



# **A Review on Perspectives of Cluster Formation in Promoting Competitive Advantage for Small and Medium Enterprises and Sustainable Economic Growth**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

This article reviews the currently available literature to examine how clusters provided competitive advantage for small and medium businesses, in what ways it led to economic growth and directs the policy interventions of the Indian government. The evolution of clusters and the contribution of researchable issues in evolution are examined. The role of clusters in creating competitive advantage and the research related to redefining the evolution is presented. External economies are the benefits that occur to a business from the external environment of the business, which are beyond its control and results in cost benefits. The firms in cluster promoted the establishment of suppliers around their customers. This in turn benefitted both the supplier and the firm by reduced transportation cost and increased physical accessibility. The firms are also able to avail customized and specialized inputs from the supplier. Cost economies benefitted the firms and led to improved economic growth. Cluster approach has positive implication and important place in economic development of the country. The review of literature clearly brings up the developments in the concept of clustering as experienced across the world and the initiatives of the Government of India

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matching the developmental needs in this area of entrepreneurship development. The clusters have made better availability of information, in acquiring specialized resources, creation of innovation and competitiveness in the world markets.

*Keywords: Cluster formation; external economies; transportation cost; economic development.*

## 1. INTRODUCTION

Unity is strength, united we stand are some of the most famous quotes that implies the importance of togetherness which leads to success. The same comes true in business environment too. Inter related business activities are grouped or linked to form an industrial or business cluster. Formation of clusters leads to increased economic activity, improves the competitiveness (regional, national and global level), reduces cost, contributes to economic development and makes the business more competitive with its rivals. Competitive advantage for a business is termed as the ability to produce the product or service at a lower cost than its rivals. Formation of business cluster provides competitive advantage for the business in terms of pooling of resource, reduced cost, knowledge sharing, improving the skill of labour and many.

Existence of clusters reveals the importance about microeconomics of competition and the role of competitive advantage [1]. Clusters have gained its importance for companies, government and for other institutions to enhance competition. Healthy clustering improves the health of companies by creating trade association, improving competition, tackle problems related to marketing and production activities, manage demand fluctuation, reduced taxes and cost. For governments to improve the competitiveness of nation, they tend to frame national level policies to boost economic growth. It is true that for global level competitiveness, macroeconomic policies are necessary but microeconomic policies are unavoidable forces to improve the competitiveness. Clusters being a driving force to increase export and attracting foreign direct investment, have become a vehicle for government policies and institutions of research.

This article reviews the currently available literature to examine how clusters provide competitive advantage for small and medium businesses, in what ways it leads to economic growth and directs the policy interventions of the Indian government.

## 2. ORIGIN OF CLUSTERS

The word business cluster or industrial cluster was introduced by Michael E Porter in 1990 in his publication "The Competitive Advantage of Nations". He stated that formation of clusters leads to mutual support within the industry and benefits flow horizontally, forward and backwards [2]. The concept of business clusters paves its way back from Von Thunen's location theory (1826), Marshall's Industrial district theory (1920) and Max Weber's Industrial complex theory (1950).

Location theory by Johann Heinrich Von Thunen in 1826 is the heart of regional economics and economic geography. He was a German economist and estate owner in 19<sup>th</sup> century. Location theory [3] states that the accessibility to market determines the system of agricultural land use pattern. Based on transportation cost, location rent, market price, net profit and the perishability of the agricultural produce or livestock, a system of land use pattern around the market was developed. This forms the first evident theory related to concentration of economic activity at a particular location.

The concept of industrial district is a chief element of Alfred Marshall's thought, which he mentioned in the principle of economics in 1920. According to Marshall [4], industrial district is the concentration of an industry in certain localities. This geographic concentration of firm is to absorb some advantages like close availability of resources, hereditary skills, growth of subsidiary trade, local market for special skill and industrial leadership. He also stated that there existed a peculiar combination of competition and cooperation in industrial districts.

Paul Krugman in 1991 stated the importance of economic geography in his book "Geography and Trade" [5]. He stated that understanding the difference in national growth starts from the regional growth and international specialization starts with local specialization. It could be understood that the concentration of specialization at regional level leads to economic

growth at national level and provides competitive advantage to the nation.

### 3. CLUSTER DEVELOPMENT IN INDIA

The concept of clustering is an age old practice in India but in a different way that some cities or villages were known for a particular product or an economic activity, which have existed for decades and centuries [6]. For example Chanderi cluster in Madhya Pradesh, is known for its traditionally oven saree, which is very famous from the Mughal period in India, but it was officially formed into a cluster in 2008. Handicraft cluster of Moradabad city in Uttar Pradesh is another best example, which is famous for brass metal handicrafts, paved its way back from 19<sup>th</sup> century [7]. The concentration of economic activity was majorly in the form of handicrafts and textile related activities other than agriculture. The concentration of these economic activities at a particular geographic location lead to socio economic development of that particular area and they still stand tall worldwide.

In 1996, United Nations Industrial Development Programme (UNIDO) introduced the concept of cluster based development approach in India by framing agreement with the government of India. UNIDO proved the effectiveness of cluster development approach in industrial hubs like Tirupur, Jaipur and Ludhiana. Adopting similar thoughts various institutions at national and state level like National Bank for Agricultural and Rural Development (NABARD), CII (Confederation of Indian Industry), Ministry of Textiles and National Small Industries Corporation (NSIC) took cluster approach as a model for socio economic development.

Then in 1997, Abid Hussain committee formed by the then Ministry of Small Scale Industry suggested to adopt cluster approach for the development of small and medium enterprises. It is stated in the report that agglomeration of small scale enterprises will lead to its growth which would be fuelled by access to domestic and international markets and cheap labour [8].

In 2007 'Empowered Group of Ministers' (EGoM) was framed under External Affairs Ministry to develop policies for cluster development and oversee its implementation by various ministries of government of India. Many institutions, central and state governments came forward with policy

measures for cluster development approach in various sectors.

Some of the cluster development schemes under various ministries are;

1. Integrated Handloom Cluster Development Scheme (IHCDS) by Ministry of Textiles towards development of Handloom cluster
2. Micro and small enterprise cluster development programme (MSE-CDP) by development commissioner, Ministry of MSME towards sustainability and competitive growth
3. Scheme of fund for regeneration of traditional industries (SFURTI) by Khadi and village industries commission and coir board under the ministry of MSME towards productivity and competitiveness
4. Industrial Infrastructure upgradation scheme (IIUS) by department of industrial policy and promotion, towards development of infrastructure.
5. SBI project UPTECH by State Bank of India for upgrading technology.
6. SIDBI Technological Upgradation Fund Scheme (TUFS) by Small industries Development Bank of India (SIDBI) to increase competitiveness and technology and upgradation.
7. NABARD cluster development programme by National Bank for Agricultural and Rural Development to increase competitiveness.
8. Schemes for Integrated textile parks by ministry of textiles for infrastructure development.
9. Baba Saheb Ambedkar Hastshilp Vikas Yojana by development commissioner (Handicrafts), Ministry of Textiles towards the development of handicraft clusters.

### 4. TYPES OF CLUSTERS

Clusters are complex in nature, hence classifying or categorizing is difficult. Still various authors have attempted to categorize clusters according to their characteristics.

Gordon and McCann [9], classified the clusters according to the type of process by which they are formed as traditional agglomeration economies, industrial complexes and social networks.

Nolan, Morrison, Kumar, Galloway, and Cordes [10], classified 15 knowledge based occupation cluster. Occupation clusters are group of

occupations that share similar knowledge, skills, education level, training and wage level.

Rosenfeld [11] classified clusters according to stage of clustering process as overachieving cluster, underachieving cluster and potential cluster.

There are some general classifications of cluster based on the skill of labour force as low and high skilled, by kind of product produced as high tech clusters, biotech, etc [12], by the core of cluster activity as production facility, research and development [13] and lastly by historic know how clusters (to maintain the advantage of their know-how over the years) and factor endowment clusters (to attain the competitive advantage related with location).

## **5. HOW CLUSTERS GAIN ITS COMPETITIVE ADVANTAGE**

While world markets are buzzing about globalization to increase the competitiveness of a business, the following discussion leads to how the formation of cluster becomes competitively advantageous in global level through localization. Concentrating and utilizing the advantages locally by clusters leads to creation of opportunities globally. Hence regional cluster turns to be a global – local nexus.

### **5.1 Specialized Skill**

Through the formation of clusters, availability and improvements in specialized skills, technology and financial services occurs incrementally. Concentration of these specialization at a particular location gets transferred to the next generation; concentration at one place provides a competitive advantage to the business. Specialization also leads to upgradation or improvement in terms of technology, innovation, lifestyle and social benefits.

### **5.2 External Economies of Scale**

External economies are the benefits that occur to a business from the external environment of the business, which are beyond its control and results in cost benefits. Personal ties with clusters help in recognizing opportunities and mobilization of resources for start-up [14]. Co-operation and networking in clusters results in external economies of scale through quality input suppliers and output buyers. Some external benefits that can be obtained are economies of

concentration, information, innovation and tax benefits.

### **5.3 Increased Societal Health**

According to Porter [2], formation of cluster increases the scope for innovation in the sector, which in turn benefits the business as well as the society. Clusters helps in linking inter related business, which in turn increases the productivity and able to pay higher wages to residents around. Employment and income spillovers are higher through clusters than an individual entity.

### **5.4 Marketing**

Networking provides rich information that enables the firm to know about new alliances and marketing opportunity available [15]. Clusters help in co-operative arrangements in marketing like joint ventures, market research, joint distribution strategies, product development and co-branding [12]. Clustering helps in better use of information technology in marketing like maintaining database, promotional strategies, improved communication with customers and online marketing activities. Hence this shows that firms within the clusters has gained its competitive advantage in marketing activity than firms outside clusters.

### **5.5 Improved Financial Health**

The major constraint for SMEs is to meet working capital requirement. In general, these working capital requirements are met by borrowing from friends and relatives. Because of the economies of scale and fewer financial transactions, it becomes tough to obtain trade credit and other financial credits from the institutional agencies. This weakens the financial health. By vertical or horizontal clustering, the members of upstream and downstream enterprises get to know each other and build trust. This trust helps in acquiring trade credit support within the cluster [16]. Networking within the cluster helps in availability of information required to meet capital requirements for the clusters. Flexible payment schedule within the cluster helps to overcome some constrains. It is easier for government to intervene through clusters to meet the financial requirement of the SMEs to boost economic growth than through individual interventions. Hence the firm within the cluster have better access to funds than others outside the cluster.

## 5.6 Better Entrepreneurial Ecosystem

Creation of win-win situation within the clusters encourages new entrants in to the sector. Forward and backward linkages through cluster eases the doing of business. Clusters helps in integrating value chain players. Good entrepreneurial ecosystem enables value creation [17], and create social and economic system for installation of new ventures [18], innovation, markets, supportive policies and improved human capital [19]. According to Davidsson [20], entrepreneurial ecosystem should lead to increased social value than the sum of private value for the individual entrepreneur [21]. Important mission of cluster is to increase social value, creating aggregate welfare increase and improved business factors. Hence it creates a better entrepreneurial ecosystem for existing and new ventures.

## 5.7 Human Resource Development

Nowadays, business world has shifted its focus towards intangible asset of human capital, which is knowledge and information. According to Martin and Mayer [22], most of the sustainable clusters are knowledge based clusters, they sustain by developing HR policies, teamwork, flexibility, learning and knowledge sharing. Organizations tend to join the clusters to develop skill, train people for employment, enhance potential, support regional skills and to gain knowledge [23]. Human Resource Management practices in clusters foster the performance of enterprise and achieves competitive advantage through people [24]. Clusters are more likely to innovate by boosting the technological knowledge than individual firm [25]. Clusters through training, skill development programme, skill centres and education improves ability of human resource.

## 6. CLUSTERS TOWARDS ECONOMIC GROWTH

Through agglomeration of economies and social networks, clusters leads to generate economic growth. Because they produce benefits external to an individual firm as opposed to arrangements initiated and organized by an individual firm [12].

Agglomeration leads to economic growth either by lowering the input cost for production from external economies or by increasing the

productivity that is increased technological economies [26]. In clusters, there is labour market pooling and worker matching. Larger number of workers means better matching. This leads to external economies to a firm. There is substantial supply of labour with varied skill when there is a larger agglomeration. Because of the greater supply, the firm is able to reduce the cost by lower the wages and increase the productivity by using the specialized skills of the labour [13].

The firms in cluster produce same type of product or service, which requires same type of input. Hence the suppliers of the input tend to locate themselves around their customers. This in turn benefits both the supplier and the firm by reduced transportation cost and increased physical accessibility. The firm is also able to avail customized and specialized inputs from the supplier. Cost economies benefit the firm and leads to improved economic growth.

Knowledge spillovers is the result of when many people working on similar problem in an industry, the skill set and processes produces wide range of understanding about the problem and results in greater innovation with respect to product, process, productivity or cost for firms in the region. The social structure and networking in clusters enhances knowledge spillover among the firm, this is more likely to produce sustained economic growth. According to Porter and Locations [27], "social glue binds clusters together, contributing to the realization of potential". By Marshall's iconic quote "knowledge is in the air", the concentration of practices and skill at a particular geographic area automatically leads to learning and innovation in the cluster, which leads to economic growth. In clusters due to spatial proximity between firms facilitates creation and exchange of tacit knowledge, which is a form of competitive advantage to the firm [28].

The cost of goods or service produced in clusters is lower because of market aggregation. When there is sufficient demand for a goods or service in the area, the players in value chain tend to locate themselves around the area, which in turn increase regional economic growth and reduced logistic cost and search cost for consumers. Due to aggregation, supporting institution is able to provide research and development, innovation and technology transfer through clusters.

## 7. POLICY INTERVENTION IN CLUSTERS OF INDIA

It is understood that clusters are important force to enhance competitive advantage and boost economic growth. Government is also ensuring necessary steps in terms of policy interventions to improve the formation and performance of clusters. Setting up of marketing and sales agencies by the Government to promote sales, distribution and development is a major policy intervention. This has maximized export performance and proximity has improved the performance of clusters.

Government has introduced policies for establishment of Common facility centres (CFC) and infrastructure development (ID) centres. CFCs have improved production line which individual units cannot undertake like testing facilities, design centres, training centres, and raw material depots so on. ID centres have developed distribution networks, marketing outlets, power distribution networks, pollution control facilities and development of roads. Grants up to 70% and 60% of total project cost are provided for establishment of CFC and ID centres by MSE- Cluster Development Programme (MSE-CDP Guidelines, GOI, 2019). Various financial assistance schemes like yarn supply scheme, group insurance scheme and schemes to meet working capital and fixed capital requirement were introduced by government of India.

Central grant is provided for skill up-gradation programme. Training, technical and managerial skill development programmes are being conducted in batches to improve the knowledge and skill sets of labour force. Maximum assistance for skill upgradation is up to 15% of total project cost (MSE-CDP Guidelines, GOI, 2019).

## 8. CONCLUSION

Cluster approach has positive implication and important place in economic development. From the review of research work across the globe it could be understood that clusters helped small and medium enterprise in achieving its competitive advantage by reduced cost, providing specialized skills, improved financial health, marketing opportunities and upgrading human resource. Clusters also lead to economic growth through market aggregation, knowledge and income spillover and labour market pooling.

Government of India as a developing economy aids in development of clusters through various policy interventions. As a result, large number of clusters have been established under industrial, handloom and handicraft category all over India. This had helped in development of rural economy, as most of the clusters were established in rural areas. The collective effort of individual companies, government and institutions have led to the development of healthy clusters in India and regional economic development, in turn lead to nation's economic development. It can be concluded that clusters have made better availability of information, in acquiring specialized resources, creation of innovation and competitiveness in the world markets.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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