The development of clusters of small and medium size enterprises in Greek shoemaking industry from a theoretical and empirical aspect

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Abstract
Clusters of enterprises constitute the major alternative corporate form of small and medium size firms to the Ford model) and are easily established and retained among enterprises sharing the same national market. Most of the research carried out so far focuses on network-creation in various sectors of the economy.
A theoretical and empirical investigation of the potentials leading to clustering of firms in the market of shoemaking in Greece is reported. The analysis is primarily concerned with the potential gains from the development of clusters in the whole spectrum of shoe's production. Moreover, the risks that small and medium size firms may face are highlighted. Finally, the case study of a cluster that was recently developed in the Greek shoemaking industry is illustrated.

Keywords: Clusters, Shoemaking Industry, Industrial Organization

Introduction

For many years, economists have been trying to understand the character of the development process and why development is unequally distributed among countries and regions. Their attention is focused on the development centers, which are called spatial agglomerations and agglomerations economies. During the decade of 1990 under the influence of Porter's (1998) research, the term "cluster" was employed.

The simultaneous emergence of intense geographic concentrations and networking of firms creates an exceptionally dynamic mixture of developmental path with an upgraded role for the small-medium innovative enterprises.

Geographical agglomeration is connected to the networking of firms (clustering). Business networks are considered to be the type of production organization that will substitute the organization of production in mass scale known as Ford model or Fordism. Fordism dominated as an organization model of production from 1945 until 1970 .Its main characteristic is the combination of Taylorism and the import of automated procedures in the chain production. The rapid increase of labour productivity per capita capital is a major result of Fordism. In the decade of 1960, the Ford model entered a deep crisis that has not found a satisfactory solution until today. The crisis of Fordism is characterized by the constantly declining rate of increase of labour

productivity.

In the next part of the paper, four fundamental schools of thought are examined as alternatives to Fordism: Flexible specialization, institutional economics, external economies and increasing returns and evolutionary economics. The main features of networks and the criticism concerning cluster developments are presented in the third part. In the same part, Porter's methodological tool of identifying and evaluating clusters is discussed. The fourth part refers to the recent developments in the industry of leather shoes in Greece. A case study on a cluster from the shoemaking industry follows. Finally, the main conclusions and other implications are included in the last part.

Alternative Schools of Thought to Fordism

Many theories have been developed as alternatives to Fordism. They are claimed to be more efficient ways of production organization, especially for small and medium size enterprises. The most important schools of thought are briefly reviewed.

Flexible specialization

By the late 1960s and early 1970s, the Fordist model of production had entered a double-sided crisis of capitalism affecting both the aggregate demand and the aggregate supply of the economy according to Lipietz (1992) and Dunford (1993). A new model of production emerged from the crisis characterized by "flexible specialization". Manufacturing firms must attempt to enter wider markets than their local ones and to be able to tailor goods responding to changing tastes and technology.

The main characteristics of a flexible system that induces success are:

- Flexibility and adaptation to the changes of demand
- Close cooperation inside and outside the firm
- Exploitation of new technology
- Innovation as a basic competitive advantage versus minimization of production cost
- Access to a network of supportive mechanisms and institutions

Institutional economics

Coase (1937) supports that the transaction costs in the market (e.g. cost of negotiations) justify firm's existence. The incorporation of transactions in the enterprise contributes to the minimization of production cost. The point where the intra-firm cost of transactions is equal to the transaction costs in the market determines the effective size of the enterprise.

According to Williamson (1999), different transaction costs require different level of organization and governance, thus leading to different type and size of firms. Critical features for this model are:

- The structure of administration that corresponds to different transaction costs (non specific, mixed and unified)

- The characteristics of investments that mobilize the capital that is involved in contracts (specific, mixed and idiosyncratic).
- The exchange costs are categorized as occasional and recurrent.

The role of the tradition of relationships and the good faith between the contracting parts is of great importance. For example, in Japan, which has a longstanding tradition in the business-to business relations, the role of good relationships in promoting development is obvious.

External economies and increasing returns

Marshall (1890) makes a clear distinction between external and internal economies and points out the importance of the former for the production of the firms and total or industrial system.
The interaction between the external economies and the distribution cost of products leads to different forms of concentration. The following cases are distinguished:

Graph 1: Distribution Costs

- If the enterprises of an industry face high distribution costs without the presence of external economies, then the enterprises tend to decentralize their productive activities in order to approach the markets of their products (Graph 1).

Graph 2: External Economies

- If the enterprises of an industry do not face distribution costs but are in effect important external economies, then the enterprises concentrate their productive activities in order to exploit the external economies (Graph 2).

Graph 3: Distribution Costs and External Economies

- If the enterprises of an industry face high distribution costs with strong external economies, then the enterprises resort to multiple concentrations of their productive activities (Graph 3).

Graph 1 shows that the distribution cost is the only defining factor of the arrangement of enterprises. According to Graph 3, external economies only exist, while Graph 2 shows that the enterprises are gathered around a unique point of the national economic space and economic activity does not exist anywhere else. This one-dimension growth is not very realistic. However, it partly explains the growth in underdeveloped countries where the economic activity mainly takes place around a primary city (e.g. Singapore).

The most recent specialization of the Marshallian tradition is made in the framework of New Economic Geography. In New Economic Geography models, market access itself is no longer regarded as given. Instead, regions getting ahead start to find their market size advantage enhanced by forces that give rise to a process of cumulative causation.

Evolutionary economics

This school of thought attempts to complete the previous approaches using extensively the conclusions drawn upon the economics of evolution and technology. It introduces the "technological paradigm" in analogous way to the "scientific paradigm" that Kuhn (1970) suggested. The "technological paradigm" is the choice of a solution of an important technological subject with the use of science in a given time. The choice of appropriate solution is made among a great number of alternatives and sets the technological trajectory which means the evolution and progress developed by the new process. Storper (1994) defines the "technological paradigm" as the "puzzle" which has to be solved.

The stages that constitute a technological orbit contain intensely the historical dimension and they set a line of completely dependent points (depended path) without observable end. Contrary to Krugman, (1991) who suggests that the agglomeration economies exist due to accidental historical events that make an area attractive for firms, the causal relationships are based on conscious choices.

Clusters' model and Porter's contribution

Clusters of enterprises have certain advantages for both the

participants and the local economy. Porter (1998) developed a methodological tool based on Porter's (1990) diamond in order to understand better the underlying characteristics of clusters.

Facts and criticism on clusters

The theories that have been developed in order to face the problems of the Ford model contributed to the appearance of a new production model.

The organization of production on the basis of clustering is not a completely new trend. It is a widespread practice of dealing with uncertainty in the markets. Moreover, corporate risk is reduced and the access to factor and product markets becomes easier. Clusters are also useful as a tool for promoting regional growth.
Clustering sets a new example but is not a separate school of thought. It has emerged mostly as the result of the "flexible specialization" approach.

Richardson (1972) refers to the importance of complementary activities in an industry. These activities include estimation of future demand, research and development, marketing etc.
According to Richardson (1972), there are three ways of coordinating the activities of a firm:

- Via administration
- Via collaboration among the enterprises
- Via market transactions

As a result, the main reason for a cluster to exist is the co-ordination of close complementary activities that are not similar.

Cooke and Morgan (1992) support that the practice of clustering refers to mechanisms, which are developed inside the firm (internal clustering) and to relationships among separate firms (external clustering) in order to face effectively the challenge (or the threat) of technological progress and the uncertainty in the markets.

The principles, on which the creation of clusters is based, are the following:

1. Close and long-lasting relationships among producers and customers
2. Joint undertaking of investments so that potential gains from specialization and better co-ordination are exploited by the participants in the cluster
3. Long-lasting subcontracting relationships so that technological innovations are facilitated

Despite the advantages that clusters offer to the firms, the industry and generally to the economy, there has been considerable criticism of this type of production organization.

Rosenfeld (1997) argues that the failure of industrial clusters leads to the failure of economy as a whole. The division of cluster to sub-clusters results in loss of its dynamics. Furthermore clusters usually have an urban character without ruling out the possibility of extension to rural regions.

Also, Humphrey and Schmitz (1996) believe that the main problem for firms that participate in a cluster is the loss of their autonomy.
Finally, the model of clusters is subject to criticism because it interprets every new form of industrial organization as a result of radical changes and transformations.
These disadvantages are not enough to cancel the benefits that clustering offers.

Porter's cluster analysis

> A cluster is a geographic concentration of interconnected companies and institutions in a particular field critical masses-in one place-of unusual competitive success in particular fields (Porter, 1998, p.78).

Porter (1990) reports the factors that promote competitiveness of a nation or a firm. Porter (1998) expands his analysis pointing out that clusters or critical masses of unusual competitive success in particular business areas, are a striking feature of virtually every national, regional, state, and even metropolitan economy.
The factors influencing the development of a cluster are shown in Figure 1.

Figure 1: Porter's cluster analysis

There are six types of conditions that interact and influence clustering.

1. Factor conditions
   - Specialized labour pool
   - Specialized infrastructure
   - Selected disadvantages that drive innovation
2. Demand conditions

- Local customers push companies to innovate, especially if their tastes anticipate global demand

3. Related and supporting industries
   - Internationally competitive supplier industries, creating a high quality, supportive business infrastructure, and spurring innovation and spin-off industries

4. Firm, strategy, structure and rivalry
   - Intense local rivalry among local industries that is more motivating than foreign competition
   - Local "culture" which influences individual industries' attitudes toward innovation and competition
5. Chance
6. Government policies

By introducing the cluster model, Porter (1998) proposes that the firm competitive advantage will not be determined by greater resources, but by the ability of firms to exploit the resources available in the network of local individuals and companies in which they operate.

Enright (1999) makes a clearer distinction in measuring the dimensions of regional clusters by suggesting the following cluster dimensions:

- Geographic scope
- Density, breadth, depth of the market
- Activity base
- Growth potential
- Competitive position
- Innovative capacity
- Industrial organization
- Coordinating mechanisms

Analysis of the leather shoe industry

In this part of the paper, the industry of men and women leather shoes is examined. A brief report on the conditions of this industry in Greece is attempted based on ICAP (2005) study.

The constantly intensifying competition from abroad and the globalisation of economy has mainly encouraged the imports of men and women leather footwear from countries where the cost of production is particularly low.

Demand

The demand of men and women leather shoes depends directly on the size of population and fashion trends. The fashion mainly influences the demand of women leather shoes because there exist greater margins of change and differentiation of the products.
The price of leather shoes, in combination with the consumers' disposable income influences the demand mainly in the weaker economically classes. The demand for the examined products is related directly to the prices of substitutes (shoes made from other materials) that satisfy the same need. The cost of the substitutes is usually lower than that of leather footwear. Another factor that influences the

demand for leather shoes is seasonality. The demand of particular products is increased during winter, while it is reduced in the summer months.

Advertising is a means of promotion for particular trademarks of leather shoes and is used mainly by medium and big size companies.
In 2004 the advertising expenditure was €9,36 million mainly absorbed by magazines.

Supply

In Greece, the leather shoes production is decreased progressively, due to the higher cost of production compared to Eastern Europe's countries and Asia. As a result of the higher cost, many productive firms have turned into imports.

The distribution networks are differentiated from firm to firm. Some of the bigger companies have created their own shop chains through which the disposal of their products is made. The franchising is developed continuously mainly in the shoemaking industry and it is mostly used by firms that their products are easily identified. Moreover, there are firms that cooperate with multi-stores in order to create corners or shop in a shop for their products.

Market

The domestic production of men and women leather shoes declined during the period 1992-2004, with average annual change rate -2,5%. In 2004 the domestic production of men and women leather shoes is estimated to be 5,9 million pairs against 6,1 million in 2003, reduced by 3,3%. The value of domestic men and women leather shoes production is estimated at roughly €189 million (prices wholesale) in 2004.

Elite AVEE has dominant position in the industry of leather shoes. Its market share (based on quantity) in 2004 was 13,5%. Feidas D.I. S.A. followed in the second place with estimated market share between 9% and 9,5%. The total size of the domestic market generally followed an increasing trend during the period 1992-2004, with an average annual change rate 2,1%. In 2004 the size of the market of leather shoes was 11 million pairs increased by 0,1 million pairs in comparison to 2003.

Women shoes represented a 55% of total sales (6 million pairs) and the men shoes the remaining 45% (5 million pairs). Most of the domestic demand was covered by imports. The amount of imports in 2004 was almost 6 million pairs, increased by 5% relative to 2003 (5,8 million pairs). The value of domestic market men and women leather shoes was €330 million in 2004 (wholesale prices).

Elite AVEE had the greater market share by quantity in 2004 (roughly 9,5%) and Feidas D.I. S.A. with 5%, and Alsinco S.A with 4% followed.

According to value, the first place took the Lemonis F. and K. AVEE firm which had a 12% market share followed by Elite AVEE, with an estimated 6% market share. The market share of Feidas D.I. S.A. was estimated at 5% in the same year.

International Market

During the last years the European shoemaking industry is in a phase of reformation, mainly because of continuously increasing international competitive pressures. Other factors that contribute to the reformation of the industry are the changes in technology and fashion trends and the abolishment of the protective measures (limitations in imports) that has led to a considerable increase of imported shoes from China.

Many companies in their majority of small size constitute the shoemaking industry in Europe. Most of them are located in regions with little industrial growth. The production of shoes in Europe follows a declining trend because many firms transport their production plants in third countries, where the cost is lower. In the seven-year period of 1998-2004, the production of shoes was reduced, with an average annual change rate -7,8%.

In 2004 the size of the European market was 705 million pairs while in 2003 it was 782,3 million pairs marking 9,9% reduction.
The imports of leather shoes from the EU countries increased during the 1998-2004 period, with an average annual change rate 11,7%. They were 1,6 billion pairs in 2004 while in 2002, they were 1,3 billions pairs, increased by 22,1%. China is the main origin country of shoes that are imported in the European Union.

The exports of leather shoes of the 25 member states of EU had a marginal reduction in 2004 (166,7 million pairs), representing the 23,6% of production. The main destination countries of particular products in 2004 were USA and Switzerland that jointly received the 45,8% of total exports.

Case Study: Cluster "Hypodimatodesmos"

The case study concerns the cluster named "Hypodimatodesmos" of Attica. De Witt's (2002) methodology was employed for the conduct of the case study. In order to examine the Amish furniture cluster, De Witt (2002) employed the Porter's Cluster Framework (1998) taking into account the following factors:

- Productivity
- Innovation
- New Business Formation

The same factors were taken into consideration while examining the cluster "Hypodimatodesmos" of Attica. The facts and data concerning the under examination cluster were provided by the manager of the cluster "Hypodimatodesmos" of Attica.

Background of the Cluster

The cluster "Hypodimatodesmos" of Attica was founded in 1998 after a study carried out by Atlas S.A. The feasibility study for the cluster was carried out in the framework of a Community Initiative for SMEs.

The participating enterprises mainly operate in Attica. Initially, "Hypodimatodesmos" consisted of the following fifteen enterprises:

Table 1: Participant firms in the cluster "Hypodimatodesmos"

Name of the firm	Activities and role of the firms
Ioannou Bros.	Leading company of the cluster Produces mainly women shoes
Ioannou Bros Ltd	Produces men and women shoes Marketing
Vavoulas T. and Co.	Produces men and women shoes
Mililis A.V.E.E.	Produces leather for the shoemaking firms
Karyda Bros	Produces and sells men shoes
Karyda S. Bros.	Produces only a trademark product, called "Stefano"
Raptis A.V.E.E.	Produces and sells children shoes
Daniolis A.V.E.E	Produces and sells children shoes
Germanakos S.A.	Produces leather for the shoemaking firms
Athinaiki Ltd	Transport company
Five (5) shops which belong to participating companies in the cluster	Retail sales

Three enterprises do not participate any more in the cluster: Germanakos S.A, Karyda Bros and Athinaiki Ltd. Also, the five shops left the cluster. The enterprises import soles from Spain and Italy.

The necessary condition for the formation of "Hypodimatodesmos" of Attica was the existence of at least seven (7) manufacturing SMEs with three-year operation. Decisions concerning the cluster are taken by the General Assembly.

Leather shoes industry

Conditions in the sector of men and women leather shoes were described in a previous part of this paper. In European level, the countries that traditionally possess leading positions, Italy and Spain, face intense competition mainly from countries of Asia such as China.

Productivity

Porter (1998) supports that being part of a cluster allows companies to operate more productively by offering better access to employees and suppliers, access to specialized information, complementarities between businesses, access to institutions and public goods, and better motivation and measurement.

The cluster "Hypodimatodesmos" of Attica has as its main target the promotion of Greek leather shoes in Europe and worldwide. The most serious motive for the establishment of the cluster was the financial facilitations that received from the Community programme for SMEs. For example, the cluster was subsidized for advertising actions.
Furthermore, "Hypodimatodesmos" of Attica has a very good relationship with the Commercial Bank of Greece.

Although that the main target of the cluster is the expansion to other external markets, most of the sales are made in the domestic market.

So, there is not a competitive advantage of the particular cluster to other similar clusters.

Innovation

Porter (1998) argues that in addition to enhancing productivity, clusters play a key role in a company's continuing ability to innovate. "Hypodimatodesmos" of Attica has created a trademark product named "Stefano" and has managed to develop a wide network of customers.

New Business Formation

Many new companies grow up within an existing cluster, rather than in isolated locations. The participants in "Hypodimatodesmos" of Attica took part in exhibitions abroad trying to develop a greater pool of customer and establishing cooperation with other companies.

Implications

The majority of benefits proposed by Porter's cluster model were evident throughout the course of this study.
A first conclusion on the operation of the cluster "Hypodimatodesmos" of Attica is that it has not achieved yet its main goal. Most of its sales are still made in the Greek market that is rather limited compared to the European. Three of the remaining companies in the cluster established a sub-network. This fact means that there are problems in their cooperation with the other companies.
No collaboration with other networks exists while the Community aid is of much importance because it finances soft activities by 70% and production activities by 50%.

Conclusions

The formation of clusters in many industries all over the world is a common practice. Small and medium enterprises are trying to avoid the disadvantages of their limited size by cooperating and acquiring a competitive advantage.

In Europe, most of the enterprises are SMEs. This fact means that there is enough space for clustering because enterprises must deal with the competition from US enterprises that are technologically superior and other countries' enterprises that produce at very low cost, such as China. Especially in Greece, over 90% of the existing enterprises are SMEs and in order to survive the international and domestic competition they have to adopt networking.

The case study from the cluster named "Hypodimatodesmos" of Attica in the leather shoemaking industry illustrates that there are many steps to be taken in order to formulate a competitive advantage.

Successful cluster initiatives include critical aspects such as:

- Shared understanding of competitiveness and role of clusters in competitive advantage
- Focus on removing obstacles and easing constraints to cluster upgrading
- Structure embraces all clusters in a nation or a state

- Appropriate cluster boundaries
- Wide participation of cluster participants and associated institutions
- Private sector leadership
- Close attention to personal relationships

In addition to the above, the role of government is very important because it monitors and easies the operation of clusters. Economic cooperation within the European Union is promoted by enterprises that take joint actions, think globally and try to innovate in every phase of the production and distribution process.

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