

Collaboration in Indian SME Clusters: A Case Study

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Abstract:

Clusters of small and medium enterprises have been very successful in promoting the growth of MSMEs (Micro, Small, and Medium Enterprise) all over the world. The success of these clusters is largely due to the individual small firms of the cluster closely collaborating and sharing resources. Sharing is the theme of our paper, where we focus on understanding how productivity and efficiency of an SME cluster in developing region can be improved by furthering collaboration among its units. The hypotheses of our study were that (a) there exists limited sharing and collaboration through informal networks among SME cluster units in emerging regions, (b) these clusters could be more productive by improving the collaboration among cluster actors, and (c) the sharing and cooperation within the cluster can be improved with formal networks among the cluster entities. To validate our hypotheses, we undertook a field study of the SME jeans cluster in Bellary, Karnataka. In this paper, we have put forth our findings from the study, followed by importance of collaboration in MSME clusters.

1. Introduction:

Clusters refer to co-located groups of micro, small, and medium-scale firms engaged in production of similar type of products. The success of a cluster lies in the simultaneous competition and co-operation among the cluster firms. Different phases of the production process are executed by separate firms and therefore, the end-product of one firm is the raw material of another firm in the same area.

Cluster and clustering of small firms promote the growth of MSMEs¹ in developing and developed world. MSMEs have employees ranging from 5 to about 500. Individual firms because of small size cannot achieve economies of scale in production, advertising and sales, which are possible for large enterprises. However, the individual firms can succeed by closely collaborating with other small firms in the same and related industrial sector and usually located in the same geographical area. The key features underlying the success of the cluster is leveraging the firm congregation to build networks, establish co-operation and enable capacity building.

One key factor for the cluster success is the specialization of small firms in same or complementary phases of the production process. Each firm can use its limited resources in its core competency and its operation is complemented by other specializing firms in the supply chain within the cluster. This not only helps individual firms to excel, but also the cluster to flourish. The other important success factor in a cluster is co-operation. Co-operation among firms enables (a) capacity building when big orders can be sub-contracted to other firms and (b) flexibility when diversity of order types can be achieved involving multiple firms. Presence of a good local governance or support institute promotes inter-firm co-ordination and lowers the barrier of entry for new start-ups. The biggest success stories of clusters have been from Italy, where the small firms are leading exporters of high-quality goods. The average size of firms in Italy is only seven and yet Italy is highly industrially developed which implies that the engines of growth are not the large firms, but the small firms.

¹ ISME: Small and Medium Scale Enterprises, MSME: Micro SME. An individual business unit of any type of cluster has been referred to as small firm or unit in this article. According to Government of India, micro enterprises have investment up to \$22,000 small scale enterprises have investment up to US \$220,000 while the medium-scale enterprises have investment from US \$220,000-US \$2.2 million

In developing countries like India, where the barriers of entry for large firms is extremely high because of several extraneous factors like limited resources, labor problem, etc the small firms can be promoted to achieve industrial growth. Based on Italian experience, measures can be taken to: (a) develop a general conducive policy for SMEs in India and (b) facilitate sectoral specialization through upgrading technology, improving quality of products, labor skills and ensuring complementarities, common activities, and collective goods.

1.1 Clusters in India

Historically, clustering is a known phenomenon in Indian context and has played a significant role in the nation's industrial growth and diversification. The clusters in India have been classified as (1) industrial (SME), (2) handloom, (3) handicraft, (4) micro-enterprise (rural and urban) and (5) service-oriented. In our study we have focused on the SME clusters. The impact of SME clusters on India's economy has been tremendous as shown in Table 1.

No Of Clusters	2042
No. Of Firms	1.5 million (700/cluster)
% of Total Manufactured Exports	60

Table 1: Impact of Indian SME Clusters

Despite the striking figures, majority of Indian clusters are not performing to their full potential. Based on case studies of many clusters, the main reason for under performance has been found to be lack of co-operation among the cluster-actors. Multiple factors have led to this problem: (a) informal communication (lack of formal and legal framework for joint operations leads to mistrust) (b) lack of understanding of the benefits of simultaneous competition and co-operation (c) lack of knowledge sharing (d) fear of loosing out in competition (e) high cost of developing collective goods and common activities.

However, only in recent years with the liberalization of economies, there is a concerted effort in cluster-growth by Indian government and different support institutions like United Nations Industrial Development Organization (UNIDO), Small Industries Development Bank of India (SIDBI), etc., for promoting the small firms. Cluster development initiatives include upgrading technology, forge strong intra-cluster network, and networking with external associations. ICT can significantly complement cluster-growth initiatives by formalizing cluster operations and reducing transaction costs for common activities.

In Section 2 we enunciate on our study of Bellary jeans cluster and try to understand how technology can help with the various issues faced by the stakeholders of this cluster. We refer to the relevant literature in Section 3 which validates our findings.. In Section 4, we discuss the challenges and opportunities of ICT in Indian SME clusters. We conclude and provide directions for future research in Section 5.

2. Bellary Jeans Cluster

For detailed analysis, we did a field study of Bellary jeans cluster, situated in Northern region of Karnataka, India. Bellary consists of 800 small firms supplying denims mainly to the lower-middle class of South India. Our visit to the Bellary cluster revealed the manner in which the cluster units were organized; the relation they shared amongst each other; the activities they undertook and the constraints they were bound by. Some of these findings were as follows.

The textile industry in Bellary is primarily associated with manufacture of denims for bottom wear. In this, the major players were the merchant manufacturers, who hired local labour from the town of Bellary. The garment industry run by the merchant manufacturers is said to be well-organized and nearly 60,000 people are employed within this industry. The industry is also said to have registered a 10% annual growth

This has been traditionally a very conservative cluster and suffers from multiple deficiencies: (a) lack of strong customer-supplier relationship (b) low quality (c) lack of planning, (d) high lead time (e) informal

practices. However, recently the business owners, due to the opportunities of doing business with established garment retailers and increasing competition from China, Bangladesh, etc, feel the need to address these issues through co-operation, public-private participation and formal linkages .

The most prominent organization here was the state-run District Industries Centre (DIC). Apparently the DIC had come up with policies that were friendly to the textile industry in the district. For starters, some enterprising officials within DIC had set up a model training centre, with the latest sewing equipment. This was to train the locals, especially women from the lower economic strata, who could gain employment in the textile industry thereafter. It was called Bellary Institute of Fashion Technology (BIFT). The BIFT was also to encourage the local merchant garment manufacturers and entrepreneurs to collaborate with the state in training and development, through Public Private Partnerships (PPP).

Nevertheless, there was a feeling among the merchant manufacturers of apprehension and distrust, especially towards the state government’s policies. PPPs had not yet taken root within the psyche of the manufacturers and entrepreneurs. But, some officials within the DIC and some merchant manufacturers were trying to change this by setting up not just training units for women, but also a planned layout for jeans manufacturing in what they called an ‘apparel park’. This was recently inaugurated by the Chief Minister of Karnataka and is set up in the outskirts of the town of Bellary.

From these findings so far, it can be inferred that the need for collaboration had been recognized by the state at least, if not by the garment manufacturers themselves. Also, that there was an active effort to link the various merchant manufacturers with each other, through formal means.

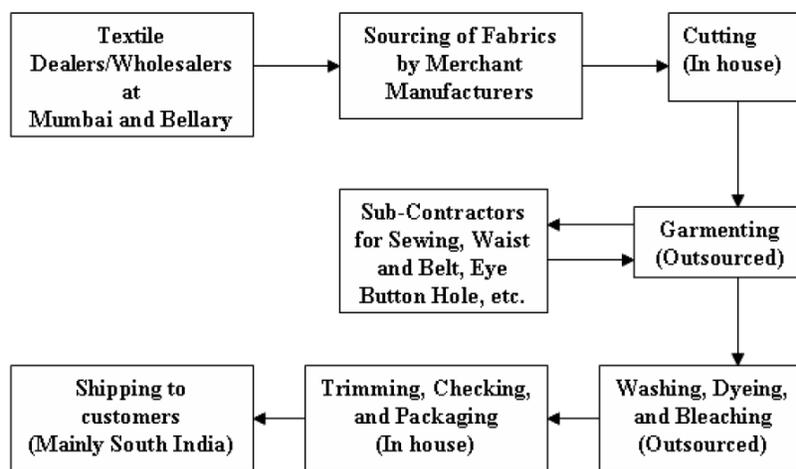


Figure 1: Bellary Supply Chain

There was a lot of informal networking and interaction among the merchant manufacturers even without the aegis of the state. This is because not all activities within cluster units were end to end. Various activities had to be outsourced and this required networking and some form of sharing. Fig. 1 describes the supply chain of the Bellary Jeans cluster. The merchant manufacturers buy fabric from local and Mumbai dealers, divide the jeans-making process into eight to ten operations (e.g., sewing, washing, etc.) with each operation being outsourced to small firms, and package the final products for sale. Thus, there were various units, which specifically dealt with stitching and cutting; dyeing, washing and bleaching; and ironing. Among these units, there was a lot of sharing of resources and expertise, due to outsourcing.

Informal networks among merchant manufacturers with each other also brought in orders for them. In fact, the businesses of most merchants thrived on the strength of these informal networks and the relations they shared with each other. It was based on trust and building of mutual social circles. This showed that there was no fixed relation between a supplier and manufacturer and was not given any significance either.

Some of the other findings from Bellary are also true of most SME clusters in India. Cluster units were collocated, with many units being housed in a single, congested building. They also faced scarcity of water and electricity. The water scarcity led to high pollution caused by the dyeing units. There was also labour exploitation in the form of long working hours and inadequate compensation – especially in baby units of garment stitching. This was compounded by the presence of patron-client relations between labour and unit owner and seasonal employment offered to workers. Besides, there was no centralized union of garment workers to address this problem.

It was also found that the usage of computer was limited in Bellary and the IT solutions used were stand-alone accounting software. In our study we found that only a few merchant manufacturers have set up their websites. These manufacturers told us that they have got orders from different parts of Europe after setting their websites. But they are not confident enough to take up these orders because of quality and lead time concerns.

A couple of recent trends in the Bellary jeans cluster scenario showed that merchant manufacturers had recognized the existence of some of their problems, and were trying to address it. Some merchant manufacturers were planning to get together and set up a joint manufacturing unit for jeans and bottom-wear. Through such an arrangement, the entrepreneurs are planning to reduce the cost of equipment, space (building), labour and other overheads. At the same time this was also to ensure better control on quality of goods being manufactured. This will even address the increase in export orders for garments from overseas, following the opening up of markets.

3.1 Validating our findings

Our study findings were validated by UNIDO studies on Indian MSMEs. From our findings, it was found that micro enterprises play a key role indeed in sustaining economic growth in India, as pointed out in the UNIDO study. They also provide employment by addressing gender imbalances. In Bellary, we found that most baby units and bigger units within SME clusters, employed women and indeed trained them in stitching and cutting. Although the pay given to them was incommensurate with the long working hours, it was indeed a step towards poverty alleviation.

Our mode of study however differs from the UNIDO study, which was more action oriented. The latter was to not only study the problems and constraints under which MSMEs operate, but also to offer step-by-step resolution of the problem. In fact, the UNIDO study even had an ‘action plan’, a phase for ‘implementation’ of its plans, which included training programmes and workshops and finally a phase for ‘monitoring and evaluation’. The study that we undertook in Bellary was more exploratory in nature, with a possible set of recommendations, which could address the problems of the jeans cluster.

In our study, it was also found that some of the baby units within a cluster were owned by family and friends. This is also validated by the studies on Tiruppur, where majority of the units were controlled and directed by families. Another finding common to both our exploratory study on Bellary and the published findings was the extreme demand on water and electricity, which unfortunately were not always met efficiently.

Although the need for collaboration was certainly felt in Bellary, it had not yet been undertaken in a major way. The reasons for this were manifold. According to the study on Tiruppur the primary reason for lack of collaboration was deficiency of infrastructure. However, from our study we found that in the case of Bellary at least, the reason was not limited to lack of infrastructural support, but also to the lack of understanding the importance of formal collaboration.

One of the primary findings of our study was the significant role played by support institutions, like the DIC. In Bellary, this state-owned organization had undertaken several, experimental measures to train local talent, encourage collaboration with merchant manufacturers and provide single-roof model of garment production. Such measures were beginning to have a positive impact on the way the cluster units functioned. Similarly, the study on Tiruppur also mentions that there have been many support bodies, which have aided the knitwear sector in Tiruppur.

4. Collaboration and ICT

4.1 Benefits for clusters

Collaboration among cluster actors is the need of the hour and under-achieving cluster units can be made to gain strength [2]. Collaboration stimulates skill and competency development, apart from the economic aspect of cost reduction and sharing of resources. For e.g. in Nicaragua, nearly USD 300,000 worth of new investment has been achieved by participating enterprises, apart from a credit of more than USD 100,000 by enterprises to implement collective actions.

Even sharing of orders and subcontracting parts of production, when individual units are unable to meet client demands, is possible through meaningful collaboration among clusters. Although this was not yet happening in Bellary, the need for this was recognized. It is said that self help groups, consortia, local and state level support institutions are collaborating to help cluster units in India to identify their needs and also to overcome barriers. In Bellary this is still at a very nascent stage of development.

Adoption of ICT technologies will enable the enterprises in a cluster to integrate processes, lower transaction costs, and hence greater collaboration, leading to formation of a digital ecosystem [3, 4] However, the full benefit of digital ecosystem can be accrued when the SMEs utilize the collaboration links within the cluster to create collaborative supply chain networks. ICT can potentially help clusters to achieve success by complementing the current ongoing cluster development initiatives by UNIDO, SIDBI, Ministry of Small Scale Industries and other public-private institutions.

4.2 ICT Adoption in India

ICT adoption by the Indian clusters is extremely low. The industry estimates that the ICT adoption among small business in India is less than 30%, and if the IT firms in the SME segment are not considered, the number will be significantly less. For example, in Karnataka, the IT penetration is less than 1% among the 700,000 small scale manufacturing firms. The main reasons for low adoption are:

1. *Reluctance to adopt technology*: The first-generation small firm owners are not technology savvy and are extremely apprehensive to adopt new technology.
2. *High cost of enterprise solutions and unsuitability for Indian markets*: Current IT solutions from international vendors are mainly stripped down versions of the solutions of the developed world and do not satisfy the specific requirements of Indian business.
3. *Low level of telecom density, especially in rural and semi-urban areas*: Many clusters are located in semi-urban areas or rural areas and therefore, cannot avail the benefits that communication can bring in. The operators do not find it profitable to run business here.
4. *Lack of funds*: The small firms of India have significantly less funds compared to their counterparts of the western world and therefore, they cannot adopt any readily-available solution used in the developed nations.

4.3 Challenges of ICT adoption in India

The challenge is to build cost-effective ICT solutions, which can be widely affordable and easily deployable within the cluster. There is a need for ubiquitous connectivity and formal integration of operations to improve the supply chain operations of the cluster. SMEs in a cluster need to ensure greater collaboration, and work towards a synchronized value chain network to face the new challenges due to

globalization. As global competition intensifies SMEs need to form symbiotic collaborative relationships and to improve efficiencies and access wider markets. Although Indian SMEs may be hesitant to share information for fear of losing competitive advantage, this collaboration model has been successful in many developed countries [5, 6]. Therefore, collaborative supply chain solutions, where the infrastructure and the costs are shared by enterprises, are needed for these networked cluster enterprises. There may be opportunities for exploiting economies of scale through collaboration. Economies of scale occur where there are significant costs common to different goods or services, which holds true for the firms within any Indian SME or artisan clusters [7]. Enterprises in the same cluster can leverage their relationships to gain efficiencies through shared operations.

5 Conclusions

We found limited sharing and collaboration among the SMEs in Bellary cluster. Also the sharing and cooperation within this cluster can be improved with formal networks among the players. However, till now, not much attention has been paid to understand the potential utility of ICT for fostering collaboration in SME clusters. Therefore, we feel that this is the opportune moment to take a look at the potential merits of ICT adoption and investigate whether a fresh approach is needed to build solutions specific for developing regions like India.

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