CHAPTER- I
INTRODUCTION AND OBJECTIVES

The geographic concentration of firms has been recognized as a crucial mechanism for the industrial growth and augmentation of an economy. The degree of success enjoyed by Silicon Valley in U.S., industry districts in Italy and high tech industries in Europe has attracted the attention of many researchers towards industrial agglomeration. The spatial concentration of manufacturing activity is thought to enjoy advantages of knowledge externality, specialization, the existence of local public goods, and reduced transaction cost within industries which can positively contribute to firm’s productivity. (Lin et al). These benefits stimulate the firms to concentrate at a particular place and leads to industrial agglomeration.

1.1 Industrial Agglomeration

Industrial Agglomeration refers to the phenomenon of spatial clustering or concentration of the firms in a smaller area. It can be described as the economies of scale that are generated when two or more firms from the industry are located near each other. The concept of industrial agglomeration has attracted the interest of researchers when it was firstly discussed by Alfred Marshall (1890). Marshall (1890) has explained the localized concentration of economic activity by using the concept of external economies of scale. The economic productivity of the firms results from the location and proximity of economic agents to each other. Marshall stated that agglomeration economies arises from three types of localization economies which are pooled market for workers having specialized skills, technological spillovers and availability of specialized inputs and services. The proximity of the firms in the same industry boosts the innovation abilities of the whole industry.

In addition to Marshall, Weber (1929) and Hoover (1937, 1948) has also elucidated the concept of agglomeration economies. Weber (1929) has introduced
agglomeration in Theory of Location of Industries and considered a number of factors to find out the optimal location and minimum cost for manufacturing plants. The author suggested that if the inputs required by the industry exist only in a limited number of locations, it is beneficial to become geographically concentrated. Weber specified the decrease in transportation cost and the cost of production as agglomeration factors which are enjoyed by the firms due to geographic concentration. Hoover (1937, 1948) has given a detailed description of internal and external economies of scale that are generated to the firms due to agglomeration. The author explained that the efficiency of larger firms in managing their inputs lead to internal economies of scale. On the other hand, external economies are due to location of firms of certain sector at a specific place. Hoover stated that geographical concentration of firms in the cluster generally occur either due to firm’s localization decision or due to higher rate of survival of firms present in the cluster. But in both the cases the cluster offers a number of advantages in comparison to other areas. Many industries have firms that agglomerate i.e. they locate near each other and lead to geographic agglomeration and this is due to accessibility to natural resources, markets or other factors.

Agglomeration of a particular industry leads to agglomeration economies. Agglomeration economies are given a key position in studies of the location of economic activities in space, for they are considered as a major factor in location decision of industries, which attempt to minimize distance, transportation and production cost, obtain cheap labour and minimize risks (Dicken and Lloyd 1990). In some cases agglomeration may result from natural advantages such as climatic and topographic suitability, proximity to raw material and location with access to natural or man made transportation routes (Dicken and Lloyd 1990). Agglomeration of firms lower production cost, lower purchase cost, raises labour productivity and increases management efficiency (Hoover and Giarratani 1985). Agglomeration increases the
sharing of information among the firms with regard to labour, research and development, finance and marketing strategies.

The famous examples of agglomeration are the concentration of motion picture industry in California, the fashion industry in Paris and the entertainment industry in Hollywood. The fashion industry experience agglomeration economies because they can share those inputs which are expensive to be employed by an individual firm. Analogously, retail industry can enjoy agglomeration economies by locating in shopping malls as a large number of customers can be assessed with low advertising cost.

1.2 Industry Cluster

An industry cluster can be defined as group of related firms, industries or suppliers and various institutions located at a particular place. Alfred Marshall gave the first clear description of industry clusters and conducted a study of the Lancashire Cutlery Industry and Sheffield Steel Industry and noted down that there was a tendency among the specialized companies to cluster together in such a way that it produced geographic concentration of activities which he called Industrial Districts. Marshall observes how “…… great are the advantages which people following the same skilled trade get from near neighboring to each other…”. The agglomeration of similar or related firms generates a number of external economies which lead to decrease in the cost for cluster producers. Such economies include a group of specialized workers, facile availability of suppliers and hasty transmission of new knowledge. The concentration of similar firms attracts and obtains benefits from a group of labour possessing common skills. The risk of individual worker is less by locating at a place where lots of employment opportunities are procurable. Further, the group of firms present in the cluster motivates the suppliers to locate at a place where readymade market is available. There is quick dissemination of ideas and knowledge as the ideas can easily move from one firm to another.
Location experts redefined the ideas given by Marshall that the firms benefit being located near other firms. They explain two types of external economies; localization economies (economies from proximity to dissimilar firms, especially firms in same industry) and urbanization economies (benefits from proximity to dissimilar firms, especially firms in other industry).

However, it was only in 1990’s that the interest in concept of clusters was enlightened when Michael E. Porter conducted a global study of world’s most successful businesses and found that firms from one or more nations achieved astonished success in particular industries. The author explained cluster as a geographic concentration of interconnected companies and institutions in a particular field. Porter (1998) elucidated that clusters include-

1. Linked industries and other entities such as suppliers of specialized inputs, machinery services and specialized infrastructure.
2. Distribution channels and customers, manufacturer of complementary products and companies related by skills, technology or common inputs.
3. Related institutions such as research organizations, universities, standard setting organization, training entities and others

Porter stated that cluster can affect competition in three ways-

1. Cluster helps in proliferating productivity of the firms present in it.
2. Cluster increases innovation.
3. Cluster helps in stimulating new businesses.

Porter (1990) has defined two types of clusters; vertical cluster and horizontal cluster. Vertical cluster includes a number of firms that are linked through buyer-seller relationship. Horizontal cluster rather includes a number of industries that share common market for end products, uses a common technology or labour force skills or require similar natural resources.
In late 1990s international organizations like United Nations Conference on Trade and Development (UNCTAD) and United Nations Industrial Development Organization (UNIDO) started taking interest in cluster based activities in order to strengthen SMEs. According to UNIDO, a cluster is specified as, ‘A sectoral and geographical concentration of enterprises faced with common opportunities and threats which:

1. Give rise to external economies (e.g. Specialize suppliers of raw materials, components and machinery, sector specific skills etc).
2. Favour the emergence of specialized technical, administrative and financial services.
3. Create a conducive ground for the development of inter firm cooperation and specialization as well as of cooperation among public and private local institutions to promote local production, innovation and collective learning.’

Jacobs and Deman (1996) have given a comprehensive definition of industry clusters. They use vertical and horizontal clusters as the basis of defining industry clusters. They explained industry clusters as “Geographic or spatial clustering of economic activity, horizontal or vertical relationships between industry sectors, use of common technology, the presence of central actor (i.e. a large firm, research center etc.) and the quality of the firm network or firm cooperation.”

Rosenfeld (1997) has stated industrial clusters in terms of vertical and horizontal relationships, size of cluster, use of common inputs and presence of common opportunities and threats. According to Rosenfeld (1997, pg. 10), “An industrial cluster is geographically bounded concentration of similar, related or complementary business, with active channels for business transactions, communication and dialogue that share specialized infrastructure, labour markets and services, and that are faced with common opportunities and threats.”
Gordon and McCann (2000) have specified three different types of industrial clusters on the basis of their features. These are Pure Agglomeration, The Industrial Complex and The Social Network.

1. Pure Agglomeration

This model is similar to Marshall (1920), Chinitz (1961) and Jacobs (1960). This model explains that the inter firm relations within the cluster are for short span of time. There is no loyalty between the firms. The firms continue to change their relation with other firms and customers with the change in market opportunities and leads to local competition. The benefits of clustering are enjoyed by the firms only because of their presence in that location.

2. The Industrial Complex

In this type of model, there are long term and stable relation between the firms in the cluster. The firms within the cluster make huge long term investment with regard to physical capital and real estate. The rationale of clustering in these type of industries is that proximity is required in order to minimize inter firm transport transaction cost. This type of cluster is similar to one discussed by Weber (1909).

3. The Social Network Model

This model states that the relationship between the key decision making agents in different organizations is as important as decision making hierarchy within the organization. These relations are continually reconstituted. The formation of such relations depends upon common culture of mutual trust between the key decision makers. In this model, spatial proximity between the firms is required to create such relation but it is not at all sufficient to access the network. This model is associated with Porter model as well as new industrial area model (Scott, 1988) where space is local, but not necessarily urban.
In real life, the concentration of economic activity will exhibit at least any of these three models and large cities may exhibit all of these three models.

Hill and Brennan (2000) have given a structure for an industrial cluster based on five elements which are driver industries, technology, labour, consumer industries and supplier industries. They explained an industrial cluster as a system that made its component firms and institute generate higher unit earnings and more efficient operations due to innovations stimulated by intense competition and cooperation within clusters.

Clusters not only reduce transportation cost and boost efficiency but improve incentives and create collective assets in the form of information, specialized institutions and reputation amongst others. Clusters enable innovation and speed productivity and growth. They also ease the formation of new businesses (Porter, 1998). The horizontal and vertical association amongst the firms present in the cluster provides the benefit of specific infrastructure, reduced transaction cost, large access of the market, rapid innovations, availability of cheap and skilled labour.

The presence of a large number of competitors in the cluster motivates all the firms to take notice of each other’s action and try to adopt the best strategy to face the competition. Buyers become more sophisticated as they expect a lot of attention from the supplier and because of this, the supplier is required to provide the best services to its customers. Due to the presence of number of institutions in the cluster who are using same skills, same technology and same inputs, more and more education institutions, Government bodies, new firms and new institutions become part of the cluster. With the development of the cluster, the resources start moving from the firm that cannot employ those resources effectively to the firms that can employ the resources efficiently. Suppliers located in the cluster provide cooperation with the industry’s research and development efforts. Further, the customers present in the cluster provide the possibility of transferring the information about new needs and technologies and demanding extraordinary goods and services. The
concentration of domestic rivals, suppliers and customers help the city or region in becoming a unique environment for competing in the market. The presence of information flow, mutual reinforcement and visibility present in the environment gives a meaning to the observation of Alfred Marshall that in some places, the industry is in the air. Further the presence of Government and various industrial associations ensure various benefits which cannot be available to the firms if they are located in another area.

Doeringer and Terkla (1995) explained the following advantages due to co-location:
1. Collaboration economies within production channels.
2. Transfer of knowledge through labour market relationships and
3. Partnerships with government and union.

Clustering provides such benefits which individual firms would rarely achieve. These advantages have been captured in terms of collective efficiency which is elucidated by Hubert Schmitz as “the competitive advantage derived from local external economies and joint action.” It can be described in the form of cluster map. A cluster map communicates all the components of the cluster. It is pictorial representation of the cluster system depicting:

- Stakeholders and their number.
- Linkages among the stakeholders.
- Types and number of distribution networks.

Various possible inter linkages can be shown in cluster map as below:
Diagram 1.1 A Typical Cluster Map

(Source: Cluster Development Programme, UNIDO)
1.3 Cluster Life Cycle

Every cluster displays a life cycle. A number of studies have been conducted to identify various phases of an industry cluster. Andersson et al (2004) explained that life cycle is identified by type of actor and collaboration. Menzel and Fornahl (2007) defined cluster life cycle by using direct and systematic dimensions. These are number of firms, number of employees, knowledge, competencies, organizational forms, perception of the cluster, capabilities for collective action, network, synergies and value chain. In many studies, clusters are explained from their age and growth, as emerging, established and declining. The emerging phase shows entrance of new firms, fast growth. The established or mature phase identifies large firms, slow growth. The declining stage exhibits declining growth, death of more firms and no change in the products. The cluster life cycle consists of the possibility that clusters may redefine themselves and may reinvigorate the declining stage. Reviewing the studies conducted by various authors, industrial cluster life cycle can be divided into following stages:

1. Emergence
2. Growth
3. Sustaining
4. Decline

1. Emergence Stage

It is difficult to construe the stage in which the cluster is arising mainly because an emerging cluster is actually not a cluster. There is absence of concentration of firms and the specific institutional environment for the cluster at this stage. It is obvious that an emerging cluster is not at all apparent. Only few firms are located in the cluster and are scattered over a wide area. The formation of cluster can be natural or induced. Natural clusters are formed due to high future demand or availability of raw material. Cluster can be induced because of policy incentives or
availability of infrastructure or large buying firms. At this stage, the cluster is heterogeneous in nature due to the availability of less number of firms. This heterogeneity intensifies exchange processes between the firms. It leads to creation of networks and customer supplier relationship. But due to the variability of the firms present in the cluster, the level of cooperation among firms is very less. The firms at this stage provide help in setting up of subcontracting firms and development of support institutions. There are two possibilities for the end of this stage. The first is the lost of the potential of the emerging cluster to become functional one. It happens when it seems that there are no possibilities for exploiting synergies between the firms. The second possibility is entrance into the growth stage where the firms start exploiting synergies among them and create network externalities. This stage can be characterized by slow growth and high cost.

2. Growth Stage

In the second stage, the cluster witnesses rapid growth and sufficient local demand where support is provided by both public and private institutes. At this stage, firms want to expand and create demand in the new market. This stage includes undertaking activities like research and development and lot of promotional efforts in order to enter new market. The need for economies of scale motivates the firms for cooperation in order to develop joint infrastructure which would be beneficial to all the firms located in the cluster. The expansion of the cluster attracts a number of new entrants in the market.

This stage ends with the adjustment of the development of cluster firms with the development of the rest of respective industry and the cluster shifts to sustaining stage (Pouder and St. John 1996).
3. Sustaining Stage

In this stage, the cluster has an established set of products and stable levels of production and sales. The firms strive to maintain the status in the cluster. There is lot of competition among the firms in the cluster. There is a need to maintain balance between the local and global market to retain the position of the cluster as a whole. There is strong requirement of research and development to reduce cost, increase production and development of new products. At this stage, weaker units shut down their businesses due to inability to cope up with the existing situation and firms having dominant share in the market may sometimes follow the policy of go alone and leave all.

There are two factors that lead to the end of this stage. The first is a step back in the cluster life cycle and entrance into growth phase. This new growth increases demand of the product and leads to the entry into new market. The second possibility is the entry into the declining stage. Due to decline in the market and change in the demand, the cluster reaches the declining stage.

4. Declining Stage

In this stage, the firms may exit the cluster. It can be due to inability of the cluster to face the changing business environment or decline in demand of the product or erosion of the competitiveness of the cluster. The number of entrants are either zero or too less. But it is found that decline sometimes becomes the basis of development of new cooperation. In order to face the adverse situation, the firms start cooperating with each other and try to overcome the circumstances together.

At the end of this stage, there are three possibilities. The first is diminishing of the cluster and the existence of the cluster comes to an end. The second possibility is entrance into new growth phase. It is due to change in existing technology due to implementation of new and different techniques or development of new products. The third possibility is complete change in the existing field and adoption of a
different field. Such a shift took place in the declining coal and steel industry of the Ruhr area towards environmental technologies. The firms of the steel and coal complex acquired the respective competencies during the correction of environmental damages that even originated from that industry (Grabher 1993).

1.4 International Experiences

At present various countries are incorporating industrial clusters into their economic development programme. An attempt is made to study the clusters with respect to developed countries as well as emerging economies.

1.4.1 Clusters in Developed Countries

1.4.1.1 Clusters in Italy

In 1991, the Italian Statistical Bureau identified 188 industrial clusters (www.istat.it). Learning from the growth of North West part of the country, the Italian Government prepared cluster development policy which is now called Third Italy model. Italy is divided into three regions on the basis of economic development. First Italy, which depicts areas towards North West Italy and this area, has developed due to its proximity to European countries like Switzerland, France and Belgium. Second Italy, which depicts south of Italy, remained backward due to low industrial growth. Third Italy has attained an unusual and fast growth. They are leaders in fashion industry, leather and food products. The reasons behind this fast growth were post Second World War investment policies. The Italian clusters showed a tremendous growth in exports and production in 1970s and 1980s at a time when Britain and Germany were in decline. This was possible by the firms not as an individual firms but part of group of firms which were able to do what they would not be able to do as an individual firm. In Italy, the concept of cluster was used to enable small firms to grow and succeed. The experience of Italy enables other countries to apply the concept of clusters. The main clusters in Italy are-
1.4.1.2 Clusters in Japan

According to 1996 survey of Small and Medium Enterprise Agency, there are 537 clusters in Japan. The most significant clusters in Japan are transportation equipments and related machinery, office machines, entertainment and leisure (notably consumer electronics), steel and fabricated metal products, electronic components and computing equipment, and optical-related products (including cameras and film). Japanese firms also have strong or emerging positions in printing equipment, telecommunication equipments, ceramics-related products, household appliances, electrical goods, mechanical or electronic products. The various clusters of Japan are:

- **Kiryu (Gumma)** - Silk and other syntetic fabrics
- **Fikur and Ishikawa** - Textile
- **Gifu (Gifu)** - Apparales
- **Ota (Gumma)** - Automobile
- **Morodami (Saga)** - Furniture
- **Sabae (Fukui)** - Eyeglass frame

Japanese industries are the most factual examples of the determinants of competitive advantage of the nation working as a system. Japan is enjoying the positive reinforcement effects of the diamond, as one competitive industry begets another and demand conditions upgrade (Porter, 1990). In those industries, where Japan has succeeded, it is seen that all the factors of diamond model are self
reinforcing. Where Japan has not succeeded, it is found that the important determinants were missing.

### 1.4.1.3 Clusters in USA

United States of America (USA), an advanced and developed economy is famous for the Entertainment cluster of Hollywood, Furniture cluster of High Point, Finance cluster of New York and Silicon Valley for IT cluster. USA also has a strong position in agricultural cluster such as fruits and nuts. USA produces half of the world’s carpet; Dalton alone has 174 carpet firms and produces 85 per cent of total USA production.

Various clusters in USA are: -

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Valley</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Las Vegas</td>
<td>Entertainment</td>
</tr>
<tr>
<td>South Florida</td>
<td>Computer, Health</td>
</tr>
<tr>
<td>Michigan</td>
<td>Clocks</td>
</tr>
<tr>
<td>Phoneix</td>
<td>Semi-conductor</td>
</tr>
</tbody>
</table>

Porter (1990) explained that there are many arrears of underlying advantages in the United States, such as top universities, unique demand conditions in some fields, the capacity for risk taking and vibrant new business formation. The author has proposed to incorporate cluster policy in the inner city of USA to ensure more development and argued that there are some industries which should be located in inner city and can perform very well. Porter (1990) suggested that policy makers should identify such firms and should encourage their development.
1.4.2 Clusters in Emerging Economies

1.4.2.1 Clusters in Pakistan

Some of the important clusters of Pakistan are Sports wear cluster (Sialkot), Surgical instruments cluster (Sialkot), Auto parts (Lahore), Electrical fitting cluster (Sargodha), Marble processing (Ravalpindi/ Islamabad), Wooden furniture cluster (Gujarat). One of the Pakistan’s examples of exports success has been the sports wear cluster of Sialkot. This cluster supplies its products to various renowned international brands such as Adidas, Nike, Puma, Select, Wilson, Micassa, Decathlon etc. It provides employment to 10000 workers. The share of this cluster in international trade is 4.5 per cent (Fouzan Mohammed). It supplies products to South Korea, Taiwan, USA, Germany, UK, Spain, Portugal, Turkey etc. The various products of the cluster are track suits, football, boxing, cycling sports uniforms, T shirts, Shorts, wind breakers, Casual wear etc.

1.4.2.2 Clusters in China

The industrial clusters of China have a long history. Jingdezhen has a 1400 years old pottery and porcelain cluster while Shenze Town of Wujiang in Jiangsu has hundred years old silk centres. The various clusters of China are-

Beijing - IT products, automobiles and electronic equipments
Tianjin - Electronic appliance, food and beverage, bio-medicine
Guangzohon - Automobile, apparel, leather products, sports goods, plastic toys
Shenyang - Steel pipes, aluminium materials, home appliances
The various characteristics of the clusters of China are:

- Majority of the clusters are privately owned SMEs.
- There is uneven distribution of industrial clusters across China.
- Some industries are most likely to form clusters than others.
- There is high degree of division of labour and specialization.

1.5 Industry Clusters in India

Clusters have been in existence in India for centuries and are famous for their products at both national and international level. Clusters represent the socio economic heritage of the country where some of the towns or contiguous group of villages are known for specific product or range of complementary products (Singh, 2010). It is estimated that there are around 7000 clusters in traditional handloom, handicrafts and modern SME industry segments (Foundation for MSME Clusters, 2007). These clusters are in following typology:

<table>
<thead>
<tr>
<th>Type of Clusters</th>
<th>Number of Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Manufacturing</td>
<td>SME</td>
</tr>
<tr>
<td>Handloom</td>
<td>495</td>
</tr>
<tr>
<td>Handicraft</td>
<td>3084</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4701</strong></td>
</tr>
</tbody>
</table>

(Source: Policy and Status Paper on Cluster Development in India, Foundation for MSME Clusters, 2007)
In addition to above clusters, it is estimated that there are about 2500 unmapped rural industry clusters in India.\(^1\) The clusters of some selected industries in some areas are indicated below-

<table>
<thead>
<tr>
<th>Product-Group</th>
<th>District-Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woollen and Cotton Hosiery</td>
<td>Tripur, Ludhiana, Calcutta, Delhi</td>
</tr>
<tr>
<td>Sports Goods</td>
<td>Jalandhar, Meerut</td>
</tr>
<tr>
<td>Hand tools</td>
<td>Jalandhar, Nagpur</td>
</tr>
<tr>
<td>Automobile Industry</td>
<td>Gurgaon</td>
</tr>
<tr>
<td>Electronics</td>
<td>Noida, Bombay, Pune &amp; Bangalore</td>
</tr>
<tr>
<td>Rubber Goods</td>
<td>Jalandhar</td>
</tr>
<tr>
<td>Woollen Shawls</td>
<td>Amritsar and Kulu</td>
</tr>
<tr>
<td>Glass and Ceramics</td>
<td>Khurja &amp; Farukkabad</td>
</tr>
<tr>
<td>Bicycle Parts</td>
<td>Jamnagar &amp; Ludhiana</td>
</tr>
<tr>
<td>Domestic Electrical Appliances</td>
<td>Bombay, Delhi</td>
</tr>
<tr>
<td>Wall Clocks</td>
<td>Morvi</td>
</tr>
<tr>
<td>Diesel Engine &amp; Parts</td>
<td>Kolhapur, Agra, Rajkot, Coimbatore &amp; Ghaziabad</td>
</tr>
<tr>
<td>Brassware</td>
<td>Moradabad</td>
</tr>
</tbody>
</table>

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These clusters contribute 60 percent of the manufactured exports from India. Some of them are so big that they manufacture 70 per cent to 80 per cent of total production of that particular product in India (Gulati, 1996). For example, Tripur, a small town in Tamil Nadu contributes 80 per cent of the country’s cotton hosiery exports. Similarly, Panipat produces 75 per cent of total blankets produced in India. In the same manner, Ludhiana in Punjab contributes 95 per cent of the country’s woolen knitwear, 60 per cent of India’s bicycles and 85 per cent of sewing machines produced in the country. Ludhiana is also known as Manchester of India. Agra, which is famous for foot wears, has 800 registered and 6,000 unregistered small scale units and it is producing approximately 150,000 pairs of shoes per day with a daily production value of 1.3 million dollars and exports worth US $ 60 million per year (Russo, 1999).

The study conducted by Gulati (1996) identified the following characteristics of clusters in India:

- The clusters are mostly present in industrially developed states like Gujarat, Maharashtra, Punjab, Rajasthan and Tamil Nadu.
- The clusters are concentrated generally near the cities.
- Traditional art and craft has played an important role in the growth and development of these clusters.
- It is found that western India has maximum clusters.
- The rural clusters can grow only when raw material is easily available and further no infrastructure is required for the product.

1.6 Major Problems of Clusters in India

The clusters in India are facing competition from the domestic as well as international market. The majority of the Indian clusters are facing various problems like obsolete technology, lack of information, poor linkages in market, poor quality products and inadequate system of management. It is seen that most of the clusters
are surviving only because of low cost of labour. They do not participate in supportive production networks, neither have they collaborated nor they compete with other firms on the basis of improvement in product, skills or technology.

Some of the main obstacles hampering cluster development are: the lack of a cultural attitude towards cooperation both at the firm and the institutional level; the significance of transaction costs that need to be borne to identify suitable network partners and to forge relationships; the absence of incentives to the implementation of common projects; the imperfect market functioning for the provision of crucial inputs for networking development such as information and innovation; and the high risk of free riding that is especially faced in contexts where the legal framework to back up joint endeavours is relatively underdeveloped (Ceglie et al., 1999).

The UNIDO report on ‘Reconstructing and Modernization of Small and Medium Enterprise Clusters in India’ (1996) points out that the clusters are required to expand their exports and for this purpose there is need to create relationships both within the cluster and overseas clusters. Technological up-gradation and maintaining quality standards is required urgently. Further, the Government is required to frame various policies and programmes for the up-gradation of the cluster.

1.7 SMEs Concentration in Indian Clusters

In India, SMEs have played an important role in an economic development. They are considered as an engine of economic growth all over the world. This sector is credited with low investment requirement, big employment generator and seed bed for entrepreneurship. In year 2006-07, there were 26.1 million MSMEs in India providing employment to 59.7 million people. One of the features of these SMEs is that in many cases, as per their specialization, these SMEs have evolved as clusters. A cluster can therefore be defined as an agglomeration of SMEs engaged in the production of similar products/services and located within identifiable area. It is estimated that in India, there are 350 small scale industry clusters and around 2000
rural and artisan based clusters. Clusters account for 77 per cent of firms, 72 per cent of employment, 61 per cent of investment, 59 per cent of output and about 76 per cent of exports of small scale industries in India\(^1\). These clusters have been in existence in India for several years. The close proximity to raw material suppliers, machinery, equipments, subcontractors, customers, competitors and cooperation from various associations and organizations helps the SMEs to face competition and improve its competitiveness. SMEs while working in clusters get competitive advantages from-

- The proximity to the sources of raw material and other inputs.
- The availability of skilled labour.
- The presence of Business Development Services.
- The attraction of customer towards the cluster traditions in the industry.
- Getting opportunities to become internationally competitive and capture the whole world.

It is seen that the cluster of SMEs have an advantage of flexibility and responsiveness that enables them to become more competitive than large firms. The concept of Third Italy was given by Amaldo Bagnasco in late 1970s which revealed the progress in the North East region of Italy where SMEs had shown fast growth. The clusters in Third Italy were able to create a strong position in global market in traditional products even at that time when large enterprises in the UK and Germany were at decline (Rabelloti 1995). This success has been related with the concentration of firms in a particular area.

\(^1\) Study of comparative behaviour of big and small towards different issues pertaining to Corporate Social Responsibility (CSR) in Corporate/ Enterprise Responsibility (ESR) in MSMEs.
1.8 Clusters Development Policies in India

Clusters in India are contributing significantly to a major share in the growth and development of the economy. The promotion of clusters was taken up as an important agenda by the Government since many years. The Government has been encouraging the clusters through its various policies such as providing infrastructural support, credit facilities, technology up-gradation, special schemes, training of manpower employed etc.

In past years, the Central Government as well as various State Governments have launched a number of schemes and strategies on the development of clusters. Some of the ministries actively involved in this process are Ministry of Small Scale, Government of India; Ministry of Textile, Government of India and the State Governments like Gujarat, Andhra Pradesh and Kerala. Apart from it, State Bank of India (SBI) and Small Industries Development Bank of India (SIDBI) have promoted various initiatives for the development of clusters which aims at upgrading the competitiveness of the firms located in the cluster.

In December 1995, the Department of Small Scale Industries and Agro Rural Industries (DSSI and ARI), Ministry of Industry, set up an expert committee on Small Enterprises known as Abid Hussain Committee. The committee advocated cluster development as an approach to be followed to promote SSI. The report stated: “Focus on clusters is the centre-piece of the new approach in an increasing public private partnership in setting up support system for small scale enterprises. Such public private partnership would thrive particularly in clusters of small scale enterprise. The expert group therefore recommends that State Governments should identify the existing SSI clusters and then promote new types of organizations which are joint ventures between State Governments or local authorities and business associations in these clusters.” The Abid Hussain Committee report was the first official document which strongly recommended clusters as the focus of SSI development.
But the cluster development activities started due to the initiative taken by the United Nations Industrial Development Programme (UNIDO) through its cluster development programme in 4 Indian clusters in 1997.

Further, in 1998 the Ministry of Small Scale Industry, through the office of Development Commissioner (SSI) launched the scheme ‘Integrated Technology Upgradation and Management Programme (UPTECH), which is renamed as ‘Small Industry Cluster Development Programme.’ The scheme covered a number of issues related to technology up-gradation, environment friendliness, improvement of productivity, energy conversation, development of marketing activities, setting up of demonstration plant and organizing seminars and workshops for quicker dissemination of information across the actors of the cluster.

In 2004, it was felt that there was a need to establish a national level resource centre for the purpose of cluster development in the country. In January 2004, National Resource Centre for Cluster Development (NRCD) was constituted with active involvement of Development Commissioner (SSI), Government of India. NRCD aims to help SMEs by implementing cluster development programme and provided training to the members of the cluster about the optimum utilization of strengths and overcoming weaknesses.

Various budget speeches of the Central Government have also mentioned the importance of cluster based development. The Finance Minister in his budget speech in 1999-2000 on rural industrialization proposed a National Programme for Rural Industrialization (NPRI) with the mission to set up 100 rural clusters every year to give a boost to rural industrialization. Similarly in the Union Budget 2005-06, support was given to handloom sector. The importance of cluster is also highlighted in union budget 2006-07. A proposal was given to constitute group of ministries who will lay down the policy for cluster development and oversee the implementation. An approach paper to the 11th Five Year Plan document stated that ‘A cluster approach can help increase viability by providing these units with infrastructure, information,
credit and support services of better quality at lower costs, while also promoting their
capacity for effective management of their own collectives’. The Government of
India has allocated Rs. 303.63 crore for XIth Plan Period (2007-2012) for SME
Cluster Development Programme. The Cabinet Committee on Economic Affairs has
enhanced maximum project cost for common facility centre for SMEs from
Rs. 10 crore to Rs. 15 crore. Further the project cost for infrastructure development
and soft interventions has been increased from Rs. 5 crore to Rs. 10 crore and
Rs. 10 lacs to Rs. 25 lacs respectively.

Apart from Central Government, various State Governments, NGOs and
other institutions are presently working for the cluster development. Major among
them are State Governments of Andhra Pradesh, Madhya Pradesh, Karnataka,
Tamil Nadu and Rajasthan, institutions like National Bank for Agriculture and Rural
Development (NABARD), Textile Commission of India, Ministry of Textile,
Government of India; Department of Science and Technology, Government of India;
Development Commissioner (SSI), Ministry of SSI, Government of India;
Development Commissioner (Handicrafts), Ministry of Textile, Khadi and Village
Industries Commission (KVIC) and various NGOs like Rajasthan Chamber of
Commerce and Industries and Grameen Development Services. During three decades
of cluster development initiatives, around 24 schemes have been launched by various
Government and supporting institutions. Out of these, 9 have been issued by three
ministries of Central Government, namely, Ministry of Textiles, Ministry of Micro,
Small and Medium Enterprises and Ministry of Commerce and Industry. During 9th
plan, 11 clusters were given assistance under Small Industry Cluster Development
Programme. During 10th plan, Rs. 675 crore was provided for the development of 19
clusters identified by the Government. Department of Ayush, Government of India
has allocated Rs. 500 crore for the development of 20-25 clusters in 11th five-year
plan.
The main motive of all these initiatives was development of infrastructure and technology up-gradation. Textile Committee by focusing on cluster model aims at institutional restructuring. NABARD by targeting on rural clusters aims at employment generation, credit linkages etc. UNIDO on the other hand aims to improve the performance and efficiency of Small and Medium Enterprise clusters for their growth and development by assisting local firms and industry associations located in the cluster. It aims at strengthening linkages to make the cluster actors self reliant. It aims at identifying the problems in clusters and designs a suitable solution. At present, all the policies designed by various State Governments and Central Governments are based on this methodology.

1.9 Need for the Study

SME clusters have existed in India for several decades with some 350 Urban and 2000 Rural and artisans ones (UNIDO, 1996). These clusters constitute 60 percent of the India’s manufactured exports but these clusters are not found to be efficient economic performers (UNIDO, 1996). Recognizing their importance, the Government has decided to promote cluster development as one of the main strategy of its small enterprises development policy. But unfortunately only a few Government initiatives are taken in this area. The Sports Goods Cluster at Jalandhar is facing many problems, which threatens its existence. Therefore, there is a need to find solution to the problems faced by this sector. Jalandhar was a big exporter of sports goods all over the world but now various other countries have taken this market and sale of its products is declining. Some of the problems are due to input prices and low labour productivity. There is a need to study and analyze the problems of this cluster in order to strengthen the competitiveness.
1.10 Objectives of the Study

The main objective of the study is to examine the growth and problems of Sports Goods Cluster at Jalandhar. With this main objective, the study has the following specific objectives:

1. To study the emergence of Sports Goods Cluster at Jalandhar.
2. To identify the factors determining the growth of Sports Goods Cluster at Jalandhar.
3. To review Government policies and support for Sports Goods Cluster at Jalandhar.
4. To explore the problems of Sports Goods Cluster at Jalandhar.
5. To suggest a model for future competitiveness of the Sports Goods Cluster.

1.11 Organization of the Study

The present study is arranged in nine chapters.

The first chapter discusses the meaning and concept of industry cluster, cluster life cycle, clusters in developed and emerging economies, clusters in India, problems faced by the cluster and cluster development policies in India.

The second chapter discusses the literature review on the cluster. On the basis of the objectives of the study, the literature review is presented in eight sections.

The third chapter attempts to study the methodology used, scope of the study, its objectives and methods of data collection.

Emergence and growth of sports goods cluster at Jalandhar is defined in fourth chapter. It aims to study the evolution and growth of Jalandhar cluster.

The fifth chapter attempts to study the existing structure of sports goods cluster at Jalandhar.
The sixth chapter discusses the factors determining the growth of sports goods cluster at Jalandhar. Factor analysis has been applied to find out the factors determining the growth.

The seventh chapter reviews various Government policies and support for sports goods cluster at Jalandhar through survey of the cluster.

The eighth chapter is devoted to study the constraints of sports goods cluster at Jalandhar. Various recommendations are made to improve the performance of the cluster.

The ninth chapter attempts to suggest a model to improve the competitiveness of the cluster.

The tenth chapter presents the summary of the above chapters and conclusion derived out of the study.