors in which the Italian industrial districts have a higher value than the Spanish ones.

CUADRO 6
COMPARACIÓN ESPAÑA (2001)-ITALIA (1996): NÚMERO DE DISTRITOS INDUSTRIALES, SU OCUPACIÓN MANUFACTURERA Y PORCENTAJE DE LA OCUPACION EN LA INDUSTRIA-DISTRITO SOBRE LA OCUPACIÓN EN MANUFACTURA DE LOS DISTRITOS INDUSTRIALES

Distritos	N.º distritos industriales		Ocupación en la industria-distrto en el DI		Ocupación manufacturera total del DI		% de la industria principal sobre la manufacturera del DI		% de los DI sobre el total nacional del sector	
	España	Italia	España	Italia	España	Italia	España	Italia	España	Italia
Textil y confección	53	69	85.151	280.936	221.984	733.514	38,4	38,3	31,5	39,4
Cuero y calzado	30	27	75.510	98.740	118.362	198.274	63,8	49,8	76,7	42,8
Industria alimentaria	52	17	59.315	27.492	181.599	109.528	32,7	25,1	15,7	6,3
Mueble, joyería, instr., juguete*	40	4	56.739	18.871	196.769	81.341	28,8	23,2	27,9	29,6
Productos para la casa**	37	39	53.530	125.669	106.117	377.384	50,4	33,3	21,9	27,8
Papel, edición y artes gráficas	4	6	45.773	4.208	305.314	17.534	15,0	24,0	19,7	1,6
Petroquímica	6	4	17.053	15.198	62.169	65.508	27,4	23,2	6,2	3,5
Metalurgia	5	1	8.731	692	69.344	2.354	12,6	29,4	11,2	0,7
Material de transporte	7	0	6.217	-	21.773	-	28,55	-	2,21	-
Industria mecánica	3	32	2.681	299.477	4.651	588.364	57,6	50,9	0,4	17,9
Otros (reciclaje)	0	0	0	0	0	0	0,0	0,0	0,0	0,0
TOTAL	237	199	410.700	871.694	1.288.082	2.173.801	31,88	40,1	14,9	20,1

* En el caso italiano no incluye el Mueble, que se asigna a Productos para la casa. ** En el caso italiano incluye el Mueble.
 FUENTE: Elaboración a partir de censos de 2001 y DIRCE (INE); Iuzzolino (2000).

With regard to the territorial distribution, we can observe in both countries very characteristic patterns of territorial concentration of the ID. Nevertheless, the Industrial Districts in Italy tend to get concentrated in the areas of the centre and the north, while in Spain it does not exist the duality north-south. In Spain, the ID make a figure with the shape of a number 8, horizontal with three queues which extend through Girona, Murcia and from Albacete to the centre of Andalucía, as well as we find a little group of ID in the coast of Galicia.

Another characteristic feature of both countries is the tendency to find clusters of ID of the same sector. This tendency can be due to three various reasons:

1. The local systems do not capture the totality of the districts (they are too small).
2. They are independent districts resulted from a historical specialization of the area.
3. They are polycentric districts (Becattini, 2004).

The methodology ISTAT (1996,1997) which has been used to identify the industrial districts in Spain and Italy, even though it has many advantages, it also counts on a series of limitations. This way we can identify:

- Establishment of arbitrary thresholds.
- The SLT have very different dimensions.
- The SLT do not coincide with any other units such as historic regions or metropolitan areas. This way, the functioning is correct, and the historic regions do not coincide with the limits in which the socio-economic processes take

place. On the other hand, the metropolitan areas may be polycentric, and they can be composed by different SLT.

- Several adjoining ID make clusters with the same specialization, which can be interpreted claiming that the true local work system is higher than the capture of the algorithm.

With regard to the algorithm to identify the SLT with characteristics of industrial districts, Brusco e Paba (1997) and Cannari E Signorini (2000) suggest different limitations:

- It contains elements of arbitrariness, such as the definition of big company from 250 occupied and that could be given as basis to limits or characteristics of each area.
- The measuring of the sectoral specialization depends on the definition of sector. This way, the criteria which have been used in Italy do not necessarily have concordance with Spain.
- The industrial district may have more than one specialization, so it could be the case that the manufacturer sector with the higher coefficient was not the one with more occupation within the district. Thus, once the industry has been identified, the next step is looking for more specialized alternatives.
- The functioning of the localization coefficient depending on the size of the enterprise, had to be modified to be applied in Spain.
- The limitations of the quantitative method with limited information to detect the nuances of the socio-economic structure of the local community. To explain this matter, we find the statements of Sforzi e Lorenzini (2002) suggesting an strategy in two phases: firstly, the quantitative methodology is used to identify the most potential industrial districts. Secondly, then it takes place some field research to validate the true industrial districts.

3.2.2. Similarities between the districts of Spain and Italy.

After having studied the Italian and the Spanish districts, we found several differences which we previously explained. Likewise, we found a series of similarities, such as the following:

- Due to the crisis we have been gone through, both countries had a decrease in their production and trade volume. Currently, this loss is little by little being recovered.
- Both districts are fragile and very vulnerable with the appearance of new competitions.
- The size of the companies is very similar.
- They count on a wide range of institutions such as entrepreneurial, professional, university or even research institutions.
- Both districts are addressed toward an international competition.
- They count on a high degree of geographic concentration.
- In both cases there is a high predominance of the Small and Medium companies.
- They count on a high degree of productive specialization.

3.2.3. Comparison between Castellon and Emilia Romagna.

The Spanish and the Italian ceramic industries have managed through time an important technological leadership, although some aspects of the manufacturing process are still related to the traditional culture and are derived from their origins.

A regional cluster is a group of companies located in some geographic proximity, that is to say, a geographical agglomeration of enterprises belonging to the same sector. We find this way that the main ceramic clusters are in Brazil, one in Santa Catarina and two in the state of Sao Paulo. In Portugal, in the area of Aveiro; in Spain, in the area Castellon, and to finish, in Italy we find them in the province of Emilia Romagna. However, over the past two years, their contribution to the world production barely represents the 30%. This is due to the fact that the industry in China has had a high increase.

In the cluster of Castellon, we find a good example of some organization of the productive activity in the form of an industrial district. This cluster is located on the

Mediterranean side and it is integrated by municipalities, where we find almost the totality of the tile factories in Spain.



In our comparison of the clusters in Castellón and Emilia Romagna, we can find several differences in the configuration of the structures of the chains of value in localizations or clusters, because of the dominant paradigm in each cluster and of the competitive strategies followed by the companies of the area.

While the Italian companies are usually more proactive regarding marketing and commercialization, the Spanish companies perform just the opposite, being more focused on the production. This is one of the reasons why they are constantly trying to reach a different competitive advantage, which can be appreciated in the prices that both countries have regarding exportations.

At the beginning of the chain of value, in the process of purchase of clay, atomization and preparation of the material, in the area of Castellon the process is articulated in a more disintegrated way. Thus, a higher efficiency is reached and this, together with the presence of clay in the area, leads to a series of competitive advantages. On the other hand, in the area of Emilia Romagna, the clay is imported from Turkey, Germany and Ukraine, and the process of atomization is usually conducted by the manufacturer. This way, the process is even more integrated, but it produces an increase of the global cost.

As for the product made, Italy usually produces some porcelain stoneware, more dependent on the sector of the machinery, while in Spain it is produced in a higher proportion the conventional tile, more dependent on the glazing process. On the other hand, Italy makes more pavements than linings, given that China is tending to produce porcelain stoneware, forcing the clusters of Castellon to continue producing clay tiles.

On the other hand, after the packaging and stocking processes, the logistic phase, in the case of Spain lays on the Italian transportation infrastructures. However, the Italian companies took a big step in the construction of the logistic platform Assocargo, to be able to optimize the entrance of clay and the exit of final products, even though in the cluster of Castellon it exists a process of assessment for the replication of a similar system.

The commercialization is a critical process. In the case of Castellon, most of the ceramic makers conduct it by means of the national market or via external nets of commercial distribution. They avoid the direct selling and for that reason there are just a few companies with their own commercialization nets and an inferior amount of shops of their own. Since they do not take care of neither the distribution net nor the final selling, sometimes the products are wrongly displayed, the technical characteristics are not properly emphasized and there is a lack of identifying brands. However, in Italy, they usually have their own distribution nets, at the same time that they count on different brands even for the same product and they make an intensive effort in order to improve the commercial matter.

Besides, we can observe that in the last phases of the value chain, there is a key difference. Castellon does not count on the link of the commercialization, that is to say, they have it but it is poorly developed and some leader companies are aware of the need of improving it.

Another segment for which the manufacturers of tiles compete in Castellon, is closer to the sector in which the manufacturers of China, Turkey or Brazil compete.

Firstly, we will talk about some distinguishing characteristics between Castellon and Emilia-Romagna.

The first difference we find has to do with the paradigm of cluster. In Castellon it is more aimed to the production, while in Italy they are addressed to the commercialization through the design, the image and the style. The competitive advantages are another characteristic. In the case of Castellon, they have a very good relation between quality and price. There is a big presence of clay in the area, they optimize the productive process. The glazes are world leaders, with a strong international investment. However, in Italy, they care a lot about the design and the brand image of the "Made in Italy". Their competitive advantage is aimed to the commercialization and their machinery is leader at world level.

The competitive advantages used by Italy have a big integration forward. They are internationalized, they have a big concentration and diversification of the brands and more than anything they care about being distinctive. On the contrary, Castellon has a strategy of competition in process managing and they are leaders in generic cost. Regarding the amount of family companies, in Castellon there are mainly small and medium companies that are usually smaller ones, while in Italy they have big groups and bigger family enterprises. The value chain if Italy is made by local machinery, Spanish glazing and local manufacturers, sale representatives. In the case of Castellon, we find Italian machinery, glazing and local manufacturers.

The product which is used in Italy is the white paste and they intend to address toward the total production of stoneware. Meanwhile, Castellon uses clay and tends to the production of pavement.

To conclude, we find the life cycle of the cluster, which has a growing phase and then phases of maturity and a tendency to slightly decrease the prices in the case of Castellon. In Italy, we find the maturity stage, with a slight decrease of the production linked to the increase of the value and the price

Secondly, we will talk about the conditioning factors. We find the employers' associations in which the ASCER (tile's manufacturers) ANNFEC (glazes) and ASEBEC (machinery) are the ones used in Castellon. It is worth pointing at the investigation centers in which they are located the Ceramic Institute of Technology, the

Association for the Ceramic Promotion and Design and the Ceramic and Glaze Institute. These associations are located in Spain. In Italy we have the Ceramic Centre of Bologna. To finish this section, we find the sponsor events in Castellon, which are the Cevisama fair (tiles), Qualicer (quality in the ceramic process) and in Italy we have the Cersaie fair (tiles).

Finally, we must mention their position with regard to the American market. Castellon has followers in the market of the USA. They are low and medium segments, apart from being leaders in Latin America. However, Italy is in the USA with medium and high segments. In the European market, Spain is leader in Portugal, United Kingdom and Ireland and has followers in the rest of Europe. Italy, meanwhile, is leader in Germany, France, Australia, Belgium and Luxemburg.

Overall, we observe little differences with regard to the institutional donations in both clusters, even being equipped with both private and public mechanisms enough to perform a good work when supporting the value chain.

On the other hand, the concentration and increase of the size of the Italian companies contributes to lose some collective action. Likewise, it is observed the different perspective that exists between the chemical orientation in Castellon due to the strength of the sector of frits and glazes with the development of a qualification of Engineering.

3.3. Situation of the ceramic sector in Spain and Italy.

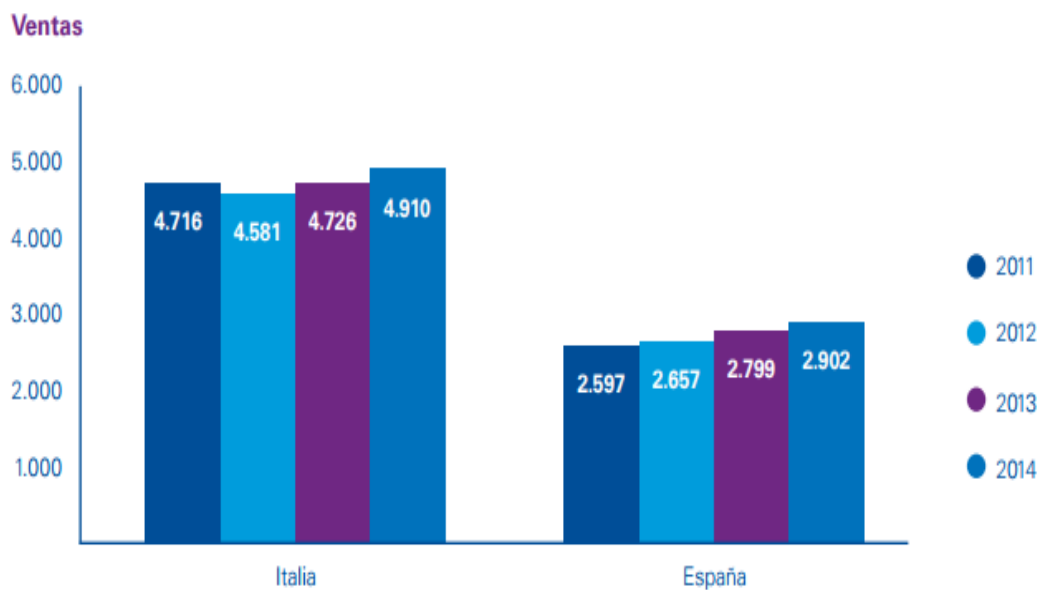
The tile world production in 2014 reached approximately the figure of 12.409 million of squared meters. Thus, it meant a growth of approximately a 4,2% with respect to the previous year.

Producción por país					
Pais	2012 (Mill.m2)	2013 (Mill.m2)	2014 (Mill.m2)	Producción Mundial en 2014 (%)	Variación 13/14 (%)
1. CHINA	5.200	5.700	6.000	48,4%	5,26%
2. BRASIL	866	871	903	7,3%	3,67%
3. INDIA	691	750	825	6,6%	10,00%
4. ESPAÑA	404	420	425	3,4%	1,19%
5. INDONESIA	360	390	420	3,4%	7,69%
6. IRAN	500	500	410	3,3%	-18,00%
7. ITALIA	367	363	382	3,1%	5,23%
8. VIETNAM	298	300	360	2,9%	20,00%
9. TURQUIA	280	340	315	2,5%	-7,35%
10. MEXICO	229	228	230	1,9%	0,88%
RESTO DEL MUNDO	1.971	2.051	2.139	17,2%	4,29%
TOTAL MUNDIAL	11.166	11.913	12.409	100	4,16%

Fuente: Ceramic World Review

To be able to perform the comparative of the current situation of the ceramic sector in Spain and Italy, we will proceed to analyze a series of factors.

Firstly, we find the sales of the ceramic sector in 2014, year when Spain had an invoicing of a 3,7% approximately with respect to the previous year. It was the first time when the national market inverted the downward trend and presented an increase of the invoicing of the 2,5% with regard to the previous year. Nonetheless, Italy presented a higher invoicing with regard to Spain, with a total of 3,9%. This increase is due to the increase of the exportations.



Fuente: Ascer y Assopiastrelle

Another important factor that must be remarked is the exportations, in which both industries have been characterized by a high range of exportation. Italy presented a quote of the 83,6%, which is a very meaningful figure at world level (Figure 1). With this range Italy stayed as the third exporter country in the world. The sales increase a 6.1% due to the increase of the sales in Germany, which is the main market to which the exportations are aimed. The average price of the sales in 2014 was 13,1 per square meter.

In the case of Spain, the exportation quote was around the 80,2%. Such increase has been remarked with respect to other countries, such as Argelia, the United Kingdom and the United States of America. The increase of the exportations was due to the increase of the sales in the countries previously mentioned. The average sales price was around 6,9 Euros.

Ventas totales (millones de euros)	ITALIA			ESPAÑA		
	2014	2013	Variación	2014	2013	Variación
Nacional	804	856	-6,1%	574	560	2,5%
Exportación	4.106	3.870	6,1%	2.328	2.239	4,0%
Total	4.910	4.726	3,9%	2.902	2.799	3,7%

Fuente: Ascer y Assopiastrelle

Another matter to consider in this comparison is the size of the societies according to their invoicing level. We can claim that the 47% of the societies of the Spanish group invoiced less than 50 million Euros, against the 5% of the societies of the Italian group. The average invoicing of the most important 21 enterprises of Italy came to 119,9 million. This same amount of companies positions Spain in 73,2 million Euros.

The size of the societies of the group analyzed according to their number of employees is another matter that we will take into account. It is worth remarking that the Spanish group has a 57% of small and medium companies which count with less than 250 employees, against the Italian companies which have more than 500 employees.

In 2014, the personnel expenses in the case of Spain got incremented in a 1,5% with respect to previous years. Besides, the number of employees presented a little increase of the 0,4%. In the case of the Italian enterprises, there was a total of 9.223 employees, and the aggregate number decreased a 5,3% with respect to the previous year, thus having a variation of the -0,7%.

To conclude, we will analyze the financial ratios and management indicators of the 21 Spanish and Italian enterprises. We will find the following ratios:

- **Working capital:** The working capital came to 343 million Euros in the Spanish companies, while in the case of the Italian ones it came to 743 million Euros. The positive working capital indicates a balanced financial structure.
- **Indebtedness:** this ratio decreased with respect to the previous year. In the case of Spain, it moved from a 1,18 in 2013 to a 1,03 in 2014. However, in the case of Italy this ratio increased moving from a 1,0 in 2013 to a 1,03 in 2014. Therefore, we can conclude that in both cases this ratio of indebtedness is in the minimum values.
- **Cash Flow:** there was an increase in both Spain and Italy, being more meaningful in the case of the Spanish companies. This way, in Spain the increase was due to the result of the societies, since the depreciation expense is slightly reduced. Nevertheless, the Italian companies derive from a combination of both. Just in one Spanish company and in two Italian companies we can find negative cash flows.
- **Economic profitability:** it is measured by means of a relation between the exploitation result and the total asset. In the Spanish companies there is a profitability of the 6,1% and 4,5% in the case of the Italian. The latter experienced an increase of 3,7 points with regard to previous years, mainly due

to an increase of the exploitation result and the total assets. In the case of the Spanish companies, they continue with the trend to increment which started in 2009.

- **Average Profitability:** this profitability was calculated as the percentage relation between the net income and the average net patrimony of the year. The average profitability in the Spanish companies came to a 9,1% while their Italian competitors reached a 6%.

4. CONCLUSIONS.

The execution of this work has meant the implementation of all the knowledge that I acquired throughout the study of the degree. Therefore, I have been able to develop a series of skills and capacities which I learned in every subject that has been made available for us.

This has been a very positive experience and I can even claim that it has been enriching, since while conducting this research work I have learned all those concepts which have been developed.

Firstly, it has been analyzed the evolution and development of the clusters, given that nowadays clusters are very much commented, due to the great importance they have for the companies. They need to know how to make groups to reach a series of advantages that they count on when belonging to a cluster.

We could say that the key factors to determine the future of the clusters are the competition and the innovation. These are reached by means of the fusion of the assets of the surroundings together with the inner resources of the company.

One of the main targets of this document was the exam of the key features of the Spanish and Italian industrial districts, as well as analyzing how they started. Each one started in a different period. Italy started to work in the concept in the years 50 to the years 80 and Spain started at the beginning of the eighties. There is an enormous difference that must be remarked and is that while the Italian districts are concentrated in the area of the centre and the north, in Spain there is a bigger duality, that is to say, they go from the north to the south. Despite these differences and some others which have been commented, it is important to point at their similarities. For instance, the economic crisis affected both. They went through a difficult time when there was a decrease in the production. Both industrial districts are very centralized geographically, and therefore it is investigated the area where more ceramic concentration can be found. We commented about Castellon and Emilia Romagna, in which we find differences and similarities as well. This way we can conclude that the Spanish ceramic industry is considered one of the most important in the world, competing at the same level Italy does as leader in the area.

Finally, we commented the current situation of the districts. In order to proceed with such analysis, we had to collect some data from previous years and obtaining results through these data. It is important to mention that currently some arrangements are taking place to, according to Acimac's words: "Offering all the professionals of the tile industry in Spain an exhaustive view of solutions to manufacture, optimize and valorize the production of completely innovative materials and with a very high extra value such as the big ceramic plates that, besides, are being increasingly required by the architecture market" (Annex 1).

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6. ANNEXES.

- ANNEXED 1: Noticia sobre el distrito cerámico.

Acimac y Asebec difunden innovaciones en grandes formatos

Las patronales de Italia y España convocan conjuntamente una jornada técnica abierta a todos los profesionales del sector

Daniel Llorens | Castelló | 14.05.2018 | 11:40

Acimac y Asebec, las asociaciones que agrupan, respectivamente, a los fabricantes de maquinaria para la industria cerámica de Italia y España unen sus fuerzas por primera vez y junta han programado una jornada técnica para empresarios y técnicos de la industria cerámica provincial. Las dos patronales han programado para el próximo 23 de mayo en la Cámara de Comercio de Castellón el simposio Nuevas tecnologías para la producción de baldosas en formato grande y tablas cerámicas. Una iniciativa en la que se cuenta con

la colaboración de la patronal azulejera española Ascer y la revista internacional Ceramic World Review, considerada como la publicación especializada en cerámica industrial más influyente a nivel mundial y con ediciones en varios idiomas.

La cita es el resultado del gran éxito obtenido el pasado mes de noviembre en el IX Meeting Anual Acimac que se celebró en Módena, el corazón del distrito de cerámica italiano, y ahora se traslada, por primera vez, al distrito cerámico de Castelló.

El objetivo de esta iniciativa es, según fuentes de Acimac, «ofrecer a todos los profesionales de la industria azulejera española una visión exhaustiva de soluciones para fabricar, optimizar y valorizar la producción de materiales completamente innovadores y con un altísimo valor añadido como son las grandes placas cerámicas que, además, son cada vez más requeridos por el mercado de la arquitectura».

Los temas serán introducidos por los presidentes de Acimac y Asebec, Paolo Sassi y Juan Vicente Bono, respectivamente. Después, antes de empezar el programa de exposiciones, hablará Juan Francisco Ramos, vicepresidente de Ascer.



Acimac y Asebec difunden innovaciones en grandes formatos

Contenido

El simposio, que estará conducido por la periodista castellanense Maria Padilla, responsable del área de comunicación del Instituto de Tecnología Cerámica (ITC), presentará sucesivamente informes técnicos de los más prestigiosos proveedores de equipos y materias primas tanto italianos como españoles con el propósito de «profundizar sobre los aspectos relacionados con el proceso general productivo de las superficies de grandes formatos, abarcando desde la preparación de soportes, hasta los procesos de acabado y tratamiento, dedicando una muy especial atención en el diseño y la estética de los productos», se subraya desde Acimac.

Por parte de la empresa Esmalglass-Itaca hablará Pablo Solá, quien ilustrará las últimas innovaciones en materiales para decoración digital de grandes formatos, entre ellos nuevos esmaltes y engobes con base agua.

Jose Miguel Monzó, de Grupo Torrecid, presentará la tecnología ECOink-CID para la decoración full digital en base agua, que ya es una realidad productiva en varios países.

System estará representada por Simone Frontini que expondrá las características de la tecnología System Lamina enfocada en la prensa sin molde Lamgea, que ya se utiliza con éxito en España.

Por parte de Sacmi intervendrá Andrea Bresciani, que se encargará de describir el proceso productivo de la línea continua para la producción de tablas, también ésta utilizada ya en diversas empresas cerámicas españolas

Emilio Benedetti y Roberto Bonucchi, de la firma LB, hablarán sobre las técnicas de preparación de materias primas y decorado en polvo.

EFI también participará con Carlos Carratalá, que profundizará sobre el proceso de decoración digital de grandes tablas.

la firma Integra, por su parte, dedicará su tiempo a hablar sobre las técnicas de depuración de los VOC (compuestos orgánicos volátiles) en salida de las plantas de cocción de grandes tablas.

Con especial énfasis en la estética final de las grandes tablas, Marco Ferrari, de Siti B&T Group, presentará su oferta completa de equipos, compuesta por la línea de prensado Supera®, impresoras digitales Projecta Engineering y líneas de acabado Ancora.

Mauro Pascarella, de BMR evidenciará el rol estratégico de los procesos de acabado (pulido, lapeado, rectificado y corte), capaces de conferir mayor valor añadido a las grandes superficies cerámicas.

Para completar el recorrido por todas las fases del proceso productivo, Laura Catalán Brenes, de la empresa Errece, planteará algunas soluciones para el embalaje de grandes formatos.

Intervención del ITC

Antes de dar la palabra al público para preguntas y debate, Raúl Moliner Salvador del Instituto de Tecnología Cerámica describirá los resultados de algunas investigaciones realizadas por ITC, que han conducido a verdaderas innovaciones en el campo del control automático en la etapa de prensado y de la medición de la densidad aparente de los polvos con utilización de rayos X.

El simposio se desarrollará entre las 8.50 y las 13.30 horas. La participación es gratuita y abierta a todos los profesionales de la cadena de producción de cerámica, así como a institutos y asociaciones relacionados con el sector cerámico castellanense.