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PhD Thesis

The transition process of industrial clusters in developing countries
A Comparative study of furniture clusters in Damietta and Brianza

Supervised by:
Prof . Gioacchino Garofoli

Prepared by:
Amr El Kilany

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Contents

Introduction

The industrial districts success in local economies of many developed countries encouraged the developing countries to benefit from the lessons learned of this experience and create a self sustained growth model, this can be supported by the presence of common and key components in many developing countries as small and medium firms clustering, artisan skills, informal and flexible work practices and structures of social cooperation (Garofoli 1989, 1996; Schmitz 1989; Kaplinsky 1991; Nadvi 1992; Scott and Garofoli, 2007).
Damietta furniture cluster northern Egypt is considered one of the successful clusters in Egypt that has achieved sustainable growth rates, through a gradual historical sedimentation of socio economic processes which shaped the development trajectories of the cluster. The cluster initially started as a craft based agglomeration of small and medium firms, then gradually with the emergence of export demand from gulf countries, it started to develop its production processes through blending traditional production tools with new technology, mainly flexible accumulation machines and production lines. Amin and Robins (1990) argued that the dynamics of growth in craft-based industrial districts are quite different from those in other examples of local agglomeration such as high-tech complexes (for example, silicon valley).

A different model in developed countries, which is Brianza furniture cluster in Italy, one of the oldest and leading industrial districts in Italy, the agglomeration of furniture firms which is mainly composed of small and medium enterprises (two third of them are artisan companies) has achieved high growth and export rates in the last 30 years. The core competence of the district is based on quality, design, innovation, and other non-price factors.
The objective of this research is to verify the common features and differences of industrial agglomerations of small and medium firms in developed and developing countries, using comparative analysis of factors of success and competitiveness in both clusters of Damietta and Brianza, analyzing dynamics of growth, trajectories of development, local institutions role, division of labor, inter firm cooperation. This could let to explore and individuate the obstacles hindering clusters in developing countries from a transition towards modern and knowledge based districts like those existing in developed countries.

In this context, the research will attempt to raise the question of whether there are opportunities for industrial clusters in developing countries towards transition to Marshallian industrial districts as in the developed countries, what are the key differences between the Marshallian industrial clusters of developed countries and industrial clusters in developing countries? How local governance of the cluster affects upgrading? Which are the instruments available for local actors to enhance the synergies and supporting services of the area? Which are the specific resources necessary to achieve the required change?

The following hypotheses will be examined during the study as follows:

Hypothesis:

Hypothesis1: There are common features between Marshallian industrial districts in developed countries and other clusters in developing countries.

Hypothesis2: The Growth of Damietta furniture district in Egypt is derived from SME's clustering and inter-firm informal networks and division of labor.

Hypothesis 3: The institutional set up and power asymmetries between local actors of Damietta value chain represent a significant obstacle towards upgrading the district.

Hypothesis 4: The catch up of large firms to the technological updates is a vital process to maintain economic growth in the district.

Methodology:

A quantitative and qualitative research method is conducted using an in depth interviews with 30 of different actors (large firms, small and medium-sized firms, workshops and local institutions) in Damietta using structured questionnaires tackling different subjects as factors of competitiveness, inter firm cooperation, internationalization, local institutions role, innovation, obstacles of business expansion and competitiveness, and proposed intervention, also interviews with about ten firms of Brianza furniture district was conducted to assist in the comparison and the benchmarking process.

The outline of the thesis will cover the following subjects. The first chapter begins with theoretical background of industrial districts and clusters, discussing the role of agglomeration in economic development including an overview of case studies of successful furniture industrial clusters in developed and developing countries.

Chapter two will discuss the economic structure and dynamics of Brianza Industrial cluster for furniture in Italy, covering the evolution and transformation phases of the cluster, the internationalization, learning and innovation process, services and competences necessary for development and competitiveness of local enterprises and challenges in the future.

Chapter three will discuss Damietta furniture cluster in Egypt and the stages of evolution of the cluster, causes of success and factors of competitiveness of the firms in Damietta, their strategies in the international markets and the learning process in the cluster, the institutional framework and local governance, collective actions, and the degree of coherence between economic policies and firms' strategies.

Chapter four will discuss the findings of the field survey undertaken, and the proposed policies of intervention in the cluster and local actors' role in upgrading

Chapter five will highlight the common features/similarities and differences between Brianza and Damietta firms' agglomerations, identifying lessons and good practices from Brianza case.

Chapter 1. Role of Industrial districts in economic development

1.1 The concept of industrial district (ID):

The concept of industrial district (ID) stem from the early writings of Alfred Marshall(1890), Marshall proved that the advantages of economies of scale which is achieved by large firms can be achieved also by a group of small-sized firms concentrated in an area, which are specialized in different phases of production and bringing division of labour and opportunities for labour productivity improvements.

The Marshallian industrial district model emphasizes the benefits deriving from economic and business links, socio-economic models of industrial districts have been developed, linking business relationships with social and institutional structures, the competitiveness of industrial districts is based on exploitation of a particular industrial atmosphere and easier exchange of goods (Marshall ,1890 : P.154-156).

The concept was reintroduced by the end of the seventies by the Scholars (Becattini 1979, Garofoli 1981, Brusco 1990), Becattini(1990) defines industrial districts as " a socio-territorial entity which is characterized by the active presence of both a community of people and a population of firms in one naturally and historically bounded area". Brusco (1990: P14) defines districts as a "cluster of firms producing something which is homogenous in one way or another positioning themselves differently in the market". Garofoli(1983) published the first book on industrial districts examining the industrial districts in Lombardy region in Italy, he elaborated the distribution of economic activities in different peripheral and rural regions from a territorial point of view, highlighting the role of small firms in diffusion of industrialization and stressing the importance of endogenous elements in this development model.

1.1.1 Main Features of the Industrial District

Garofoli (1983) identified three models of local development for SME's, a) local productive systems, b) specialization areas, c) system areas or industrial districts; He summarized the main features of these models as follows (Garofoli, 1989 and 1991):

- The existence of large number of firms producing the same product or related production inputs or machines needs to the release of the final product.
- High division of labor between local firms and dense inter and intra sector interdependencies.
- The volume of production of the product represents a significant portion of the national or international production.
- High specialization of production between firms, which enhances the accumulation of certain skills and competencies.
- The abundance of highly skilled labor, aware of production processes.
- High churn rate of labor force in the cluster.
- Efficient local information system which disseminate information and knowledge concerning all what is related to the industry, technology and its markets.
- SME's are dominating the local system not the Lead firms.
- Proximity between local actors facilitates the diffusion of knowledge and enhances technological improvement and efficiency of the system.

Becattini (1990; 2002) argues that industrial districts have certain characteristics and features:

- Interaction between the population of families and businesses in various ways within one natural and historically well-defined area and a strong merger between productive activities and the daily life of the district.
- The breakdown of businesses into different populations working on different phases of the production process (e.g. spinning, weaving, dyeing, finishing) organized in flexible teams often headed by a finished goods manufacturer named "impannatore" who coordinate the activities within the district and interacts with the external market, Production processes that can be carried out successfully in the district must have special features, such as the divisibility into phases, and the possibility of transporting the phase products through space and time.
- Continuous process of learning and utilization of knowledge in the industrial districts integrating “contextual knowledge” which can be socialized only through a long process of context and experience sharing and, with “codified knowledge” that makes it possible to transfer knowledge from one context to another.
- The existence of homogeneous values system in the local community, expressed in an ethic of work, family and reciprocity, supported by a system of institutions and rules (e.g. the family, the church, local

government, the local branches of political parties, the firm, associations) which spread these values all over the district.

- The existence of home workers and part-time and self employment creates sustainable and dynamic changes in labor market and a continuous reallocation of human resources of the district, when the worker moves from one firm to another, His specialization remains part of that "public good" which Marshall labels "industrial atmosphere".
- The coexistence between competition and cooperation in the district, firms improve its performance and position in the market and maintain strong ties with firms in different phases of production.
- The importance of the local credit system in the district, which is deeply linked with the district community and aware of the district needs and requirements.

Becattini (2003) summarized the previous characteristics of the district stating that: "it is the creation of a specific local system, which has an objective identity, density, competitiveness, ad-hoc created institutions, and evolutionary pattern".

1.2 The concept of industrial cluster

Schmitz (1995) defined cluster as "a generic agglomeration of firms of different sizes operating in the same sector with a specific locality", he emphasized the role of local factors for competing in international markets and explained that the pooling of small firms allows achieving economies of scale through procurement and marketing consortiums, Nadvi (1999) defined a cluster as a sectoral and spatial concentration of firms, moreover Morosini (2004) defined an industrial cluster as a "socioeconomic entity characterized by a social community of people and economic agents localized in close proximity in a specific geographic region".

Porter (1990) introduced a different approach for clusters, defining industrial cluster as :"Geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries and associated institutions (for example universities, standards , agencies, and trade agencies, and trade associations) that compete in particular fields but also co-operate." , or a "cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" (Porter, 1998).

He stressed that the cluster should not be limited by geographical boundaries, stating that: "The geographic scope of a cluster can range from a single city or state to a country or even a network of neighboring countries" (Porter, 1998).

Porter approach of industrial clusters aims at explaining competitive advantage of countries or regions, through a geographic concentration of firms in interrelated industries along the value chain of the industry, the geographical concentration of specialized industries generates advantages, visible also in the competitiveness of nations (Porter, 1998). Porter stated that factors of competitive advantages related to proximity, which are extracted from his diamond model of sources of local/national competitive advantages, can be summarized in: presence of specialized industries, firm local rivalry, presence of supporting institutions, learning processes inducing the demand and threat of substitutive products.

The approach of Porter was criticized of dismissing the socio economic factors role in the development of the cluster, and ignoring the significance of the characteristics of the main elements of the territory, local actors and institutions in triggering the dynamics of development, he highlights the population of firms and ignored the relationship between the population of firms and the social context, Martin and Sunley (2003: 11) have strongly criticized the cluster concept, describing it as fuzzy and chaotic because of the absence of a unique definition and difficulty of measuring it, Foss (2011: 100) criticizes the Porterian approach; accusing him of applying a wrong form of eclecticism, of proposing "loose frameworks."

1.3 Difference between the cluster and the district:

The concept of cluster is wider and looser than the Marshallian definition of industrial district, the cluster is not limited by geographic area and could be extended to a group of countries, while the district is defined by geographic boundaries and identified entity, also it is characterized by strong social identity and close relationships which reflects the local community characteristics, while Porter tackled the cluster concept from a functional perspective not a territorial one.

Another important difference is that the district has a minimum threshold of agglomeration dominated by small and medium enterprises, while a Porterian cluster has not minimum threshold and the typology of firms could also be dominated by large firms. The districts are characterized by dense inter-firm relations and strong ties between firms, suppliers, subcontractors and

producers based on trust and cooperation, on the other hand the cluster could encompass this relations but not a condition.
The institutions in the industrial districts are created locally and are intensively embedded in the dynamics of the territory, while in the cluster the institutions can be local or exogenous.
In the district, the entrepreneurship starts locally and could be followed by foreign entrants, however in the cluster the entrepreneurs could be local or foreigners from the start of the cluster.

Table1.1: Comparison between Marshallian industrial district and industrial cluster

Marshallian industrial district	**Industrial cluster**
- Limited geographical extension	- unlimited geographical extension
- significant presence of small and Medium size firms.	- undefined size of firms
- large firm population	- undefined firm population
-Necessary presence of SME's	- Undefined size of firms
- Linkages between final producers and subcontractors. - creation of social identity - emergence of trust and cooperation	- possible linkages between final producers and subcontractors
- ad hoc local institutions - emergence of communities of practices	- ad hoc institutions
- local entrepreneurship (and Possible subsequent entry of non endogenous firms).	- local or foreign entrepreneurship

Bellussi, 2007

1.4 Role of agglomeration in economic development

The phenomenon of economic agglomeration has been studied by many geographers and economists, analyzing the production concentration in certain territories, Marshall (1890) proposed the agglomeration of specialized SME's in the same area as an alternative mode of production organization to large firms vertically integrated, as the aggregation of small firms can constitute a large system, the main advantage of economies of agglomeration is generating external economies of scale, these externalities involve creation of economies of scale, and scope (Pyke & Sengenberger,1992), pool of specialized workers ,minimizing transaction costs for the local actors of the district, also cooperation between firms in networks enhances learning and innovation diffusion, agglomeration helps small firms to cooperate horizontally to respond to large orders, subcontracting of intermediate products ,sharing technical information and machinery use, specialization and division of labor lead to complementarities between firms and increase efficiency and competitiveness.

Agglomeration could be an independent tool for accelerating local development and increasing competitiveness, the model of industrial organization based on the agglomeration of SME's and its role in development has been discussed by many scholars (Becattini,1979; Garofoli,1983; Piore and Sabel, 1984, Sabel 1989; Porter 1990;Storper1995), Industrial districts and agglomeration patterns represent an essential basis for the Italian economy , many studies emphasized the role of ID and agglomeration in development and competitiveness in Italy, for instance Becattini (1989) emphasized the importance of industrial districts for Italian economic development, changing the unit of analysis from a single firm to a district of interconnected firms in bounded area, and representing the concept of industrial district through his studies on Prato textile district. Garofoli (1993) stated that agglomeration is a location strategy often followed by producers because proximity translates into lower costs of transaction and wider opportunities for matching needs and capabilities. He pointed out that agglomeration alone does not necessarily lead to the formation of efficient transactional interrelations, because there are powerful forces which may work against this phenomenon, as power and knowledge asymmetries between firms or lack of trust among firms. Brusco (1996) conducted a study on Emilia Romagna applying benchmarking against various Italian sectors, concluding that performance in clusters is better in terms of exports, employee wages and firm size.

The phenomenon of economic agglomeration and industrial districts exists in different areas in the world as Grenoble in France, Baden Wurttemberg in Germany, and other developing countries as Brazil (Schmitz,1995), Pakistan (Nadvi, 1999) and Mexico (Rabellotti,1995). These examples showed that territorial agglomeration can perform efficiently when linked with inter firm specialization and network of complementary activities, which contributed in achieving growth rates in many sectors as furniture, textiles, machinery footwear, packaging and food processing, however not all agglomerations of small firms trigger growth and generate employment, the presence of highly skilled labor, and efficient institutions represent important factors for stimulating growth in industrial clusters. The experience of what is named as "third Italy" (Bagnasco, 1977) has attracted the attention of scholars towards the importance of agglomeration of SME's, as in the late seventies the northwestern part of Italy which was dominated by large vertically integrated firms faced a crisis, while northeast and center of Italy dominated by SME's based on dense networks of flexible, strongly related, small and medium sized firms in craft-based industries were achieving high growth rates.

Becattini (1987) has explained the industrial rise of the Third Italy as an endogenous growth process which is based on cooperation and interaction localness in highly dynamic local production systems, the efficiency of these local networks is mainly the result of a combination of competition and cooperation. Specialization in inputs production or in phases of the production chain should reinforce co-operation among local firms. Agglomeration helps small firms to cooperate horizontally and vertically, subcontracting intermediate products, sharing of technical information and machines. Specialization fosters division of labor among firms; all this favors integration between firms. Also the proximity of suppliers of raw materials and inputs minimize the cost of inventory and save working capital which contribute in increasing efficiency and competitiveness. Another feature of industrial clusters are the "institutional thickness" representing a set of organizations, institutions, trade associations which plays a central role in synergizing and coordinating efforts between different actors in the district, another important component of the economies of agglomeration is the web of social relations linking firms together, as firms cooperate and compete in the district, the socio economic factors constitute the "industrial atmosphere" of the cluster and enhance trust between different parties.

1.5 Innovation and learning in Industrial clusters:

The literature emphasized the importance of learning in industrial clusters; Innovation and learning have stimulated many scholars. Schumpeter (1917) defines innovations as the introduction of a new good or a new quality of good, new production method, organization, market, and the innovation of new materials. Garofoli (1989 and 2003) emphasized the importance of innovation in maintaining competitiveness in industrial districts. Cooke & Morgan (1988) described firms as vehicle for continuous learning and knowledge-creation; Asheim and Isaksen (1996) emphasized that innovation is often a territorial phenomenon, innovation processes are in part based on formal and tacit knowledge, norms and institutions that are place-specific, and they called it as "regional embedded innovation systems" which is composed of small and medium-sized enterprises.

Scholars discussed the stages and the flow of the innovation process (Dosi 1988) and the diffusion of innovation (Rogers 1962).At the beginning, innovation was perceived as a 'linear process' that occurs at the level of the firm: proceeding sequentially from research through development to outlet market. Nelson & Winter (1982) representing the evolutionary economic perspective proposes a non-linear, open systems model of innovation. This was elaborated in the chain link model of Kline and Rosenberg (1986) which stressed the importance of feedback loops between research, technological knowledge and the market.

The theory of a National Innovation System (NIS) was introduced by Lundvall (1988 and 1992) and Freeman (1991, 1995). The theory argues that the process of innovation is characterized by interactive learning within an innovation system: a spatial concentration of firms and associated non-market institutions such as universities, research institutes and relevant government agencies. It focuses on interactive learning and emphasizes human interactions , inter-dependence and the central role of institutions (Edquist, 1997).

The Neo-Marshallians (Becattini, 1990; Dei Ottati, 1995; Bellandi, 1982) view of innovation is based on the Marshallian conception of knowledge and perceives the cluster as meso-level platform of learning. The knowledge spreads in the cluster through the spillover and labor turnover.

The previously discussed overview of literature revealed the rule of innovation in industrial clusters , stressing that innovation is subject to both market driven and research driven factors, confirming the important role of interaction and governance in enhancing the national innovation system of the clusters, and stressing the role of networks in enhancing innovation and learning.

1.6 Furniture clusters around the world:

Evidence of globally competitive clusters is found in developed and developing countries (Garofoli, 1992; Pyke & Sengenberger,1992; Nadvi & Schmitz, 1999). The experiences of Third Italy, Baden Wurttemberg, West Jutland, and South West Flanders, Sialkot, Sinos Valley from developed and developing country clusters (Schmitz and Musyck, 1993) provide evidence about how clustering helped small firms overcome export barriers, and ultimately increase their performance[1.]

The furniture sector represents a strong evidence of how many developing countries "benefited" (increased their production) from globalization, achieving progress on the international level, an industry which has achieved a substantial rate of increase since 1990's (Kaplinsky,Morris,Readman;2002), The global furniture trade has witnessed a fast and dynamic development, the global furniture exports in 2011 amounted to 130 billion $,in comparison to 57 billion $ in 2001.The developing and transitional economies share within the top ten furniture world exporting countries represent about 56.7% in 2011,in comparison to 18% in 2001[2].Globalization and gradual removal of tariff barriers led to the emergence of new countries in the furniture global value chain with substantial contribution in the global exports, as Vietnam, Poland, Brazil and Indonesia.

In this section, we will go through successful cases of furniture industrial clusters in developed and developing countries , discussing its competitive edge, moreover how these clusters benefit from agglomeration and labor division achieving high growth rates.

Jepara Furniture cluster in Indonesia:

The wood furniture sector in Indonesia offers a very compelling case of opportunities and challenges raised by globalization for SME producers in developing countries.
In Indonesia, 14 out of 33 provinces produce wood furniture products. The role of Central Java is essential as it contributes by 26.5% of national production and about 27.8% of the employment in the wood furniture industry, and 37% of large and medium firms (Indonesia Statistical Bureau,2004).

[1] Studies in Brazilian cluster of Sinos Valley (Schmitz, 1999), Pakistan cluster in Sialkot (Nadvi, 1999), Mexican cluster in Guadalajara (Rabellotti, 1995).

2 Statisitics of the world trade center(Intracen)

Main wood furniture clusters are concentrated in Central Java, Jepara, Klaten, Sukoharjo, and Semarang City.The town of Jepara in Indonesia has a long tradition in the woodworking industry. Historical records confirm that a wood-carving industry has long-existed in the Jepara region, and that the skills of the craft industry have been accumulated over years.

The local industry was reintroduced recently in the 1970s through a revival of domestic traditional-style furniture. There are 14 091 small units (92%), 871 medium units (6%), and 309 large units (2%) as shown in Table 1.1.

Across 80 villages, Employment was estimated at 176,000 workers of which 36% are non-permanent workers (census, 2005), Since the 1970s, a large share of Jepara's furniture production has gone towards satisfying local demand (Posthuma, 2003). Later, exports became more prominent and probably culminated between 1998 and 2002 as can be seen in Table1.2; large part of Jepara's export success is due to a convergence of favorable circumstances, both externally and internally to the wood furniture cluster.

Table1.1: Enterprises in Jepara furniture cluster by category

Type	Workshop	Showroom	Log parks	Sawmills	Warehouses	ironmongeries
Small	12202	1250	763	158	210	82
Medium	435	230	133	74	219	18
Large	126	68	57	37	146	82
Total	12763	1548	953	269	575	109

Source: Atlas of wooden furniture industry, Jepara.

Table1.2:Jepara cluster exports from 1996-2006

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Exports	97	147	169	201	201	75	77	112	135	119	87

Source:Jepara statisitics office

Several reasons for wood furniture firm clustering in this province. First, proximity to sources of main materials is significant, as in Jepara, Grobogan, Blora, and Sragen. Second, clustering has strong historical roots, as in Jepara and Klaten. Third, clustering provides easy access to consumers or buyers, as in Semara and Surakarta. Fourth, clustering provides easy access to business facilities, as in Semarang. Firms may in fact have more than one motive for clustering (Andadari,2008).

Bolstering SME's embedding in productive relationships generate number of benefits, enhancing external economies, reducing transaction costs ,boosting bargaining power vis a vis buyers and enabling collective efficiencies. The cluster attracts many traders who connect the small enterprises to distant

markets in Indonesia and abroad. Being located in this cluster thus offers small enterprises easy access to buyers.

The growth of the local industry has brought about a much denser network of clustering activities among furniture producers, few large firms have emerged, taking a role as the manager of their supply chain. Others have engaged more actively in out sourcing specialized parts of the production process to smaller firms. A survey on the clusters in Central Java province reveals the high density of relations between firms within the same cluster, as well as the intense buying relations across clusters in this province (CEMSED, 2002)[3]. This process has also involved more flexible production and labor practices, Benefits are gained from dynamic SME's networks and the inter-firm linkages and the competitiveness of firms in regional industrial districts, as in the third Italy (Sengenberger & Pyke,1992).

Lucena furniture cluster in Spain:

The city of Lucena, is located south of the province of Cordoba(Andalucia) in the region of the Subbetica Cordobesa in Spain , more than 42 thousand inhabitants are living in the city, many industrial activities exists with a high number of companies specialized in the production of wood products and furniture.

The origin of wood industries activity can be placed in the late 50s and early 60s, when casting and production of brass goods went into crisis and emergence of new industries engaged in the manufacture of furniture, intended to cover part of demand, generated by the growth in the number of places in hotels and apartments, as the development experienced at first industry is closely linked to the tourism boom in Costa del Sol touristic area.

The predominance of wood industries over other industrial activities has increased in recent years as illustrated in table 1.3; more than 50% of the firms in the industrial sector are working in the wood industry, nearly 306 firms, contributing by 53% of job opportunities in the city (Industrial registry, 1996).

The wood industries in Lucena have achieved high growth rates in terms of number of establishments and workers, increased from 129 establishments in 1985 to 306 in 1996, while the number of workers increased from 924 workers in 1985 to 1837 worker in 1996. The cluster uses pine wood as the main raw material, which comes from Galicia , Cantabria and the Basque, firms acquire wood through sawmills or stockists, varnishes and paints are purchased from Valencia while crystals and glasses are produced in the city,

[3] A survey conducted by the center of micro and small enterprises dynamics (CEMSED) in 2002 in Jepara studying the linkages of the cluster with global buyers and the relation between different clusters in central Java.

the Union of Entrepreneurs of Timber in Córdoba set the criteria for purchasing wood in the cluster, it has formed a dedicated network between the timber companies , often based on subcontracting relationships.
Firms in Lucena are specialized in the production of Castilian style furniture, which is highly requested both in fashion and also for its convenient price, also another segment of firms are specialized in the provincial style, characterized by high quality and relatively high price, on the other hand there are firms that are engaged in the manufacture of kitchen and bath room furniture, they also tend to sell their products own brand.

Table 1.3: Dynamics of Industrial activities in Lucena from 1985-1996

	1996			*1985-1996*		
	Establish.	Worker	Kw	Establish.	Worker	Kw
Food & beverage	63	303	916 +	13	+183	+438
Textile	---	---	---	---	---	---
Leather, footwear and clothing	4	47	19	+1	+8	+13
Wood and Cork	306	1.837	10.33	+177	+913	+7.260
Paper, press, graphics	16	63	476	+10	+26	+356
chemistry	13	129	1.845	+4	+14	+736
Non-metallic minerals	35	134	1.711	+15	+45	+656
First transf. metals	104	471	1.965	+25	+53	+204
construction	19	247	1.161	+14	+115	+873
machinery						
Electrical, electronic, mechanical precision	20	44	50	+8	+28	+33
Material transport	---	---	---	---	---	---
Mechanical workshops	37	175	685	+19	+65	+180
Other	3	10	118	+2	+5	+78
TOTAL	**620**	**3.460**	**19.279**	**+288**	**+1.359**	**+10.875**

Source: Industrial Registry

A survey conducted in the cluster (Perez, 1999) revealed that 50% of respondents indicate that they usually subcontract part of production stages, essentially turning, sanding, or performance of specific parts such as legs of tables and chairs. Along with these types of relationships, have emerged

different partnerships between companies, as 26.9 % of surveyed companies have signed a long term contract for cooperation.

Intermediate institutions play an important role in the development of the cluster, The Consortium School Timber Encinas Reales (CEMER), is a specialized occupational training center, founded in 1992 by the Ministry of Labor and Industry and by the City of Encinas Reales. Its focus is on providing training and encouraging innovative working environment in the cluster, with particular concern on quality control in manufacturing and new design techniques. It also acts as a technology center; as it provides "real services" to companies which include: design, numerical control, various business consultancy services.

Another important entity is The Union of Employers of the Wood of Cordova (UNEMAC) founded in 1991, aims at promoting socially and culturally the wood sector , it provides firms in the sector with business services as legal, taxing services, and foreign markets information. Another institution is the Business Collective Association Lucena (ACC) with about 500 member of local entrepreneurs or self-employed and its main objective is to defend the interests of its members, providing advocacy services and acting as legal representative employers to the government , organize training courses for entrepreneurs .

Cebu furniture cluster in Philippines

Metro Cebu is agglomeration of four cities (Cebu City, Mandaue City, Lapu-Lapu City and Talisay City) which is located in the central Philippines. The literature reveals that Furniture making for the export market has a long tradition in Cebu, dating back to the 1950s**,** Cebu has played the major role in inter-island shipping in the Philippines, through good port facilities. Unprocessed rattan was already being exported through the Cebu port in the early twentieth century.

The gathering of materials at Cebu helped in the emergence of small furniture shops that used a small amount of rattan for furniture production for the local market. This contributed to the spill-off knowledge base in using rattan for manufactured goods.

The initial development of the export furniture in the cluster took place in the early 1950s through the entrepreneurial family in Cebu (the Aboitiz family), who had contacts with interested buyers in the United States, and it was through these contacts that exports took off. The agglomeration of Metro Cebu played a key role in offering a supply of entrepreneurs with the

financial capacity to engage in the industry and with the ability to communicate with external agents.

The industry slowly started to receive attention from government organizations in the early 1970s, like the Department of Trade and Industry (DTI), the collective efforts of the government and some leading entrepreneurs in Cebu helped establish a furniture trade association in Cebu (CFIF) and trade support organizations in Manila. The government decision to ban the exports of unprocessed raw material gives a big push to the cluster, as it encouraged the furniture industry and protected the national reserve of raw wood.

The establishment of the British furniture company Maitland-smith in 1982 represents a turning point in the industry in Cebu, the company operated more professionally than most of the family managed companies in Cebu. It helped in making wood a more prominent raw material for the furniture industry; many companies in the cluster were able to work as subcontractors for the British company.

The enterprises currently are around 175 directly exporting companies and a much larger number of subcontracting units. In 2010 the cluster exported furniture worth nearly US$80 million, which represents about 60 % of Philippine 's total furniture exports (Philexport Cebu, 2011).

Cebu furniture industry sells its products on the national market very infrequently, the main product lines of the industry are rattan furniture and wooden furniture where development of furniture making is more a bottom up process than an exporter initiated and controlled process. Some companies have invested in machinery and equipment, but to a large extent the workers still depend on artisanal skills that are transferred through informal mechanisms (Beerepoot,2005).The cluster enhances close inter-firm cooperation, inter firm cooperation takes the form of subcontracting ,ending of materials, sharing of buyers, consolidation of small shipments and the bandwagon effect(Zosa,2005).

Subcontractors carry out most stages in the production process such as framing, weaving, assembly and sanding. The process of finishing and packaging is in many cases done in house by exporters, as the cluster is low technology and artisan based; there is little space for technical interaction between exporters and subcontractors. Entrepreneurs depend a great deal on informal learning channels, Knowledge and ideas about new materials can be obtained by monitoring related sectors, that also mainly depend on local craft skills (Beerepoot, 2007).[4]

[4]Zosa stated that in her interviews with subcontractors, they claimed that discussions with other subcontractors were one of their key sources of market information .

Beerepot(2005) demonstrated that knowledge transmission in the furniture industry in Cebu is constrained by the local mode of production, characterized by the increased outsourcing of work to the informal sector and the prevalence of piece rate payment schemes for workers, and the dominance of exporters over the local value chain, for this reason , the investments in skills and capacities necessary for product upgrading are low and majority of workers acquire their skills through informal mechanisms.
Pietrobelli and Rabelloti (2004) argues that "in buyer-driven chains, global buyers facilitate the link with the international market by signaling the need (and the modes) of the necessary upgrading, however, global buyers do not normally foster and support the SME's upgrading process.

Sao Bento furniture cluster in Brazil:

The Sao Bento furniture industry's history was originated in the 19th century, when immigrants arrived from Central Europe to Sao Bento, immigrants who had experience in handicraft activities started its business in the area.
The construction of the railway between Sao Bento and Curitiba (Parana capital), to the west, and to Joinville (main Santa Catarina business town) to the east has led to the flourish of these activities. Then transition period from craftsmanship to furniture industrial production takes many years. Since then, the regional economy began to depend on the furniture business. The furniture manufacturing business has been flourished after the Second World War. At that time, firms were generations who had acquired skills from their fathers.
Sao Bento furniture cluster is populated by many small and micro firms, Considering the whole region, they amount to 335 firms, most of them (171) situated in the main district, Sao Bento, Among those almost 60% are micro firms and only two of them have more than 500 employees (Denk,2000).
The cluster has witnessed structural changes when the federal government of Brazil in the sixties and seventies has initiated a program of industrialization covering main sectors among them was the furniture sector, Sao Bento firms had more facilities from the government mainly access to credit and production line modernization. Meanwhile; it became more concentrated, many firms merged while SME's also grew as subcontractors of large industrial groups.
Other relevant factors were: the foundation of the Banco Nacional de Habitaçoes in 1964, which gave a strong impulse to the national demand for furniture and sofas, and other wood products (Mafra, 1993:53).
By The seventies, small firms turned into industrial companies, moreover the furniture sector became dominant in Sao Bento manufacturing industry. In

the eighties, a major restructuring process hit the Brazilian economy, forcing firms to look for new markets abroad (Lanzer et al, 1998),There was also a big boost in exports of the cluster in the nineties (Brancaleone, 1999).

The highly appreciated colonial style was replaced by modern and simple designs, better suited for small city apartments (Denk, 2000), wood shortages obliged firms to shift entirely to pine as their basic raw material.

In the nineties, the cluster reached the maturity, becoming the main Brazilian furniture exporter, several changes characterized this decade. Sao Bento firms became highly dependent on international purchasers and on local brokers. The local government set up the Foundation for training, technology and research (FETEP) to enhance the training in the district, local institutions and private firms invested strongly in infrastructures, both physical and immaterial. Several new exhibitions were organized in the cluster, attracting national and international producers and buyers. Local universities promoted specialized courses in industry-related technology and entrepreneurship, FETEP created a new training school pushing the technology center of the district.

The Sao Bento innovation system has been characterized by several public initiatives, most of them implemented in the last decade. Private and public actors, such as business associations, local governments, national training organizations, regional universities and local firms, have carried out most of these actions in partnerships.

The CTM (Centro de Tecnologia do Mobiliario) is the central institution providing technical assistance and training to local firms[5]. CTM enhanced the modernization of Sao Bento industry allowing firms to access the newest technologies; research activities in product and processes and quality control tests for furniture components.

Promovel is another institution in the district, supported by many local and national actors, as the furniture industry association, the ministries of industry and foreign affairs, the national centre of R&D and the export promotion agency, its role is to support Brazilian furniture firms abroad through many different initiatives, related to product and process upgrading. For example, ISO norms, marketing research, participation to international fairs, management training, new design technique, visits to foreign firms, acting as a catalyst between different actors and encouraging learning and technology trajectories within firms.

[5] CTM has been established in 1998, as a joint action between the local branch of SENAI, the UDESC, the FETEP, the local government and other industrial associations.

Valencia l' Horta Furniture Cluster in Spain:

The development of furniture industry in Valencia has its origin in craft workshops and the existence of trades such as carpentry. These workshops were a purely local demand, addressed to the furnishing of homes. A mid-century craftsman adapts to the changes brought by industrialization, with mass production, suitable designs and the incorporation of new material.

The Valencian home furniture industry presents an important geographical concentration, most of the firms being localized in the regions of L'Horta Sud, L'Horta Oest, L'Horta Nord, el Baix Maestrat and la Costera, L'Horta Sud stands out among them, with a high number of firms in its neighborhoods and high degree of territorial concentration.
The Valencia l'Horta furniture cluster includes all phases of production process required for the finished product reaching the consumer's hand end; this includes all staff working with and for furniture manufacturers (suppliers of boards, sheets, varnishes and other materials commodities, machinery manufacturers, designers, board, transportation, marketing).The furniture industry in the region of l'Horta is mainly specialized in classic furniture, midrange and high in terms of segment yield and quality.

The firms belonging to the wood and furniture sectors at the national level are 10,316, although there are 2,244 firms devoted exclusively to the furniture manufacturing, in the Valencia l'horta cluster, there are around 1200 firm, employing 30000 worker, representing 60% of the total production of furniture in the Valencian autonomous region and 30% of total Spanish production (Generalitat valencian,2007).
The Local productive system in the cluster started spontaneously with involvement of public institutions, followed by proliferation of settlements concentrated industrial companies of the wood and furniture with gaps in basic infrastructure, the LPS of the cluster is characterized by entrepreneurship based on personal initiative and family transmission, with a origin linked to the development of wood craft carrier of knowledge able to produce high value added product to be placed in a segment of high end market.
Valencia furniture industry has undergone major crisis in the last three decades. The first of them occurred in the late seventies and was maintained throughout the eighties, not being until 1987-1988, when recovery occurred, the sector was restructured due to business closures and bankruptcies, which resulted in fragmentation furniture production process and the emergence of specialized small-scale enterprises in some of its phases or parts thereof.

In 1993 there was a new crisis, causing a significant decrease in the number of employees, following the corporate restructuring which occurred as a result of the great crisis, the furniture sector presents today a significant degree of heterogeneity, in the presence of small businesses.
Many small and new companies have emerged from former employees or directors of companies, setting up networks subsidiary companies with a certain level of integration grid.

In the middle of the decade of the nineties, 60% of the furniture companies had less than 6 workers (IMPIVA ,1999). The average firm size in the cluster now is around 25 employee. Currently it's composed of SMEs with a high degree of interdependence, located along the production chain that starts with the sawing wood and culminates with the production of furniture. This implies a model based on cooperation between subcontractors.
The main factors that help competitiveness in the area are the presence of qualified labor force, workers with a wide experience in the sector, The institutions also played an important role in the development of the cluster, AIDIMA is the most active and dynamic institution belonging to the Valencia autonomous government as part of the R&D technology institutions network, it facilitates the collection of research funds from national, regional and European programs, which frequently cover R&D activities and provides an arrangement for training, information and lobbying.
Regular programs of training are provided by various institutions as AIDIMA, IMPIVA, MINER, Chamber of Commerce, moreover the promotion and development of the technological level of firms, of the technicians, and the level of the quality of the products as Technological Institute of Furniture (ANIEME).
It is estimated that only 12% of enterprises in the cluster carry out task related to research and development (R&D)[6], and that the implemented innovations come from external firms, The district is suffering from the absence of a local or foreign machinery sector(AIDIMA,2005).

Currently Two trajectories of business are distinguished in the sector. On the one hand, companies that continues to focus on domestic demand, without introducing product innovations, which is increasingly difficult to maintain their niche in progressive reduction under the pressure of competitors of lower cost.

[6] Study conducted by Generalitat Valencia in 2007 on the innovation in Valencia l' Horta

On the other hand, companies that have expanded their market scope through exporting to external markets, with the support not only of certain benefits in price, but by improving quality and customer service, In the first case, the restrictions imposed by the specialization adopted are high, reducing the margin of maneuver of the organization, In the second case this margin is higher and allows more space for growth.
The development model of Valencia l' horta revealed that the technological evolution experienced by the sector has to do mainly with pressure from the environment, including customers and competitors. Technological development sector is not only the possibility of more specific processes, but that has a direct relationship with the introduction of new materials and processes.

Concluding Remarks:

In this chapter, we discussed the theoretical background of industrial districts, starting from the seminal work of Marshall (1890) going through the districts literature of Becattini (1979), Garofoli(1981, 1983 and 1989) and others, underlining the benefits arising from agglomeration and the possibilities of achieving economies of scale through a group of small sized firms specialized in different phases of production and the existence of skilled labor pool.

Garofoli (1983) introduced the concept of local productive systems in which he stressed the existence of high division of labor between local firms and dense inter and intra sector interdependencies where proximity between local actors mostly SME's facilitates knowledge spill over and technological efficiency.

Porter(1990) raised a different approach for industrial clusters describing it as a geographic concentration of interconnected specialized providers and firms in related industries , that cooperate and compete in particular field, ignoring the socioeconomic factors and territorial role in the development of the cluster.

Comparison between Marshallian Industrial districts and Industrial clusters was discussed, highlighting the main differences between both from different perspectives as the Marshallian ID should be limited and bounded in certain area, while the cluster is extended, the dominance of SME's is a condition in industrial districts while not in clusters, and the importance of the socioeconomic relations between firms in the district, while it is not the case

in Porter's cluster , also the institutions in industrial districts are locally embedded in the territory, while in the cluster it can be an external institution.

Successful models of competitive clusters exists in both developed and developing countries, of which cases of furniture industrial clusters in different countries as Jepara in Indonesia ,Cebu in Philippine, Sao Bento in Brazil, and Valencia l' horta in Spain. it is notable the important role of agglomeration and proximity in increasing the efficiency and competitiveness of these clusters, also inter firm relations and the dynamic working mechanism contributed significantly in knowledge spill over and widespread flow of information across the clusters. .

Chapter 2.Brianza furniture district

2.1 Introduction

The furniture and wood sector is considered one of the important sectors of the Italian economy, representing about 6% of the total industrial output in 2010, There are about forty industrial districts of furniture spread all over Italy, contributing by 65.8% of total national production of furniture and 64.8% of veneer boards and 56.6% of other products7, table (2.1) reveals the main important furniture industrial districts in Italy.

According to the census of year 2000, the number of enterprises working in the wood and furniture sector in Italy is about 102,328 enterprise with an increase of 16.4% of 1996 census, more than 96% of these enterprises have less than 20 employees, the total number of employees of the sector in 2000 is 474,760 employee with an increase of 22.5% in 1996.

The sector is divided into two sections, furniture which contributes with 60 % of total production and 62.5% of employment, and wood products which represents 40% of production and 37.5% of employment, for the wood sector, the subsector planed and impregnated wood represents 26.7%, followed by then carpentry work which represents 24.7%,then veneer and fiber board which represents 24.3% .

For the furniture section, office furniture represent 29% of total production, followed by home furniture (Bedroom, dining and living room) with 24.8%, then seats and chairs with 21.8%,then kitchen with 20.6%,There is a high concentration of artisan companies in the subsector of veneer cutting and wood treatment, which indicates that all primary work of wood is done outside Italy as it imports semi finished products.

Table (2.1): Main furniture industrial clusters in Italy

Province	**Production specialization**
Brianza(Milano, Monza, Como, Lecco)	Modern and contemporary furniture
Mantova, Cremona	Veneer Panels
Verona	Antique furniture
Vicenza, Padova, Treviso, Pordenone	Modern and contemporary furniture
Udine	Seats, chairs, veneer panels, MDF
Belluno, Trento, Bolzano	Wood for construction &Packaging
Forlì, Cesena, Ravenna	Upholstered furniture& Packaging
Firenze, Prato, Pistoia, Pisa	Upholstered furniture
Pesaro	Kitchen
Bari, Matera, Taranto	Upholstered furniture in leather

[7] Estimation of the Italian national observer of industrial districts,2010.

The first two decades after the Second World War has witnessed structural changes in the production of furniture in Italy, where many artisan companies have achieved high growth rate, which led to a change in the dimension of the enterprises over time, Another important change is the emergence of the north east part of Italy (Veneto,Fruili Venezia regions) as producer of furniture to compete with the historical north west part (Milan, Monza&Brianza, Como).

For the sectors of wood and furniture, there were two important phases, from 1951 to 1971 in which high growth rate was achieved in terms of occupation, then from 1971 to 1996 the sector started transformation towards technology which led to a re-dimension of the enterprises volume, the sector was characterized by a strong vertical integration at the fifties and sixties, then transformed towards economies of specialization and division of labor by the seventies (Trau, 2004:41).
As illustrated in Table (2.2) , the decrease in the number of enterprises and employees from 1981 to 1996 by 21% &17.6% respectively.

Table (2.2): Enterprises &Employees in the furniture sector in Italy

Item	*1981*	*1991*	*1996*	*2000*	*Var. 81-91*	*Var. 91-96*	**Var. 96-00**
No. enterprises	111.233	92.337	87.854	102.328	-16.99	-4.8	16.4
No. employees	470.891	405.815	387.628	474.760	-13.82	-4.4	22.48
Class(1-9)	221.691	193.363	179.850	203.868	-12.78	-6.9	13.35
Class(10-19)	76.785	73.371	71.143	85.956	-4.45	-3.04	20.82
Class(20-49)	75.459	63.904	61.777	81.766	15.31	-3.3	32.36
Class(50-99)	45.331	33.376	32.431	41.693	-26.37	-2.83	28.56
Class(<100)	51.625	41.801	42.427	61.477	-19.03	1.5	44.90

Source: ISTAT

2.2 Evolution of Brianza district:

Brianza industrial district is the oldest industrial district in Lombardy region, the history of the furniture industry in Brianza returned back to the 18th century, with the construction of the Royal Palace "Villa Reale" in Monza province when Lombardy region was part of the Austrian empire, this event attracted highly skilled carpenters from France with Italian workers to make the furniture of the palace, enabling the Italian workers to get the technical knowledge of handicraft furniture.

On the other hand the nobles of Milan started to construct villas in como and neighboring areas which pushed the development of the artisans skills of the Italian workers in the region, moreover the establishment of the school of art and competence diffused the knowhow of furniture making.

The furniture industrial district of Brianza is extended over 36 municipalities in provinces of Milan, Monza and Como in an area of 258 km'2 and half million inhabitants. After a long period of "intensive development" in the fifties and sixties (Garofoli, 1986), the production has been expanded to include various products, starting with the traditional sofas and salone, to office furniture, using different materials as metal, plastic.

In the eighties, the area has witnessed high growth rate and transformation in the production from economies of scale "castle Enterprise" model to economies of flexibility (Butera, 1990), the industrial districts have substituted the traditional Fordism enterprise (Piore & Sabel, 1984) and "Industrial atmosphere" concept raised by Marshall describes the role played by the territory as a coordinator between economic and social subjects.

The history of the district has witnessed three crises, the first was related to the crisis of the seventies, which in response the enterprises have changed their commercial strategy, from permanent show room to niche market of specialized products with expansion in local and foreign markets (Lojacono, 2000).

The second crisis was at the end of the nineties, when the furniture enterprises in Veneto region(northeast Italy) introduced articulated and customized products penetrating Brianza market and increasing the tension of competition with its producers. The enterprises of Brianza responded through adopting a strategy based on raising the level of quality of the product and searching for new markets.

The third crisis was related to the international financial crisis in 2008, which led to the closure of many enterprises in the district, especially small enterprises at the early phases of the upstream of the value chain, targeting the low price segment of the market, lead companies faced the crisis through innovation, quality and searching for new markets(Scarpinato,2003).

2.3 Dynamics of the district:

The overall productive units of different economic sectors in Brianza are estimated to be 60 thousand unit, employing about 251 thousand employee, there are 137 industrial unit for every km, and around 15200 enterprise in the commercial activity, small enterprises(less than 50 worker) represents about 97% of total enterprises in the district (Butera,Catino,Garavaglia,Ghezzi;2006:41). The enterprises working in the core furniture sector (sawmilling and manufacturing of different pieces), according to the registry published by the chamber of commerce of Monza & Brianza in 2010 are estimated to be 6335 (2569 unit in Monza and Brianza),(2064 unit in Milan) and (1702 unit in Como) ,of which 43% have maximum 9 workers, conducting activities that varies between cutting, woodworking, polishing, lacquering, gilding, upholstering, metal and plastic work. The artisan companies represent 75% of the total number of enterprises in the district, the average number of workers per establishment for wood working furniture is 3.8 workers, and for upholstering is 4 workers and 5.4 for metal product.

The production of Brianza as illustrated in Table(2.3) decreased from 2985 Million euro in 2010 to 2900 Million euro in 2011 with a percentage of variation during 2011/2010 of (-2.8%) while exports increased from 1105.2 Million euro in 2010 to 1183.9 Million euro in 2011 , with a percentage of variation during 2011/2010 of (7.1%) ,moreover imports of Brianza increased from 65.1 Million euro in 2010 to 74.3 Million euro in 2011 with a percentage of variation of (14.1).

Table(2.3) :Production, Exports and Imports of Brianza from 2007 till 2011

Mn.euro	**2007**	**2008**	**2009**	**2010**	**2011**	**Var.% 2011/2010**
Production	3450	3470	2930	2985	2900	-2.8
Exports	1276.1	1314.3	1018.6	1105.2	1183.9	7.1
Imports	90.8	85.9	59.5	65.1	74.3	14.1
Internal Market	2264.7	2241.6	1970.9	1944.9	1790.4	-7.9

Source: Elaboration on Istat data

A research was conducted by "sistema arredo" group and Bocconi university in 2006 stated that Brianza furniture districts produces 18.5% of the total national production and 5.2% of the European production. Enterprises in the district have different composition, the area of Cantu' is characterized by high presence of small artisan companies with external linkages with design offices in Milan, enterprises in Monza and Milan are distinguished by high industrialization process with clear strategy on international markets.

The local productive system of Brianza is distinguished by the presence of small and medium dimension enterprises with strong infrastructure and good potential for exchange, and articulated products with high quality, and low importance of price as factor of competitiveness, also a vast varieties of products and materials is produced in the district, the small and medium enterprises are competitive because of its capacity to create its socioeconomic system efficiently.
The district is characterized by high fragmentation of the production cycle, all phases of production are done inside the district as sawmilling, lacquering, gilding, upholstering, glass, metal and plastic work, also more than 75% of products are home furniture products and the rest are decorations and floor products, ranging between upholstered furniture (24%), bathroom furniture (18%), office furniture (16%) and kitchens (42%).[8]
The increasing diversification and personalization of products exceeded the capacity of enterprises to design, plan, produce a whole product internally and created production integration between different actors in the value chain.

2.3.1 The role of lead enterprises in Brianza:

Traditionally, the value chain of the District is characterized by the presence of business leaders who have guided and directed a network of small and medium-sized companies linked to them by a system of relations tends to be stable and structured. By time, the leading companies have implemented an investment policy of expansion, which has led to the emergence of structured industrial groups able to control almost all stages of the supply chain, from the processing of wood to tanning, from design to prototyping of new models to the assembly, marketing and distribution of finished products.
Lead enterprises in Brianza are estimated to be about 150 enterprise, their competitive edge is based on the quality of the product and the capability of introducing new, innovative materials and personalized products. These lead

[8] Italian National observer of industrial districts

enterprises contribute to 35% of the sales value of the district and export between 50 to 60% of its production (Brunetti, Micelli, Minoja, 2002:124).
The presence of leading enterprises in the district is strategic for their functions, as they consider the district as a pool of skilled labor, also the abundance of suppliers for raw materials is an advantage, the atmosphere of competition in the district provides the enterprise with flow of information on competitors and represents a sustainable incentive for self-development. The evolution of Lead enterprises strategy doesn't downgrade the role of the territory, but highlights the importance of upgrading the district (Coro & Micelli, 2007).
Their investment on the commercial side and distribution have ensured an important activity in the markets that is went to benefit the entire district, through the supply relationships that bind these enterprises to those of the chain. Lead enterprises have developed a system of market relations and have been able to translate customer demand in production orders; these companies have ruled the supply chain by controlling two fundamental phases of the value chain, that product development and other of relations with customers, investing heavily in internationalization and enhancing their international presence in nontraditional markets,
District-based lead firms have different features from other firms in the industrial district, a recent study performed by Giansoldati and Salmasi (2010), who applied the heterogeneous firm framework (Melitz, 2003) to distinguish Italian district firms that internationalize (either through trade flows or FDI) from those that do not within a sample made up of 500 firms.

The empirical study looked first at the average value of selected firm variables, namely turnover class, size (in terms of number of employees), human capital endowment, registered trademarks, existence of R&D and design department, together with a series of performance indicators, such as productivity. Results of the descriptive statistics show that internationalized firms, present higher turnover levels, employ on average a higher number of workers, which are usually more qualified than those employed by mere domestic firms. In addition, internationalized firms are more likely to have a dedicated in house R&D department, and are normally able to deposit a slightly higher number of trademarks than their nationally bounded peers.

As the core competence of these enterprises is quality, design, innovation, and other non-price factors, they rarely tend to outsource from outside the district (Scarpinato, 2008), Roberto Gavazzi, the owner of Boffi one of the leading enterprises in Brianza, ruled out any move into lower-cost parts of the furnishings and fittings market, stating that "*Our strength is at the high end. We would not be any good if we had to start making products at high volumes and worry unduly about how much things cost*."[9]
The big capacity of large enterprises in the district and the efficiency of its managerial staff enabled it to confront different crisis faced along its history, through repositioning its products in the market, relying more on quality, design and innovation, also the creation of a department of "contracting" in these enterprises for B2 B has showed a big success in the last years. Large enterprises have chosen a different channels and techniques for distribution, supplying and introduced new policy for branding.

2.3.2 Small & Medium enterprises:

Small & medium enterprises[10] represent more than 97% of the share of enterprises in the district; and they are considered the motor of development, creating big portion of job opportunities, they are able to compete when organized in the industrial district, which allows them to overcome the limitations of its size and use "dynamic competitive advantages" (Garofoli, 1991).

Typologies of activities conducted by SME's in the district can be summarized as follows:

- Enterprises which act as subcontractors for the large enterprises in the district, mainly in the real-estate furnishing projects.
- Enterprises which produce "made to measure "products, with high personalization of products.
- Enterprises which produce for niche markets, with involvement of artisan companies in their production process and other limited enterprises specialized in the classic furniture.

[9] Interview with Gavazzi the owner of Boffi in the financial times magazine, "A recipe to beat low cost countries",2007.
[10] According to the European commission definition (2003), small enterprises have between 5 and 50 employee, with turnover less than 10 million euro.

These small firms have now found their way towards internationalization of production (Corò, Volpe, Chiarvesio, Di Maria, Micelli; 2006), which is not foreign direct transfers or relocation processes, as it actually requires larger companies, but by the market, through exporting and international agreements with other companies.
The small size is not necessarily linked to backwardness of technology or productive inefficiency (Cossentino, Pyke & Sengenberger; 1996), some case studies about Tuscany (Dei Ottati, 1996) clearly show the ability of small businesses to organize themselves in informal groups, by stable relations, based on mutual trust and reputation and sometimes on the spur of the continuous improvement of its subcontractors.

The increase in the varieties of products, and the trend towards more customized and personalized products engendered cost burden on large companies in the district to invest in new production lines and recruit highly qualified calibers, consequently many firms,mainly large, have decided to outsource part of its production phases to small and medium firms to avoid financing extra cost of production, these changes enhanced SME's role and enforced its presence in the district.
SME's in the district ,with budget constraints far from that of large enterprises, are suffering from strong price competition; some of them buy semi finished products from Romania, rarely make production investments outside the district, and they did it only as strategy for penetrating new markets.
The flexibility of these firms and its low operational cost enabled them to confront the consecutive economic crisis, for instance the crisis of 2008 has pushed small enterprises in the district to adopt a strategy of "quality with low cost". According to a survey by the chamber of commerce of Monza &Brianza (2010), 30% of enterprises in the district have introduced a new line of "low cost".
These firms at the same time show the almost absolute lack of market analysis for the furniture sector in terms of the value of sales of competitors, characteristics of the style of the products sold, price ranges, macro and micro-economic trends. They are suffering from low capabilities of marketing and communication; rarely do they recruit highly educated personnel due to budget constraints.

2.4 Internationalization Strategies:

The approach of internationalization was tackled in literature as an inevitable approach for competition, Garofoli (2003) stressed the importance of internationalization as an important factor of development which helps in the diffusion of knowledge in the districts, Camuffo & Grandinetti (2006) raised the concept of "Global district enterprises" which affirms the importance of insertion of districts enterprises in the global value chain.

The elements of quality and innovation represent an important factor for Brianza firms to compete in international markets, which constitutes the core image of the district and position its products in international markets. A wide portion of firms in the district position their products in mid-high segments of the market, depending more on quality than innovation, providing more services to client and quick response to customers' needs, on the other hand, large firms in the district rely more on design and innovation as their competitive edge in higher segments of the market.

Lombardi (2003:1446) stated that the internationalization of the production cycle, together with the reduced importance of spatial proximity amongst companies and the unprecedented increase in the formal and informal groups of firms lead to a period of transition, characterized by a series of events. "Firstly, the reshaping of local production potentials with a reduction in the number of firms and employees; secondly, an increase in the imports of components and half-finished products from other (domestic and international) local production systems; thirdly, changes in the mixes of technologies used, raw materials worked, and goods produced; fourthly, the possibility for larger firms to acquire qualitative and quantitative flexibility of the production potential, thanks to computer-related technologies" .

These facts contributed to a series of consequences in the recent evolution of Brianza local production systems; the most important is the formation of hierarchical networks of firms with significant leadership phenomena, Lead firms enforced its supply chain through diversifying its suppliers based on quality, efficiency, and flexibility, monitoring more closely the quality of production process and intensifying the flow of information and feedback with its partners.

Moreover the crisis of the 1990's in Italy affects the comportment of enterprises in the district, as many of them tended to outsource some production phases to reduce the cost and compensate the bankruptcy of small artisan enterprises in the district. In the meanwhile, enterprises which produce internally tend to develop the know-how internally to avoid high

cost of purchasing from outside, Quality and service are the main competitive factors for these enterprises (Bramanti, 2007).

Recently, the traditional markets of the district seem to have reached a level of maturity and growth in terms of market share gains, even many firms get to a real own processes of regression due to the entry of new actors and local business. In front of the difficulties encountered in the traditional markets, district firms are looking with increasing attention to other emerging markets. They are particularly interesting especially in relation to the demand for the medium-high, in markets like Russia, United Arab Emirates, Qatar, Brazil, India, the district firms are gearing up to tap the demand for these markets. It should be noted, however, the need to build an interface with the market more solid and structured. Many enterprises adopted a penetration strategy towards niche markets; working in high quality segments and discovering new markets for exports, the principle market for district exports remains the local and European market.

The presence of the district's firms in emerging markets require a different strategy, based on developing appropriate promotional initiatives to increase receptivity of the "new" consumers with respect to the culture and the style of the Italian product, Promotional policies should be also accompanied by internationalization formulas that take into account the importance of combining foreign investment in production and distribution without breaking the networks activated over time in the district.

Also it is strongly felt the need of services for internationalization that can really increase the competitiveness of the district, currently few undertakings have services dedicated to internationalization, although demand for services dedicated to internationalization, both production and commercial, is increasing.

Instruments of communication of enterprises in the district are usually through participation in fairs; also advertizing and internet are very important for middle and high class producers (Grandinetti et al, 2002:13).The main source of knowledge of international markets is the clients, agents and suppliers, beside the important exhibitions as Salone del Mobile Milano, some enterprises in the district bought other enterprises in the EU, as a part of market penetration and insertion strategy, however production remains in home district (Garofoli ,2001).

Business leaders deal with brands much better recognized by the user, this is true not only in relation to enterprises that have historically offered products with strong design, such as B & B, Minotti, Poltrona Frau, Cassina, etc., but also with reference to new players entering the market. There is therefore the need to explore new elements potentially that can provide competitive advantages in this repositioning, this should suggest to firms in the district

that their competitive success could not only play for the construction of their new identity market, but also through the establishment of agreements, via enabling to link the product to other most recognized brands in the market. However, other companies are trying to express forms of more direct control of the distribution through small franchise chains or corner-shop and flagship stores dedicated in more or less large commercial structures. It is also noted the importance of management and coordination of the sales network in terms of effective creation and sharing of know-how for the flagship stores and galleries that businesses have in Italy and the world.

Currently many companies in the low segments appear committed to a shift in the medium-high market. It is, however, a choice that poses great challenges to businesses. In the first place, the repositioning towards these bands are almost inevitably accompanies to a volume reduction potential of sale. This can determine an impact on the size business, as companies are forced to downsize to reduce fixed costs, especially in terms of labor force. The attempt to repositioning determines a crowding market segment where only a few players are able to succeed. Furthermore, requires profound changes both from the point of view of organization, productive management, strategies for the construction of brand and product development oriented to different collections and seasonal exhibitions, construction partnerships with architects and designers who contribute to building a recognizable product.

2.5 Relation between producers and suppliers:

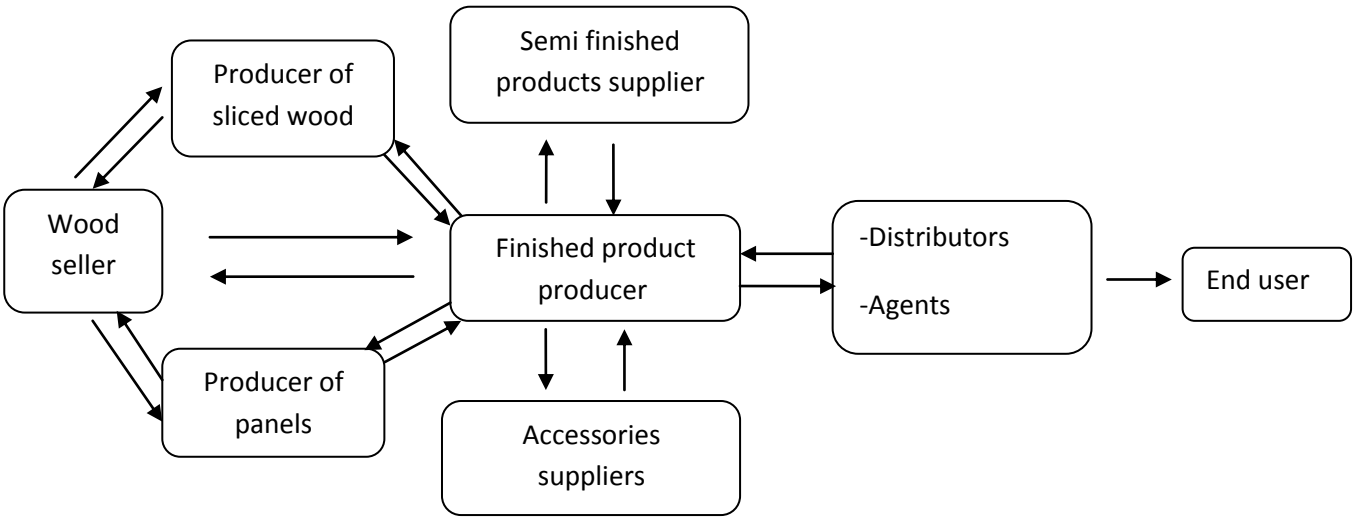
The mechanism of production in Brianza is based on close and dense interfirm relations, where large firms subcontracts different production phases from small firms ,which can be considered as an important point of strength for the district (Scarpinato,2011). Firm's capabilities of cooperation and interaction in the district are the main factors of competitiveness; moreover the high division of labor along the whole value chain created economies of scale and enhanced the information exchange mechanism.

Suppliers of Brianza play an important role in the district and are carrying out the steps of cutting, sewing and final assembly of the furniture padded on behalf of other businesses, which receive raw materials and semi-finished products, as well the technical-operational procedures for the realization of the products, this justifies the fragmentation of the production process and the exercise of a multitude of businesses in Brianza.

Over years, the network has been developed with the emergence of the need to optimize the performance of logistic and quality of the products along the entire cycle of production.

The subcontractors are involved in producing finished products complementary to the supply of raw materials and semi-finished products; they are keen to innovation that companies often fail to compete successfully in other sectors more or less related to the wood-furniture using the skills and know-how gained in production.

Fig.2.1 Production Value chain in Brianza



Source: Author

In recent years, the crisis has pushed enterprises to internalize part of its production activities to contain the cost of production within a strong price competition, and avoid the risk of late delivery or quality control difficulties, this has displaced some artisan companies in the primary phases of the supply chain (Bramanti,2007).

Many enterprises in the district are drawing their strategy on high end products; this has led to a new process selection of companies in the value chain, depending on the punctuality of deliveries, product quality and the flexibility of response to different production needs.

These factors seem to be, at present, almost the pre-conditions to survive and operate in the market supply and subcontracting, which resulted in a considerable reduction of the number of firms along the value chain. According to Chiarvesio et al. (2010), local networks of suppliers are still important as they can guarantee flexibility and speed in manufacturing processes.

There are main features that distinguish relations between producers and suppliers in Brianza, as stability, trust and mutual interaction between both parties to maximize and enhance the quality level of products, also enterprises in the district rarely change their suppliers[11], Lead enterprises rely mainly on suppliers who have the capacity to produce with the required high level of quality noting that price is not the crucial determinant for the relation, however those targeting the low class segments in the market search for suppliers with the lowest cost, and in some cases tend to externalize from outside the district.

The suppliers in the district faced many obstacles due to the demand contraction on local market in the last years, many of them were not able to face the series of crisis hit the market lately and closed their activity[12], also medium and large enterprises tend to integrate vertically.

These problems represent a big obstacle towards the reproduction of know-how and competency in the district and impose questions on the ability to attract new young calibers to the district. It is necessary to optimize the network of suppliers and contractors, and raise the levels of qualitative supply networks with a view to better respond to the growing demand for customized products.

2.6 Intermediate Institutions

2.6.1 CATAS quality institute

CATAS is the Italian research institute and test laboratory in the wood and furniture field, with laboratories located in both of Italy's main production areas, in San Giovanni al Natisone (Udine) and Lissone (Brianza). The institute carries out a wide range of tests and research on wood and furniture to ascertain that a product actually meets a client's requirements, verify conformity to standards, and test quality and safety.

It represents a case of excellence among the actors who play the role of interface between a specific industrial district and the competitive environment in relation to knowledge about a specific problem. The start-up of the laboratory was in 1969 in San Giovanni al Natisone (Udine) to respond to Italian firms needs to get access to specific markets, mainly Germany, through assisting to cope with quality and safety standards required in these countries, and then in 1997, it opened a branch in Brianza to serve the firms of the furniture district.

[11] CATI survery was conducted in Brianza in 2007 ,stated that 90% of the sample interviewed have stable relations with suppliers for more than 5 years at least.

[12] According to Movimprese data, more than 500 furniture enterprise in provinces of Monza,Brianza,Milano &como closed its activity from 2008 till 2011.

The institute has developed its core business to include a web of services as improving the quality of production processes, improving energy efficiency, reducing costs of environmental impact, the reduction of process waste, preparation of technical documentation, technical advice, seminars and training courses, the experience of the institute enhanced its capability to respond to non-standard highly customized services.

CATAS implemented different activities in district, more than 230 firms in Brianza have benefited from the center services in 2004 (Camuffo&Grandinetti,2006), Daniela Mascheroni ,the marketing director of MisuraEmme one of the leading companies in Brianza, appreciated during an interview the role of CATAS, stating that : "*CATAS plays an important role in raising the quality level of the district products, the varnishing system of Misura Emme is entirely based on water-soluble products and its performances are equal and sometimes better than those obtained with traditional plants, as certified by CATAS*".

The role of CATAS is crucial in the process of accumulation of knowledge in Brianza as the center act as knowledge gatekeeper in the district through access to different sources of knowledge and interaction with different international institutions, it also supports the codification process in the district through the services provided by the center.

2.6.2 Training institutions

The system of training in Brianza consists of 100 institute of which 47 technical schools with beneficiaries exceeding 30000 student, IPSIA- Meroni of Lissone and Terragni Meda are the main actors in local education and training in the district beside many centers for training of which the Art institute. Moreover ,The volta center "Centro Volta di Como" which was established in 1983 in Como city North Italy to link between research and industry, is considered a first step towards local governance and cooperation between public and private entities (Garofoli, 2001),The center has implemented many projects of cooperation with the industrial sector, of which the IDIA project in cooperation of the CLAC of Cantu' and SME's in Brianza district aiming at discovering new dimensions of design and produce workplace infrastructures linked with latest technology.

Although there are various training centers and institutions providing services in the district, however the training system is suffering from lack of programs for development of managerial skills, also the family business composition of the district is considered a bottleneck in this context, as usually these enterprises depend on the family members, without trying to develop its hierarchical managerial system to cope with recent techniques in the field of marketing, management and financing, Most of the district companies don't

invest heavily in training because of fears from headhunting of their managers and employees by their competitors.

The system is essentially in need of the renewal and development of organizational and management skills of staff, development of a stronger networking with the system of higher education and university is important to generate positive externalities for furniture sector; moreover Steps must be taken to facilitate and enable greater integration between the furniture sector and the education system.

It is also noted the lack of coordination between initiatives designed to provide training (Bramanti, 2007), the monitoring and evaluation of local training and its response to the needs of social and economic production fabric becomes the first and essential step to build a broader and more ambitious development plan.

A proposal of territorial stakeholders converge on the idea to realize an "Observatory" to serve as a link between the experiences and initiatives, linking all vocational training schools and acting as a focal point to coordinate the national and regional policies, providing consultancy services to all.

The Observatory consists of three subsystems, a database (database of training activities), which collects information about training and makes them available operators of the territory; a "showcase" of training, through which you can consult the database, but also request & offer information and feedback between users of different levels (Training operators); drafting an area that acts as a "guide" to the policies of territorial training (Bramanti, 2007).

2.7 Innovation

The turnover of Brianza district is stemmed from its capacity to produce products with high degree of innovation in terms of design, materials and compatibility, so the competitive advantage of the district is strongly based on its ability to innovate continuously.

Brianza closeness to Milan has played an important role in enhancing the innovation process, as cooperation between enterprises in the district, and design offices in Milan, generated new products and materials (Scarpinato, 2003). Innovation projects are usually the result of cooperation between the enterprise and the designers, architectures and suppliers, and rare cooperation with technology or university centers (Garofoli, 2002).

Chiarvesio & Micelli (2010) stressed this argument stating that innovation is more"Market driven" than "Research driven" as the important factor of stimulating innovation is interaction with clients and market research. Also the literature has proved the difficulty of cooperation between small enterprises and universities (Bellini & Ferruci, 2002:67).
Innovation in Brianza is often not patentable and companies consider to have at most one temporary advantage (about six months) ,then the product will be reached and imitated and firms have to produce new ideas (Bramanti & Riggi 2007).

With the aim of developing a capacity for innovation by firms of the district system, it is required an analysis of the position of firms on approaches to be followed for the management of innovation processes. In fact, on the one hand you could push towards the creation of centers of research and developments, but what emerges is the strong position that innovation should be designed and conducted by the company and the enterprise; this is because innovation is linked to the strategic plan of each enterprise.
That conclusion is supported by the position of enterprises in the district about the type of channels that innovation deem most appropriate for achieving the processes of innovation. The main channels are considered founding the innovative capacity of internal research and the acquisition of equipment and means of production.
In the following section we will discuss the mechanisms of innovation in Brianza, resources allocated by firms for the innovation process and examples of projects introduced by local actors to enhance innovation.

2.7.1 Dimensions of innovation

Brianza firms have traditionally been focused on the product; this was also the result of a successful growing period that has seen the undertakings concerned by strong market demand. By the increase in the volume of consumption, the consumer taste has been shifted from traditional quality features to design and innovation aspects, this transformation motivated large and medium enterprises to concentrate on activities of design and innovation (Rullani, 2004).

This is an area of great strategic Importance, Which is, however, a critical issue for the financial resources needed. In particular, enterprises show the willingness to adopt management tools that they can go to advanced integrated solutions ,however significant investments is dedicated in production technologies and design.

One area of great Importance for increasing the competitiveness of district firms is technology transfer; Innovative enterprises in the sector dedicate 80% of its innovation resources for purchasing of new machines for furniture production, and the quote of research and development of the furniture sector in Italy in medium is 15% of budget (IPI, 2003).

There are two groups of factors relevant to innovation: those in business and those related to the district and territorial system. The first category includes, for example, dimensions such as the construction of the brand and the enhancement of the aspects of the Made in Italy, marketing intelligence, the development of new products through functional innovations, technology and styling, quality, productivity, management of customer relations, distribution, and construction of a product identity.

While in the second category, we are having dimensions such as the identification and enhancement of "shared competence", the development of forms of finance, the construction of technology centers, the provision of infrastructure and equipment.

A great deal of attention given to the adoption of hardware platforms and software as well as sales and marketing innovation and organizational innovation, which involves the definition of business models more appropriate to the new competitive landscape. In terms of areas of innovation in Brianza on which companies provide investment over the coming years, the first important fact is detectable focusing on brand building, improving processes of sales and distribution, and in general on improving relations with customers.

Box2.1 represents an example of initiatives of innovative projects implemented in Brianza in 2010 to support SME’s with young designers.

"A designer for companies" Project

In 2010 ,the project "A designer for companies" was launched by the Chamber of Commerce of Milan, and Material ConneXion (R&D center) and the chamber of commerce of Monza &Brianza, the objective of the project is supporting SME's with young designers from schools of design to implement and execute ideas proposed by enterprises and designed by young designers, The first two editions have witnessed the participation of 4 schools, 30 companies, more than 120 students over the production of about 50 prototypes, the marketing of some of the products, prototypes and emergence of stable collaborations between companies and students-designers involved.
Students of design schools in Milan, Domus Academy, Istituto Europeo di Design (IED), New Academy of Fine Arts (NABA), Faculty of Design at the Politecnico di Milano , and the Academy of Fine Arts Aldo Galli Como participated in the intiative.
The ideas of competition took place on two levels. The first, is the selection process of the prototype project that was implemented for the companies and the second, for which a committee select the best quality projects in terms of Innovation, Sustainability and Innovative Materials.

This assesses students' ability to respond to the needs expressed by the company, the absolute quality of the projects evaluated according to the categories above. Designers and companies worked closely to the realization of prototypes of the products that was exhibited to the public of the Milan Triennale and placed in a catalog at the end of the project, which trace all the steps and reproduce the designs produced by the students and document the prototyping and collaboration existed between designers and companies.

2.7.2 Internet based technology

The literature acknowledged major opportunities for SMEs derived from Internet-based technologies (Seassaro and Simonelli 2000,Capitani and Di Maria 2000),many benefits could be gained from internet based technologies as easier access to foreign markets, through the Internet as a communication channel able to reach a large number of potential customers, a more effective and efficient management of processes such as supply chain management or new product development, which typically involve a large number of small players (customers, suppliers, subcontractors, sales network), raising the contractual power of suppliers through buyers groups which can be coordinated through the Internet.

Scholars highlighted the obstacles facing SME's in this context (Micelli 2002, Seassaro & Simonelli 2000), as lack of competencies and skills, absence of convenient IT solutions, fears of standardized solutions which could hinder the flexibility of the enterprise, Industrial districts under pressure of competition should reorganize its mode of communication on the international level which enable flow of information and services, the district specific features and dynamics could support SMEs in the adoption of Internet-based technologies (Capitani & Di Maria 2000; Micelli 2000).

The network of relationships could facilitate the development of Business projects involving various companies and associations, and providing financial support for the district strategic projects, moreover the proximity of the companies could make consulting and training services more effective.

An empirical study done by the Politecnico di Milano (2008)[13] on the e-business applications in Brianza, stated that most of the enterprises hardly ever feel external pressures towards the use of Internet-based applications: 73% of the enterprises do not feel any pressures, while 13% experienced pressure from their customers, 3% from competitors, and 1% from consumers. The knowledge of active e Business initiatives is low: 63% do not know of any portal addressed to their industry or district and 89% do not know of any e-Business initiative of competitors, customers, suppliers or others, although some of them have taken the first steps, either alone or leveraging a vertical e-Marketplace. Finally, in 46% of the cases the predicted impact of e-Business in the district business is judged as ‘‘scarce’’ or ‘‘zero,’’ while 44% of the enterprises forecasted a ‘‘significant’’ impact.

[13] The study was carried out by the Observatory of Politecnico of Milan and the Municipality of Como.

Lead enterprises in the district realized the importance of e-business solutions, for instance, Tisettanta is a leading enterprise in Brianza with a turnover of about 30 Million euro, assures the importance of e-business solutions in manufacturing sofas and beds, the company uses modern software to facilitate its managerial and industrial processes, for instance "Metron" graphical product configuration software converts technical drawings into a list of materials used to plan production process and sourcing of materials and components, however the company is facing a problem that their distributors can't deal with the software and they are in need of training, also the company is applying the ASIS model as a new trendy software used to manage sales order and the "Virtual actor" represents a B2B support platform introduced with purpose of managing all information exchanges between the parties and reduction of paper work and improving the response of the supply chain.

The interviews firms in Brianza revealed that many leading firms in the district use Enterprise Resource Planning (ERP) software which enables the enterprise to manage its resources and processes efficiently according to each enterprise needs and capabilities. Management software solutions are important in order to improve the structure of demand planning, through alignment between increasingly rigorous market forecasts and capacity.

The previous discussions revealed the potential of developing internet based solutions in the district, with its direct reflection on enhancing internationalization of the district, reorganizing its mode of communication on modern basis and developing SME's capacity to reach new markets.

2.7.3 Obstacles to innovation

Interviews with firms in Brianza revealed that there are several obstacles perceived by them that affect the development of innovative processes, one of the main obstacles in the district is the lack of financial resources, the financial status of enterprises in the district is satisfying, but not enough for conducting R&D activities, large enterprises usually finance their innovation activities internally. This implies that most of the firms do not have the ability to carry out research activities in a continuous and strategic mode, In addition to a general lack of access to public funds.

Another obstacle is the lack of qualified personnel, especially of the professional techniques. This is followed by the lack of funds for self-financing innovation processes, poor access to financing sources to research, both public and private, and lack of venture capital and also the difficulty of finding qualified partners in the area. Finally, of great importance is also the

lack of an effective information system to support the finding of useful information for the process of innovation.

The district is also suffering from lack of information on markets and shortage on the ability to express and codify the demand for innovation, and to find a valuable R&D partners or interface effectively with potential centers of national and international research operating on activities related directly and indirectly with what firms produce, poor interaction between the production system and research centers and low propensity among the companies to collaborate on knowledge transfer projects , public private partnerships, low R&D investments and low ICT investments .
Brianza is in need to improve relational assets that can lead to closer collaboration between regional actors, sustaining the collective learning capability and formulating a regional innovation strategy based on strong regional network , Innovation through investment in technology to support cross-productive activities and not Enterprises production, with the development and effective use of advanced platforms for software management.
Public policy in the district should encourage policies that enhance communication between firms in activities related to innovation, also initiatives introduced to enforce linkages between research and technology centers and firms will be of great importance.

2.7.4 Intervention policies

Demand for innovation can be categorized into two categories: those related to the transfer of business processes of enterprises and those related to fundamental business processes of companies. The first category in the past has often been characterized by self-sufficiency and lack of information and reporting with other industries. Today there is a need to set a benchmarking structured activity in order to analyze similarities and differences to be addressed and possible solutions and shared paths. In particular, it is important to radically revise enterprises business models in an increasingly more marketing oriented model.
The need to invest in technologies is complemented by the need to develop intangible resources of enterprises. In this regard, the fundamental importance is attached to the building of corporate identity through brand marketing policies and strategies. This highlights the trend companies want to invest in the recognition. Businesses need to adopt new and innovative models of governance and performance, the development and use of new organizational and management tools, predictive models, techniques for analyzing and understanding customer behavior.

As regards, however, the underlying business processes, the demand for innovation occurs in improvement of the process of new product development, the need for innovation in product development, and in the related technologies attached to the product, and express questions in terms of management, training and organization, in the search for new information and technology solutions such as software tools and technology for performance management, new product development, as well as internal ICT tools.

In addition, the need for increased work of contextualization of new ideas, projects for each market, customer of interest to companies, construction of a structured system of relations. It should be noted the need to improve relations with the world of research and to drive more effectively the work.

On this basis, product innovation plays a key role in the future of the district, especially because now the customer always seems to seek a product that will not only meet requirements closely related to the instrumental nature of the product, but also esthetic features and environmental certification of supply chain and eco-compatibility. The competitiveness of companies' district is supported by recognition and product differentiation in the market, in this sense the eco-compatibility is of big weight. This can be analyzed from two perspectives, the prospect of the certification chain that sees all companies in the value chain involved in their environmental qualification, and the prospect of eco-friendly products.

The need for enterprises to improve competition based on product quality and the flexibility of response to different production needs and delivery in time, this requires increasingly stringent and effective coordination actions, to be implemented in the form of advanced platforms and information systems to support coordination activities.

Another important issue is innovation in production processes, in terms of robo- mechatronic solutions to support the production that can potentially help enterprises work better, eliminating manual intervention which is more repetitive and tiring. It also shows the need for further investment in automatic cutting, in automated warehouses. Energy improvement, aimed at a reduction in consumption and self-production of energy. Logistics, both in terms of mode of handling of goods and finished products so as to reduce road transport and meet the costs associated with the rising price of fuel, and management products, in addition, great importance is of the management of information flows especially with suppliers and distribution chains.

2.8 Public policy and structure of local collective action

A package of governmental support for regional development of SME's was introduced in Italy in the nineties , targeting barriers related to dimensions as absence of critical mass and operational cost, for instance Law no.17 for year 1990 stipulates the government incentives dedicated to Lombardy region, Article (15) of the law, stated the allocation of 30% of budget to establishment of networks of sales and market studies, Art.16, assigned a contribution for export councils in the region for alleviating the burden of bureaucratic and administrative costs of exporting(certificates of origin, legislation costs),Art.(17) stated the contribution related to collective participation in international fairs.

Also an agreement was signed between Lombardy region and chambers of commerce in Lombardy (sistema camerale) to encourage projects of internationalization of Micro enterprises (Bramanti,Scarpinato, 2010). Another agreement in 1999 was signed between the Ministry of international trade and the Italian regions including five objectives for intervention of which, the promotion of the "Made in Italy", providing training for SME's for internationalization, encouraging exports, internationalization of fair system, and reciprocal trade missions.

Although big efforts were exerted on the level of public policy, however policy based on direct financial support is not valid for all typologies of enterprises, specifically non-exporting enterprises, as these enterprises are lacking more the managerial and administrative structure and competency, also one of the obstacles facing SME's to get these incentives is the long time taken for the procedures of support, as it takes between two and three month.
There are various local institutions for governance in Brianza, the agency of development of Brianza "Sviluppo Brianza" was established in 1998 aiming at creating a favorable environment for economic & social development, the agency composed of officials from 21 commune of Brianza. One of its intrinsic goals is to consolidate governance in Brianza and create networks between training systems and enterprises to promote innovation.

Another institution which is CATAS of Lissone is more concentrating on quality control tests, IPSIA of lissone and AFOL of Monza are the centers of training on woodworking for young calibers, this is beside the federations and associations of producers and fairs.

Although the stated local entities are playing an important role in the district, but on the other hand, Interviews with firms revealed that few enterprises have benefited from these initiatives, while the rest of the structure of the enterprises did not get benefits from its programs, consequently coordination of efforts between these entities in the future could lead to a solid and reliable programs to support the whole structure of the district.

2.9 Challenges

The analogy of the dynamics of the district between 1991 and 2001 shows that the number of enterprises in the district remains positive, but it was noticed the reduction in the number of artisans, and the decrease in the number of sub sectors enterprises with low value added, mainly raw material suppliers. This can be attributed to the tendency of furniture enterprises to outsource part of their inputs from low cost suppliers outside the district (Bramanti, 2007).

Also elevating international competition on price pushed enterprises to adopt new strategies on what to produce and what to outsource, searching for new markets and channels of distribution. High rate of mortality represents a significant challenge specially for enterprises operating in the initial phases of production; on the other hand, enterprises on the middle or end of the production process are achieving a good performance (Martignano & Scarpinato, 2007:125), many enterprises in the district tend to delocalize some production phases, and maintain the high value added phases in the district. Micro artisan enterprises in the district should vary its scale and range of products with high product and service quality.

Another important challenge is the fierce competition in international markets, the district should prioritize its agenda with more attention to international markets with the current stagnation in the local market .The strength of Brianza is based on the grade of integration between enterprises in different production phases with high division of labor, however, it is of great importance to control production phases, and enforce relations with suppliers from the bottom to the top of the value chain, and getting closer to the final consumer through enhancing the relations with distributors.

Also of great Importance is investment in R & D and industrial design, as the district represents a patrimony of know- how for the enterprises, closer collaboration between regional actors is needed to sustain the collective learning capability and formulating of a regional innovation strategy based on strong regional network, and connecting young designers with the enterprises in the district, raising the awareness of the district enterprises to the growing importance of industrial design.

It is also noted during interviews with firms the reluctance of young generation to work in the sector, as they prefer to choose a more comfortable and attractive field of work. This represents an important challenge to the future of the district and threatens the patrimony of knowledge and know how accumulated over years, and should be faced by giving incentives for youth to participate in training and workshops in the sector and give more attention to training on managerial and financial skills to enforce the training scheme of the district.

Concluding Remarks:

The last three decades have witnessed a structural change in furniture production systems in Italy, transforming from a strong vertical integration towards economies of specialization and division of labor.

Brianza industrial district in Lombardy region, one of the oldest furniture districts in Italy, represent a successful model that has achieved high growth rates based on strong specialization and division of labor.

The district is characterized by strong presence of SME's conducting different activities from cutting, woodworking, polishing, lacquering, gilding, upholstery, metal and plastic work. The discussions reveal that the competitive advantage of these firms relies on its capacity to create its socioeconomic system efficiently producing articulated products with high quality, also the strong presence of specialization and division of labor enabled firms to diversify its products and increase the capacity of personalization and customization of its products.

Lead firms play an important role in managing a network of SME's, creating a stable and structured relation based on trust and quality, also these firms control two fundamental phases of the value chain, which is the product development and relations with customers, its core competence is based on quality, design, innovation and other non-price factors.

SME's are conducting different activities in the district, many act as subcontractors for large firms, others produce "Made to Measure" products with high personalization of products and others produce for niche markets highly articulated products.

With the growing demand for customized products, SME's role is enforced in the district as large firms prefer to outsource part of its production phases from SME's to avoid investing in new production lines, with these market changes, networks in Brianza was enforced to satisfy these need, relying on quality, flexibility, services, efficiency and intensifying information flow between parties of the value chain.

The district closeness to Milan played an important role in enhancing innovation in the district, as many firms cooperate with design and architect offices in Milan, Innovation is a market driven process in Brianza, innovative products usually emerge from cooperation between firms and designers ,rarely from technology centers or other governmental institutions.

Firms in the district dedicate a special attention to innovation dimensions related to development of new products through functional innovations, technology and construction of product identity and brand building. Although efforts have been exerted by different actors in the district to enhance innovation, but still there is a need to interact effectively with national and international research centers operating on activities related to firms products and supporting closer collaboration between regional actors ,forming a regional innovation strategy based on strong regional network.

Chapter 3. Damietta furniture district

3.1 Characteristics and Economic Structure of Damietta

Damietta is an Egyptian governorate and a peninsula, which is located on the Mediterranean coast, and lies on the east bank of the Nile River, with total area of 1029 km'2, of which 669km'2 are inhabited areas.

The governorate is divided into four regional province (Damietta,Faraskoor,Kafr Saad,Zarka) and 10 cities, Damietta represents a case of sustained economic development based on family managed small enterprises with low tech technology. It is famous of artisan industries, mainly the furniture with total production of about 600 million dollar in 2010 (CAPMAS)[14].

Damietta rank is the fourth among all the governorates in Egypt in terms of human development index (2007-2008),by analyzing the economic indicators of Damietta illustrated in table (3.1), we can observe that the rate of industrialization[15] increased from 7.6% in 2004 to 12.1% in 2007, while the occupation rate increased from 29.5% to 32.7%, the governorate rank in 2007 all over the selected industrial governments in Egypt was the second in terms of rate of industrialization and the third in terms of occupation rate.

The literacy rate in Damietta is about 80.3% of which 38.6% are enrolled in secondary and university educations, the real GDP per capita (PPP) in the governorate increased by 53% from 4686.2$ in 2003/2004 to 7166.8$ in 2007/2008, while unemployment rate decreased from 8.7% in 2004 to 6.7% in 2007, compared to 11.9% in Cairo.[16]

Table(3.1)- Industrialization and occupation Rates among main industrial governorates in Egypt(2004-2007)(%):

Governorate	*Industrialization rate(%)*		*Occupation rate (%)*	
	2004	2007	2004	2007
Cairo	8.9	12.4	21.8	29.9
Damietta	7.6	12.1	29.5	32.7
Alexandria	8.9	10.9	25.5	32
Kalyoubia	8.1	9.9	27.8	32.6
Giza	7.6	9.2	28.3	32.6
Dakahlia	5.6	6.2	32.4	34.6
Sharkia	5.2	5.9	33.8	34.6

Source: Egyptian Ministry of Planning

[14] CAPMAS is the central agency for public mobilization and statistics in Egypt

[15] Rate of industrialization= workforce in the industrial sector/population

[16] Egypt human development report, United Nations development program report on Egypt, 2010.

3.1.1 Dynamics of the furniture Industry in Damietta

Egyptian furniture sector contributed in medium with 4.5% of the industrial GDP in Egypt from 2000 to 2010, Damietta contribute by 66% of total Egyptian production and 70% of total Egyptian exports of furniture, and 38% of job opportunities in the sector (CAPMAS, 2010).

The core competence of Damietta district rest on the handmade classic furniture and high skills of labor, as industrial districts often arise in regions with long traditions in craft production (Garofoli,1986), Micro and small sized furniture manufacturing firms' nature dominate the Furniture sector of Damietta, They function with limited number of regular employees, mostly operate in workshops in residential areas and utilize hand tools, however recently, CNC machines started to be used in Damietta workshops.

Damietta exports value increased from 30 Million $ in 2005 to 179 Million$ in 2010 with CAGR of 42.9%, and share of 70.1% of total Egyptian exports in 2010 (Table3.2), The export boom in the cluster is attributed basically to a combination of factors represented in; the high demand from the gulf countries of the classic furniture of Damietta, the devaluation of the Egyptian pound in 2003[17] ,the emergence of big factories in New Damietta and the role of institutions mainly IMC and export offices in providing business services to the cluster.

Table (3.2) illustrates the total Egyptian production of furniture and contribution of Damietta in the total exports of Egypt from 2000 till 2010:

Year	*Egypt total Production (M$)*	*Egypt total exports (M$)*	*Damietta Exports (M$)*	*Damietta Share in Exports (%)*	*Furniture sector contribution in GDP(%)*
2000	312	15	NA	NA	4.5
2001	350	14	NA	NA	4.1
2002	364	19	NA	NA	4.5
2003	391	20	NA	NA	4.4
2004	435	21	NA	NA	4.5
2005	**455**	**48**	**30**	**62.5**	**4.4**
2006	569	145	101	69.6	5
2007	721	229	160	69.8	5.2
2008	795	293	205	69.9	4.4
2009	849	268	187	69.7	4
2010	**934**	**255**	**179**	**70.1**	**3.7**

Source: Goeic,UN com trade, CBE

[17] The Egyptian government in 2003 has taken a decision of flotation of the Egyptian pound against the dollar which led to loss of the value of the pound by nearly 60% of its value.

The furniture industry in Egypt has recorded positive growth rate in Net Value added (NVA) 2006 till the middle of 2009, as indicated in table (3.3).

Table (3.3) Net value added of furniture industry in Egypt (2006-2010):

Year	*Net value added (M$)*	*Growth rate (%)*
2006/2007	168.9	--
2007/2008	209	23.7
2008/2009	301.3	44
2009/2010	252.1	-16

Source: CAPMAS

3.1.2 Occupation in Damietta

The furniture industry in Damietta contribute significantly in generating job opportunities, as The official statistics illustrated in Table 3.4 reveal that the number of firms in Damietta increased from 20,507 in year 2000 to 32, 228 in 2010 with CAGR of 4.6%, with average number of 4.2 workers for every firm, Damietta generates about 38.5 % of total job opportunities in the furniture sector in Egypt (CAPMAS,2010), working in different phases of furniture production carpentry, carving work, veneer pasting, polishing and upholstering, Interviews with Firms showed that the average wages of workers in the furniture cluster rose from 1000 L.E (250$) per month in year 2000 to 2100 L.E (400$) in 2010.

Employment levels rose from 88000 worker in 2000 to 135000 worker in 2010 (CAPMAS), about 15% of employees in Damietta (nearly 20000 worker) move daily from neighbor governorates (Dakahlia and Kafr El Sheikh) to their work in Damietta. The higher mobility of labor, and their willingness to move where other high skilled labor is located, gives thus rise to potential multiple equilibrium concerning the location choice and potential clustering of particular industries (Baldwin et al 2003, Fujita et al 2000).

Table (3.4) illustrates the dynamics of occupation in Damietta furniture cluster (2000,2005,2010):

Year	***Firms***	***Employees***	***Average no. employees per firm***
2000	20,507	88,180	4.2
2005	25,634	112,226	4.3
2010	32,228	135,301	4.2

Source: CAPMAS, Industrial development Agency

3.1.3 Typology of firms in Damietta:

SME's and the artisan workshops in Damietta dominate the core structure of the district and play a significant role in its development, Table (3.5) reveal the increase of micro and small firms from 20.343 unit in year 2000 to 31,841 unit in 2010 which represent about 98.8% of the total establishments in the district.

Table (3.5) illustrates the number and classification of firms in Damietta (2000, 2005, 2010):

Year	***Micro & small (1-19)***	***Share (%)***	***Medium (20-99)***	***Share (%)***	***Large (>100)***	***Share (%)***
2000	20,343	99.2	150	0.74	10	0.04
2005	25,377	99	230	0.90	27	0.10
2010	31,841	98.8	337	1.1	50	0.10

Source: CAPMAS**, Industrial development Agency**

Most of small firms in the district are producing handcraft classic furniture, very limited number of firms (about 50) is specialized in exporting Antique furniture to niche markets through export services offices, and about 60 small firms are producing the locks and furniture paints which covers only 10% of the district needs of production inputs.

Micro and small firms in Damietta are characterized by high degree of specialization, division of work and interdependence, moreover the flexibility of producing tailored customer designs, and capability of producing small series of products in short time, which gives it a competitive edge over large producers, These firms' activities are based on auto financing resources and internal capacity to generate cash flow.

The administrative activities of small enterprises are of low quality, they are suffering from limited financial, managerial and marketing capabilities, due to lack of professionals and insufficient organization, for these reasons, small firms resort to large enterprises and export services offices to export their products with commission based on exports volume, which lead to erosion of their profit margin.

The presence of medium enterprises (21-100 employees) is very rare in Damietta as it represents only 1% of the district (2010). This comply with previous studies on the industrial structure in developing countries, as the common feature is the "missing middle"; large enterprises at the top and many small enterprises at the bottom ,unable to graduate into the medium

sized category (Schmitz,1997:21), They cannot grow because of informational and other market failures associated with the provision of financial, technical and market support to SMEs' (Levy 1994:2),however it is noted that medium enterprises is growing in the district, achieving compound average growth rate (CAGR) during 2000-2010 of 8.4% (CAPMAS,2010).

Large firms in Damietta are considered the motor of development in the district, as these firms are employing in medium about 250 employees, exporting between 10 to 12% (CAPMAS, 2010) of the cluster exports, they tend to consolidate part of the production process internally, to guarantee the required level of quality needed to compete internationally and outsource the rest from SME's in the cluster.

These enterprises in the district are the result of the structural transformation from artisan activity to industrial activity, with updated production lines, wood drying machines, internal paintings and polishing cabins. The large dimension of these enterprises enabled them to secure their needs of production inputs materials, and decrease the vulnerability to wood prices fluctuations.

3.2 Structural changes in Damietta

Blomqvist (1989) defines structural changes as the changes that take place over time in the composition of production and the allocation of production factors (quoted from Vikström,2001:7), the concept of transformation pressure is used to analyze the economic signals that provide the incentives for long-term structural change. The transformation pressure is seen as a principal factor behind the economic actor's resource-allocating decisions, which result in structural change. The transformation pressure can, from the actor's perspective, be of two kinds; positive and negative. The positive transformation pressure consists of the opening of new opportunities, such as the emergence of new markets, technological innovations, new products and preference changes. The negative transformation pressure consists of shrinking markets, outdated products and falling demand due to preference changes.

Damietta district has witnessed three important phases in its modern history, the first phase started during the period of the French and British colonization in Egypt in the 19^{th} century, where Egyptian ex- craftsmen working in the manufacturing of ships were recruited to work in the field of furniture production, and produce furniture for the nobles and rich people in this period, they gained woodworking skills and accumulated their technical

knowledge over time which was inherited to the successive generations, taking benefit of their closeness to Damietta Port to import timber.
The second phase started after the Egyptian revolution in 1952, as the socialist central government role was evident, the political trend was toward building a national production base. The government established cooperatives to safeguard production inputs for Damietta furniture producers mainly wood. The socialist government encouraged barter trade with the ex-Soviet Union, Egypt exchanged cotton with wood from the ex- Soviet Union, which helped in supplying wood to the firms in Damietta with suitable prices.[18]

Schmitz (1995a) observed that clustering in developing countries was not an outcome of planned interventions but emerged spontaneously in an endogenous process, the cluster started to grow and play its role as the major source of furniture to the local market in all the Egyptian territories thanks to its highly qualified labor. The gradual increase in local demand for the furniture products pushed the workshops owners towards work division with other subsector workshops in the district, fragmenting the industrial process from designing, wood cutting, carpentry, carving work, veneer pasting, polishing and upholstering.
Changes in technology and growth of demand for non standardized products increased the autonomy of SME's and encouraged innovation (Becattini 1978, Piore &Sabel 1984).By the beginning of the nineties, with the growth of demand on furniture, firms in Damietta started to change its pattern of production from standardized products to more customized and wide range products with different colors and designs. The Distribution strategy of firms changed from depending on public sector chains and showrooms in Damietta, to ownership of private showrooms outside Damietta specifically in middle high class zones in Cairo to be near their domestic market.

The third phase started by the late 90's, a structural changes was noticed in the cluster in 1998, when The governorate of Damietta established a new industrial area in New Damietta(25Km far from the old city) of 255 hectare east of Damietta ,with a modern infrastructure facilities for different industrial activities including the furniture sector , and a package of incentives to attract the transfer of workshops from the old city to New Damietta, mainly 10 years tax exemption and subsidized land price paid on installments.

[18]Rami Ginat, The soviet union and Egypt (1945-1955), Frank Cass book service,1993

Fifteen firms in old Damietta who possess a strong financial capacities accumulated over years were able to transfer their activities to the new industrial zone and operate new factories with a modern production lines with total investments of 100 Million $, of which also factories for wood production (veneer, plywood), and furniture paints were established. Small workshops with limited financial capacities were keen to remain in the old area which they consider as a milieu that the culture and attention of client and keep the synergies and chains of suppliers and buyers accumulated over years.

The openness towards international markets by 2004 ,through participation in International exhibitions and exporting to international markets, represents a turning point in Damietta, also it helped firms to interact with international buyers in exhibitions, many firms modified its designs from pure classic to contemporary furniture to match the European taste, interviewed firms in the district specially those exporting to Europe affirmed the importance of discussion with their international buyers to develop a new product or new design.

We can conclude that the changing process in Damietta along its history was incremental and subject to different determinants, part of it related to the socio economic factors and historical sedimentation; as endogenous skills and capabilities of producing handmade furniture accumulated over years, other factors related to local and governmental efforts in certain periods aiming at developing the industry, and creating an industry wide change through encouraging exposure to international markets.

3.3 Damietta Value Chain

3.3.1 Production inputs:

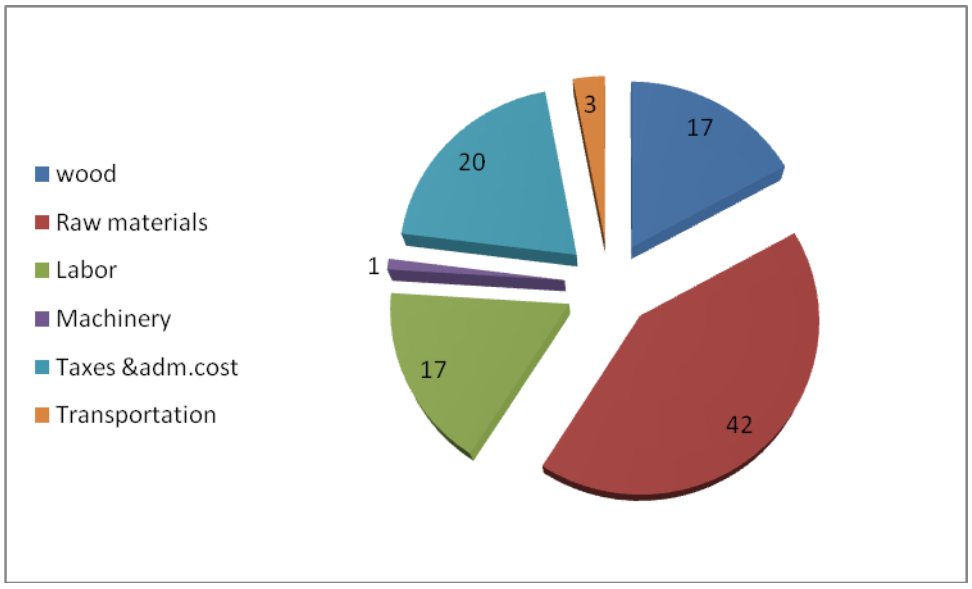
Egypt is not naturally endowed with wood resources, the country imports all its needs from other countries, Beech is the common wood used in Damietta, usually imported from East Europe mainly Romania, Veneer is both produced in the country and imported from Southeast Asia, also the MDF is taking a good portion of Damietta imports.

Damietta imports most of the production inputs as timber, paints, adhesives, accessories from outside the country, Firm's owners acknowledged in the interviews that their presence in Damietta enabled them to get access to raw materials and production inputs through traders, 30% of the sample (all of them are large enterprises) import their production inputs and raw materials directly from foreign companies, while 70% of the sample buy them from distributors and traders in Damietta (72% of them are SME's), the presence of

suppliers of raw materials, components, machineries and highly skilled labor represents a key factor for specialization (Brusco,1975).
Wood and raw materials represent a large portion of cost structure of the finished products in Damietta as illustrated in Fig.3.1; interviews with firms revealed that it represents about 59% of the final cost of the product, most of the production inputs are imported from china and east Europe, the average customs tariff on production inputs of furniture is 15%[19].

Most of the interviewed firms denied any form of collective cooperation in purchasing of raw material, however they stated that collective lobbying is done on the governorate and chamber of commerce of Damietta when emerges unjustified increase by traders in prices of raw materials mainly wood.

Fig.(3.1): Cost structure to produce upholstered seat in Damietta(%)



Source: Interviews with firms 2012

[19] Egyptian customs database

3.3.2 Inter-firm relations:

The organizational model of a territory is based on two main dimensions (Garofoli,1983&2003), firstly the system of production ,which include relations among firms, social division of labor and secondly is the social and institutional base, Garofoli (2007) summarized the typology of local productive systems as follows:

- Clusters of small firms as "specialized areas" with static competitive advantages (agglomeration of specialized suppliers in an area with low wages and weak ties among firms and lack of control on final markets).
- "Local productive systems" with a division of labor among firms and continuous production of professional competences, interaction and learning become strategic factors and allow a progressive shift towards the introduction of dynamic competitive advantages.
- "System areas" where it is distinguished by effective territorial integration networks, and the presence of complementary firms enabling the introduction of new knowledge and innovation. Voluntary decision making and partnerships for transformation and innovation, the introduction of collective actions and effective local state intervention are able to produce dynamic competitive advantages.

Damietta can be classified in the second category as "local productive system"; interviews with firms in Damietta revealed that the production mechanism is characterized by strong backward production linkages and high division of labor and reproduction of labor skills which represent the main competitive edge of the district.

The district growth in Damietta led to the generation of external economies (Marshall,1890)[20] represented in highly skilled labor, capable of producing handmade products, abundance of raw materials ,market access and business services through institutions, industrial districts in developing countries have structures and development processes that are different from typical MIDs in that they have emphasized the importance of family circles, active local states, frequent informal networks, the cohabitation of small firms and Fordist giants, and low degree of specialization (Park and Markusen ,1995; Rabellotti ,1995; Schmitz, 1995b).

[20] According to Marshall (1890), firms cluster around specific locations to take advantage of external economies of scale, access to a common labor market and shared public goods, such as infrastructure or educational institutions; economies from saved transportation and transaction costs due to the regional proximity of firms along the supply chain; and economies from spillovers that result from industry secrets being readily discerned due to proximity

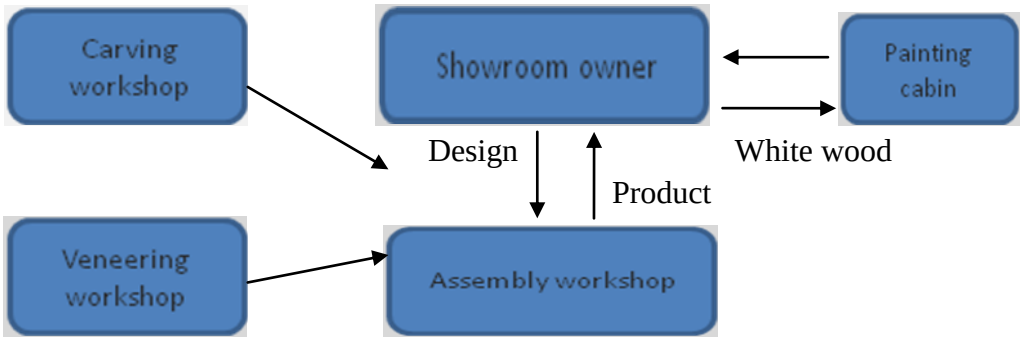
Interviewed firms in Damietta admitted the importance of their presence in the district, enhancing access to market information, new technology and trends, agglomeration of firms in an industrial cluster makes it easier to recruit highly skilled workers, smooth spill over of knowledge, and imitation of new technologies developed by others .

Penrose (1959) evidenced how there is a limit to the range of activities that the individual firm can capably undertake, Damietta is characterized by high division of labor, the production process in Damietta is classified into multistage processes along small workshops, the stages of cutting wood, pattern design, profiling and sanding are carried out in one place by assembly workshops, on the other hand the processes of carving, veneering are subcontracted to other specialized workshops, then the painting and polishing processes in another painting cabin.

Within industrial districts there are three basic types of firms: those that support productive activities, those that provide intermediate products for other firms within the district, and those that "manufacture the finished product" and deliver it either to the retail system (as with consumer goods) or directly to the companies that use the product (as almost always occurs in the case of investment goods) (Brusco, 1992).

Damietta local value chain as illustrated in Fig 3.2 is dominated by the show room owner, who possesses a strong bargaining power among small workshops, giving credit to workshop owner to buy wood and manage the whole value chain process, he selects the design and outsources wooden inputs to small carver workshops, and then he coordinates other production stages carpentry, carving work, veneer pasting, polishing and upholstering with another workshops. Sandee (1995) stressed the role of traders in the networks.

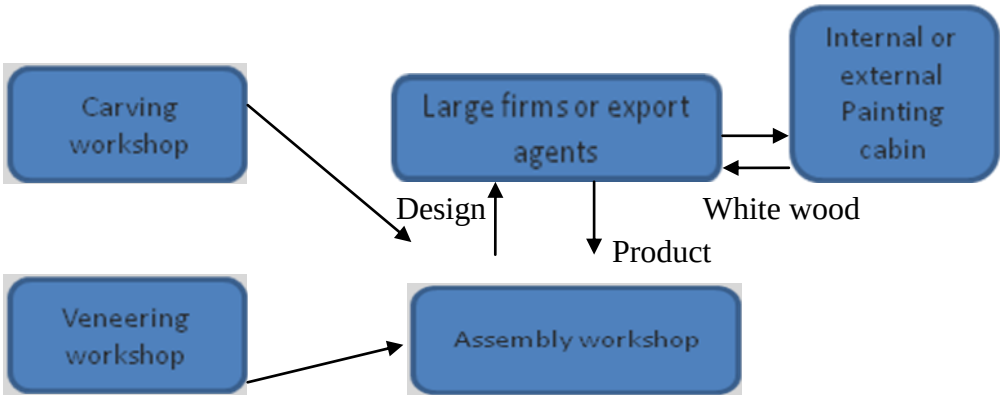
Fig 3.2 Damietta Local value chain



Source: Author

Another form of value chain in the district is the export value chain, as illustrated in Fig. 3.3, which is dominated by large manufacturers, who subcontract different stages to small workshops and do painting and finishing processes internally and then export to foreign markets.
Export value chain is characterized by high value added products and provides good opportunities for learning and innovation, while the local value chain is more price oriented with limited opportunities for development.

Fig.3.3 Damietta Export Value Chain



Source: Author

The dominance of the small dimension typology of firms on the cluster and their limited capacity to accept large orders led to weak forward linkages and limited financial capabilities, also most of the firms use outdated technology and suffer from scarcity of competent managers who are capable of optimizing the resources of the firm.
Due to the limited marketing and managerial capacity of small firms, they started to outsource marketing and export services from agents or export offices. Table 3.6 illustrates the large contribution of SME's in Damietta total exports which is in average near to 90% of total Damietta exports.

Table 3.6 illustrates SME's share of Damietta total exports from 2005 till 2010:

Year	*SME's Exports*	*Total Damietta exports*	*Share of SME's in Damietta exports (%)*
2005	26.5	30	88.3
2006	90.3	101	89.4
2007	148	160	92.5
2008	191	205	93.1
2009	165	187	88.2
2010	159.2	179	88.9

Source:GOIEC

Another organizational mechanism evident also in Damietta is the subcontracting between large and small firms, in some clusters large firms, although few in number, may have a very significant role (Humphrey 1995, Schmitz 1993), small enterprises and networks usually coexists with vertically integrated firms (Sverrisson 1993, Schmitz1995). All SME's interviewed stated that they cooperate and supply large enterprises with finished and semi finished products, Large firms estimated that they outsource between 20 to 30% of their production of finished and semi finished furniture from SME's in the district, 80% of the firms interviewed cooperate vertically with other companies in the district.

Such complexes give evidence of potent entrepreneurial and innovative energies stemming from the very intensity of interaction between local producers (Storper and Walker 1989), Knorringa and stamer (1998:2) classified cooperation between firms typically into three features which can be analytically distinguished, namely relational contracting, information exchange / joint learning, and collective action.

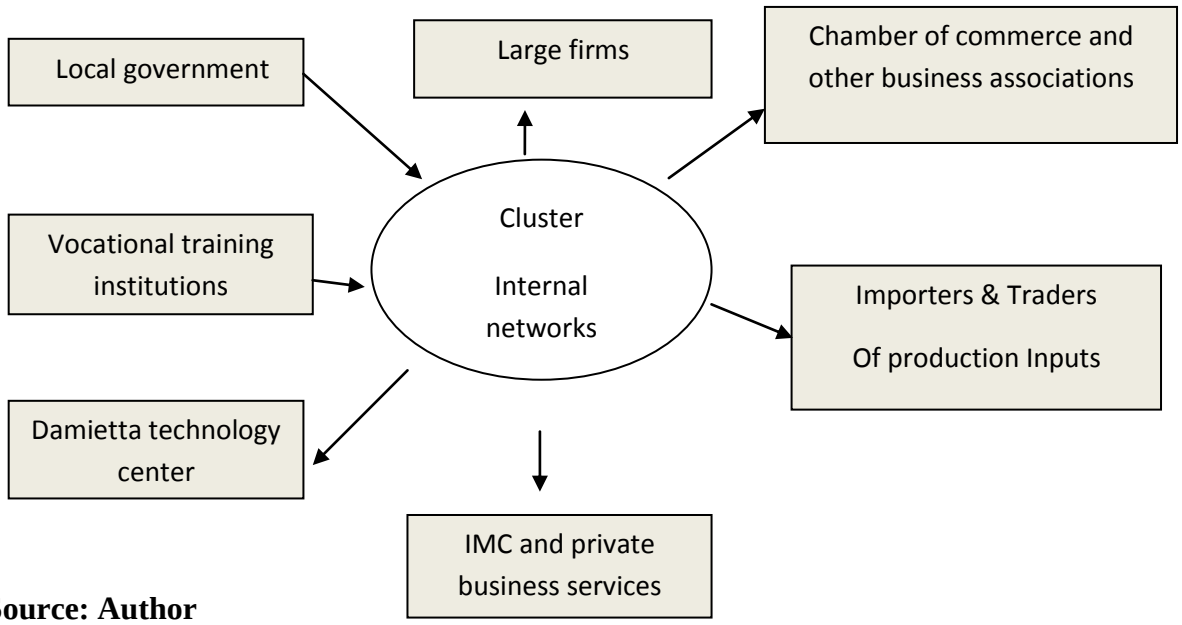
Relational contracting involves a business relationship based on trust, this type of cooperation exists in Damietta, El Azab company production manager stated that:"*our company outsources the whole painting process of furniture from another painting cabin owner in Damietta, whom we trust and can ensure a long term contract to reduce cost and guarantee quality*".

Information exchange between firms and suppliers in Damietta revealed the role of firms in guiding their suppliers on how to work with specific materials or use special new techniques, as long-term networks may offer substantial benefits in terms of minimizing transaction costs and reducing principal agent problems. Such arrangements are based on mutual trust, agreements are self-

enforcing to the extent that firms run the risk of eroding trust, and thus possibly drop out of the network, if they behave opportunistically (Knorringa &Stamer, 1998:5).

The gains that arise as a result of consciously pursued joint action (Brusco 1990; Schmitz 1995) are generated through co-operative and collaborative relations between firms. Figure 3.4 illustrates the mechanism of internal and external networks in Damietta, SME's represent the core network of relations in the cluster, supported by different inter relations with large firms, local government, training centers and local institutions.

Figure 3.4: Mechanism of internal and external networks in Damietta



Source: Author

The most common form of collaboration occurs bilaterally between individual firms, it is also noted in Damietta the horizontal sharing of capital equipment or vertical collaboration on product improvement between producer and seller. It also exists inter firm sales in certain components as glass, another form of cooperation was noted through usage of wood driers machines, as SME's cannot afford buying driers, usually they rent driers of big companies or centers with acceptable fees.

Another pattern of production in Damietta is the complete vertical integration of the production system, only 10% of the sample stated that they do the complete process of production internally, usually these firms export mainly to the EU countries, they don't cooperate with other firms in the district due to the difficulty of controlling quality and the fears of design imitation from competitors.

3.4 Intermediate institutions in Damietta:

The intermediate institutions or mesolevel institutions play an important role in the process of building the territory, the literature of institutions highlighted the role played by intermediate institutions in local development, Arrighetti (2002:7) stated that "the competitiveness of a local system is not based exclusively on the efficiency of competitive relations between companies, but also on the capability of the economic organizations to develop co-operative solutions and consolidate them over time" .

The meso economic level is a strategic asset for development strategies at the national scale (Garofoli & Scott, 2007). It has been demonstrated that the policies for local development are more effective when they are formulated and implemented through a close cooperation between public and private actors (Sabel, 1988), also Bagnasco (1988) underlined the importance of local institutions, banks and cooperatives in providing a suitable socioeconomic support to small business.

These institutions and organizations, on the micro level can be individual companies, families, associations and administrative units and on the macro level as national and supranational institutions. The main function of intermediate institutions is to " Generate compliance and uniformity with respect to development projects shared with others, and do not impose universalist abstract as do macro institutions, but generate different local regulatory orders and are firmly rooted in the territory" (Lanzalaco ,1999:17).

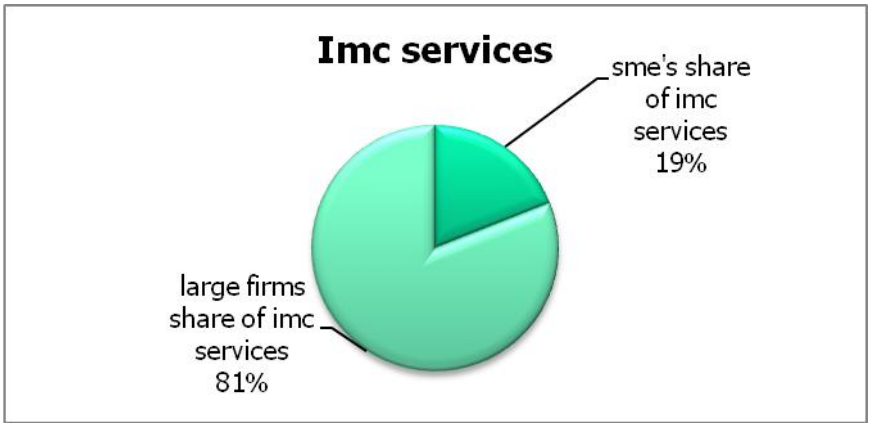
Abdel Latif & Schmitz (2010) proved that the relation between policymakers (institutions) and investors in Damietta in the period from 2002 till 2004 helped local firms responding to rising export demand which was the main reason behind the boom of investment in the cluster.[21] There is strong evidence that profound institutional change such as adoption of new organizational form is usually preceded by changes in institutional logics (Leblecici et al 1991).

There are many institutions in Damietta which are responsible for developing the furniture district in Damietta, The Industrial Modernization Center (IMC) is considered one of the important institutions of the Egyptian Ministry of Foreign trade & industry, responsible for outlining the policies of modernizing different industrial sectors and adopting executive programs and allocating funds, it was established in year 2000 aiming at providing business development services and industrial support to Egyptian industrial

[21] Hubert Schmitz,Abla Abdelatif evidenced the importance of relations between policy makers and investors abbreviated as (CIPI) in solving problems in Damietta cluster.

enterprises, the institution which is based in Cairo realized the need to open an office in Damietta in 2002, to work closely with companies in Damietta.
Since 2002, IMC adopted a program named "Damietta, center of excellence", allocating a budget for Damietta furniture cluster, offering technical assistance, production process development, quality control, and upgrading the entrepreneurial skills of enterprises in Damietta, local and international exhibitions participation, the center provides its services through outsourcing from a third party.
Since the beginning of the program, more than 250 companies in Damietta, out of 1383 furniture company served by the center all over Egypt, have benefited from its industrial and managerial consultancy services, however it is noted during the interview with IMC officials, that the eligibility criteria for benefiting from the center services, requires that the firm should have at least 10 socially insured workers, with industrial register, which are conditions that can be applied only on 15% of total furniture firms in Damietta. Generally, policies in developing countries have been geared towards supporting 'established ' or 'formal sector' firms, whereas smaller firms have been ignored or even harassed by the authorities (Van Dijk, 2000).
This argument is verified through examining the services provided by IMC to the interviewed large and small enterprises in Damietta, out of more than 280 service provided by IMC to these firms in Damietta since its establishment, as illustrated in Fig.3.5, large enterprises share was about 81% of services (227 service), while the share of SME's was 19% (57 service), also 75% of the interviewed enterprises in Damietta have benefited from the services of IMC of which 34% are SME's.

Fig 3.5: Share of large firms &SME's of IMC services



Source: IMC

Large firms interviewed acknowledged the impact of IMC services on their business, stressing its direct impact on their exports as illustrated in Table 3.7 and stating that the center funded 80% of their cost of participation in international exhibitions of furniture as Salone del Mobile of Milan and Meuble Paris (Table 3.8 illustrates large firms participation in local and international exhibitions), which they consider an effective tool for promoting their exports and one of the main reasons behind the breakthrough achieved in the last years, also 15% of large enterprises interviewed stated that they got support from IMC to buy a new machine or managerial software.

Table (3.7): Number of services provided by IMC to the large enterprises interviewed and evolution of its exports: (Value: Million L.E)

		Exports							
Company	Services provided by IMC	2005	2006	2007	2008	2009	2010	2011	*CAGR (%)*
Asal	47	5.2	15.5	18.9	21.2	15.6	17.6	21	+25
El Gallad	23	3.9	7.4	16.2	17.4	26.5	9.5	11.1	+18.2
French furniture	32	0.585	6.2	13.5	13.5	43.9	18.3	8.8	+54.3
Azab	32	1.6	8.7	11	6.3	4.3	4.3	4.5	+17.9
Shoulah	28	--	0.048	2.8	7.6	8.9	3.7	3.4	+134
Mobeliana	17	0.094	1.7	4.1	6.1	4.6	5.9	3.4	+77.5
Ali ElBadry	19	---	0.131	2.1	2.5	1.8	3.3	0.515	+31.4
Labban	16	---	----	----	0.399	0.073	----	0.705	+20.6
Total	214	11.379	39.679	68.6	74.9	105.6	62.6	53.4	+29.4

Source:IMC&GOEIC

Tables (3.8): Participation of large enterprises interviewed in exhibitions

	Number of Participations from 2004 -2012					
Company/Exhibition	Salone Milan	Interior Birmingham	Index Dubai	Meuble Paris	Meuble Russia	Furnex Egypt
Asal	9	3	3	4	3	8
Shoulah	9	-	-	1	2	7
El Gallad	4	3	2	1	---	4
French furniture	3	-	3	4	--	8
Ali ElBadry	-	-	1	-	-	1
Mobeliana	5	-	-	2	3	5
Azab	4	-	1	1	1	4
Labban	1	-	1	-	1	5

Source: Interviews with firms,2012

SME's interviewed confirmed the important role of IMC in Damietta,30% of them stated that they participated in international exhibitions through IMC, and all of them participated in local exhibitions ,however they recommended that IMC should introduce intensive programs on marketing and business skills to the firms in the district, also they noted that the process of purchasing production machines through IMC is bureaucratic and takes long time, as the firm should buy the machine first ,then take the refund from IMC which is not feasible as most of the firms don't have enough liquidity for this process.

Another institution which is The Association for Furniture Sector Development in Damietta (AUFSD) which was established in 2003 by group of about 300 firm in Damietta, with the aim of developing the industry and enhancing business environment in the district.

AUFSD was involved in many projects in Damietta, one of them is establishing a wood drier with cost prices to serve the SME's in Damietta to decrease the humidity in the wood to the international levels (4%), many users have benefited from this service, but it is noted during the interviews with SME's in Damietta who tried to use the wood drier of AUFSD , that they claimed that the drier is too big ,as it takes about 3 cubic meters of wood, and most of the workshops in Damietta work in medium with 1 cubic meter, so the quality of drying is not as they expected, and they recommended using small driers to cope with their needs.

In 2007, another project was done by the association in cooperation with the Canadian International Development Agency (CIDA) to conduct a detailed study of the furniture packaging technology used in Damietta, the study showed the deterioration of the level of packaging in Damietta, and recommended the establishment of packaging unit in Damietta technology center, however this proposal has not be activated till now.

The president of the association stated during the interview that the main obstacle for the association is the difficulty of financing its activities, as it is mainly depending on member's contribution and funds from NGO's and these are not sustainable resources.

3.4.1 Training institutions

The learning process in Damietta usually begins when a parent or a close relative sends his son to a master to learn the carpentry and carving skills, however with the emergence of industrial technology and use of machines in the workshops in Damietta, the importance of a developed and institutionalized system of training becomes a demanding need.

In Damietta there are 19 vocational training center beside Mubarak kohl private secondary industrial school ,The Mubarak-Kohl Initiative (MKI) which was signed between Egypt and Germany in 1992 is considered the first initiative that links technical education with industry requirements, The initiative aimed at establishing 68 technical secondary schools all over Egypt of which the one in Damietta, to enhance the market relevance of Technical Secondary School graduates' qualifications, through a dual system model of cooperative technical education, with extensive technical cooperation through the German GTZ.

Students undergo during the year academic study for two days in a technical secondary school and then are exposed to four days of training in factories and companies per week. Funds allocated to the project from 1994 till 2008 amounted to about 28.5 million Euro.

During the interviews, many firms acknowledged the high level of graduates of the school, however they stated that one of the limitations of this project is that the number of graduates is very limited (150 student) which is not sufficient to satisfy the market needs in Damietta, but they asked for more industrial schools in the governorate, especially that the training opportunities in Damietta after graduation is very limited as labor consider training a waste of time because they prefer to work and gain money, the main long term benefit of industry based apprenticeship schemes and other vocational training efforts run in cooperation with companies, is that they create links between large companies and the prospective proprietors of small companies .

Another forms of training are the vocational training school which is part of the Ministry of trade and industry, an interview was held with the director of this school in Damietta, she stated that the studying years of the school are three years, first two years theoretical and the third is practical. The school students received a technical training on furniture making skills from the EU as part of TVET program, but this type of programs is very short and not sustainable. The school depends on very limited financial resources from the government to finance its activities, this justifies that only 30 students are graduated from the school every year.

Also the school use outdated machines for training and in need of upgrading the level of trainers to raise awareness on new international trend and modern technology.

Interviews with firms in Damietta revealed that training on upholstery and finishing skills represent an important area for intervention, to target weakness points in the district, also of great importance are programs that aims at promoting the concept of collaboration between firms especially on downstream activities, diffusing different techniques for enforcing relations

with local and international markets and giving guidance towards the importance of branding , identity creation and other intangible assets .
The District in Damietta lacks a clear training policy, where all local actors should participate in drawing its main dimensions, mobilizing the required resources and identifying the areas of intervention, developing core competence skills, exploring new areas for high value added training for firms in the district.

3.4.2 Business Development Services centers (BDS) in Damietta

The Business development services (BDS) centers can be defined as "an institution which can be private, public or mixed which offers technological services, It should also target small and medium-sized enterprises, develop and transfer applied research and technology, and offer services directly usable by the enterprises." (Pietrobelli, Rabelloti, 2002:18).
The literature has tackled the importance of (BDS) in many references; Scott (1988) argued that the new regime of flexible accumulation is founded pre-eminently on three major ensembles of industrial sectors. These are (a) revived artisan and design-intensive industries producing articles for final consumption, (b) High technology industries and (c) service functions, and most especially business service.
Cluster wide bodies and real service centers can accelerate the dissemination of know-how among local producers (Brusco, 1992), The provision of these services may transfer knowledge and technology, and facilitate learning, thereby modifying in a structural, non-transitory way their organization of production and their relation with the market.
The acknowledgement of the localized nature of knowledge creation and utilization, and the need for continuous user-producer interactions (Lundvall, 1988) explain the existence of local providers of BDS.
In developing countries BDS tend to have positive externalities of consumption: as a consequence of imitative mechanisms, higher quality standards are introduced within the companies and in inter-company relations and these are likely to have a multiplier effect on industrial and SME's development (Pietrobelli & Rabelloti, 2002).
Bartoloni (2001) identified the main factors behind the firms' decision to outsource BDS as follows:
• Cost factors. When the costs of accumulating the in-house competencies, to perform functions that could be otherwise outsourced, are too high in relation to the transaction costs of buying them from the market. Often also excessive minimum costs and indivisibilities occur.
• Quasi-cost factors. The firm may prefer a flexible organization, focusing on core and strategic activities, and externalizing all or part of its non-core

activities; this Strategic choice may vary overtime, and may imply also risk-reducing considerations.

•Technological factors. Related to the rising technological and organizational complexity of the environment in which firms currently operate. Thus, enterprises may lack the knowledge required and its rapid evolution imposes to purchase it from outside, from highly specialized entities. Moreover, the need to fulfill international technical and quality standards is increasing, and this further induces outsourcing of specialized technical functions, BDS centers play a more crucial role in enhancing innovation and diffusing technologies, when they act as coordinators of a network of institutions, universities, research centers, and innovative firms (Schmitz, 1992).

In the following section, we will discuss Damietta furniture Technology Center (DFTC) ,the only technology center in the district and its role in the district, opportunities of development and areas of intervention.

3.4.2.1 Damietta furniture Technology Center (DFTC)

Damietta furniture Technology Center (DFTC) is a business development center in Damietta which was established in 2005, The center ,which is affiliated to the Ministry of industry, is a part of the national policy to promote innovation and technology, its role is developing and upgrading the furniture industry in Damietta along its value chain, to raise its competitiveness in the international markets through increasing the value added, the technology used and raising labor technical skills.

The center activities is financed by the Ministry of industry; beside funds from international organizations or NGO's as the Kuwait donation, since its establishment DFTC conducted a series of training programs (about 15 training course) for workers in small and large companies in the furniture sector in Damietta, including designing, carpentry, carving, gilding and upholstery. Also it is equipped with a quality certification laboratory valued by 5 Million L.E to provide Damietta firms with subsidized quality control services for furniture[22], but due to bureaucratic problems and lack of technical training, the laboratory is not activated yet.

The BDS is less developed in Damietta in terms of both supply and demand, firms in the district are prudent and usually feel uncomfortable to give information to another party or consultant. Smaller enterprises also lack the capacity to collect information on business services in the market.

The service transaction cost for the private sector in Damietta to SME’s is unprofitable, for this reason, the public sector should underwrite the risks

[22] In an interview with the responsible for the center, she stated that the center will subsidize the services provided to Damietta firms by nearly 90% of the total cost.

related with these uncertainties and the costs of creating markets that private agents would not be able to bear otherwise, The average cost of establishing a business center in Damietta to serve 3200 small and medium firm is estimated to 1Million L.E of fixed cost and 200 Thousand L.E of running cost (El Mahdi A., 2005).

Interviews with the center officials and Damietta firms indicated that the center lack coordination with local stakeholders and other regional institutions in Damietta, and adequate capabilities to enhance innovation in the district, suffering from absence of sustainable vision for intervention in Damietta , due to the changes in the Ministers of industry and the management of the center. The staff capacity in the center is very limited, only three engineers and nine employees, which is not enough to satisfy the needs of the sector in Damietta. Pietrobelli & Rabelloti (2002:69) stressed that: "Managerial, technical skills and capabilities, entrepreneurial attitudes, and human capital are crucial for the success of BDS Centers".

About 90% of the interviewed firms stated that they did not benefit from the center services since its establishment, which reveals the weak linkage between the center and the business community in the district, the center is in need to stimulate demand for its services from private firms ,creating critical mass and economies of scale to achieve tangible results ,beside the importance of creating collective strategy with Damietta local actors, not only to satisfy the firms needs of services ,but also to propose innovative solutions coping with the fast market dynamics and inductive to industrial development. The limited budget constraints of the center underlines the importance of providing technical assistance to SME's in the most efficient and autonomous way and raise the technical and managerial skills of the staff.

3.4.3 Export offices (Agents)

The literature of industrial clusters in developing countries highlighted the role played by export agents in boosting growth in the clusters, Schmitz (1995b) stressed the role of export agents in the Sinos Valley shoe cluster, describing it as one of the special services that tend to agglomerate around clusters of producers, also some companies in the Sialkot surgical instruments cluster have established trading firms in the Tuttlingen cluster in order to facilitate access to German and global markets (Nadvi and Halder 2001).

The role of private export offices (export agents) in Damietta has been emerged in the last years, the increasing demand on Damietta exports led to growth of export business services offices in the district, which enabled unique foreign market accessibility to SME’s, also proximity and

collaboration between service providers and firms in Damietta engenders significant competitive advantages.

The estimated number of export offices (agents) in Damietta is about 50 offices, Interviews with SME's in Damietta revealed that 69% of them export, of which 75% stated that they exported through export agents or offices, so we can argue that export agents contributed significantly in the high share of SME's in Damietta total exports illustrated in table (3.6), which ranges between 88 to 93% from 2005 till 2010, through providing different marketing, export and logistical services.

The neo-technology model suggests a strong and positive relationship between human capital and export propensity, because educated and skilled manpower possesses certain abilities that make it easier to establish and maintain certain contacts with foreign markets.

A survey conducted by A.Auer (2003) on a sample of firms in Damietta stated that 22% of the sample use marketing services (Brokerage, promotion and trade fairs), and 58% consider to use marketing services. [23] . Most of the clients of these export offices are small firms, the relationship between firm size and exports was tackled in the literature, many scholars considered the relation positive, that is, "to compete globally, you have to be big" (Chandler, 1990), large firms are perceived as more capable of coping with the large investments and high risks associated with exporting, However, some researchers observed no relationship between firm size and exports. An explanation for this kind of relationship is the possibility that a non-linear relationship might exist between firm size and exports, above a certain threshold, size no longer plays a significant role., Also it was empirically observed in Italy by Gerbi Sethi (1981), Grandinetti and Rullani (1992), who stated that no significant correlation between firm size (number of employees and total sales) and export intensity.

Export agents play an important role in creating external linkages for Damietta producers with international buyers; they market small workshops products and arrange visits for foreign buyers to the cluster, also organize the logistics and payment arrangements.

3.5 Labor Market in Damietta

The labor market in Damietta furniture district is characterized by high rate of labor mobility, the firms interviewed stated that only between 30% and 40% of the required staff for production are permanent and the rest are free lance workers who have been trained in other workshops or firms. This

[23] A.Auer, the potential demand for marketing services among MSE's in the furniture sector in Damietta,Egypt,Arab academy for science

strategy is also common among small firms, which are thus able to save on training costs. This elevated firms churn rate leads to a continuous regeneration of ideas and to the creation of a dynamic environment (Mazzoni, 2001).

Customs and informal rules regulates the local labor market, employers know what they have to do in order to find the skills they need; employees know what wages and employment conditions they may expect from employment. Industrial clusters labor markets are a form of 'internal labor markets' (Doeringer & Piore, 1971) where most of the rules are only informal.

The labor market in Damietta has witnessed changes in the last ten years: the majority of the firms interviewed stated that the rapid growth of exports led to increase of demand on labor and affects the availability of skilled labor, as a result more than 20 thousand worker from neighboring governorates move daily to work in Damietta to fill this gap and satisfy demand for labor in the district.

Local firms establish tacit agreements between themselves, in order to avoid stealing each other's best employees, the skills in Damietta are accumulated and transmitted from one generation to another, the process of knowledge accumulation and collective learning supports local innovation capacity, moreover the high rate of labor mobility enhanced the knowledge spill over in the district. This process of collective learning of knowledge becomes a collective process in the district, based on common knowledge accumulated in labor.

Labor mobility in Damietta could be a suitable mode of transferring knowledge in the district, however there are concerns that it may not represent a valuable mode of knowledge dissemination, for several reasons: the first of them being that workers who move across firms may be retaining their knowledge and not entirely transferring it to the new firm, unless both a codification effort (to transform tacit, human-capital embodied knowledge into shared knowledge) is undertaken as well as the definition of a proper sharing inducing incentive system (Breschi & Lissoni, 2001).

Moreover, labor mobility can produce valuable dissemination of knowledge if the employee is both particularly skilled and has acquired a substantial technical competence before moving. What follows is that labor turnover of low skilled labor force will not add anything to the "collective" knowledge of the cluster, and too rapid labor turn over, will be potentially damaging for the firms that are left, as it doesn't allow them to amortize training costs (sunk costs).

In our interviews with firms in the cluster, 55% of the sample considered low labor productivity as an obstacle for competitiveness, while only 25% of firms stated that scarcity of skilled labor could be an obstacle of expansion.

The firms interviewed believe that improved welfare and better education, due to the expansion of the furniture sector in Damietta, results in an increasing tendency for local young graduates who are better educated than their parents, to abandon the sector if they can find alternative, mainly non artisan jobs. There are fears that the interruption of the accumulation and transmission of skills, from one generation to another could, in the future, undermine the collective learning effect which has been so important in determining the competitiveness of the district.

3.6 Technology:

Technology increasingly plays a central role for economic activities, and the pace of technological change is getting more and more rapid, technological learning is defined as "the acquisition of additional technical skills and knowledge by individuals in the firm by any means" (Bell,1984:187), the evolutionary view attributes firm's technical change results to sustainable learning process and technological capabilities , which requires the technical and organizational skills needed to use the machines or equipments efficiently.

Freeman (1987) stressed that the National System of Innovation is constituted by the institutions and economic structures affecting the rate and direction of technological change in the society. The network of institutions in the public- and private-sectors whose activities and interactions initiate, import, modifies and diffuses new technologies, Cooke et al. (1997) believed that innovative regions should possess the following characteristics: (1) A formal or informal network of relationships, such as with customers, suppliers, and collaborators, serving as part of a firm; (2) Knowledge centers, such as universities, research institutes, cooperative research organizations, and technology transfer intermediaries; (3) Governance structure of private business associations, chambers and public economic development, training and promotion intermediaries and government departments.

Many National Innovation System case studies suggest that public and academic efforts can “support, but may not substitute for the technological efforts of firms” (Nelson and Rosenberg 1993: 20), the cumulative productivity impact of small incremental changes that are usually undertaken on the shop floor can be much greater than the initial introduction of a major new technology ,developing countries usually acquire technology through foreign direct investment or importing and imitating of capital goods or foreign licensing, it also elaborates the importance of “absorptive capacities,” in developing countries and their “ability to [acquire,] learn and implement

the technologies and associated practices of already developed countries" (Dahlman and Nelson, 1995).

Edquist(2001) has introduced a concept called Systems of Innovation for Development (SID), underlining key differences with the NIS approach taken in developed economies, stating that Product innovations are more important than process innovations because of effect on the product structure; also he pointed out that incremental innovations are more important and attainable than radical ones ,moreover he stressed that absorptions (diffusion) is more important than development of new innovations and innovations in low and medium technology sectors are more attainable than those in high technology systems.

Many developing countries have achieved a tangible success in encouraging and supporting industrial technology, Brazil introduced concrete science and technology policies, of which was the creation of the Secretaria de Tecnologia Industrial (STI) of the Ministry of Industry and Commerce (MIC) in 1972. The STI consolidated and expanded MIC's efforts by funding R&D programs, disseminating technical information and instituting a system of intellectual property rights (Dahlman and Frischtak 1993).Another important model is in South Korea, where the government encouraged public and private R&D centers to promote the flow of technology in the country, the number of private R&D centers in the country jumped between 1970 and 1987 from 1 to 604 (Kim, 1993:371), also the importation of capital goods from advanced countries accelerated the technology transfer process in the country.

In the following section, we will discuss technology in Damietta, itineraries and trajectories of technology, role of large firms in technology diffusion in the district and opportunities of development of technological capabilities of small firms.

3.6.1 Trajectories of technology in Damietta:

In Damietta, the district production system was mainly based on artisanal and handmade tools for production, the introduction of machinery was in the fifties with increase of demand on furniture in the local market however it was limited to large producers, the breakthrough was by the end of the nineties a plan adopted by the government to avoid possible regional lock-in, policy makers in Damietta have encouraged the transfer to new industrial zone with modern production lines, and solid infrastructure and tax incentives.

Technology imports played an important role in local technology development in the district through stimulating and enhancing acquisition of

local technological capabilities, as technology imported is associated with a wide stream of technical training and learning components.

This technological change in Damietta is attributed to the need to satisfy foreign export markets demand, mainly the gulf countries, which was not attainable by the traditional historical tools used before. Large firms in Damietta invested in acquiring and installing new production lines and CNC machines, looking for technology suppliers and technical training for their staff.

CNC machines introduction in Damietta increased the firm's capability of producing a variety of new products, or old products produced in new ways. In our sample survey (see chapter 4), 65% of the sample use CNC machines in their production process, 77% of them are large enterprises and 23% small and medium enterprises. The key advantage of such flexibility is that the machines can simply be reprogrammed, thereby extending their technical life, maintain the fixed capital invested, increasing firms ability to respond to fluctuations in market demand, and adopting new products quickly, also The numerical flexibility increased the ability of firms to adjust the aggregate quantity of labor used in production more easily and quickly.

The district is suffering from poor local capital goods sector, which is more skill intensive rather than capital intensive, producers depend on imitating imported machines using low quality materials and simplifying design to better suit the needs of small workshops and provide flexible solutions for the idiosyncratic requirements of small workshops. As Marshall (1920) explained how enterprises located in industrial clusters easily imitate new technology developed by other enterprises, purchase (or sell) parts and intermediates products from or to other enterprises, and hire workers with the required skills, because industrial clusters facilitate the acquisition of inputs, technology, and market information at relatively low transaction costs.

Locally made machine producers in Damietta depend on the role of thumb without any scientific knowledge, gaining their technical experience through observation and practical experiments, firms don’t conduct any active information search, relying mainly on passive receiving of information through spill over. Most of locally made machine producers are illiterate artisan, they can't consult technical or scientific manual, depending mainly on copying or imitating other imported machine processes, which severely hinders the opportunities of developing the technological capabilities in the district.

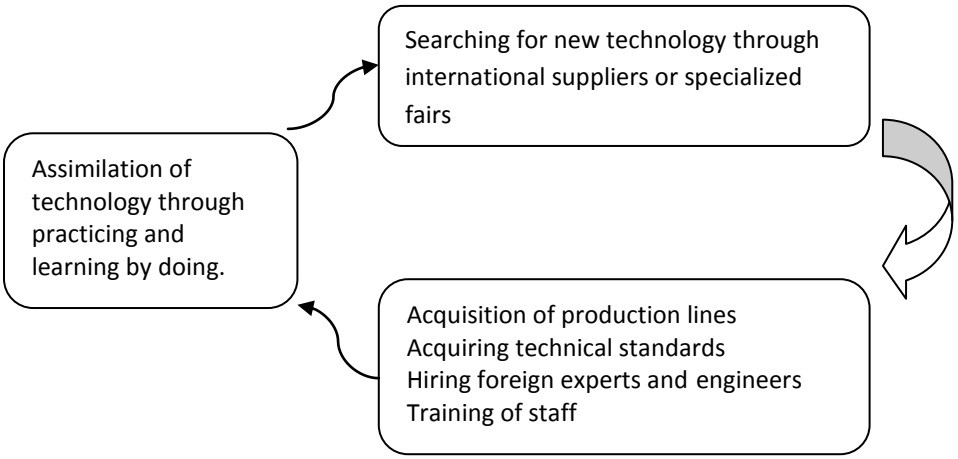
Local capital goods sector in the cluster should be enrolled to play a more effective role to assimilate imported technology, as the interactions between producers and users facilitate technological change and adapt technology to social values of the district.

3.6.2 Role of large firms in technology diffusion:

Large firms in Damietta played an important role in diffusing technology in the cluster. Technology acquisition process for large firms in Damietta as illustrated in Figure (3.6) started with searching for new technology through international suppliers or visiting specialized fairs, then purchasing production lines, the process is entailed by getting the technical standards and hiring experts to train the staff, followed by the third phase which is spontaneous assimilation of technology by practicing and learning by doing.

These firms also played a significant role in introducing and adapting technology to the local context of the district, as although CNC machines can produce up to 80% of the finished product, however they utilized labor handmade skills in each phase to impart the handmade touch on the product, these technological changes required the creation and upgrading of labor skills and the encouragement of relevant forms of worker socialization.

Figure (3.6): Technology acquisition process of large firms in Damietta:



Source: Author

The continuous process of technological learning in large firms created a platform for interaction between firms and workers, large firms act as the pool for technology diffusion in the cluster, while labor act as the knowledge carriers of technical information to other firms due to higher labor mobility and increasing churn rate, they acquire the tacit elements of technology and machines through their experience in large firms, contributing to a skill transfer and technology diffusion from large firms to small firms .

Small firms assured the importance of labor transferred from large firms and knowledge spill over as an important sources of technical knowledge ,however the transferred skills is not sufficient to offset the weak internal technical capabilities of workshops and achieving productivity needed .

Large firms mechanism of acquiring knowledge depend on "effort based" mechanism for upgrading relying mainly on search for external technological information and hiring of external expertise.

Firms interviewed emphasized the role of competition in export markets as an important inducement to technology upgrading, According to interview with the owner of Shoulah Company, one of the pioneers of introducing CNC machines in Damietta. He stated that:" *our regular visits to international furniture and machinery exhibitions in Italy and Germany, revealed the possibility of increasing our productivity through new technology, we started introducing it gradually and then when it proved success, other firms in the cluster started imitating us*".

Notwithstanding the importance of access to technology for firms in Damietta, however this is not sufficient to increase productivity as adapting technology to the local context and qualifying labor to be capable of dealing with technology represent important factors to raise productivity. Large firms suffered, at the beginning of technology introduction in the district, from lack of technically skilled labor to work on the machines; they started a "Train the trainer" program with Italian and German experts to train their staff who spontaneously transferred their knowledge to other workers in the firms, then consequently to other firms and SME's, this strategy aims at compensating the missing role of technology institutions which should provide technical information, standards and other "public goods" to increase firms technological capabilities.

Technical change strategy of large firms in the district rely on its accumulation of skills and knowledge over years, supported by sustainable exposure to external foreign technology sources and interplay with technology suppliers, however the limited financial resources for firms affects its capabilities to pursue a sustainable modernization process, in our survey all the interviewed firms using CNC machines stated that they don't change their machines before 10 years of operations, depending mainly on

external foreign firms for maintenance, noting that the district is suffering from lack of technical expertise who are capable of dealing with such kind of technology.

The catch up of large firms to the technological updates is a vital process to maintain economic growth in the district, as it enables firms to benefit of market opportunities especially in the international markets and acts as the window of technology for the district, however this one direction technology path is not sufficient for technological development, as there is a clear need for more pluralistic approach supported by governmental technology development policies aiming at developing local technology capabilities and adapting technology to the cluster's needs ,moreover triggering closer links between different actors in the system.

3.6.3 Technical capabilities of small firms

Technological learning of small firms in Damietta is a gradual and incremental process, based mainly on trial and error efforts and repairing of second hand imported machines, firms are suffering from limited access to technology and uncertain environment, moreover financial constraints pushed many small firms in Damietta to buy locally made machines which are more exposed to technical crash and require more maintenance than imported machines.

This uncertainty push firms to prefer less risky solutions, however competitive pressures and increasing costs of production supported the scenario of technology change, many workshops started to imitate large enterprises and purchase small CNC machines usually second hand imported machines. The introduction of CNC machines in Damietta is reflected on the range of product variation, as interviewed small firms stated that machines helped in producing more articulated products rather than the usual standard traditional design of classic furniture.

The mechanism of acquiring technical capabilities for SME’s in the district is incremental, whether through working experience in large firms equipped with modern machines or search for new technical information outside the firm or through receiving technical assistance, as acquiring mastery over a given technology would require efforts to assimilate the technology because its underlying principles would be fully understood only through practice (Lall, 1992).

Small workshops in Damietta are more capable of adapting technology to their local needs due to their flexible system of production and daily interaction with customers, these firms depend on external information to get their technical knowledge because of their limited capacity to engender

information internally, as the formal technical training is nearly missing in Damietta , the main mechanism of acquisition of technical skills and technological learning in small workshops is based on trial and error or reconditioning of second hand imported machines , informal apprenticeship and learning by doing.

The weak bargaining power of small workshops towards other players in the district as showroom owners and raw materials traders, lead to limited profit margin and affects its capacity to develop its internal technical capabilities, furthermore its isolation from the governmental and institutional support exacerbates the difficulties facing technical development attempts and supports the technological stagnation path in the district.
In turn, firms depend on traditional apprenticeship training system to provide basics of technical knowledge for their workers, however formal training is a condition to acquire more complex technical knowledge ,this can be achieved through the existence of strong technical institutions in the district, technical knowledge acquired through informal techniques of learning and learning by doing is not sufficient to compete in high quality markets, so formal learning is important to open new perspectives for technical knowledge.

Creating institutions external to firms to provide technical information and other "public goods" services, investing in training on technical knowledge is an important intervention especially for the young generation who are better educated and capable of assimilating modern technology trends.
The development of technological capabilities in Damietta is related to the introduction of incentive structure by the government to treat market failure, upgrading the human resources technical knowledge and creating institutions to provide technical information and other "public good" services, greater attention should be given to various forms of design and engineering capabilities, creating a base for localized technology to complement technology imports and encourage in house design and engineering capabilities.
Technical upgrade also requires an understanding of the scientific and technical concepts with a minimum level of formal technical education, mixing formal technical training with practical experiences is an important component for upgrading technological capability in Damietta.

3.7 Innovation and learning process in the district

The innovation and learning process in Damietta is based on informal networks and ties in the absence of effective formal institutions, as informal institutions, interactive production networks, family ties are much more important, According to Garofoli (2003), innovation system approach focuses on the behavior of local actors and breaks with the traditional view of innovation as a process of radical change at the frontier of an industry.

Attempts have been made to describe the informal institutions role in innovation in developing countries (Humphrey & Schmitz, 2000;Schmitz 2004). Lundvall et al. (2009) argued that an approach based on tacit and localized knowledge , learning by doing, using and interacting is more useful for a broader understanding of innovation systems in developing countries, and acknowledged that the 'formal institution-focused' understanding of the innovation system in developing countries is of limited value for understanding and explaining.

Networks are seen as essential mechanisms for the development of knowledge and learning which, in turn, lead to innovation and adaptation, Putnam (2000) stressed the importance of networks in creating social capital for individuals and communities. It represents an important tool for innovation and learning, create trust and increase forbearance (Sabel 1992) and provide economies of scale (Humphrey & Schmitz 1998, Nadvi 1997).

Antonelli (1999) observed that the capacity to innovate appears to be strongly conditioned both by access to available technological information and learning opportunities, and by the accumulation of tacit knowledge both internal and external to each firm.

In the following section, we will discuss the learning process in Damietta, the effect of division of labor on learning diffusion, learning modes, tacit and codified knowledge in the district and other determinants affecting the learning mechanism in the district.

3.7.1 Division of labor and Learning in Damietta:

Innovation and learning processes in Damietta are derived from activities that are not related to R&D, stimulated by internal pressure represented in the competition with rivals in domestic market and external pressure represented in the competition in international markets.

Division of labor in Damietta supported innovation in the district through creating specialized accumulated knowledge for each production unit and continuous interaction and feedback from their clients in the district. Garofoli (1991) attributes learning and innovation to the division of labor between local firms which facilitates the capability to innovate through the

introduction of specific innovations and the diffusion of innovations introduced in other areas, also Mazzoni (2001) affirms that division of labor creates a strong competitive pressure on local actors, resulting in regular stimulus for the introductions and diffusion of innovations.

Learning mechanism in Damietta is different from that of developed countries, as firms in Damietta can be classified within the lower learning cycle (Albu, 1997), where the learning process in the district concentrates on increasing production capacities to reduce production costs, exert trial and error efforts to learn from the maintenance and reconditioning of equipment, while it misses the capability for generating future technical change in products, Gottardi (2000:59) explained the mechanism that firms can generate knowledge and innovation without having a tangible R&D, stating that: "even if the production of innovation is difficult for individual firms, this is not true for the district as a whole. With the incremental creation of know-how, every enterprise frees positive externalities which can be appropriated by others, especially when there is physical proximity and co-operation", Bellandi (1989,1996) also proved that proximity and agglomeration of SMEs specialized in the same production generates rapid diffusions of innovation, he stressed the importance of learning by doing and learning by using (Rosenberg, 1982), stating that spill over of knowledge generates continuous local accumulation of skills.

The good reputation of Damietta as the home of furniture in Egypt and the Arab countries created a pool of diversification of products in the district and attraction point for clients due to the existence of wide varieties of products, this agglomeration also created a fertile soil for knowledge spill over and incremental development and innovation of products, where innovations are frequent and very often successful designs or technical improvements introduced by one company and quickly adopted by other companies if technically feasible (Brusco, 1995).

Large clusters have high potential for imitation because of the presence of many similar firms; such imitation tends to be focused on details in material, production methods and so on rather than the general type of imitation found in earlier stages. This results in a deepening of the collective fund of tacit knowledge about possible product alternatives and the methods to make them (Van Dijk , Sverrison,2003).

Product design is considered one of the important activities that provide high value added and represents an important indicator of innovation in the district. Interviews with small and medium firms in Damietta revealed that 80% of them do not design internally, but they depend mainly on imitating designs of large enterprises, catalogues or importers designs, while 90% of large enterprises in Damietta have their own internal designs for the local

market, however for the export markets ,they produce the importer's design in most cases. This assures that innovation in the district is more related to production processes and cost reduction; it also highlights the importance of targeting high value added skills in the district for any future intervention, as upgrading the internal design skills to target higher segments in the local and international markets.

3.7.2 Codified and tacit knowledge in the district

Knowledge has been distinguished between tacit and codified (Polanyi's 1967), codified has to do with objective received knowledge, such as scientific principles and laws; tacit is a type of highly specific and contextual knowledge, mainly embodied in people. Lundvall and Borras (1999:33) argue that :"Tacit knowledge may be shared through human interaction and this may be the major force behind the formation of business networks. This means that codified and tacit knowledge are complementary and co-exist in time". Neo-Shumpeterian (I) distinguishes between tacit and codified knowledge, considering the firm as a unit of technological capability accumulation, and perceive the process of new knowledge generation as the result of the interaction between localized tacit and external codified knowledge.

Damietta firms depend on local tacit knowledge accumulated over years as the main source of knowledge, which is not enough to maintain the dynamics of the district, the integration of different sources of knowledge is crucial in order to compete successfully in international markets, and the importance of linking local and global systems of knowledge (Freeman, 1991). Changes in technology emphasizes the need for more complex cognitive skills, , Belussi and Pilotti (2002) pointed out that the transformation from region knowledge governance to more open global knowledge governance is crucial for traditional industrial clusters and high-tech clusters.

Dosi (1988) underlined the diverse sources of knowledge which engenders learning and technological progress as follows:

1. R&D department or other internal sources;
2. Knowledge generated by universities and research centers
3. Other external sources:
    - Relationships with customers, suppliers, subcontractors (Freeman and Lundvall, 1988);
    - All forms of learning generated from the connection between internal Departments and the external environment (Rosenberg, 1976);
    - Recruitment/training activities (Freeman and Soete, 1987);
    - "Reverse engineering" techniques (Pavitt, 1984);

- Purchase of licenses.

Interviews with firms in Damietta revealed that there is a substantial informal information exchange going on between firms in Damietta, mainly between large and small firms, the changes in both knowledge and technology in the district is an outcome of informal contacts, user-producer relations, skilled labor force turn over, demonstration effects, spin-offs etc., that are eased by local social endowments, trust and geographical proximity.
The interaction between suppliers and large firms along the value chain in Damietta created a constructive dialogue between them, leading to developing or creating new production or design or new technicalities, Brusco (1995) emphasized that cooperation between client and supplier can result in substantial modifications to the finished product, thus promoting technical innovations which are nearly always of an incremental type, but are still of considerable value in the market, Proximity between different actors makes it possible for them to create, acquire, accumulate and utilize knowledge faster than firms outside of knowledge intensive, dynamic regional clusters.

Nelson and Winter (1982), elaborated that the firm's rate of innovation is influenced by the technological environment facing the firm, that is by:
Opportunity conditions: the firm's likelihood to innovate, given the investment in research.
Appropriability conditions: the possibility of protecting innovations, and the profits thereby derived from imitation.
Degree of cumulativeness: the extent to which the amount of innovations produced in previous periods raises the probability of innovating in the present period.
Knowledge base: the type of knowledge upon which the firm's activities are based.

The district in Damietta is lacking two of the four conditions determined by Nelson &Winter; the opportunity and appropriability conditions, For the opportunity conditions, all the interviewed firms admitted the lack of any investment in R&D whether internally or externally, even the technology center in the district is not activated and suffering from bureaucratic obstacles.

For the appropriability conditions, although exists the legal protection of intellectual property rights in Egypt represented in law no. 82 for year 2002, however the law is not enforced due to the long and bureaucratic procedures required to register property rights. Mobeliana firm owner in Damietta stated that:" *cooperation with other firms in Damietta is more efficient than complete vertical integration of production, however our major concern is of design imitation in Damietta and lack of law enforcement which hinders this type of cooperation* ".

Although Firms in Damietta emphasized that spatial Proximity matters and the importance of knowledge dissemination, however, the district should be more opened to reach out distant markets and partners, and become part of international integrated system. However, the limited knowledge of new global technological languages, as well as the lack of substantial organizational changes required by the new technologies to be effective, may progressively affect the 'industrial atmosphere' and might not be sufficient to compete in international markets.

3.7.3 Learning modes in the district:

The learning process in Damietta is highly localized and constitutes a significant knowledge asset and infrastructure for firms in the district, which underline the important role of historical trajectories of the district, this argument is enhanced by Porter (1990) who argues that competitive advantage is created and sustained through a highly localized process.

Also Garofoli (2002) acknowledged the importance of 'Territorialization', as a distinctive subset of territorial agglomerations, where "economic viability is rooted in assets (including practices and relations) that are not available in many other places and cannot easily or rapidly be created or imitated in places that lack them" .

Malerba(1992) classified the type of learning processes as follows:

- Learning by doing, refers to the accumulation of knowledge gained through carrying on repetitively the same kind of activities.
- Learning by using, refers to learning through the utilization of products.
- Learning by searching, refers to the generation of new knowledge achieved through formalized search activities such as R&D.
- Learning from advances in science and technology, refers to the absorption of new developments in science and technology.
- Learning from inter-industry spillovers, refers to the activities of competitors and other firms in the same industry.

- Learning by interacting, refers to ‘horizontal’ or ‘vertical’ forms of interaction with other sources of knowledge such as cooperation with other firms.

Three types of the above mentioned are dominant in Damietta; Learning by doing, learning from inter-industry spillovers and learning by interacting, Freeman(1993:9-10) underlined "The tremendous importance of incremental innovation, learning by doing, by using and by interacting in the process of technical change and diffusion of innovations" .

Firms of the learning economy are basically 'learning organizations'. They choose organizational modes such as inter-firm networking and intra-firm horizontal communication patterns in order to enhance learning capabilities (Johnson & Lundvall, 1994).

The learning process in Damietta is mainly based on tacit knowledge combined with a small margin of codified knowledge, Lundvall and Borras (1999) argue that codified and tacit knowledge are complementary and co-existing means that there are natural limits to codified knowledge, increased codification does not necessarily reduce the relative importance of tacit knowledge, mostly skills and capabilities, in the process of learning and knowledge accumulation.

The knowledge and learning process in Damietta rely on a high level of individual skill and experience, collective technical culture, which are highly immobile in geographical terms, as Asheim(1999) argues that localized learning is not only based on tacit knowledge, but contextual knowledge also is constituted by 'sticky' codified knowledge. This refers to 'disembodied' knowledge and know-how which are not embodied in machinery; such 'disembodied' knowledge is often constituted by a combination of place-specific experience based, tacit knowledge and competence, artisan skills and R&D-based knowledge.

The literature distinguished between radical and incremental innovation (Dewar and Dutton 1986; Tushman and Romanelli 1985), incremental implies a linear, cumulative change in a process or product, representing "minor improvements or simple adjustments in current technology" (Dewar and Dutton 1986), while the latter are nonlinear paradigmatic changes, representing significant departures from existing practice or knowledge.

The innovation in Damietta can be categorized as incremental innovation, which builds up upon existing firms knowledge without the need to drastically change the production process or required skills to upgrade. In particular, incremental innovations are generally not based on formal R&D activities, but on minor discoveries and on non-codified tacit and localized

knowledge (Stiglitz, 1987; Antonelli, 1995).This argument was confirmed during interviews with firms in Damietta who denied having any formal R&D activities, however they assured that incremental changes and innovation have taken place in their firms in the last ten years, big portion of the sample assured the existence of these changes in the production process or in the product or managerial and administrative changes in the last ten years.

3.8 Concluding remarks:

Analyzing the dynamics and synergies between firms and other socio economic factors in Damietta furniture production system could assist in configuring the area and defining whether it is a cluster or a district, the furniture production system in Damietta which is diffused within a geographically limited extension area of about 500 km due to the dense existence of workshops in residential areas, the system is characterized by the presence of large population of firms and workshops (nearly 33 thousands), and almost all of them are small and medium size firms contributing significantly to the national production of furniture.

Relation between firms in the district is intrinsically based on cooperation, reflecting the local community features, culture and social identity, this inter firm relations between suppliers and producers generated externalities and engendered the competitive advantage of the area. The high local context of the production system of Damietta supported the local entrepreneurship; it is rare to find foreign or exogenous firms in the area. The system is characterized by high division of labor between firms and the abundance of skilled labor, moreover the high labor mobility and churn rate contributed in knowledge dissemination and diffusion in the district, also the existence of part time workers in the district supported the flexibility of the system and enabled employers to optimize their costs according to market demand.

Salient institutions in Damietta are all local institutions either constituted by the government or by large firms or other syndicates formed by small firms and workshops, even public institutions in Damietta are mainly composed of employees from the local community of Damietta.

The previously stated characteristics and features reveal that Damietta could be classified more as an industrial district than a cluster, industrial districts often arise in regions with long traditions in craft production (Johannisson et al,1994), however there are missing factors in Damietta to be considered as an industrial district, for instance ,many questions is raised concerning the effectiveness of the institutions in the district (see chapter 4) and its role in

managing the development trajectories of the production system , the lack of local credit system that should be linked to the local system is another important missing factor, moreover the local information system which disseminate information and knowledge concerning technology and markets is not efficient and can be considered an important bottleneck in the development of the district.

Learning in the district is a highly localized process, based on historical accumulation of knowledge and skills, tacit learning is dominant, however large firms depend on a combination of tacit and codified learning, innovation process in Damietta is an incremental process, which relies on interaction between firms and customers, not based on R&D activities.

Technology change in the district is supported by the introduction of CNC machines lately, which enhanced producing more articulated products and increased the productivity of many firms, technology imports in the district supported local technology developing through enhancing acquisition of local technology capabilities and technical learning, locally made machine producers in Damietta depend on observation and practical experiments without exercising any technical or information research, they are supposed to play a more effective role to adapt technology to social values of the district.

The training process in Damietta depends mainly on apprenticeship training system, based on informal and family ties, young artisans need at least 10 years of training to master the carpentry skills, although formal vocational training institutions exist in the cluster; however there are strong limitations for these institutions due to the lack of competent trainers, funding and collective vision of the cluster.

Innovation in Damietta is an incremental process, not based on formal R&D activities but on tacit knowledge, building upon firm's accumulated experience and technical skills, the cluster lacks strong networks of formal and informal institutions which could boost innovation and learning, based on the local culture of the cluster. The opportunities of learning and innovation are more appealing in Damietta export value chain, as quality and design factors are the main determinants of the chain; artisans are capable of upgrading their knowledge and getting the latest applications of the sector through international exposure.

Chapter 4: Field research in Damietta: analysis and results

4.1 Field work results

4.1.1 Methodology:

In depth structured interviews was conducted during the period from April to November 2012, with 30 of different actors (large firms, small and medium-sized firms, workshops and local institutions) in Damietta ,The sample has been selected in order to balance between large enterprises and SME's. All large firms interviewed (Lead Firms) are located in the new industrial area recently established in new Damietta, the average number of employees in these firms is about 200 employee with average annual turnover of 15 Million L.E (2Million$), while SME's interviewed are all located in the old city of Damietta, with average number of 7 employees per firm and average annual turnover of 250 Thousand L.E (35 Thousand$).

Qualitative and quantitative data collection approach used during interviews allowed us to explore trajectories of development of the district, main factors of competitiveness, obstacles of upgrading, role of local institutions, and bottlenecks of development. In this chapter, we will discuss the main findings of the interviews with firms in the district in terms of export activities, firm's cooperation, and production inputs, factors of competitiveness, training and relations with local institutions.

4.1.2 Exports:

Survey revealed that 70% of firms surveyed are exporting to international markets; SME's share of exporting firms represents about 35%. For main export markets, 72% of exporting firms export to the Arab countries mainly gulf countries, while only 18% (all are Large Firms) export to EU countries mainly Italy and France, mostly semi- finished furniture exported in small pieces to reduce volume in shipping then reassembled and finished in Europe.

All the exporting firms acknowledged the importance of their presence in the district as an important reason for enhancing their exports, 85% of exporting firms admitted that the export process led to introduction and innovation of new products or materials.For the government support in terms of exporting,70% of the interviewed firms got direct governmental export subsidies (10% on their bills of exports) , 35% of them are SME's.

Large firms export directly without any intermediate or export agents, while interviews with SME's in Damietta revealed that 69% of them export, of which 75% stated that they exported through export agents or offices, export agents play an important role in creating external linkages for Damietta producers with international buyers; they market small workshops products and arrange visits for foreign buyers to the district, also they organize the logistics and payment arrangements.

4.1.3 Production inputs and firms cooperation:

The district imports most of its intermediate factors of production from overseas, Interviews reveal that 30% of the sample (all of them are large firms) import their production inputs and raw materials directly from foreign companies, while 70% of the sample buy their production inputs and raw materials from distributors and traders in Damietta.

All surveyed firms acknowledged the importance of attracting investment in the feeding industries in Damietta, mainly production inputs as paints, foam, adhesives and accessories.

As Egypt is a net importer of wood and other intermediate factors of furniture production, firms affirmed that the competitive edge of the district lies in the handmade skills of its labor and networks of learning and knowledge diffusion in the district.

The networks of cooperation and synergies in Damietta is strong, 80% of firms interviewed cooperate vertically with other firms in the district, while only 20% of firms have complete vertical integration and do not exercise any form of production cooperation with others in the district.

All SME's interviewed cooperate and supply large enterprises with finished and semi finished products, also they admitted the importance of interaction with large enterprises to develop their production skills and capacities.

Horizontal cooperation between firms in Damietta is very rare; all firms interviewed stated that they did not conduct any form of horizontal cooperation with other firms.

Firms interviewed differentiated between cooperation in the local value chain and Export value chain, as quality and timing are two important factors distinguishing the later, describing the export value chain as an important trajectory for learning and development in the district, underlining learning through interacting, which contributed in introducing new techniques and designs in the district, while they described the local value chain as more traditional cooperation based on the historical knowledge of the district with limited trajectories for development.

4.1.4 Training & relations with local institutions:

All firms interviewed admitted that apprenticeship programs are the main source for training for employees in the district, as it is the lowest cost mode of learning, however firms realized recently the importance of formal training specially for administrative and managerial techniques, the majority of firms (75%) of the sample have benefited from subsidized training programs from local institutions as the Industrial Modernization Center (IMC) and Damietta Technology Center (DTC), 85% of these firms stated that services outsourced by their entity are mainly accounting and legal services, only 15% of the sample outsource business consultancy, managerial or designing services.

The firms interviewed stated that the training was on traditional furniture skills as paintings , upholstery, design ,beside other managerial and administrative courses as accounting and marketing, however all the interviewed firms admitted that the training programs did not cover any innovative or new techniques in the industry.

They also admitted that the level of vocational training graduates in the district is not sufficient to satisfy local market needs. However 20% of the firms appreciated the level of graduates of Mubarak Khol vocational school (Egyptian-German cooperation), due to the dual system adopted in this entity.

The linkages between firms and local institutions in the district is variant between different actors, only 10% of the interviewed firms stated that they have benefited from Damietta technology center (DTC) services, while 75% of the sample have benefited from the services of the Industrial Modernization Center (IMC) (34% of them are SME's).

4.1.5 Local and International Fairs:

The district experience of participation in international fairs is recent, started nearly 10 years ago, survey with firms in the district revealed that 65% of the firm's sample have participated in international furniture exhibition with support from IMC which cover 80% of participation costs, nearly 30% of them are SME's,61% of them participated in international fairs in Europe, mainly Salone del Mobile Milan, Interior Birmingham and Meuble Paris ,while 39% participated in fairs in Arab countries mainly Index Dubai.

All the surveyed firms admitted the importance of participation in international fairs as an important tool for penetrating new markets and a source of innovation and information about the latest trends in the furniture sector all over the world. All the firms interviewed stated that they participated in local fairs, 90% of them participated in “Furnex” the most important furniture fair in Egypt ,where international buyers are invited and financially supported by IMC to visit the fair.

4.1.6 Financial resources:

Interviews with firms revealed that 85 % of the sample depends on their endogenous financial resources to support their long term and short term investments, 82% of these firms affirmed that the main reason for this approach is the high interest rate of banks which ranges between 12 to 14 %, while 18% refuse to deal with banks due to religious beliefs.

Meanwhile, 15% of the sample deals with banks to finance their investments. (All of them are large enterprises), also it is noted that IMC package of services include financial support for buying new machines or software, 15% of the surveyed firms have benefited from this service, all of them are large enterprises.

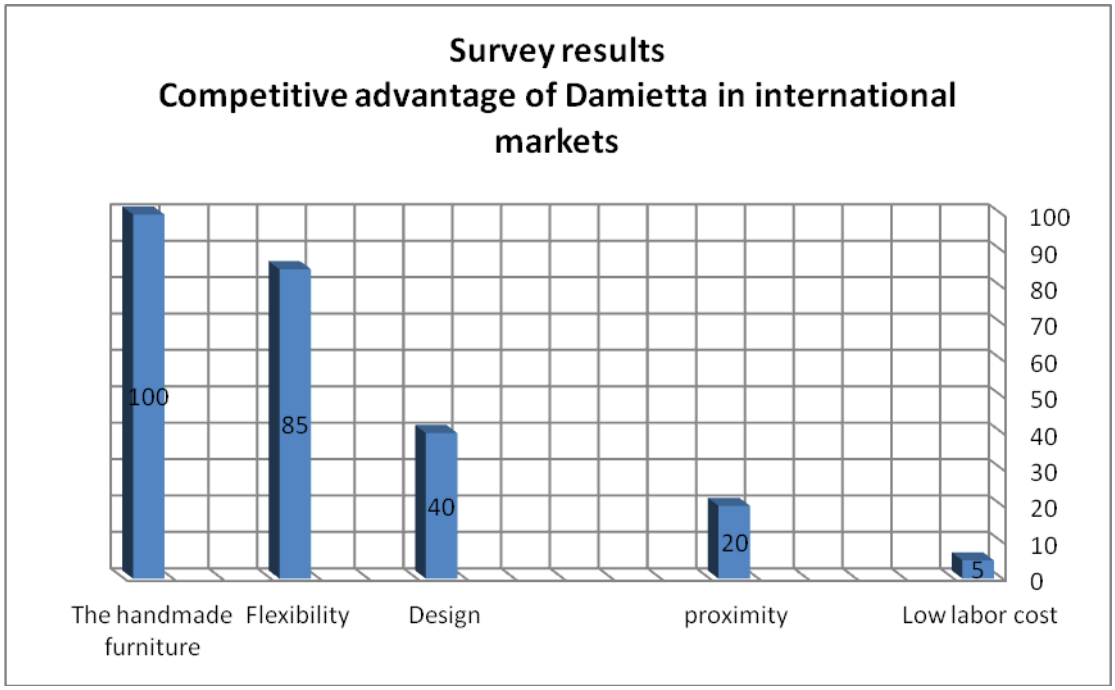
It is stated during interviews with SME's that they depend on their internal savings to finance production activities, also the showroom owner(Trader) plays an important role in this regard, as he controls the credit cycle of these workshops through giving them credit to finance buying wood and related raw materials for the production, although this mechanism could allow new channels of credit to small workshops, however it narrows the horizon of development for them due to their weak bargaining power towards traders and their limited margin of profit which affects their opportunities for expansion and innovation.

4.1.7 Factors of competitiveness:

The district firms were surveyed about their main factors of competitiveness in the international markets. All the firms in the sample underlined the importance of the handmade furniture skills as the main competitive advantage, while 85% of the sample stated that the flexibility of producing small volumes of furniture as an important edge, while 40% of the sample stated their ability to design handmade classic furniture, and 20% stated the geographic proximity as an important edge, while 5% of the sample stated the low labor cost as an important edge.

Firms interviewed stressed that the high level of specialization in the district is one of the important factors of competitiveness, as producers do not have to acquire machinery for the entire production process concentrating only on a specific task, moreover specialization enhances human capital technical skills and deepens their knowledge.

Fig.4.1 Competitive advantage of Damietta in international markets



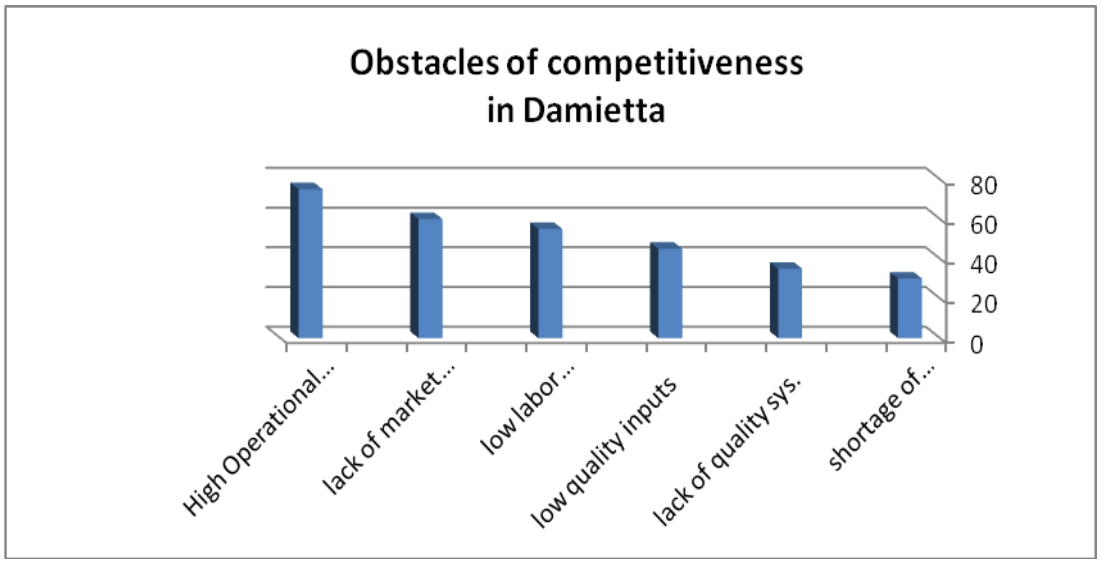
Source: Interviews with firms

4.1.8 Obstacles of competitiveness in the district:

Surveyed firms were asked about the major obstacles that hinder their competitiveness in international markets, 75% of the sample stated the high operational cost as an obstacle, while 60% stated the lack of knowledge about international markets as an obstacle, while 55% stated the low labor productivity as an obstacle, and 45% of the firms stated the low quality of production inputs and raw materials as an obstacle, and 35% of the sample stated the lack of quality control systems as an obstacle, 30% stated shortage of governmental and business institutions role as an obstacle and 10% stated the competition of Asian companies as an obstacle.

Interviews revealed that the increasing prices of raw materials (wood, varnishes, adhesives, fittings) imported from overseas represents a huge burdensome on firms, they stressed the importance of introducing a new incentive scheme to attract investments in raw materials, to safeguard the district's needs of raw materials in competitive prices, also there is a demanding need for local institutions in the district to provide SME's with the latest information about international markets, new trends in the industry and other services as marketing and accountancy services.

Fig.4.2 Obstacles of competitiveness in Damietta



Source: Interviews with firms

4.1.9 Obstacles of business expansion:

Surveyed firms were asked about the major obstacles that hinder their business expansion, all the firms stated the limited endogenous financial resources as a big obstacle, while 90% referred to the high cost of loans and 60% stated the scarcity of land in Damietta and 25% stated the scarcity of skilled labor and 15% stated lack of quality control systems and 10% stated that no market potential.

Obstacles of business expansion	%
Limited endogenous financial resources	100
High cost of loans	90
Scarcity of land in Damietta	60
Scarcity of skilled labor	25
Lack of quality control systems	15
No market potential for expansion	10

Source: Interviews with firms

4.1.10 Innovation:

Surveyed firms were asked about whether they have any formal R&D activities, all the firms denied having any activity in this sense, however they noted that incremental changes and innovation have taken place in their firms in the last ten years, the highest category of change was in the production process, as 65% stated, mainly through introducing new modern CNC machines ,while 50 % of the surveyed firms stated that they developed new products or design, while 35% stated they introduced new techniques for services as packaging, while only 15% admitted of making organizational and administrative changes to increase the managerial competency of their firms. It is also noted that the share of large firms in these incremental innovations is significant, exceeding more than 90% of the total sample; this could be attributed to the high exposure of these firms to international markets and their continuous communication with foreign buyers.

Interviews also revealed that a strategy should be introduced to encourage companies to conduct research and development into new innovative industry specific techniques, adapting localized knowledge to innovate new products and techniques of production.

Type of incremental innovation	%
Production process	65
Product	50
Service	35
Organizational change	15

Source: interviews with firms

4.1.11 Policies for intervention:

Surveyed firms were asked about the proposed intervention to make an industry wide change in the district , 80% of the firms stated the importance of establishing a modern business service centers to support SME's, while 70% stated that establishing a credit guarantee institution to ensure loans for SME's will have a positive impact on the financial liquidity of firms ,while 60% stated the importance of establishing an employment center to match between supply and demand of labor in the district.

All the interviewed firms stressed the importance of strong presence of local institutions capable of setting objectives and drawing future plans for the district, introducing collective strategies for development and monitoring the district performance within the local and international context.

Policy intervention	%
Establishing a modern business service centers to support SME's.	**80**
Establishing a credit guarantee institution to insure loans for SME's.	**70**
Establishing an employment center to match between supply and demand of labor in the district	**60**

Source: interviews with firms

4.2 Bottlenecks of the district

4.2.1 Inefficient Governance:

The ability of an economy or an industry to generate growth depends on its ability to generate technical change as well as on its Social relation Structure; Garofoli (1993) identified social actors and structures as essential components of models of productive systems stating its importance in reproduction of skills and entrepreneurial capacities.

Bianchi (2000:330) stated that: "A grouping of small enterprises is efficient, could be a reliable means for accelerating local development and could also be an international competitive actor, if the whole economic and social system becomes efficient. Otherwise its growth, and even its conception, may be impeded by obstacles that could actually block the more general development of the country and its capacity to insert itself in a global economic context".

According to Michael Enright (2000), a cluster's governance structure refers to the relationships among firms in the cluster in terms of the nature of relationship and distribution of power. Governance includes both the formal systems which force people to obey the rules, and also includes a variety of informal institutional arrangements which are in accord with the agreement or the interest of people. Institutional arrangements are the combination of formal constraints, informal rules, and their enforcement characteristics (North 2005).

Empirical evidence in Damietta furniture district reveals the deficiencies of governance in the district; firms, mainly small and medium, aren't well represented in business associations or other platforms, isolated from participation in initiatives of development of their district, institutions are highly politicized and dominated by large firms who possess strong bargaining power , De Soto(2003) pointed out that developing countries are not suffering from lack of entrepreneurship, but it does not produce wealth on a large scale because of lack of formal market institutions.

Good governance structures in Damietta can promote the flexibility and elasticity of the district production system, and increase the operating efficiency of dynamic mechanism, the existence of governance mechanisms can reduce the opportunistic behavior in complex transaction relationship, but the lack of effective governance mechanisms may result in the failure of strategic partnership owing to distorted incentive problems.

Schmitz (1997) argues that the key of cluster governance is collective efficiency, defining it as "the competitive advantage derived from local external economies and joint action", Collaboration capability and adaptability of the cluster rely on a group of structural arrangements

(including division structures, power structures and social relations structures) which affects knowledge sharing and innovative behaviors of clustering firms, external economies are important to growth but are not sufficient to ride out major changes in product or factor markets: that requires joint action (Schmitz 1995, Nadvi 1996).

Schmitz (1999) argued that there are two types of joint action, individual firms cooperating or groups of firms joining forces in business associations or consortia, he emphasized that emergence of suppliers, marketing agents, specialized services, and formation of consortia and associations among small enterprises are derivatives of collective efficiency, so collective efficiency can be evaluated through measuring sub-contracting, and joint cooperation in the cluster.

The firms in Damietta succeeded in achieving partial collective efficiency through vertical integration and subcontracting , production organization and arrangements, as the strong specialization and division of labor previously proved in the district (see chapter 3) engendered externalities and high growth rate, however the district lacks collective efficiency on the institutional level, suffering from lack of strong institutional platform with concrete collective vision to promote the "Made in Damietta" internationally, also the individualistic behavior in marketing, promotion and distribution activities is dominant.

An important component of collective efficiency is trust; many scholars stressed the important role that trust mechanism plays in cluster governance, classifying it into interpersonal trust (Putnam, 1993), and institutional trust, Langen (2004) emphasized "Trust" as a basic variable of good cluster governance, beside other three basic variables; leading enterprises, information media and the solution to the problem of collective action. Scott & Storper (1992) attribute cases of inefficiencies in cluster agglomeration to lack of trust among local firms.

Humphrey and Schmitz (1998) categorized two kinds of trust: minimal and extended trust. Minimal trust in form of socio cultural ties is important in cluster development, and is needed to start a business but in order to be competitive it has to be developed into extended trust.

Trust in Damietta district can be categorized within the minimal trust category, and has to be more towards extended trust, enforcing relations between firms and local institutions; as the low level of interaction between both parties affects the collective efficiency and hinders the adoption of concrete collective initiative.

The local institutions environment in Damietta is attributed to take the responsibility to upgrade the district, these institutions as technology centers and BDS centers should play the catalyst role to unblock the learning trajectories in the cluster, rebalancing power asymmetries between firms and adopting a collective approach for the development of the district, avoid being politicized by powerful firms or interest groups, diminishing opportunistic behavior and creating networks of cooperation and interaction between firms in the cluster.

4.2.1.1 Lack of strong business services:

The literature of industrial clusters emphasized the important role of business (real) services on the competitiveness of firms in industrial clusters(Bellini, 1985,2000;Bianchi,1985;Brusco,1992),the local endowment of real services adds to the collective assets of a region, and generates positive externalities (Pietrobelli,Rabellotti,2007).
David Lane (2002) emphasized the role of what he called 'scaffold' that consist of development rules, interaction places and agents roles. They function as a support scheme for interactions and make the development paths of the system stable and coherent.
The previously discussed development centers in Damietta (see chapter 3) used to adopt top down approach in setting priorities for business services agenda in the cluster, in collaboration with lead entrepreneurs to achieve a change in the cluster, while SME's role is quasi marginalized in setting development plans for their cluster, This mechanism was better suited to a phase of incipient industrialization (Amin, 1997).

An intervention which encompasses a wide and collective scope, with a clear vision and concrete agenda for development is missing; the firms in the district are moving in a high individualistic basis, especially in the context of marketing and promotion strategies, Joint action is a critical element to explain growth and competitiveness (Schmitz, 1997).
The Development of Infrastructure and technology requires huge investment presenting a big challenge for small enterprises, consequently, intervention by social, political and economic institutions is required in order to facilitate development of requisite infrastructure and technology. The provision of business development services in industrial clusters is distinguished by a heavy investment nature and long term profit retention, which is difficult to be attained by private sector with a short-term profit orientation. The private sector involvement in this process confront many challenges in this regard: a) lack of certainty concerning type of services that should be provided, and

whether it is economically feasible or not b) achieving the collective scale required to run such kind of business services c) convincing SME's of the viability of services provided to their core business.

These obstacles should trigger the public policy to manage a public private partnership cooperation with local actors as firms ,institutions, universities to establish an entity which act as a platform of cooperation and dialogue between the cluster stakeholders, coordinating changes of the cluster, giving SME's the chance to upgrade its capabilities, skills, and compete in international markets.

The reinforcement of a positive institutional environment requires generating local leading institutions, which act as "catalysts", able to develop strategic development guidelines for the cluster by involving and coordinating different local actors in policy initiatives to fulfill common objectives (Bianchi, 2002).

As large segment of firms interviewed trained by local institutions in Damietta (85%) stated that services outsourced by their entity are mainly accounting and legal services, and only 15% of the sample outsource business consultancy, managerial or designing services; so policy makers in Damietta should abandon the "generalist" approach adopted by public institutions in Damietta in the last years, to a more customized and adequate services approach, evaluating case by case clients capabilities, areas of intervention and points of weakness, also it is quite important to preserve the independency of the center and resist pressures of powerful firms in the cluster aiming to direct the center services towards an individual interest, which could affect its credibility.

Business services provided to SME's should stimulate the current weak demand of SME's in the cluster to business services through providing adequate services that are demand led. The official's role of this institution should encourage and build trust between firms, trust can be capitalized through accumulative process of dialogue and interaction leading to concrete collective initiatives publicized among the cluster firms.

Fisher and Reuber (2000) outlined main principles of effective business development services which can be summarized in; designing demand driven programs, self sustaining programs, and customizable programs, proving for cost-recovery in service delivery, and forming networks among BDS providers.The BDS centers in Damietta should modify their scheme of services to meet the demand of their customers and impart its value, this approach will stimulate SME's to benefit from the centers services on the short run and achieve the required economic scale for private sector to be involved in providing these services on the long run.

4.2.2 The strong presence of the informal sector:

The "informal sector" concept originates from a study in a Third World context by the anthropologist Hart (1971). He presented the concept as a part of the urban labor force, which takes place outside of the formal labor market; Hart's seminal work is limited to the small 'self-employed' firms, stating that wage-earning employment is a characteristic of the formal sector only.

De Soto (1989) argued a different view stating that the legal status is the main element distinguishing informal from formal activities, It linked the emergence of the informal sector to the state policies applied and suggests the complete abolition of State intervention, he also argued that a key factor contributing to poverty in the developing world were the barriers placed by governments in the path of small-scale entrepreneurs.

The informal sector is a common phenomenon in the industrial sector of developing countries; Lewis (1954) argued that labor markets in many developing countries are highly segmented. In such a market, many workers are rationed out of the formal sector jobs and therefore forced to start a business in the informal or unregistered sector. Vera Lutz (1958) attributes the causes of dualism to the factors determining the pattern of investment, on which the effects of investment on employment depend, therefore the level and the dynamics of employment are mainly determined by the level of wages so the rise in wages brings about a fall in employment through an increase in capital intensity, consequently creating dual labor system.

In this section, we will discuss the phenomena of informal sector in Damietta as a significant obstacle towards the development of the cluster, and policy implications in this context.

4.2.2.1 The informal sector in Egypt:

As many developing countries, the informal sector in Egypt plays a significant role in GDP contribution, Schneider and Klinglmair (2004) estimate that the informal sector contributes about 35.1 % to GDP in Egypt, a study conducted by Hussein(2004) argued that the informal sector in Egypt is more labor intensive than the other formal ones.

A sample survey conducted in 2012 by the Egyptian center of economic studies(ECES) -independent think tank- on a sample of 122 employee and employer working in informal establishments[24] in the manufacturing sector in Egypt reveals that :According to employers (Table 4.1), 50.6 % of them

[24] Informal establishments have at least one of the following characteristics: do not have an operating license, all or some of their employees do not have contracts, do not file tax returns or do not contribute to social insurance,and do not keep regular accounting records.

attribute informality to difficulty and lengthy legal procedures, while 21.7% of them stated that legal procedures are very costly, and 13.3% attributed it to instability of workers. and only 3.6% for avoiding tax, concerning the advantages of being informal,30% of the sample stated that it saves time and cost, while 26% stated that no advantages for formality and 16% stated that no need to subscribe for employees in social insurance and 14% acknowledged that no need to pay taxes.

Table 4.1: illustrates the causes of informality from Employers perspective

Employers survey	
Causes of informality	**%**
Difficulty of legal procedures	30.1
Lengthy legal procedures	20.5
Cost of legal procedures	21.7
Avoiding taxes	3.6
Lack of knowledge of procedures	1.2
The project is small	4.8
Instability of employment	13.3
Spatial requirements	1.2
Other	1.2
District does not allow licensing / no licenses offered	1.2
Bribery	1.2
Work based on lump sum remuneration	0
Market instability	0
Established under the supervision of social solidarity	0

Source: ECES survey,2012

According to employees, 70% of them stated that the main reason for working in informal establishments is the lack of formal job opportunities, while 15% stated that it is Suitable for their skills.

Concerning the procedures required attracting the informal sector to formality, the majority of employers (50.8 percent) and employees (41.4 percent) believe that the government has to simplify the administrative and legal procedures for registration and behave transparently.

Table 4.2: illustrates the causes of informality from Employees perspective

Employees survey	
Causes of informality	**%**
Difficulty of finding new job	70
Suitable for their skills	15
Do not care about insurance	4.5
Taking it as an extra job	4.5
Taking it as a temporary position	6

Source: ECES survey, 2012

Table 4.3: illustrates the advantages of being informal from Employer perspective

Advantages of being informal(Employers)	
	%
Saves time and effort	30
Formalizing does not involve advantages	26
No need to subscribe employees to social insurance	16
Do not need to pay taxes	14
Being not committed to the application of labor laws on employees	6
Earn more profit and save more	6
other	2

Source: ECES survey, 2012

The findings of the previous recent survey nearly describes to a great extent the obstacles stated by firms and local institutions in Damietta , as informal firms occupy a big portion of the furniture manufacturing activities; the informal firms in the cluster is estimated to range between 40% to 50% of total firms[25],on the other hand ,interviews with firms in the cluster revealed that the percentage of formal employees in these firms ranges between 40% to 50 % of the real workforce of these firms, even within large firms.

The officials of IMC stated during their field work in Damietta the following: "*we noted that informal firms in Damietta can be classified into two categories, the first which is the firms that look similar to other formal firms in terms of features ,skills ,productivity and capabilities ,but they prefer to work in the shadow to avoid any cost burden taxes and other administrative costs, the second category is workshops that are suffering from low productivity , low potential , even no desire or capacity for development, they cannot survive unless they work informally*".

[25] In 2005, CAPMAS estimated the average informal sector share of total economic units in Egypt by 46.4%

Interviews with firms in Damietta revealed that large and medium firms outsource part of their production from segments of informal workshops in Damietta mainly in the middle phases of the value chain; the process is done efficiently as those of formal ones, they denied any form of threat from informal firms that could affect their market share or profit margin, on the contrary they perceive these firms as a flexible catalyst for their operations ,On the other hand, another segment of workshops are suffering from lack of productivity and limited managerial and financial capacities, they are mainly at the early stages of the value chain in the cluster, trying to compete within the low price categories of products, use lower-quality inputs and have less access to public goods and finance, They nearly represent the view which argues that informal firms are suffering from inefficiencies and cannot survive unless they avoid taxes.

4.2.2.2 Policy implications

It is obvious from the previous discussions that the main reasons behind reluctance of informal workshops in Damietta to formalize their activities are; the lengthy bureaucratic administrative procedures and the costly social insurance for employees.

The appropriate policy should be to reduce the burden of regulation and, as a consequence, the economy should increase its efficiency and overall productivity.

The main incentives that could induce formality in the cluster is that the formalized legal firms feel the advantages of being "formal" through smooth access to public services, finance and benefiting of high value of services and training, beside simplifying the governmental procedures to offset the cost of being formal, this approach spontaneously will attract the informal firms to join the formal framework,

On the other hand, it is also obvious that the approach needed for the success of the formalization process is to adopt an institutional reform approach to guarantee sustainability, rather than strictly implementing policies that are purely legislative (Abdel hamid, El Mahdi,2003),this could be through providing ' real ' industry-specific services to firms (Brusco,1989; Cooke and Morgan ,1991) to enhance specialization and inter-firm co-operation, to market the products of the cluster .

Several experiences have demonstrated that a policy of consolidation of the industrial clusters of SMEs requires a gradual, but steady action to recuperate and formalize informal activity, through an ad hoc simplification of the regulatory procedures, a functional taxation system, and measures of technical support allowing this activity to be consolidated and inserted permanently into the sector of formal activity (Bianchi,2000).

The process of transformation from informal to formal should target the whole set of reforms in the cluster to convince local informal actors to shift towards formal channel, this could be reached through simplifying access to governmental assistance programs, financial institutions, technology transfer and training programs.

Also supporting collective efficiency through participation in international fairs and missions, to secure the long-term reproduction of sector-specific skills, recognition of collective advantage, all the previous actions are likely to be of positive impact on the cluster.

4.2.3 Lack of R&D capabilities:

Johnson & Lundvall (2000) stated that:"A development strategy based on an innovation system approach would start by analyzing all parts of the economy that contribute to competence building and innovation. It would focus on the linkages and synergies between the parts that form the system as a whole and, especially, it would try to identify the nodal points and crucial learning stimulating linkages. It would also try to identify the missing linkages and interactions, the interactions which for different reasons do not occur thereby reducing the innovation performance of the economy".

Innovative activity is a critical determinant of competitive advantage (Porter, 1990), firms in emerging economies are commonly regarded as latecomers in innovation, limited human and technological resources for innovation (Schmitz, & Stamm, 2008).

Results of the interviews with firms in Damietta revealed the low capabilities of the cluster in terms of R&D, which is limited to incremental innovative changes of products, services, production process and organizational changes, without any radical innovative products introduction.

Audretsch (1990) stated that process innovations offer less added value than product innovations, developing new incremental or radical products should lead to better financial performance (Banbury & Mitchell, 1995).The Innovation process requires a highly knowledgeable, experienced and skilled entrepreneurs and labor, higher level of education is associated with greater innovation activity, the official indicators reveal that the professional and technical staff (Higher education) for all industrial activities in Damietta represents only 18% of total labor force (+15) in 2008 compared to 31.5% in Cairo and 25.8% in Alexandria .[26]

[26] Human development report in Egypt,2010

It was found during the interviews that large firms that has achieved good steps in terms of changes of products, services, production process and organizational changes are employing highly educated staff, also the emergence of new generation of entrepreneurs who acquired a good education level provided by their family (business owners) enhanced the performance of these firms, the son of the owner of El Gallad company, one of the leading exporters in Damietta stated that:"*My studies of business administration in the American university in Cairo, one of the leading universities in Egypt, enhanced our capabilities to develop our company products to cope with the new international trends and innovation*".

The highly fragmented furniture sector in Damietta and the limited financial and managerial capabilities of most firms in the cluster are the major obstacles for innovation, also the high cost and risk of innovation which could be destroying to small firms if failed , can be considered an important barrier for small firms to innovate.

According to Schumpeter (1942), larger firms are better placed than smaller firms to develop and exploit new technology as a result of larger infrastructure (finance, marketing, R&D), economies of scale in production, and greater capacity to manufacture and distribute products, also Rogers (2004) stated that they have access to a greater range of knowledge, skills, and expertise than smaller sized firms, while Moenart et al. (1990), in a multiple case study approach, found that small firms with limited resources turned to alliances to achieve innovation, whereas large firms preferred to innovate themselves.

On the other hand, Sverrisson (1997) noted that small business success is influenced by the level of education and training obtained by the entrepreneur, the inability of small businesses to hire highly qualified staff due to inadequate finance, also implies that innovation activity in those businesses would be ignored, hence affecting productivity, growth, and the overall performance (Van Dijk 1997),Another obstacle which hinders the innovation in the cluster is the dominance of family ownership of firms in Damietta, the entrepreneurs usually prefer to recruit family members rather than qualified candidates, this could affect the innovation and development activity of the firm, The closeness of family members may lead to too few weak ties (Granovetter ,1985) and impede innovation.

The owner of Aransa company in Damietta stated that:"*I learned the carpentry and furniture skills from my family, but at certain stage I realized that we need to develop our strategies and take more risky decisions to be able to compete ,but I found strong resistance from the family, for this reasons I decided to work separately from the family and open my own business to adopt new strategies*".

Although the cluster has been opened recently to international markets and gained a good experience through interaction with foreign buyers and suppliers, however the process of endogenous creation of knowledge is very critical for the sustainability of growth in the cluster, Nonaka and Reinmoller (1998:425) stated that: "no matter how great the efficiency and speed of exogenous learning, it will not substitute for the endogenous creation of knowledge. The faster knowledge is absorbed, the greater the dependence on the sources of knowledge becomes", this argument stresses the role that should be played by universities, research centers and NGO's in stimulating local knowledge and creating linkages with firms in the cluster. Innovative firms prefer to interact with universities and research centers, to improve their innovation capability (Cusmano et al., 2000).

In Damietta, the faculty of applied arts in Damietta university is the only faculty that has dedicated section for furniture industry, it is noted during interviews with firms that university scientists and engineers do not interact with enterprises in the district ,it is also noted that out of 48 studies done by the faculty in their research plan of last year, only one study is related to the furniture sector. The interviewed firms whether large or small denied any form of interaction, for this reason, they asked to promote greater interaction among university researchers and enterprises in the cluster.

The university in Damietta is isolated from the needs of the district, The commercial dimension of innovation is a critical factor for guaranteeing the success of the innovation process, the researchers scope should tackle the commercial and market applications of their researches to receive the required momentum for success, which should be publicly financed as the financial capacities of firms in the cluster is very limited.

Another significant obstacle is the lack of law enforcement of intellectual property rights in Egypt, this hinders any innovation attempts in the cluster, diffuse "free riding", and erodes profit margins of innovation, this is also exacerbated by the long governmental procedures of registering any innovation.

In this context, government intervention is required to develop R&D capabilities in the district, taking into consideration different typologies of firms; between SME's, large firms and also the informal firms, so in this context different Schemes should be adapted to the different types of firms, tackling various needs: technical, commercial, legal, and other schemes applied in broader actions aimed at upgrading the overall management of enterprises.

4.2.3.1 Policy implications:

Innovation strategy in Damietta should be adapted to its technological and institutional capabilities by capitalizing on its strengths, specificities and tackling its weakness points, the support should be provided in the form of integrated packages; whether at the micro level for enterprise upgrading, or at the meso level for the development of specific institutions and associations, and at the macro level in the building of required infrastructure inducing to innovation.

A strongly articulated policy is required to harmonize all local efforts for improving the quality of infrastructure, human resources, and institutional frameworks, although investment in innovation will consume resources, the consequent growth and profitability of the firm may be associated with greater levels of innovation (Audretsch 1995).

The absorptive capacity of firms is crucial for translating innovative ideas into productivity gains. The intervention should develop new cultures taking advantages of the cluster, providing the necessary technical support, organizing transport and logistics for exports, reforms should be gradually implemented in many other key areas such as education, training, finance and exports, creating a broader environment more conducive to innovation, firms in Damietta have to redirect their business towards more skill-intensive, searching for new product niches, R&D oriented products, and new market areas to survive.

The cluster is in need of independent agency able to act flexibly on all what is related to innovation, including the direct provision of technical, financial, support to innovative projects, the removal of regulatory or informal obstacles to innovative efforts, and stimulating change. Damietta technology center (DTC) should be activated to satisfy the cluster needs, develop market oriented products and contribute to knowledge , technology transfer and innovation, also educational policies and capability-building are important public policies, the center staff should possess the ability to provide tailored diagnoses, based on comprehensive knowledge of company behavior and organization (Bellini, 1998).

4.2.4 Insufficient Training programs :

Armstrong (2003) defines training as the formal and systematic modification of behavior through learning, which occurs because of education, instruction, development, and planned experience, Bell & Pavitt (1993) stated that The quality of human resources can be increased by providing employee training to expand technical capability, Jhingan (1985) argues that undeveloped

human resources are an important obstacle to economic development in developing countries. According to him, the economic quality of production remains low when there is little knowledge of available natural resources, possible alternative production techniques, necessary skills, existing market conditions and opportunities, and institutions that might be created to favor economizing effort and economic rationality.

Traditional apprenticeship training is the most common form of training in Damietta furniture cluster, the trainee helps the master and acquires the knowledge through on job daily practicing, one of the advantages of this type of training is that it is the least expensive way to get skills (Johanson and Adams 2004), also it provides the trainee with a good practical orientation and product skills ,On-the-job training plays an important role in the lifelong learning system; it builds on the acquired soft and hard platform skills, adds specific skills necessary for the job, and helps upgrade skills continually.

It is observed that 22.5% of adults (+15) in Damietta governorate are illiterate, Illiteracy limits the absorptive capacity of firms to acquire new skills and curbs the productivity potential of the sector, also the vast majority of furniture workshops owners, especially old workshops, didn't obtain university education.

The training policy intervention Damietta should be designed to increase competition, a significant input from employers in the training process; also training providers should be a mix between public and private providers.

vocational training policy should be reformed to adjust technical and professional education, improved technical and business skills are of prime importance for enhancing the productivity of the sector activities as well as the quality of the goods and services produced ,the training system should cover the informal sector, provide attractive qualified training programs , conform more closely to practice, Orienting to the requirements of the employment system and preparing young people for levels that comply with high standards and opening up employment prospects.

Another modern methodology of training is the competence-based training systems, it focuses on the skills needed for performance in the job, it is characterized by individualization and the role of the trainer changes to that of facilitator, It is flexible, not time-based, learners progress through units at their own pace, and Outcome-based as emphasis is put on the product and not the process; it reflects the expectations of performance in the workplace.

One of the main advantages of this system is that it encourages specialization, concentrating on mastering skills, reduction of time of training, allows flexibility for employers and different routes for skills acquisition.

The general carpentry and furniture skills are acquired in Damietta cluster through traditional apprenticeship programs and knowledge accumulation through learning by doing, however the cluster is in need of a more tailored and customized programs, and competence-based training systems tackling the points of weakness of production, which is mainly the upholstery, design and the finishing of the product.

The owner of French home furniture company stated during the interview that: "*our employees have taken general training programs on carpentry and paintings; however training should also encompass certain skills on upholstery and finishing, which is the point of weakness of the cluster and affecting the final quality of the product*".

The problem for institutions in Damietta is that provision of services is provided under serious financial and institutional constraints, Such business support systems or services can and should be put in place primarily through private sector initiatives, in co-operation with local and regional government authorities. The limited capacity of local authorities in creating solid training programs can be considered an important obstacle, which tends to be a supply and donor driven process with limited impact.

Dawson (1997) stresses such institutions failure to reach large numbers, and the fact that they are very expensive. Training is usually focused on generic business training with a standardized content, this type of general programs misses the Follow-up and its effectiveness cannot be measured or evaluated.

The training approach should be demand-led, effective training would be participatory, relevant and focused, adequately monitored and based on, at least, cost recovery (Gibson 1997).

Under these conditions, various instruments are available for creating conducive institutional frameworks through creating networks of cooperation between local actors, adapting global knowledge to local needs, engaging actors in the problem solving networks, also the policy should balance between adapting existing technology to local culture and pursuing focused research on new technology.

The policy should be changed from picking winners in the district achieving fast success stories limited to certain group of firms, mainly large-, to creating dynamic and innovative climate which could lead to collective growth of the whole cluster, Goldstein and Ford (2001) argue that it is not simply a matter of literacy skills but the need for complex thinking skills. These include abilities to assess information, understand work systems, deal with new technologies as the workplace changes and develop interpersonal skills.

Chapter 5. Brianza and Damietta: A final comparison

It is obvious from the previous chapters and the empirical work of this study that Brianza and Damietta are two different models of development, however Our approach is using benchmarking to determine the causes and motives of successful networking among SME's in Brianza and its applicability in Damietta, analyzing the main components and elements of development that could reveal similarities and common areas and features for development.
Our perspective of comparative analysis will discuss the set of relations, characteristics, mechanisms of cooperation, forward and backward linkages existing and the role of institutions and services in both districts.

5.1 Similarities and Differences between Brianza and Damietta:

5.1.1 Dominance of SME's in the district structure

The structure of Brianza and Damietta is dominated by SME's specialized by sector and spatially concentrated, which represent the socio economic tissue of the district and acts as the center core of industrial activities and dynamics of growth, the SME's classification in Italy ranges from 10 to 249 workers while in Egypt classified from 5 to 99 workers.
In Brianza, the presence of artisanal small and medium firms is significant representing 98% of the total number of firms in the district with average number of workers nearly four workers per firm, while in Damietta SME's presence is overwhelming representing more than 99% of the total, with similar average number of four workers per firm, similarities between the two districts can be observed also in the relatively small number of large firms in the districts representing only 2% in Brianza and less than 1% in Damietta.
Both districts contribute significantly to the furniture national production of their countries, with Brianza contributing by 18.5% of national production of Italy and 5.2% of the European production, while Damietta contributes by 66% of total Egyptian national production, moreover both districts occupy a good portion of their countries total exports of furniture, Brianza exports more than 20% of the Italian exports to the world with significant contribution of SME's, while Damietta exports more than 70 % of the total Egyptian exports ,mostly exported by SME's (nearly 88%).
Family based firms are dominant in both districts, characterized by strong social background and high sense of identity, owned by master craftsmen most of them have only elementary or uncompleted secondary education and depend mainly on family members or kinship relations, which allows wage flexibility and knowledge accumulation, the high specialization of these firms

enabled them to better exploit the different economies of scale in the various production phases, and efficiently employing the production capacity available with the lowest cost and required time.

Firms in both districts stem their power in the market from high grade of task specialization, In Damietta ,firms interviewed stated that there are more than 54 tasks covering the sectors and sub sectors along the value chain in the district as the wood cutting, carpentry, painting, lacquering, wood carver, gilding, polishing, upholstering, wood setting, and others, while in Brianza ,there are more than 20 sector and subsector ,where you can find workers in different specializations as carving, inlaying, polishing, gilding, processing, glass, metals, plastics and padding.

The typology of activities conducted by Firms is very similar, which can be classified into; a) firms that produce "made to design" products with high personalization and customization, b) firms that produce for niche markets, with strong involvement of artisan companies in the production process and other specialized in the classic furniture, c) firms which act as subcontractors for large firms, this typology of activities enriched the districts and maintained its dynamism.

A common point of weakness for small firms in both districts is the forward linkages, firms are suffering from low capabilities of marketing, communication and distribution; the initiatives of territorial marketing is very rare, also firms rarely recruit highly educated personnel due to budget constraints.

5.1.2 Inter firm relations:

The close and dense inter firm cooperation is a basic feature of Brianza, interaction between firms in Brianza especially between large firms and their subcontractors represents the point of strength of the district(Scarpinato,2011),as it created dynamic feedback along the production networks in the district which enhanced its competitiveness, this type of cooperation constitutes a locally networked economic system facilitated by the spatial proximity, also the firms capabilities of cooperation and synergizing are the main factors behind their competitiveness and efficiency. Roberto Gavazzi the owner of Boffi one of the leading enterprises in Brianza indicated that: "*Three-quarters of our company purchases and components comes from mainly small companies that comprise a "cluster" of expertise in furniture and fittings in Brianza area that can do the same job more cheaply* " [27]

[27] Interview with Gavazzi the owner of Boffi in the financial times magazine, "A recipe to beat low cost countries",2007.

Garofoli (1993, 2002) underlined the important existence of productive linkages between firms as a genuine variable affecting the possibilities of production organization; he distinguished between hierarchical relationship in opposition to cooperation among firms, stating that internal hierarchical organization of production can be replaced by a network organization of firms based on partnership and contractual practices. The improvement of network relations among firms as well as between firms and local institutions is in fact the basis of external economies that can produce and maintain local competitive advantages.

The high division of labor and tasks in both districts created economies of scale and enabled the exchange of information and ideas, the firms locally embedded were able to create strong informal ties based on cultural norms and values which decrease the margin of opportunistic behavior. Lorenzoni(1999) explained that cooperation and trust in industrial districts emerges from a process of reciprocal relations constructed over time with individual firms and not a universal resource that can be accessed by firms in the districts.

Inter firm relations is dominant in Damietta, large firms estimated during the field work that they outsource between 20 to 30% of their production needs of finished and semi finished furniture from SME's in the district, moreover 80% of firms interviewed stated that they cooperate vertically with other firms in the district whether through supplying pieces of furniture or finished products, the owner of El Eraky company, one of the leading firms in Damietta, stated that:"*It is very difficult for large firms in Damietta to produce the whole product internally, on the contrary, our company outsource at least 30% of its production from SME's which is more economic and efficient* for us".

The literature distinguished between implicit and explicit cooperation of firms and suppliers (Lazerson and Lorenzoni, 1999); implicit cooperation is generated from long relations among firms within a high division of labor context which create opportunities of cooperation between firms. the long and stable relations between suppliers and producers in Brianza created better opportunities for implicit cooperation, where suppliers are keen to cooperate and share with ordering firms its problems and try to participate in solving it, on the other hand, explicit cooperation means voluntary actions or initiatives taken by local actors in the district to encourage collective cooperation and contribution of different firms in the district.

Although the inter firm cooperation in both districts is evident, however there are differences in terms of types of suppliers, as the literature distinguished between "standard suppliers" and "specific suppliers" (Garofoli ,1991; lorenzoni and lipparini 1999). For "standard suppliers" ,the relationship between firms is determined by the price factor as suppliers usually accept prices offered by the ordering firm, which possess a strong bargaining power among suppliers, so in this case suppliers can be considered as price takers. while for "specific suppliers" , suppliers are on equal foot with the ordering firm , as they are providing high quality products with high innovative content, so in this case suppliers possess a strong bargaining power and they are able to negotiate the price of their product and can be considered as "price makers".

Suppliers in Damietta can be categorized as "standard suppliers" where they have a weak bargaining power towards the ordering firm, ordering firms in Damietta are switching between subcontractors based on price factor as they stated in the interviews, this caused instability of relations within the district and reduces the opportunities for development of relations and quality level. As the relation between suppliers and producers in Damietta is based to great extent on the price factor; the producers do not conduct any quality control process or visits to their suppliers, this could expose the final quality of the finished products to big risk and possible deficiencies.

In Brianza, suppliers can be categorized as "specific suppliers "or price makers, they can negotiate price, which is not the deceive factor of choosing suppliers or subcontractors for producers, contractual ties between firms and suppliers in Brianza is based to a great extent on quality and prompt delivery which represent necessary conditions for cooperation in the district (Bramanti, 2007), also regular visits are conducted by producers to their suppliers to control the quality and standards.

In Brianza, it is observed that the relations between suppliers is stable and remains for a long period[28] due to the relevance of quality and trust factors, while in Damietta, the sensitivity of the price factor creates instability of relations between suppliers and producers, as stated by large portion of firms interviewed and represent a bottleneck for development of relations between both sides.

Another important difference is the vertical cooperation mechanism along the value chain in the two districts. In Damietta the vertical cooperation between small workshops in producing finished products is usually managed by the

[28] A Cati Survey conducted in 2007 revealed that more than 90% of firms in Brianza has a stable relations with their suppliers,"Il distretto del legno arredo,Alberto Bramanti,2007."

trader or showroom owner who coordinates the production process between different workshops, from producing the design , financing the purchase of wood and raw material, till the phases of painting and upholstery. The trader who possess a strong bargaining power in Damietta is playing an important role in compensating the weak capacity of small workshops to market its products, while it is noted historically in Brianza the existence of the trader role in coordinating the value chain ,which was in the early phases of the district(Ghezzi,2012).However by time with the increasing capabilities of firms in the district to commercialize and market its products, the role of trader diminished in coordinating the process. Currently the vertical cooperation exists between firms, and the bargaining power is nearly balanced between firms, however large firms are tending in the last years to internalize most of the production process to guarantee the quality and contain production costs. It is also noted that the spatial proximity between production inputs producers, machinery manufacturers and furniture producers in Brianza ,which is not the case in Damietta , enabled the interaction and encouraged the information flow within the district to develop and innovate new products, or process. This triangle based relation in the district which is extended along the upstream phases of production triggered the dynamics of development along the entire length of the value chain , starting from introducing new materials till development of new techniques of finishing.

Also the network of relations in Brianza extends to outside the district to encompass design and services firms in Milan, the relation between both parties underlined the importance of the design element as a decisive factor in the competitive capacity of Brianza, which represents the real value added for competitiveness of the district in international markets, the close relations between firms and designers enabled firms to develop more articulated and sophisticated products , differentiating the products of the district on the local and international level.

This external linkages of Brianza district with designers in Milan is a missing feature in Damietta, the firms in Damietta are relying mainly on imitating products from catalogues or large firms products in the district. Even large firms usually internalize the design function for products in the local market ,or implement the importer design for products exported to EU markets, which cannot be reproduced in any other markets based on exclusive agreement between both parties, large firms started lately to deal with design offices in Cairo ,but it is not a common behavior of firms in the district.

It is observed that the main differences between Damietta and Brianza in terms of inter firm relations can be summarized in the elements of quality and technology dynamism along the network linkages, these elements are

missing in Damietta, while strongly exists in Brianza , the strong presence of design ,quality and technology techniques is dominating the stream of communication between different parties in Brianza and engender a real value added that can be translated to strong positioning in markets. Consequently the important lesson is that quality and technological development are the main competitive factors enforcing the network ties and maintaining the dynamics of the district.

5.1.3 Mechanisms of labor market:

The labor market in both districts is a good pool of highly skilled labor characterized by high degree of flexibility and labor abundance, which can be explained in the possibility of working extra hours and day offs, this flexibility enhanced the firms capacity to meet the fluctuation of demand on their product and raised their ability to produce in short series and respond to successive orders. Also both districts are characterized by high rate of labor mobility, which enhanced the knowledge spill over and the process of collective learning of knowledge, this collective process of learning created common knowledge accumulated in people rather than firms.

The labor market in Damietta is suffering from weakness of managerial and cognitive skills of labor, this can be attributed to the dominance of the artisan nature and the reluctance of young highly educated generation to work in the sector, also firms are not willing to invest in such kind of training because of risk associated to losing the worker or possible headhunting by other competitors, The family business structure of firms in Damietta led to emergence of common managerial bottlenecks, as mixing between ownership and management, low tendency to delegate decision-making authority , family biased behavior in recruiting new workers in the firm, low propensity to take risky managerial decisions , these previously stated bottlenecks could explain the shortage of labor functional tasks as marketing, financing, distribution and communication in Damietta.

Labor in Brianza represents an important competitive advantage of the district, it is characterized by high technical and cognitive skills accumulated over years of experience and becomes part of the patrimony of the district, also the existence of large diversification of skills between firms lead to productive integration; these complementary skills enhanced division of labor, specialization, productive integration and potential vertical implicit cooperation. Garofoli (2002) stated that complementary allows productive integration between firms in technological knowledge, problem solving approaches that determine productive interdependence and division of labor among firms.

The core difference between both districts in terms of labor market mechanism is the "milieu" dominating the district, the limited exposure of labor in Damietta to international markets experience hinders the development of their skills and isolated broad sector of labor in the district from the latest trends in the industry, they depend on their knowledge stock accumulated over years without strong external sources of knowledge, which is not sufficient to realize an outstanding industry wide change.

On the contrary , labor in Brianza is exposed to international experience as most of the firms export and have good international experience, also the presence of capital goods industry in the district raised their technical capabilities, and guaranteed a sustainable and fast acquiring of technological knowledge through introduction and installation of new production lines.

Another important difference is that although the small network of cooperation in Damietta helped to sustain and increase local employment in the district, however the quality culture is missing among the district, which is reflected on the labor attitude focusing only on doing the routine daily work and repetitive tasks without trying to acquire new skills or broadening of their tasks in the firm, The labor in Brianza compete on the basis of quality and flexibility, they are characterized by competency in their core specialization along the value chain, capable of managing computer systems (CAD/CAM and CNC programs) , organizing the production , coordinating the quality control systems, and managing inventory spaces which are nearly missing tasks in Damietta.

The institutional structure of labor is different in both districts, the labor in Damietta is suffering from lack of effective institutional representation structure and employment security for labor, even the current syndicate of workers misses the sufficient bargaining power to adopt a long term strategy to enhance working conditions for labor and prevent workers exploitations, the labor in the district are not well represented and don't participate in shaping the employment system of the district. The workers consider working in family relatives firms as a security buffer for their career, as family business firms represent an important mean of employment security in difficult economic conditions (Sengenberger&Pyke,1991), on the contrary there are many institutional structures representing the labor in the Brianza as CISL ,CGIL or UIL, which usually sign social pacts with employers to create a balanced relation between employers and employees, they possess a strong bargaining power to defend the labor rights and confront any exploitation or violation from their employers , also it supports the district workers in case of any work accidents, temporary work-related disability, permanent work-related health damages.

5.1.4 Collective efficiency:

The concept of collective efficiency was raised by many scholars, Garofoli(1983) stated that the local productive system operate in particular conditions of collective efficiency, stressing that local productive systems, through productive linkages and interactions among local actors, produce external economies (to local firms) and collective efficiency.

Schmitz (1992, 1995) named the benefits resulting from clustered firms as collective efficiency, he defined collective efficiency as "the sum of unplanned or incidental consequences and planned or consciously pursued effects". Rabellotti (1995) differentiated between static and dynamic external economies and cooperation effects, as she emphasized that external economies and cooperation effects can be static, when they impact the level of productivity of the system, or dynamic, when they impact the system's capability to grow and innovate. Schmitz (1999) argued that collective efficiency is derived from external economies and joint action, external economies generated from collective efficiency are related to labor market pooling, technological spillover and market access (Marshall 1890, Nadvi&Schmitz 1994).

The collective efficiency exists in both districts , but with different intensities and approaches, the collective efficiency in Damietta is implicit and stemmed from inter firm vertical cooperation as interviews with firms in the district indicated that 80% of them cooperate vertically with other firms in the district , the production manager of one of the leading companies in Damietta El Azab company stated that:"*our company outsources the whole painting process of furniture from another painting cabin owner in Damietta, whom we trust and can ensure a long term contract to reduce cost and guarantee quality*".

It is noted during interviews that firms cooperate together to find solutions, for instance, firms stated that they were facing the problem of high humidity in wood imported from outside ,which was above the international standard level(4%),so they decided to tackle this problem through buying a drier to provide drying services for district's firms with acceptable fees.

Another important form of cooperation exists between export offices (agents) and small firms in Damietta, these offices played an important role as a mediator between small firms in Damietta and international buyers, guiding this small workshops towards foreign markets needs and latest trends in the industry, they manage the whole export process, and remove the burdens of administrative and logistical procedures of shipping.

Collective efficiency in Damietta can be described as a static Collective efficiency, where the high specialization evident in Damietta and admitted through interviews and the existence of production inputs traders, components and accessories in the district, allows firms to get the lowest possible cost of products from their suppliers, and agitated the competition between them creating pressure to get more efficient products and generating externalities in the district.

An important factor supporting Collective production efficiency of the district is the gradual openness of the district to international markets ten years ago, as interviews with firms revealed that 70% of them are exporting to international markets, which represents a turning point towards reorganizing the production process of the district to be able to compete internationally. Producers and suppliers worked closely to meet the quality standards of international markets and respond quickly to successive orders from international buyers within scheduled delivery time. Most of the exporting firms admitted during the interviews that their interaction with international markets through exporting or participation in international fairs contributed in the introduction of new product or material, as Garofoli (1983) explained that the increase of productivity of a single firm will impact the efficiency of firms linked on the interdependence chain of production in the district. Consequently the efficiency of the system increase the competitive position of firms in the industrial district, which create a virtuous circle of collective efficiency.

In Brianza, Implicit and explicit Collective efficiency exists in the district, implicit Collective efficiency is stemmed from firms' capacity to explore together and find solutions for problems in the district, which is achieved through cooperation and coordination between firms, on the other hand the involvement of local institutions and actors effectively in the district can be considered as an explicit Collective efficiency, as many institutions in the district as CATAS for quality services played a significant role in facilitating the task for companies to demonstrate the quality of the products outside the borders of the domestic market (Grandinetti&Camuffo,2005). It is also noted in Brianza the adoption of many initiatives by local actors to organize collective actions for labor market’s governance, for instance, an initiative was adopted to give collective training courses for young workers as Higher Education Technical Training programs (IFTS) with the participation of secondary schools and universities. collective efficiency in Brianza is enhanced through stability, trust and mutual interaction between suppliers and producers, firms worked closely to maximize and enhance the quality level of products benefiting from the long and stable relations and trust accumulated over years as more than half of furniture firms in Brianza target mid- high quality product categories.

5.1.5 Institutional thickness:

Institutional thickness means the presence of group of institutions in the district capable of presenting or advocating the interest of the districts firms and coordinating the district activities to achieve collective interest of the firms. Garofoli and Scott (2007) emphasized the importance of the space of local productive system below the level of the national economy, but above the level of individual firm and its critical role to any concrete progress of development, as competitiveness goes beyond the frame of single firms .

Amin and Thrift (1994), argued that the economic success of a locality is heavily dependent on its "proven institutional capacity", stating that this capacity or 'thickness' is derived from: (1) mix of institutions (local firms, public initiatives, private institutions) (2) frequent interaction to promote collaboration and knowledge transfer (3) structures of coalition to control behavior (4) common agenda among those local institutions.

The institutions in Damietta miss this described "thickness", lacking coordination efforts or clear strategy to develop the district, there are no synergies or coordination of programs between them, small firms are ignored and isolated to a great extent, even services provided by these institutions are general and not targeting the gaps and missing areas of the firms. Institutionally thin environments is dominated by elites in what Amin (1998) calls 'institutional sclerosis', thwarting opportunities for sustainable development. These institutions should set its policies and action plans based on whole view of the district not certain firms or enterprises, enhancing the district milieu and enforcing relations between firms.

The institutional policy in Damietta is static and reactive, react only when a serious problem could affect the district's daily activities as increase in wood or raw material prices or incidental demonstrations of labor, proactive initiatives of collective development of the district is very rare. The expansion of the industrial district in the late nineties could be the only concrete initiative in the district successfully achieved in cooperation with firms, where a group of large firms together with the governorate of Damietta and local institutions created a new industrial zone near the old one, creating a modern infrastructure facilities for different industrial activities including the furniture sector, and a package of incentives was introduced to attract the transfer of workshops from the old city to New Damietta.

The district is lacking a strong technical training scheme, although there are 19 vocational training centers in Damietta, but it is not sufficient to deliver highly qualified calibers and satisfy market requirements, these centers are suffering from limited financial resources, using outdated machines for training and in need of upgrading the level of trainers to raise awareness on

new international trend and modern technology. A developed and institutionalized system of training becomes a demanding need, linking technical education with industry requirements and satisfying market needs.

The District in Damietta lacks a clear training policy, where all local actors should participate in drawing its main dimensions, mobilizing the required resources and identifying the areas of intervention , exploring new areas for high value added training for firms in the district for instance training on design, upholstery and finishing skills , developing core competence skills, , also of great importance are training programs that aim at promoting the concept of collaboration between firms especially on downstream activities, giving guidance towards the importance of branding , identity creation and other intangible assets and diffusing different techniques for enforcing relations with local and international markets.

In Brianza , the institutional system is well established, there are more than 47 technical schools graduating 3000 student, IPSIA of lissone and AFOL of Monza are the famous centers of training on woodworking, the presence of the CATAS -center for research and technology of wood- in Lissone (originally based in Friuli Venezia Giulia) is of important value, providing quality control services and credible quality certificates to export to foreign markets, this set of institutions provide a good framework to preserve the technical knowledge and identity of the district, and capitalize on the rich artisan heritage of the district.

On the other hand, the local government in Lombardy region introduced in the nineties a package directed to SME's, encouraging internationalization, participation in international fairs and developing distribution channels, these efforts were coordinated by the chambers of commerce, it is also noted that intervention of local government was indirect avoiding direct financial aids which could lead astray development attempts and required areas of intervention. The institutions role in Brianza is important to maintain the sustainability of endogenous and spontaneous growth achieved by the district after a long process of historical sedimentation of socio economic processes. The mutual interaction between firms, institutions and other local actors supports the district to overcome the series of crises confronted in the last 20 years and form the development trajectory of the district.

The critical difference between Brianza and Damietta lies in the institutional capability to respond on collective basis to competition and international market pressures, maintaining the isomorphism of the district and managing its evolution, also the firms in Brianza have access to financial, marketing, infrastructural, technical, and consultancy support which played a significant role in the development of Brianza, while Damietta firms miss this scheme of support.

The transformation of Damietta institutions to "institutional thickness" status has a great appeal but severe limitations, as most of these institutions in the district are highly politicized, representing the interest of certain group of firms mainly large ones and working within a limited resources context, in our opinion, the approach towards this transformation should be through introducing new institutions dedicated for SME's support, reflecting the identity of the district and restoring trust between firms and local institutions, providing different type of business and consultancy services for young entrepreneurs, adopting programs for internationalization and enforcing forward linkages with distributors and international buyers. This institution should be a window for local firms on global markets, enhancing mechanisms of formation of skills and the organization of relationships and networks, with external professional knowledge and skills, thus enabling the interplay of supply and demand on coherent basis and capacity to achieve results (Garofoli, 2001).

5.1.6 Learning:

Learning and innovation processes play a central role to maintain the dynamics of competitive advantages in industrial districts, which is achieved mainly through mechanism of interaction within territorial dimensions between different actors in the district. The process of innovation and change is engendered through progressive division of labor along the production value chain and the tendency of firms towards product differentiation and quality (Garofoli, 2011).

The learning process is a decisive component distinguishing the dynamics in Brianza and Damietta. In Brianza, it is enriched by broad and wide interaction between local actors, it stems its dynamics from cooperation between different actors as machines producers, designers and services providers which stimulated the information flow in the district, the cooperation and competition between firms enhanced the diffusion of knowledge , also the emergence of the role of industrial design in the furniture sector enforced the external linkages of the district with design offices in Milan, as Giulio cappelini the owner of Cappelini furniture stated that" *it's important to create a strong relationship with other designers"*[29].

[29] Interview with Giulio Cappelini at the financial times, Designs on the future Salone,facts and figures,April 2005.

The learning process is long and complex as it is subject to different socioeconomic and cultural changes, learning in Brianza has witnessed different changes along its history, During the sixties and seventies, firms competition in Brianza was based on price and cost reduction, as firms were considered as "price takers" in relation to buyers, but their interaction with international buyers enhanced the learning process ,consequently a restructuring process has taken place in the district in the late seventies and beginning of eighties, they changed their strategies to be based on introducing new skills and knowledge, producing differentiated products and designs, firms have been converted from being "price takers" to "price makers" as their products are mainly based on quality and innovative factors.

The learning process in Damietta is passing a similar or near trajectory witnessed in Brianza in the sixties and seventies, firms are "price takers" with recent experience in international markets, the linkages of the district with external sources of knowledge is very limited as only large firms which are considered the district knowledge gatekeepers have good exposure with international buyers and foreign firms, the mechanism of learning in the district is based on circulating and diffusing the existing knowledge between firms, which is not enough to cause an industry wide change or transferring the dynamics of growth to a broader horizons of development. The core area of knowledge transfer between large firms and their subcontractors in Damietta is limited to used materials and products standards, large firms are keen to hide information related to their clients and markets, which they consider as their strategic competitive edge. A technological linkage with foreign firms, which is limited to certain group of large firms in Damietta, is a crucial process to enhance technological knowledge and competence of firms in the district.

Learning and knowledge in Damietta is related to the experience of workers acquired through an accumulative process of informal processes and interaction ,so innovation introduced by firms is limited to upgrading of organizational or production processes, the district is missing a knowledge creating system capable of introducing synergies between firms, universities, research and technology centers. Public institutions should play a significant role in mobilizing people, firms and other organizations, moreover fundraising of intermediate institutions activities in the district (Garofoli, 1999),these institutions are enrolled to encourage interaction between different actors in the district and drawing sustainable policies for innovation.

Technology center in Damietta should enforce its linkages with firms in the district, stimulating demand for its services, and creating necessary critical mass and economies of scale to achieve tangible results, proposing innovative solutions coping with the fast market dynamics and inductive to

industrial development. The center should provide technical assistance to SME's in the most efficient and autonomous way because of budget limitations and raise the technical and managerial skills of the staff.

An obvious difference in the learning process in both districts is that the tacit learning prevails in Damietta, and the codified learning is very limited, while in Brianza the tacit and codified learning are balanced. In Brianza, the sources of innovation are stemmed from high value added functions as Industrial design and mechanical machines, also the stream of technological knowledge is encompassing the whole district, moreover, part of the technological knowledge cannot be transferred, as it is tacit, sticky and difficult to be transferred (Pavitt, 1984).

Another important variable of learning process in both districts is the technological change, the generation of technical change in Brianza is a sustainable activity stimulated through different relationships sources; suppliers, clients, services firms, users interaction and promotion activities, also public institutions contributed in diffusing technical knowledge through training and quality centers. The cognitive mechanism of knowledge absorption and creation is quite a continuous activity, and depends on the firm's capacity to mix local knowledge with external knowledge.

The dynamic relationship between producers of technology (machine producers) and their users produces a sort of partnership, as due to the territorial and cultural proximity, firms work together to find a solution to their problems which is usually solved through trial and error methods, as Garofoli (1983) explained in his three typologies of local productive systems(specialization areas, local productive systems and system area), the importance of "inductive methods" in industrial districts to ensure the production of new knowledge, as Proximity between local actors facilitates the diffusion of knowledge and enhances technological improvement and efficiency of the system.

In Damietta , the technological performance in the district is poor due to the lack of local capital goods sector, firms depend totally on external sources for technology, technology diffusion is the unique form of technology change, technology market is not mature as most of the firms use second hand machines, which directly affects the productivity of firms due to machines frequent crashes, the capacity of firms to moderate the technical change is not enough to manage the process, as the lack of technology expertise in Damietta constitute a big hurdle towards developing the technological capabilities of the district.

5.1.7 Internationalization:

The degree of openness of industrial districts to international markets is an important indicator to justify the dynamics of development, as Garofoli (2003) stressed the importance of internationalization as an important factor of development which helps in the diffusion of knowledge in the districts. A report conducted by Cattolica University (2008) showed that the province of Monza and Brianza achieved high rates of openness of the economic system[30] index reaching 138% in 2006 compared to other provinces in Italy (For instance :Milan trade openness index reached 89%).

In Brianza, the strong process of internationalization and opening of new markets is based on branding and building commercial subsidiary and distribution agents, through organizing platforms for the transfer and absorption of strategic knowledge coming from outside ,investment in knowledge off shoring through the opening of new subsidiary (Belussi & Staber 2004), Renato Preti, the managing partner at B&B furniture in Brianza says that " *B&B is concentrating on branding, something rare for the furniture industry, perhaps only 2 per cent of consumers recognize a luxury furniture brand, the exact opposite of, say, the name recognition of fashion houses such as Gucci. So the company has started to spend money on public relations, on communication, on opening its own stores and on expanding its "shop-in-shop" network - areas of other stores where B&B can display a large collection*"[31].

The firms have good exposure to international markets, as more than 75% of firms export to international markets[32] mainly EU markets, where the elements of quality and innovation represent an important competitive edge for firms, while estimated number of firms exporting in Damietta do not exceed 10% of total firms according to interviews with firms and institutions in the district, More than 95% of these firms export to the Arab countries mainly gulf areas, while only 5% of exporting firms which are usually large firms export semi-finished furniture to EU markets, interviews with Damietta firms revealed that wide portion of them admitted that their interaction with international markets in the last ten years through exporting or international fairs participation contributed in developing new products or design using modern CNC machines, the small size structure of firms in Damietta

[30] Index of openness of the economic system is the sum of exports and imports divided by Gross Domestic Product(GDP).
[31] Interview with Renato Pretti at the financial times, Designs on the future Salone,Facts and figures,April2005
[32] Cati survey, Bocconi university,2007

enforced its capacity to flexibly deal with rapid market changes .It is noted in both districts that firms exposed to international experience are more resilient to face the slowdown in local markets; the traditional markets of exports for firms in Brianza are EU markets, while large firms targeting high segments of the market are more capable of exporting to extra European countries as the US, Brazil and China.

The internationalization of the production cycle, together with the reduced importance of spatial proximity amongst companies (Lombardi, 2003) led to a series of consequences in the recent evolution of Brianza local production systems; the most important is the formation of hierarchical networks of firms with significant leadership phenomena. Lead firms diversified its suppliers based on quality, efficiency, and flexibility, monitoring more closely the production process and intensifying the flow of information and feedback with its partners, The elements of quality and innovation represent an important factor for Brianza firms to compete in international markets, which constitutes the core image of the district and position its products in international markets. The competitive advantage of Brianza is derived from the firm's flexibility and adaptability to cope with rapid market changes, relying on their high artisan and craft skills; as firms in the district are keen to monitor closely consumer needs and introducing highly customized and articulated products with high quality and considerable degree of personalization.

The collective marketing and communication initiatives that could boost the position of the district is very rare, the high level of fragmentation of firms in both districts could be an obstacle to participation in international fairs, also the cost of participation is not affordable by most of the firms in the districts, however many small firms in Brianza try to solve the dimension problem through participating in collective pavilions as in Salone del Mobile international fair in Milan. Another common feature in both districts is the presence of micro and small firms that produce antique products targeting and exporting to niche markets, depending mainly on its handmade and artisan skills as a competitive edge in global markets.

The main difference between the two districts can be summarized in that; firms in Brianza especially those targeting middle class segments realized the importance of commercialization and branding to market its products, starting to compose networks of distribution on the national and international level , even small firms started to work to develop their distribution channels in international markets, providing more services to client and quick response to customers' needs, while the distribution networks in Damietta are primitive

and simple process depends on about 200 small independent wholesalers or retailers, many workshops sell directly to customers, only few large firms have their own showrooms in Cairo and Alexandria, however chains for furniture is starting to grow in the country.

In both districts, it is strongly felt the need of firms for consultancy services in internationalization, as the only source of information on international markets for firms is the contact with client. So these types of services are needed to increase firm's capacity to explore closely international markets and assists in selecting the right penetration strategies. The dominance of SME's over the structure of both districts reveals the importance of the existence of these type of services to provide internationalization services for firms and introduce promotional international activities, for instance Boffi, Living and Porro, which are three firms in Brianza, opened new shops in international cities as NewYork, introducing new concept for internationalization through proposing a place where clients can receive a professional design services for home and commercial projects .

5.1.8 Credit system:

The existence of local credit system is considered one of the important pillars for sustainable growth for small firms in the industrial districts, The industrial districts is an attractive model for local banks in Italy, Becattini(1990) described the local bank as a bank that; "born and bred" in the district, has strong linkages with local entrepreneurs ,and deeply involved in the life of the community. local banks are capable of establishing a long term relation with firms and understanding the culture of local firms in the district, it contributes in boosting the growth of local economy, they can understand deeply the needs of local firms , benefit from functional proximity ,and capable of selecting their clients based on their organizational and entrepreneurial capacity.

Becattini(1990) stressed the importance of smooth credit mechanism to ensure the district efficiency. The proximity of local banks in industrial districts to the production system enhances the process of evaluation and monitoring of their clients and reduces information asymmetries, the local banks usually have a decision autonomy from their headquarter, capable of assessing the credit worthiness of firms in the district than banks outside the district. Farabullin &Gobbi (1998) conducted a study on the banking system in Italy, concluding that firms in industrial districts get benefit of low interest rate than other " isolated " firms outside the district.

The credit cooperatives as "cassa rurale" currently named "Banca di credito cooperative" and local popular banks played an important role in enhancing

growth in Brianza furniture district, Casse Rurali became the most successful financial undertaking in Brianza, as they paved the way for the eventual development of artisan manufactories (Ghezzi,2002). interviews with firms in Brianza revealed that the close ties built between local actors and credit institutions in Brianza enabled the creation of suitable "milieu" for facilitating finance in the district, the proximity between both parties allowed discovering more business opportunities and enabled banks to gather more information on their clients or prospects, the stable and extended relation between local banks and firms enhanced the capacity of district firms to acquire new machines and update existing technology in the field, moreover presence of firms in the district facilitated the mission of local banks to assess the firms performance within the framework of the sector , based on market situation, technology used and labor pool competencies within the district. Another important financing source in the district is the central and regional governments financial support programs, Italian government introduced fund programs for small firms as the artisan fund and the national program of loans for artisan workshops, supporting Confidi and voucher programs.

Confidi which stands for "consortium of collective guarantee of trust", is a consortium that conducts provision of guarantees to facilitate companies' access to finance in the short medium and long term, for the economic and productive activities, the trust main function is to assess the prospects for regional development and industry and obtain a wealth of information about the company and its reputation. It acts as a bridge between businesses and banking intermediaries, this mechanism helps banking intermediaries to improve assessment of the creditworthiness of the company and reduce the financial risk retrieval of selected customers.

The Italian government also introduced other decrees as law no.657/77 which is a guarantee fund for medium long term bank credit up to 50% of investment financing and law no. 1142/86 of soft loans for investment projects for SME's up to 50% of investment, and law no.240/81 of loans for firms belonging to consortium of maximum 10 years for settlement.

The banking system in Damietta consists of four commercial banks and branch for the social development fund (public entity) ,the tight financial constraints of banks in Damietta provoked firms to rationalize their financial resources to maintain their competitiveness, firms in Damietta which is mostly family owned rely mainly on its savings to finance its business activities , the banks are not willing to support small workshops or start up's, due to lack of collaterals causing high risk associated to this type of loans, even the social fund role is not effective as a broad section of small workshops are informal and in residential areas, and are not eligible for loans and financial support schemes. The Social Fund policy in Damietta is in need

to be revised, rely more on territorial social and economic characteristics of the district, sharing risk with small firms and creating a formula to deal with informal firms in the district.

The limited external capital and financial alternatives represent a real bottleneck toward the district expansion, a broad strategy should be introduced by the local government to enhance workshops access to finance and reducing the bureaucratic procedures, which hinder the firm's capability to expand its business and introduce new products to cope with international trends, the presence of local banks capable of working closely with the clusters firms will increase the operational proximity and reduce the distance between firms and banks ,also banks will be able to assess firms financial needs and adapting its financial packages to the cluster collective strategy.

5.1.9 Provisory remarks:

Previous discussions revealed the similarities and differences between both districts. As illustrated in table 5.1, it is evident among similarities the overwhelming presence of SME's in the economic structure of both districts, moreover both districts are dominated by artisanal family based firms distinguished by strong social background and identity. It is also noted the significant contribution of both districts to the national production and exports in their countries.

Both districts are characterized by high degree of specialization along the value chain covering different sectors and subsectors, this specialization is engendered through historical sedimentation and accumulation of knowledge among successive generations. It is also evident in both districts the high rate of labor mobility which contributed significantly in knowledge spill over and accumulating common knowledge.

However it is of importance to underline the differences between both districts in terms of various factors , of which the different role played by large firms. As in Damietta , large firms played a significant role in diffusing technology in the cluster , adapting technology to the local context of the district and qualifying labor to deal with technology. On the other hand, in Brianza, large firms play an important role in innovation and product development in the district through interaction with international designers and R&D centers.

Another important difference is the knowledge acquiring mechanism, as in Damietta,the process depends mainly on the circulation of existing unstructured knowledge in the district and it is characterized by weak external linkages. While in Brianza ,it is related to sustainable activity stimulated from different relationships between suppliers, clients, services firms and institutions ,and it is characterized by strong external linkages with design offices in Milan.

The learning process in Damietta rely on tacit and informal channels of learning in the district, while in Brianza , it is a balanced process between tacit and codified learning.
Collective efficiency in Damietta is static and implicit generated from collective vertical production cooperation in the district, while in Brianza it can be categorized as dynamic explicit and implicit Collective efficiency generated from long and stable relations along the value chain.
Institutional framework is different in both districts. In Damietta, the district is suffering from institutional thinness environment and highly politicized institutions, lacking synergies with different actors and institutions. While in Brianza, institutional thickness is based on a set of institutions that capitalize on the rich artisan heritage of the district and preserve the technical knowledge and identity of the district.
The technological performance is variant in both districts, Damietta is suffering from poor technological performance due to the weakness of local capital goods sector, firms depend totally on external sources for technology mainly second hand machines, while Brianza is characterized by strong capital goods industry engendering district development through continuous interaction with different actors in the district.
Damietta credit system is suffering from tight financial constraints of banks , provoking firms to depend on their personal savings or loans from their relatives. While Brianza credit system is characterized by SME's accessibility to finance due to the existence of local banks, credit cooperatives and national funding programs with attainable conditions for collaterals.

Table (5.1): Similarities and Differences between Damietta and Brianza

	Damietta	**Brianza**
Similarities		
• SME's represent the socio economic tissue of the districts. • Dominance of artisanal family based firms on the districts structure. • Significant contribution of districts to the national production of furniture. • High grade of specialization. • High flexibility and adaptability to cope with rapid market changes. • High rate of labor mobility enhancing knowledge spill over.		
Differences		
Role of Large firms	Key players in technology diffusion in the district	Key players in innovation and product development in the district

Knowledge acquiring mechanism	Depends mainly on circulation of existing unstructured knowledge in the district and characterized by weak external linkages.	Sustainable activity stimulated from different relationships between suppliers, clients, services firms and institutions and characterized by strong external linkages with design offices in Milan.
Learning process	Tacit and informal channels of learning prevails in the district	Balanced process between tacit and codified learning
Collective efficiency	Static and implicit collective efficiency generated from collective vertical production cooperation in the district.	Dynamic explicit and implicit collective efficiency generated from long and stable relations along the value chain.
Institutions	Institutional thinness environment and highly politicized institutions lacking synergies with different actors and institutions.	Institutional thickness based on set of institutions that capitalize on the rich artisan heritage of the district and preserve the technical knowledge and identity of the district.
Technological performance	Poor technological performance due to the weakness of local capital goods sector, firms depends totally on external sources for technology mainly second hand machines.	Strong capital goods industry engendering district development through continuous interaction with different actors in the district.
Credit system	Tight financial constraints of banks in Damietta provoking firms to depend on their personal savings or loans from their relatives.	SME's accessibility to finance due to the existence of local banks, credit cooperatives and national funding programs with attainable conditions for collaterals.

5.2 Lessons learned from Brianza:

Studying the model of Brianza district reveals facts and lessons that could be adopted as good practices and benchmarking for Damietta, competitiveness of firms in Brianza is stemmed from their ability to follow rapid technological changes and adapting it to develop their products. Technical change in the district is a sustainable process generated from the use of capital goods and diffused through learning from daily interaction between firms, suppliers, machine producers and clients. The technology change process in the district is a bottom up process where networks of small local firms interact to find solutions to confront technological challenges.

Technological change in Brianza is a consequence of the interplay between codified technological knowledge and tacit knowledge, as the development of knowledge is influenced by the network of relations among firms with externalities and interdependence playing crucial roles, localized learning dynamics and bidirectional knowledge exchanges between users and producers of capital goods and intermediate goods in the context of industrial districts, have contributed in the Italian case to strong specialization and division of labor (Antonelli,1995).

Research knowledge is, often, a consequence of inductive learning and processes through the changing relationships among firms. Products diversification and differentiation in Brianza changed the links among complementary firms, where these firms worked together with ordering firms to find solutions to their new problems and challenges according to specified inputs set by ordering firm. This mechanism encourages backward and forward linkages (Hirschman, 1958,1977) which represents an important factor for development and engenders complementary effects and dynamic specialization between firms.

Coherence between national and regional economic policies on its different levels is of great importance to ensure the success of development programs in the district, Policies on the meso economic level (below the level of national economy and above the level of individual firm) is of paramount importance in Brianza to implement effective and successful strategies, it represents an important platform for critical mass needed to synergize and create linkages between firms, institutions and local labor market. Moreover Development policies are more efficient when carried out by local actors,

Local policies monitor the actor's practices on the ground to adapt its policies according to its rapid changes; designing policies to stimulate innovation taking into consideration local practices, features and networks of cooperation.

The institutions in Brianza are part of the social fabric of the district as Firms, families, and local banks are institutions embedded in forms of exchange that are both cultural and economic (profit making), and that this interaction of elements produces an idiosyncratic mix (Ghezzi,2012: 239), Public policy in the district relies basically on setting Plans enforcing and supporting local firms networks, to enhance innovation and increase productivity of firms, intensifying its collaboration with firms to clearly understand firms needs and bolster the learning process in the district.

Innovation in the district is derived from learning and knowledge exchange between firms as the existence of a set of links based on competition and cooperation makes the area integrated (Garofoli, 1983), the firms are characterized by strong absorption capacity to external knowledge and adapting it to embedded internal technical knowledge accumulated over years of experience, the absorption capacity of firms has been supported by public organizations as training institutions and quality centers.

Another important dimension of learning is the so-called "institutional learning" (see. Welsh experience in Henderson and Morgan, 2003), it stresses the importance of institutions involvement in the experimentation , definition of the objectives and the selection of projects to be undertaken, which increase its capacity of self-assessment of the results achieved and upgrading of the strategies and tools used for local development .

The ability of self-assessment and continuous correction of the objectives and strategies of development is considerably more important than any external evaluation, because it allows institutions to internalize knowledge and skills and enables a path of conscious and predominantly of endogenous nature (Garofoli, 2006). Institutional learning in Brianza is more concerned with increasing institutions ability to solve problems rather than to have the financial resources and to comply with the formal bureaucratic and administrative procedures.

The accessibility of small firms in the district to credit through local banks , cooperatives , national and regional credit programs with low interest rates supported growth and development in the district, allowing firms to catch business opportunities in local and international markets through continuous modernization of their production lines and technology used, the strong social features in the district as reputation, family and social relations represented an intangible collaterals and important factor to enhance credit access.

The success of the industrial policy in Damietta is conditioned by adapting interventions and regulations to socio economic features and characteristics of the territory, the firms should participate in setting the business plans of institutions and business development centers, It is nearly impossible to support thousands of small firms working in Damietta through direct intervention, consequently public policy in the district should be shifted from direct subsidies and regulations to a more territorial approach, with the aim of enhancing networking and learning diffusion.

SME's bottlenecks in Damietta can be summarized in difficult accessibility to international market opportunities which require complying with technical specifications, also difficulties related to fluctuation of production input prices especially wood due to monopolistic practices by traders .Another important obstacle is related to the difficulty of introducing important functions in workshops as training ,logistics and international markets information.

Consequently, public policies in Damietta on the meso-economic level, should tackle organizational systems and learning communities to catch up technological changes, restructuring its production system and adapting technology to differentiate its products, achieving coherence between technology and handmade skills to achieve productivity and competitiveness in local and international markets.

The effect of the reorganization of the production system in Damietta on productivity and competition should generate more returns and scale economies, moreover emphasizing the role of public and semi public institutions to act as a focal point between firms and encourage more inter firm networks, ensuring flow of information, developing entrepreneurial skills and opening external linkages with international markets will reduce transaction and production costs.

Conclusions

Industrial districts are important tools to engender sustainable competitiveness and employment opportunities through generating external economies of scale and creating a pool of specialized workers, moreover reducing transactions cost. The study reveals the commonalties, similarities and differences between Brianza and Damietta; however trajectories of development and dynamics of growth are different in both models discussed.

The institutional framework is a critical difference between both cases, as the case of Damietta shows that local institutions are highly politicized and have been dominated by lead and powerful actors and missed its core objective of introducing a collective approach for the whole district. This deficient working mechanism in Damietta institutions severely affects the learning process in the cluster and hinders small firms from any potential for learning and upgrading.

The study also shows that although there are limitations to copy identical external models, however best practices and lessons can be learned from Brianza district, as the importance of designing appropriate local policies that take into consideration contextual local knowledge and territorial features, minimizing the power asymmetries between firms through creating the platform for firms to learn and share knowledge and enhancing their access to business services.

An important obstacle of development in Damietta is the mistrust between firms which reduced the opportunities of horizontal cooperation between them, and affects the cluster's capacity to respond to large orders whether locally or internationally. Moreover the study revealed that SME's in Damietta play a vital role in the economic performance of the district, contributing by more than 85% of the districts exports due to it high artisanal skills accumulated over years.

Inter firm cooperation and division of labor are clear features in Damietta, based on high specialization of different workshops along the five multistage processes of the value chain, this chain is highly controlled by the showroom owner (trader) who possess a strong contractual power on small workshops, coordinating the whole production stages starting from selecting the design till the polishing and finishing. Although this mechanism enhances the

forward linkages of small firms and workshops, however it affects the information flow and feedback between suppliers in certain stages of the value chain, losing the product identity and the ownership sense.

Skill acquiring and craftsmanship skills are the main factors behind the competitive advantage of Damietta, so enhancing the learning networks in the district is a substantial intervention for future development, developing core competence skills and tackling points of weakness as upholstery and finishing, moreover this indigenous knowledge and skills should be supported by formal technical training, and acquiring more complex technical knowledge.

Another important dimension, which is the local capital goods sector, the sector is underdeveloped and depends on imitating imported machines using low quality materials. The technical change in Damietta is related to adapting technology to the local needs of the cluster and widening its scope of interaction with machine users. The case of Damietta shows that power asymmetries between firms in the cluster could severely hinder the trajectories of development and upgrading. The institutional set up ,which is biased toward large firms, affects the opportunities of supporting SME's and thwart any attempt for development of the district.

All these previously stated factors represent serious limitations for the transformation of Damietta towards a developed industrial district, which reveals the importance of governance and collective efficiency framework and underlines the need for understanding the mechanisms of interaction and learning trajectories to pursue the right path for development.

The district in Damietta is in need of different local development policies, so it is proposed to establish a new local development agency in the district; the core function of this agency is to perceive common needs of the district, increase trust between private and public actors, constitute a network of collective order which include different governmental and non governmental institutions and agencies. Moreover it is attributed to mobilize investment resources, human and entrepreneurial skills, and facilitating information flow to encourage learning processes and searching for solutions for common problems. Its strategy should be based on promoting local production system, introducing more information exchange and networking and supporting accessibility to international markets and linking the district to the global economy. The activity of this agency should be highly articulated , and should scout implicit needs of the firms in the district, constructing of a network of relations between different firms, institutions and promoting development and building capacity of the local economic system and playing the role of the “catalyst” to enhance problem solving process and strategic planning.

It is important for this agency to start conducting a comparison of the experiences of local development in other countries and districts, studying the trajectories of development of clusters in developed and developing countries. This local agency should understand the mechanisms of success achieved elsewhere as they are crucial factors for learning to organize an effective planning of local development. It is of paramount importance to anticipate new modes of action, building trust between local actors and introducing reform proposals and steps for constructing a local path and strategies for development and solutions for the challenges facing the district.

There are different success stories of local intervention by development agencies in industrial clusters in Italy and all over the world(Garofoli,2003), for instance the case of AIS in the municipality of Sermide in Oltrepò Mantovano in Italy and the case of Lumetel in Brescia mechanical district.

On the European level, Cluses industrial cluster in France which is specialized in the production of mechanical products mainly car components, represents a model of the importance of local institutional intervention, a deep restructuring process of the car components market was operated by the outsourcers of major car companies requiring a requalification of the skills of hundred of firms, aiming at ensuring the quality of the products and constituting a network of specialized contractors. SME's was confronting serious difficulties to respond to this new requirements, Different local intermediate institutions in the cluster started to interact to face this problem, as CTEDEC technology center, which has a long tradition of strong links with local businesses with an organizational structure sufficiently extended, with the capacity to offer services and IREP-D which is the institute of research on production and development of Grenoble university and SIDEMVA development agency affiliated to the community of Arve Valley.

These institutions introduced a strategic action plan coordinated by SIDEMVA to restructure the economic system of the cluster to cope with these new changes, this initiative resulted in creation of a number of first-tier subcontractors capable of taking orders from large car producers and proposing technical solutions to their clients and managing its networks of relations with firms.

Another important model is in Elche , the most important Spanish footwear district , the local development agency in Elche together with other intermediate institutions in the district which are part of IMPIVA network (Instituto de la Pequeña y Mediana Empresa Valenciana) as the Region Generalitat Valenciana ,beside a network of technology centers, played an important role to support the local system of the district.

This was achieved through providing a web of services to firms as technical assistance, certification and vocational training for technicians, moreover improving human resources skills in the district through establishing a new private university in the area, these institutions succeeded in launching a strategic plan to the district, coordinating and integrating all territorial interventions in the district.

The proposed development agency in Damietta should set an action plan which could start by organizing a conference to listen to the local actors of the district to understand the working mechanism of the local economy and networks of relations between firms and institutions, restoring trust between public entities and firms in the district, determining common needs and problems of the firms and proposing solutions , moreover identifying the skills that the district is missing and exploring the possibility of outsourcing of these skills from outside the district.

The agency should play the role of integrator between tacit know how rooted in the territory and transmitted through network of relations between firms and knowledge and skills encoded (Garofoli, 2003c), this will enhance the interplay between tacit and codified knowledge in the district.

Introduction of effective interventions in Damietta depends on creating a coherence and interaction between different levels of government, with an open and cooperative approach with the aim of interaction and synergy. Planning at the national level is not sufficient to achieve the required goals and objectives of development, as the meso-level allows mobilizing local resources, determining local actors and translating opportunities into actual projects, actions and results, it is therefore necessary to consciously work on increasing the capacity of coordination between the various levels of government.

The improvement of human resources devoted to local development in Damietta is an important starting point; the district is in need to have diverse skills and high-level development governance, the continuous updating and improvement of professional skills, and increasing the ability to solve problems from the bottom and adopting "Best practices" benefiting from the experiences of other countries and territories.

One of the important pillars of human resources development in the district is the training scheme programs, intervention in this regard should explore employer's needs and encourage enhancing core competence skills, targeting areas of weakness as upholstery and finishing skills and intensifying training on high value added skills as industrial design. Moreover it is of paramount importance to synergize training programs of different training providers and technical schools as Mubarak Khol School, Damietta vocational training

school and Industrial modernization center. Special attention should be given to training programs that encourage collaboration between firms especially in downstream activities, branding and creating identity skills, also programs aiming at enforcing networks in the district as it represents an important tool for innovation and learning, create trust and increase forbearance (Sabel 1992), moreover introducing the culture of creating consortiums is of great importance as for instance, the market of production inputs and raw materials(wood, paintings, adhesives,….) -which is nearly all imported- is suffering from price distortion and weak bargaining power for SME's to mobilize their need of intermediate goods, so creating a consortium for importing raw materials and wood which represents more than 60% of total production cost could reduce cost and generate externalities and increase the competitiveness of small firms in the district.

Policy makers in Damietta should possess the capabilities to analyze the relative positioning of the economy and local society, identifying the so-called "specific resources" of the territory (Colletis and Pecqueur, 1994) which generates the competitive advantage of the district. Moreover they have to assess the challenges and threats of competition from other regions and the changes taking place in the markets and in technology organization, and the opportunities for integration on national and international markets, as well as the opportunity to solve specific problems starting from the local professional capacity.

The development of technical and professional skills, the spread of business culture, internalization of external knowledge, the creation of business networks, the improvement of the conditions of socio-economic and environmental impact are the basis of local production and reproduction of dynamic competitive advantages(Garofoli,1999), that only provide the so-called "high road" to development (Pyke and Sengenberger, 1992), based on the continuous pursuit of quality production and innovation factors .

Any future intervention in Damietta district requires awareness of different dimensions of the development process with the involvement of significant number of actors and institutions to design the district policy on collective basis. This complex process requires the existence of human capabilities for managing the process, assessing the appropriate skills needed and various interests that exist on territory, realizing factors of competitiveness and challenges posed by global competition, and solving problems through the stimulation of best practices of similar cases.

Appendix

Sample of Interviews with large enterprises in Damietta

Firm (A)

1. How do you benefit from your presence in Damietta furniture cluster? What are the advantages and disadvantages of the cluster?
   Damietta is the school of furniture in Egypt, we benefit from the abundance of highly skilled labor, near raw material wholesalers, the disadvantage is when we closed our workshop in the old city in Damietta to our factory in the industrial zone in new damietta-20 km far- ,where it was really difficult to convince labor to work in the district, so we provided for them means of transport, which represents an extra cost for your budget.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The emergence of the CNC machines and the technology even in small workshops due to the increase of demand in the local and international markets, also labor from neighboring governorates started working in Damietta to satisfy the need of factories in new Damietta.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   There are many ways for importing, either we import directly special types of timber upon request from our customers in Europe, or we take the normal beech wood from wholesalers and importers in Damietta, the prices are relatively high but its relative weight on total cost is not high,for instance wood represents between 17-20% of cost, however pressure from chamber of commerce and associations of Damietta on importers could lead to decrease of prices .

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor? what are the phases of production of your products?
   We outsource between 10 -20 % of our production needs from small workshops for certain products that we do not produce, but the major part of production is internally produced, starting from cutting till painting.

5. What are the financial instruments available for short term and long term investment in your company?
   All our financial resources for investments are endogenous, however we don't mind if we find another way of financing which is compatible with our beliefs and traditions. There are two dimensions for this issue, first religious as it is forbidden in Islam to borrow with interest rate, second which is that dealing with banks is a big risk in Egypt , as we have seen few companies in Damietta who dealt with banks ,and they were not able to pay the high interest rate of their loans which is about 15%,and ended up with bankruptcy.

6. Did your company export to foreign markets? if yes, What are the factors of competitiveness of your products and its dynamics ?
   We export finished furniture mainly to Gulf countries, and to Italy and France semi finished –white wood and frames- ,our competitive edge is the handmade furniture and the highly skilled labor ,even with the emergence of CNC machines capable of carving , but doesn't give the same effect and spirit of the handmade, however our point of weakness especially in the European market is the finishing as upholstering and painting .

7. What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   Our strategy to face the competition is through innovating new products and designs, and retaining the artisanal furniture and the handmade touch, also enhancing the relations with our customers and agents in Europe and the gulf countries.

8. What are the major destinations of your exports to the world? Do you have business relations with EU retailers and what are your techniques for approaching new markets?
   Our major destinations are the United Arab Emirates, Saudia Arabia, Italy and France, our main techniques for approaching these markets are through participating in international Fairs, as Index Dubai, Salone Del Mobile, Maison Objet, and also creating a network of agents and wholesalers is an important way to boost our exports.

9. What do you propose for public and governmental entities to do to satisfy the needs of the companies in the cluster?

Upgrading labor skills in Damietta is an important intervention, we are suffering from lack of skilled labor,Mubarak khol school has a good educational level, however graduates are very limited compared to the demand in Damietta, also labor consider training a waste of time because they prefer to work and gain money, so the solution is establishing more vocational training schools, moreover we are suffering from the difficulty of finding designers graduated from fine art faculty, because they prefer to work in Cairo.

10. Are there any forms of research and development and innovation strategy for your products? Is there any innovative changes u did in the last ten years?
    We don't have a formal research and development department in the company, but we innovate through learning from the market or our clients abroad, getting the new trends from fairs and exhibitions and adapt it according to each market needs, we changed our production process drastically in the last ten years, using CNC machines which contributed significantly in increasing our productivity to cope with international demand.

11. What are the major bottlenecks for local and foreign investments in the district?
    The presence of outdated legislations and laws, which should be changed to enhance the investment climate, for example, the social insurance law is obliging the employer and employee to pay about 40% of the salary to the government as a salary, which is a big burden on both of them, also the lack of quality standards for importing raw materials represents a big obstacle towards attracting investors to work in Damietta.

12. What is the most important industry wide change that could affect your company performance positively?
    Establishing a modern vocational school, providing high level of training on upholstering and painting could be a turning point that could affect the industry positively.

13. What are the key challenges which may affect the future of the cluster and its competitiveness in the international market?
    The increasing prices of raw materials and accessories, as Damietta is a pure importer of production inputs, so the there should be a government strategy to attract investments in production inputs with acceptable level of quality.

14. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity. -1-
b. High operational cost. -3-
c. Difficulty in the availability of certain raw materials or inputs.-5-
d. Increasing competition from Asian countries. -6-
e. Lack of quality control systems. -4-
f. Shortage in business association and government institutions support. -7-
g. Lack of knowledge about the international markets.- 2-

15. Rank the following competitive advantages of Damietta furniture cluster to export to international markets?

a. Low labor cost. -3-
b. Geographic proximity. -4-
c. Production flexibility and ability to deliver small orders in time.-2-
d. Technical knowhow accumulated over decades. -1-
e. other

16. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources -2-
b. High cost of loans.-1-
c. Lack of professional skills or specific competence-3-
d. scarcity of land for expansion .-4-
e. Lack of quality control systems. -5-
f. no market potential for expansion.-6-
g. other

17. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. -1-

b. credit guarantee institution to act as mediator between banks and enterprises.-2-

c. Business service centers to provide technical services for the district.-3-

d . Other

Firm (B)

1. How do you benefit from your presence in Damietta furniture cluster? What are the advantages and disadvantages of the cluster?

   The industry in Damietta started 200 years ago, with the French military campaign in Egypt, where the workers were skilled in fixing ships, then they started working on furniture with the demand of the French foreign community in Egypt, the first exports from Damietta were during the monarchy era to European countries, we established our company in 1946, Damietta is the school of furniture in Egypt, with abundance of highly skilled labor and good environment for furniture industry.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?

   The New Damietta establishment by the end of the nineties is an important structural change, where many workshops now were transferred to big factories and started to export.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?

   We import directly part of our production inputs, another from traders, sure the prices are overestimated due to customs tariff, and we have to encourage the national industry through encouraging investment in production inputs in Damietta.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor? What are the phases of production of your products?

   Yes, we have cooperation with other workshops, at least 25% of our sales are from workshops, however most of the production phases are done internally in our factory.

5. What are the financial instruments available for short term and long term investment in your company?

   Most of our short term and long term investments depend on our internal financial resources, however in rare case we deal with banks because of its high interest rates.

6. Did your company export to foreign markets? if yes, What are the factors of competitiveness of your products and its dynamics ?

   We are exporting 80% of our production; our competitive edge is the design and the handmade work.

7. What are your strategies to face the fierce competition from Asia competitors in the local and international markets?

   We concentrate on the French design style semi finished white furniture with the handmade touch; we are not competing in pricing, as it is very difficult to compete with the Chinese in terms of cost.

8. What are the major destinations of your exports to the world? Do you have business relations with EU retailers and what are your techniques for approaching new markets?

   US, Gulf countries, Russia and Italy, France, we don't have any relations with EU retailers; we approach the market through local commercial partners and international fairs, a new approach is entering a market through a partner in another country, for example we entered the Russian market through our agent in Italy who has good networks there.

9. What do you propose for public and governmental entities to do to satisfy the needs of the companies in the cluster?

   The educational industrial schools system in Damietta failed to graduate the required labor who satisfy the companies needs, establishing a modern school graduating a highly skilled labor, who are capable of dealing with new machines and technology, this will facilitate the mission of the factories in searching for new labor.

10. Are there any forms of research and development and innovation strategy for your products?

    We do not have enough resources for R&D, however our exposure to international markets and interaction with clients enhanced our capacity to follow the latest trends and introduce new products with different designs.

11. What are the major bottlenecks for local and foreign investments in the district?

    The lack of governmental vision to develop Damietta, which should be translated in a group of incentives and facilities to enhance the business environment , as simplifying the customs producers and reducing customs tariff on raw materials and developing attractive tax scheme for investors.

12. What is the most important industry wide change that could affect your company performance positively?

    Establishing a new industrial cluster in Damietta for the feeding industries, this will directly enhance the competitiveness of our products, decrease the cost burden of the production inputs and generate more job opportunities.

13. What are the key challenges which may affect the future of the cluster and its competitiveness in the international market?

    The problem of finding highly skilled labor, specific skills are now rarely to be found and are decreasing, this is our edge that we should maintain.

14. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.(1)
b. High operational cost.(3)
c. Difficulty in the availability of certain raw materials or inputs.(2)
d. Increasing competition from Asian countries.(7)
e. Lack of quality control systems.(5)
f. Shortage in business association and government institutions support.(4)
g. Lack of knowledge about the international markets.(6)

15. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(4)
b. Geographic proximity.(2)
c. Production flexibility and ability to deliver small orders in time.(3)
d. Technical knowhow accumulated over decades.(1)
e.other

16. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(1)
b. high cost of loans.(2)
c. Lack of professional skills or specific competence (3)
d. scarcity of land for expansion .(5)
e. Lack of quality control systems.(4)
f. no market potential for expansion.(6)
g. other

17. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (1)
b. credit guarantee institution to act as mediator between banks and enterprises.(3)
c. Business service centers to provide technical services for the district.(2)
d . Other

Firm C

1. How do you benefit from your presence in Damietta furniture cluster? What are the advantages and disadvantages of the cluster?

   Our presence in Damietta is very important, before opening our family business, we started with working as carpenters in different workshops in one of the villages of Damietta which contributed to acquiring artisanal knowledge and techniques of the furniture industry, then we opened our workshop in Damietta and started producing "Make to order" furniture for individual customers (seats, bedrooms, dining rooms).One of the advantages of Damietta is the availability of highly skilled labor specialized in handmade classic furniture from Damietta, also due to high demand on labor, labor started to move from near governorates as Dakhalia, Kafr El Sheikh to work in Damietta ,second main advantage is the location near Damietta port , the disadvantages are the difficulty of finding some production inputs in the cluster as some kind of sophisticated accessories, beside the need to enhance the managerial and organizational capacities in the cluster.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?

   At the late nineties, part of the old workshops in Damietta(old city) transferred their activities to New Damietta industrial cluster, and established factories with modern production lines, by 2002, they started exporting part of their production to gulf and European

countries, these factories now contributes to about 25% of total production of Damietta. One the other hand , the industry has been expanded on the outskirts of the city and reached the villages and neighbor governorates.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   For the wood, it is imported from outside and there are hundreds of warehouses of wood in Damietta, but the increase or decrease of prices depends on the market, moreover other production inputs as paints, polishes and accessories are totally imported, and there is a need for foreign investments inside the cluster in the feeding industries as there is no experience for Egyptian companies in this field.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor?
   For my company, all production process is done internally, as I have specialized production lines for seats, bedrooms, the reason behind this is to control the quality, but there are other factories in the cluster bring parts from other workshops, also they make carving work outside the factory.

5. What are the financial instruments available for short term and long term investment in your company?
   Most of my activities are auto financed.

6. What are the major destinations of your exports to the world? Do you have business relations with EU retailers and what are your techniques for approaching new markets?
   I started exporting in 2003, through participating in Salone del Mobile,I am currently exporting to many EU companies mainly in Italy and Spain, they are companies that import unpainted furniture from my company and resell it in the local market in Italy and Spain.

7. What are your strategies to face the fierce competition from Asia competitors in the local and international markets? What are the factors of competitiveness?
   We cannot compete with Asian companies in pricing, but our strategy relies on enhancing design and branding, all our designs are done

internally, our factors of competitiveness are handmade product and proximity to EU markets.

8. What do you propose for public and governmental entities to do to satisfy the needs of the companies in the cluster?
   Assisting companies in Damietta in providing training for labor on modern CNC production machines and new trends in production, we are currently establishing a training unit and workshop internally through courses provided by highly skilled local workers to other young workers.

9. Are there any forms of research and development and innovation strategy for your products?
   We have a small internal department for innovation, mainly in design, which is considered our core competence; our clients contribute to a great extent in drawing our strategy for introducing new products and designs through brainstorming and mutual coordination.

10. What is the most important industry wide change that could affect your company performance positively?
    Creating a mechanism of collective action plan for marketing and Internationalization for companies in the cluster and Upgrading the managerial and organizational capacity of the companies in Damietta.

11. What are the major bottlenecks for local and foreign investments in the district?
    The investment obstacles are various, the customs clearance is very complicated and bureaucratic, taxes on every phase of production, beside the lack of qualified business services as marketing, designing office.

12. What is the most important industry wide change that could affect your company performance positively?
    Establishing an agency for developing and marketing of Damietta is a very important action, proposing solutions for problems facing the district, and raising the human resources level through training on different technical and managerial skills.

13. What are the key challenges which may affect the future of the cluster and its competitiveness in the international market?
    The problem of finding highly skilled labor, there are specific skills that are now rarely to be found and are decreasing, this could be our main challenge to maintain our competitive edge in the future.

14. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.(1)
b. High operational cost.(2)
c. Difficulty in the availability of certain raw materials or inputs.(3)
d. Increasing competition from Asian countries.(4)
e. Lack of quality control systems.(6)
f. Shortage in business association and government institutions support.(7)
g. Lack of knowledge about the international markets.(5)

15. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(4)
b. Geographic proximity.(3)
c. Production flexibility and ability to deliver small orders in time.(2)
d. Technical knowhow accumulated over decades.(1)
e.other

16. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(1)
b. high cost of loans.(2)
c. Lack of professional skills or specific competence (4)
d. scarcity of land for expansion .(3)
e. Lack of quality control systems.(5)
f. no market potential for expansion.(6)
g. other

17. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (1)
B. credit guarantee institution to act as mediator between banks and enterprises.(2)
c. Business service centers to provide technical services for the district.(3)
d. Other

Firm (D)

1. How do you benefit from your presence in Damietta furniture cluster? What are the advantages and disadvantages of the cluster?
   We are an old company established in 1971 in the old city of Damietta, , we transferred to New Damietta industrial cluster(25 km far from the old city) to benefit from the new infrastructure , our presence in Damietta is important because of the abundance of highly skilled labor force.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The transfer to New Damietta industrial district and the introduction of CNC machines, which was a turning point towards encouraging exports to international markets and introducing the new technology.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   We get our production needs from wholesalers and distributors, I don't have a big warehouse to import directly, the prices are acceptable in most products.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor? what are the phases of production of your products?
   We cooperate with other companies and take parts of furniture, it is more economic and specialized, we outsource at least about 20% of our sales, for the paints, and moreover we outsource the painting through a specialized cabin with high quality paints.

5. What are the financial instruments available for short term and long term investment in your company?
   We depend on our internal financial resources; we don't prefer the risk of taking a loan especially with this high interest rates.

6. Did your company export to foreign markets? if yes, What are the factors of competitiveness of your products and its dynamics ?
   We export more than 50% of our production, mainly to Saudia Arabia and Emirates, Italy and France, our factors of competitiveness is the

handmade skills because we have highly skilled labor got their knowledge over years.

7. What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   Our competitive edge is the handmade skills ,which is hard to find it anywhere, we are not competing in terms of price as the Asian companies, and we have to preserve the advantage of handmade to maintain competition in international markets.

8. What are the major destinations of your exports to the world? Do you have business relations with EU retailers and what are your techniques for approaching new markets?
   We don't have relations with EU retailers, Participating in international markets is an important tool to our company, we participated in Salone del Mobile in Milan, Maison Objet in France, now we are intending to participate in Moscow and Istanbul Fairs, we also adopted new commercial strategy in the Arab countries through opening a showroom with a local partner.

9. What do you propose for public and governmental entities to do to satisfy the needs of the companies in the cluster?
   We were taking export aid of 15% of the value of export; however it stopped now, also we have taken training funded by IMC on paintings with foreign experts, the government should reduce the taxes and burden of operating in Damietta, as the social security percentage, the income tax, especially for small workshops.

10. Are there any forms of research and development and innovation strategy for your products?
    We don't have any form of research and development may be with the cooperation with Damietta technology center we can try to start working on it.

11. What are the major bottlenecks for local and foreign investments in the district?
    There are no government incentives for local and foreign investors to invest in the feeding industries and production inputs, which represents a point of weakness of the products of Damietta.

12. What is the most important industry wide change that could affect your company performance positively?
    Setting quality specifications for importing wood and other production inputs is an important step, because some traders import a very low quality wood, which affects our reputation in the international markets.

13. What are the key challenges which may affect the future of the cluster and its competitiveness in the international market?
    The difficulty of finding highly skilled labor in the future, especially in New Damietta, also the new generation is not willing to work in Furniture and prefer to work in another administrative work.

14. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.(3)
b. High operational cost.(2)
c. Difficulty in the availability of certain raw materials or inputs.(6)
d. Increasing competition from Asian countries.(7)
e. Lack of quality control systems.(4)
f. Shortage in business association and government institutions support.(5)
g. Lack of knowledge about the international markets.(1)

15. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(4)
b. Geographic proximity.(3)
c. Production flexibility and ability to deliver small orders in time.(1)
d. Technical knowhow accumulated over decades.(2)
e. other

16. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(3)
b. high cost of loans.(2)
c. Lack of professional skills or specific competence (5)
d. scarcity of land for expansion .(1)
e. Lack of quality control systems.(4)
f. no market potential for expansion.(6)
g. other

17. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (2)
b. credit guarantee institution to act as mediator between banks and enterprises.(1)
c. Business service centers to provide technical services for the district.(3)
d . Other

Firm (E)

1. How do you benefit from your presence in Damietta furniture cluster? What are the advantages and disadvantages of the cluster?
   We have two factories in Damietta, including about 300 worker, our presence in Damietta is important as you can find highly skilled workers with acceptable salaries, we get land with suitable prices and ten year tax exemption in the nineties, disadvantages are the difficulty of attracting workers, so we got transportation buses for them .

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The emergence of factories in the industrial district, starting to export to international markets, the use of technology also increased, however the need of labor is very crucial in Damietta, the production of Damietta is about 1000 room daily.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   We import directly our production inputs, prices are relatively high, however it will not be feasible for investors to invest in paintings or other production inputs, because the volume of demand at the end is not huge, compared to heavy industry investments as paintings.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor? What are the phases of production of your products?
   All the phases are done inside the factory, we don’t' have any cooperation with companies, to control the level of quality; workshops are working with low quality materials, although is more efficient to cooperate with other firms in the district, however we can't' do this due to the risk of copying our designs.

5. What are the financial instruments available for short term and long term investment in your company?
   We invested till now about 4 million euro, our turnover yearly is 3 million euro; I dealt with banks at the beginning of establishing our factories, now there are strict restrictions and guarantees to take a loan which represents an important obstacle for expansion.

6. Did your company export to foreign markets? if yes, What are the factors of competitiveness of your products and its dynamics ?
   We are exporting 50% of our production, mainly to European markets, especially Italy, France and UK, design and handmade is our competitive edge.

7. What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   We concentrate on developing our own designs to be able to compete; this is beside the importance of importing high quality production inputs and good packaging.

8. What are the major destinations of your exports to the world? Do you have business relations with EU retailers and what are your techniques for approaching new markets?
   We are exporting mainly to European markets, especially Italy, France and UK, our participation in international fairs as Salone del Mobile and Meuble Paris is the major source of international clients.

9. What do you propose for public and governmental entities to do to satisfy the needs of the companies in the cluster?
   The most important intervention in my opinion is to change the culture of firms in the cluster to the importance of design, special upholstery and finishing techniques as it represents a weakness point in the cluster, this could be done through highly customized training programs.

10. Are there any forms of research and development and innovation strategy for your products?
    We try to innovate in terms of design through our internal designers; also we search for new materials through our international exposure in the exhibitions.

11. What are the major bottlenecks for local and foreign investments in the district?
    The lack of highly educated calibers, who possess managerial and educational capabilities, beside the bureaucratic taxes on every phase of production.

12. What is the most important industry wide change that could affect your company performance positively?
    Changing the mechanism of work in Damietta, which depends on the trader who buys the wood with the lowest cost, then outsource all phases of production through workshops till the final product, this cycle cannot create the sense of ownership and did not guarantee the quality of the product, we have to encourage the creation of factories to increase the sense of ownership and control the quality.

13. What are the key challenges which may affect the future of the cluster and its competitiveness in the international market?
    China is the challenge for Damietta, they are producing classic furniture with very competitive price, also the local and international trend is changing towards the modern furniture and this will affect the classic sales.

14. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?
    A. Low labor productivity.(1)
    B. High operational cost.(2)
    C. Difficulty in the availability of certain raw materials or inputs.(4)
    D. Increasing competition from Asian countries.(3)
    E. Lack of quality control systems.(5)
    F. Shortage in business association and government institutions support.(7)
    G. Lack of knowledge about the international markets.(6)
15. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(4)
b. Geographic proximity.(2)
c. Production flexibility and ability to deliver small orders in time.(3)
d. Technical knowhow accumulated over decades.(1)
e. other

16. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(2)

b. high cost of loans.(3)

c. Lack of professional skills or specific competence (4)

d. scarcity of land for expansion .(1)

e. Lack of quality control systems.(5)

f. no market potential for expansion.(6)

g. other

17. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (2)

b. credit guarantee institution to act as mediator between banks and enterprises.(3)

c. Business service centers to provide technical services for the district.(1)

d . Other

Sample of Interviews with SME's in Damietta

Firm(A)

1. How do you benefit from your presence in Damietta furniture cluster? Mention the advantages and disadvantages of the cluster?
   Damietta is a well known city of furniture on the national and international level, so this branding accumulated over years attracted customers and agents to come to Damietta, and enhanced the exports of the city, for the disadvantage is the difficulty of having a stable and committed labor, for example in my workshop I have only 3 permanent workers and the rest are free lancers, which threatens our commitment to deliver orders in time.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The use of CNC machines in Damietta is increasing with the increase of demand, also to avoid the complete dependence on labor, moreover product variation increased in the last years with more customized and detailed designs different from the traditional standard designs of the past.Also the consumer taste has changed, in the past, consumers were considering the furniture as a piece of art that last for a long time, so he is willing to pay high price, but now the consumer prefers to buy furniture for renewal of his home, with intention to change it within five or seven years, so he prefers to buy a lower cost furniture.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   The structure of importing in Damietta is based on three levels, main importer then wholesalers, then distributor ,we deal with distributors in Damietta to get our production inputs, for the foam ,there are two factors for foam in Damietta, we deal with them due to the difficulty of importing foam which will cost a lot and will not be feasible, for the paints, we are not satisfied with local companies quality ,so we deal with suppliers in Italy, who provide us with paints and training on its use.Establishing an association responsible for importing high quality production inputs and raw materials as it was in the sixties is an important step, also the government should set quality standards for importing these inputs to guarantee minimum level of quality.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor?
   We provide some factories with parts of furniture, we design and make our products as white wood, and then we pass it to other workshops for gilding, painting and polishing.

5. Is there any support programs adopted by public institutions or business associations in the area? if yes what is the scope of these programs?
   Not yet, but I will participate for the first time in Furnex Egypt exhibition this year, our participation is funded by the Industrial modernization center.

6. What are the financial instruments available for short term and long term investments in your company?
   The culture in Damietta is against taking loans with interest due to the Islamic religious belief which forbids taking loans with interest, so we depend on our endogenous resources for any type of investment whether short or long term.Another important issue, which is that most of banks can't find guarantees or collaterals to give loans, due to the fact that most of the workshops are not legally registered.

   For the workshops, there are four life cycles of capital over the year, as the average production is about 24 rooms of white wood bed, dining, living rooms per year with average sales of 4000 L.E per room, so total sales per year are around 100 thousand L.E, with profit margin of about 10%, which can't enable any margin of expansion.

7. Are you exporting? What are the major destinations of your exports to the world? What are the factors of competitiveness of your enterprise?
   Yes, we are exporting to the US, Italy and France, our factors of competitiveness is the handmade products, we are concentrating on the antique products.

8. Do you have business relations with EU retailers and what are your techniques for approaching new markets? What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   We don’t have relations with EU retailers, we export directly through agents or wholesalers, we don’t see Asian companies as competitors for us in the international markets, as they depend mainly on

machinery with little handmade touch, however they compete in the local market due to low pricing of their products,We also depend on the internet to promote our products in the international markets as the Us, Russia and Brazil.

9. How do you design and market your product in the local and international market? Do you participate in any local or international fair?
   Most of our exported products are designed by the importer, because he is familiar with the needs of his market, we did not participate in any international fair.For the marketing, it is a common problem in Damietta, it is a one man show strategy, the owner is doing all what is related to production, marketing, and distribution, and this is a big obstacle towards the penetration of international markets.

10. Are there any forms of research and development and innovation strategy for your products?
    We don't have R&D department, but we try to innovate through discussions with our clients in Europe and the US.

11. What is the most important industry wide change that could affect your company performance positively?
    Establishing a new industrial cluster for SME's with usufruct system for 10 years, where workshops can rent ready -made equipped workshops and benefit from common services as dryers, CNC machines with affordable fees.

12. Do you have any sustainable scheme for training your labor?
    We have taken a training on upholstery and painting organized by the industrial modernization center which covered part of the cost of training, however the training need to be much more customized according to the needs of the company, for example we need to have training on paintings with information on materials used in EU market or the US.

13. What are the major obstacles which cannot be faced on the firm level?
    Due to the diversity of phases of production of furniture, we are facing the problems of taxation on every stage of production, which affects our competitiveness, this is beside the need to change the mechanism of social insurance which is a big burden on both employer and employee, another issue is also that the new generation of Damietta is not willing to work in the sector, looking for administrative and

managerial job opportunities which will certainly affect the labor market in Damietta.

14. What are the main changes in the production process in terms of organization, introduction of new machines and products in the domestic market?

    The main changes in terms of organization are that many workshops are tending to acquire machines to decrease dependence on labor, for the labor, we will face the problem of scarcity of skilled labor in the near future, as a big portion of labor now are not from Damietta, but they are coming from other governorates daily, some of them get the knowledge and return back to their city and open their own business.

15. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.(7)
b. High operational cost.(3)
c. Difficulty in the availability of certain raw materials or inputs.(6)
d. Increasing competition from Asian countries.(5)
e. Lack of quality control systems.(4)
f. Shortage in business association and government institutions support.(2)
g. Lack of knowledge about the international markets.(1)

16. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(4)
b. Geographic proximity.(2)
c. Production flexibility and ability to deliver small orders in time.(1)
d. Technical knowhow accumulated over decades.(3)
e. other

17. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(3)
b. Difficulty in access to finance.(4)
c. high cost of loans.(5)
d. Lack of professional skills or specific competence (7)
d. scarcity of land for expansion .(2)
e. Lack of quality control systems.(6)

f. No market potential for expansion.(1)
g. other

18. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (2)
b. credit guarantee institution to act as mediator between banks and enterprises.(3)
c. Business service centers to provide technical services for the district.(1)
d . Other

Firm (B)

1. How do you benefit from your presence in Damietta furniture cluster? Mention the advantages and disadvantages of the cluster?
   I have about 35 workers, we were before in old Damietta, then we transferred to new Damietta, The presence in Damietta enables access to large pool of skilled labor, for the disadvantage is the need of introducing new technology and training labor on it.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The last 10 years have witnessed the emergence of big factories in New Damietta, which gives a boost to the exports from 30 million L.E in 2003 to 200 Million L.E in 2005 for example, also the new technology and machines started to be used in this factories.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   We got the raw material from local wholesalers who import it from outside Egypt; however there are many varieties for raw material, the level of paintings in the local market is enhancing overtime.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor?
   We bring some parts or pieces, a least 15% of our production from other small workshops; in the cluster there are many tasks and

specialization, we cannot produce the whole product internally, for instance we outsource the painting process from outside our factory.

5. Is there any support programs adopted by public institutions or business associations in the area? if yes what is the scope of these programs?
   We participated in international fairs, Index Dubai, salone del Mobile, Furnex in Egypt, with the support of the international modernization center, as they cover 80% of the participation fees, The export aid was 10 % of company exports value, many cases of fraud were discovered and the aid stopped, now the export aid is given only to freight costs, the policy should be changed through giving aid to indirect activities as exhibition participation or industrial modernization.

   The furniture technology center is suffering from unqualified staff and misuse of its resources, since its establishment in 2005 we didn't benefit from the center.

6. What are the financial instruments available for short term and long term investments in your company?
   We deal with banks, but we are suffering from high interest rates which reach 13%, it is really a high burden on our total cost structure, also there should be flexibility in payment in the time of economic slowdown.

7. Are you exporting? What are the major destinations of your exports to the world? What are the factors of competitiveness of your enterprise?
   Yes, we were exporting between 70 to 80% of our production, but now we export only 50 %, mainly to Arab countries, our main factor of competitiveness is the handmade work and skills of Damietta labor.

8. Do you have business relations with EU retailers and what are your techniques for approaching new markets? What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   We don't have relations with EU retailers, we export directly through direct importers, no threats from Asian countries, the furniture is different, and they cannot compete in the handmade furniture, we depend on the fairs to get our foreign clients.

9. How do you design and market your product in the local and international market? Do you participate in any local or international fair?

Most of our products are designed by our designers, because we are familiar with the local and Arab market taste, we did not participate in any international fair.

10. Are there any forms of research and development and innovation strategy for your products?
    We don't have R&D department, we try to develop our products through exploring the new trends in the market.

11. What is the most important industry wide change that could affect your company performance positively?
    Establishing a modern university for furniture in Damietta, When I was the head of the association for upgrading the furniture industry in Damietta, we were trying to introduce the new technology in Damietta to compete internationally, we got an approval to make furniture university in Damietta, we got 20 acres of land, but after the revolution, the project stopped .Also Establishing a new industrial zone for SME's is very important in Damietta, we can take 200 small workshops ,and industrial developer ,workshops can pay 25% of the amount and the rest on five years, business services will be available for the SME' including training, and marketing.

12. Do you have any sustainable scheme for training your labor?
    I have recruited many workers from the school of Mubarak khol they are well trained, as they studied for about three years, only 180 students graduated every year, sometimes we send them to take training on painting with the IMC.

13. What are the major obstacles which cannot be faced on the firm level?
    the labor in Damietta are skilled and trained on handmade working, but still they lack training on new technology and machines ,this problem should be solved on the national level through enhancing the education system.

14. What are the main changes in the production process in terms of organization, introduction of new machines and products in the domestic market?
    The process of mechanization and CNC is in gradual increase in Damietta, no fears on labor, as long as mechanization increases, productivity increases, factories will expand and recruit more labor.

15. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.(1)
b. High operational cost.(3)
c. Difficulty in the availability of certain raw materials or inputs.(5)
d. Increasing competition from Asian countries.(6)
e. Lack of quality control systems.(5)
f. Shortage in business association and government institutions support.(4)
g. Lack of knowledge about the international markets.(2)

16. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.(3)
b. Geographic proximity.(4)
c. Production flexibility and ability to deliver small orders in time.(2)
d. Technical knowhow accumulated over decades.(1)

17. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources(1)
b. high cost of loans.(2)
c. Lack of professional skills or specific competence(5)
d. scarcity of land for expansion .(3)
e. Lack of quality control systems.(4)
f. no market potential for expansion.(6)
g. other

18. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. (3)
b. credit guarantee institution to act as mediator between banks and enterprises.(2)
c. Business service centers to provide technical services for the district.(1)
d . Other

Firm C

1. How do you benefit from your presence in Damietta furniture cluster? Mention the advantages and disadvantages of the cluster?

   we have a family business in Damietta ,we acquired the skills of carpentry from our father, now we have a group of workshops, Damietta provides us with the atmosphere and market beats of the

furniture market in Egypt, also the availability of highly skilled labor is an important edge in the national and international market.

2. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The emergence of export business in Damietta, many factories, even workshops started to export, which is considered a transformation point which led to expansion of many factories to satisfy the demand in the local market.

3. What are the channels for importing your production inputs? Do you think that production input prices are overestimated? How can we tackle this problem?
   We got our needs of inputs from distributors here in the local market, prices may be slightly higher, but with marginal effect on the total cost of the final product.

4. Do you have production cooperation with other companies and suppliers in the cluster? Is there division of labor in the cluster? If yes? What is the mechanism of division of labor?
   As we have many workshops, some are specialized in carpentry work, others in painting, other in gilding, other in upholstery so most phases of production are done through our workshops.

5. Is there any support programs adopted by public institutions or business associations in the area? if yes what is the scope of these programs?
   We participated in many exhibitions outside Egypt, with 80% support of the industrial modernization center and the export council of furniture exports, also we have taken training on paintings and upholstery, also The institution for upgrading the furniture sector in Damietta has established a wood drier with cost of 250L.E per m3, however it is not enough to satisfy the needs of the workshops in Damietta.

6. What are the financial instruments available for short term and long term investments in your company?
   We prefer to depend on our own financial resources, as the banks ask for a very strict guarantees and high interest rates.

7. Are you exporting? Which are the major destinations of your exports to the world? Which are the factors of competitiveness of your enterprise?
   Most of our exports are to the gulf countries, especially the united Arab emirates-UAE- and Saudia Arabia, our factors of competitiveness is the flexibility of producing any quantity, with the hand made spirit .

8. Do you have business relations with EU retailers and what are your techniques for approaching new markets? What are your strategies to face the fierce competition from Asia competitors in the local and international markets?
   No, we don't have relations with retailers, we deal with direct importers or companies taking semi-finished furniture, the Asian companies are not considered a competitor , because the type of product is different, we make highly classic handmade furniture, most of the Asian companies depend on machines to reduce the cost of their products and this is not our strategy.

9. How do you design and market your product in the local and international market? Do you participate in any local or international fair?
   We depend on catalogues and designs provided by our clients, we participated in Index Dubai Fair and looking to participate in Moscow fair also.

10. Are there any forms of research and development and innovation strategy for your products?
    Unfortunately we don't have the resources for Research and development, even Damietta technology center is not activated till now, we didn't benefit from it.

11. Which is the most important industry wide change that could affect your company performance positively?
    Establishing a highly public private company specialized in marketing, capable of branding the "Made in Damietta" ,as most of the companies and workshops in Damietta don't have this marketing capabilities.

12. Do you have any sustainable scheme for training your labor?
    We participate only in the programs of the Industrial Modernization Center(IMC) for training whether administrative or industrial.

13. What are the major obstacles which can not be faced on the firm level?
    The main obstacles are the bureaucratic procedures and high burden of taxes and social security, simplifying the process of employee registering is an important step towards facilitating business environment in Damietta.

14. What are the main changes in the production process in terms of organization, introduction of new machines and products in the domestic market?
    Due to the increase in demand, the production process is much more customized , moreover big factories are taking big portion of production from small workshop, and the local market is much more sophisticated due to the high competition and the products are various and customized more than before.

15. Rank the following obstacles that may affect the competitiveness of your products in the international markets by the most important?

a. Low labor productivity.-4-
b. High operational cost.-3-
c. Difficulty in the availability of certain raw materials or inputs.-6-
d. Increasing competition from Asian countries.-7-
e. Lack of quality control systems.-5-
f. Shortage in business association and government institutions support.-2-
g. Lack of knowledge about the international markets.-1-

16. Rank the following competitive advantages of Damietta furniture cluster towards exporting to the Middle East and Europe?

a. Low labor cost.-4-
b. Geographic proximity.-3-
c. Production flexibility and ability to deliver small orders in time.-1-
d. Technical know how accumulated over decades.-2-
e. other

17. Rank the following obstacles that may face your business expansion?

a. Limited endogenous financial resources-1-
b. high cost of loans.-2-
c. Lack of professional skills or specific competence-5-
d. scarcity of land for expansion .-3-
e. Lack of quality control systems.-4-
f. no market potential for expansion.-6-
g. other

18. Which of the following do you think is more important to enhance the competitiveness of your enterprise?

a. Employment center to mediate between supply and demand of labor. -3-

b. credit guarantee institution to act as mediator between banks and enterprises.-1-

c. Business service centers to provide technical services for the district.-2-

d . Other

Sample of interviews with intermediate institutions in Damietta

Interview with

Industrial Modernization Center official in Damietta (IMC)

1. What is the role of your institution in Damietta?
   The Industrial Modernization Center (IMC) was established in 2000 aiming at providing business development and industrial support to Egyptian industrial enterprises, the institution which is based in Cairo realized the need to open an office in Damietta in 2004, to work closely with companies in Damietta.

2. Is there any support programs for the furniture sector adopted by your institution in Damietta? if yes what is the scope of these programs?
   We provide industrial and managerial consultancy through outsourcing services from a third party, More than 250 companies in Damietta have benefited from our services, ,specific criteria was set for choosing the beneficiaries, which is that they should have at least 10 insured workers, with industrial registry, for example, cooperation with shoulah company is a success story, we started working from scratch with Shoulah Company in 2004, we put the managerial structure with the company, delegation of authorities, exhibition internationalization, branding and design, a total budget of 900 thousand L.E has been spent, now the company exports amounts to 15 Million L.E.

   Another project named "clusters" started in 2007 with workshops less than 10 workers, they have taken managerial courses and started participating in exhibitions in Furnex Egypt, and many of them now have their own factories.

3. What are the sources of finance of your activities?
   Our main source of finance is the Ministry of Industry and Trade, beside the funding programs of the EU.

4. What are the main obstacles facing your entity in Damietta?
   Most of the workshops and companies in Damietta depend on free lance workers, which is an obstacle toward investing in temporary labor that are not committed to the company.

Another important issue is the culture in Damietta; it is not easy to build trust with the owners of the workshops and to change the mentality of the one man show dominant in Damietta to modern managerial systems based on delegation of authority and decision making.

5. What are the structural and organizational changes that happened in the cluster in the last ten years?
   The role of big factories in exporting to international markets and participation in international fairs contributed in branding the "Made in Damietta" as a good product for exports, and had its reflections on the figures of exports, which was tripled in the last 5 years, this also allowed small workshops to supply these factories with their needs to satisfy the increasing demand.

6. What do you advise the government to do to increase the competitiveness of the cluster?
   One of the problems affecting the competitiveness of the industry in Damietta is the low quality of production inputs imported from outside mainly china, this should be tackled by two approaches, the first which is setting quality standards for imports, the second which constitutes an association to lobby on the traders and importers to get high quality products with convenient prices.

   Another problem which will arise in the near future is that Romania will close the exports of wood, due to forest depletions, so we have to look for another source to avoid future problems.

Interview with
Damietta Technology center official

1. What is the role of your institution in Damietta?
   The center -which is affiliated to the ministry of industry -role is developing and upgrading the furniture industry in Damietta along its value chain, to raise its competitiveness in the international markets through increasing the value added and the technology used and raising labor technical skills.

2. Is there any support programs for the furniture sector adopted by your institution in Damietta? if yes what is the scope of these programs?
   Since our establishment in 2005, we started a series of training programs (about 15 training course) for workers in small and large companies in the

furniture sector in Damietta, including designing, carpentry, carving, gilding and upholstery.

A tender of five million Egyptian pounds was won by Catas Italy, with the objective of supplying the center with quality certified laboratory to test the furniture, the lab. is now ready to be used and our staff will travel to Italy to take the technical training, the center will cover 90% of the quality control test fees provided to producers in Damietta.

3. What are the sources of finance of your activities?
   Our main source of finance is the Ministry of Industry; however we take funds from international organizations or NGO's as the Kuwait donation.

4. What are the main obstacles facing your entity in Damietta?
   Lack of sustainable vision for intervention in Damietta, due to the changes in the Ministers of industry and the management of the center ,also the staff in the center is very limited ,only 3 engineers and nine employees, which is not enough to satisfy the needs of the sector in Damietta.

5. What are the structural and organizational changes that happened in the cluster in the last ten years?
   In the last ten years, Damietta products started to be exported in the international markets; consequently a group of services related to exports have been emerged, as export offices, quality certification, also on the production level, modern CNC machines and use of high quality production materials, so we have to cope with these changes and provide the right services to the producers.

6. What do you advise the government to do to increase the competitiveness of the cluster?
   There is a big potential for furniture industry in Damietta, exports can be doubled or tripled, through setting quality standards both for production or imported raw materials, expanding the base of companies participating in international fairs, also diffusing the use of technology gradually will increase the productivity and maintain the handmade touch of Damietta products.

Interview with
Association for Furniture Sector Development in Damietta (AUFSD) official

1. What is the role of your institution in Damietta?
   The association was established in 2003 by group of producers in Damietta, with the aim of developing the industry and enhancing the business environment in Damietta.

2. Is there any support programs for the furniture sector adopted by your institution in Damietta? if yes what is the scope of these programs?
   The first project was establishing a wood drier to serve SME's in Damietta to decrease the humidity in the wood to the international levels (4%) with cost price, many users have benefited from this service.
   In 2007, we started a project with the Canadian International Development Agency (CIDA) to conduct a detailed study of the furniture packaging technology used in Damietta, the study showed the deterioration of the level of packaging in Damietta, and recommended the establishment of packaging unit in Damietta technology center.
   Another important project was done in cooperation with Damietta technology center, the project objective was raising the level of working with paints in Damietta, two training courses was conducted to companies in Damietta, which raised the awareness of trainees on new painting techniques.

3. What are the sources of finance of your activities?
   Our main source of finance is the member companies and donations from NGO's.

4. What are the main obstacles facing your entity in Damietta?
   The main obstacle is the difficulty of fundraising our activities, as we are mainly depending on member's contribution and funds from NGO's and these are not sustainable resources.

5. What are the structural and organizational changes that happened in the cluster in the last ten years?
   Many firms in the cluster started to export to international markets and introduced CNC machines to achieve the required productivity to compete in export markets.

6. What do you advise the government to do to increase the competitiveness of the cluster?

   We should deal with Damietta furniture as an industry not an artisan work, so we have to reinforce the local component represented in paints, adhesives, accessories to the international level of quality, also the training of labor should target the exact areas of weakness, as paintings and upholstery, moreover the vocational training should be totally reconsidered to meet the international standards.

Interview with Damietta vocational training school officials

1. What is the role of your institution in Damietta?

   The school is affiliated to the Ministry of industry and Trade with the objective of providing high quality graduates who are capable of satisfying the needs of the labor market, the studying years are three years, first two years are dual system (theoretical and practical part), and the third is practical.

2. Is there any support programs for the furniture sector adopted by your institution in Damietta? if yes what is the scope of these programs?

   We were having a project within the TVET program of the EU, they brought experts to train our students on different furniture skills, it was successful but it is not sustainable, we also have another program of training with Damietta technology center.

3. What are the sources of finance of your activities?

   Our main source of finance is the government or donations, we received a donation from the Japanese government of CNC machine costing 3 Million L.E, we are starting to work on it.

4. What are the main obstacles facing your entity in Damietta?

   The main obstacle is that we only have 30 graduated students yearly; we don't have enough budgets to recruit more trainers.

5. What are the structural and organizational changes that happened in the cluster in the last ten years?

   The role of designing is emerging; also the CNC machines and computer programs are spread in Damietta in the last ten years.

6. What do you advise the government to do to increase the competitiveness of the cluster?

   Allocating resources for training, we need modern machines for educating students, more training on paintings, upholstery and design; we also need to recruit experts who are able to raise awareness on new international trend, taste and modern technology

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