

Draft Version

**The Emergence of Tirupur as the Export Hub of
Knitted Garments in India:
A Case Study**

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1. Introduction

Tirupur is the knitwear cluster of India. This cluster is widely recognized as a 'dynamic' cluster with necessary 'vertical' depth, critical mass of enterprises as also appropriate factor conditions. Tirupur is located 60 km east of Coimbatore district of Tamilnadu, has emerged as the knitwear capital of the country in three decades. Popularly referred as "Dollar City" or "Small Japan" or "Banian City", it excels in knitted ready-made garments. Tirupur has traditionally manufactured knitwear and had especially established its name in India in the manufacture of cotton undergarments. In the 1970's, as a result of collaboration with an Italian cluster, Tirupur began to exploit opportunities in the export market. Over the last two decades, Tirupur has emerged as a leading export cluster in knitwear and has established its presence in Europe, US and in the Pacific. The Tirupur cluster has grown as a highly linked (although informal) cluster of units which together convert cotton to knitwear products. Individual units are highly specialized at the manufacturing of fabric, dyeing, processing, knitting and export marketing. As of date, over 6000 units in Tirupur work in the cluster. About 45 per cent of India's garment are in the form of knitwear, and here the Tamilnadu centre of Tirupur plays a pivotal role, generating as much as 80 per cent of knitted garment exports; in other words, about 4 per cent of India's total export trade. Known as 'T-shirt City', the industry in this town started with the production of low valued cotton hosiery items, mainly under garments during the 1930's. Knitting to this city was brought by Gulam Kadar in 1937 who established "Baby Knitting Industries" in Kaderpet area of Tirupur.

The success story of Tirupur can be mainly attributed to the hard work, entrepreneurship, ability to adapt to changing business trends and passion for growth of the native people. Exports from Tirupur, which provides employment to over 3.5 lakhs people and within a matter of two decades the export has crossed Rs. 11,000 crores mark in 2006-07 from a meager Rs. 10 crores in 1984. During 2007-08, due to appreciation of rupee against dollar export declined by 10 % and registered Rs. 9,950 crores. The global financial crisis of 2008-09 brought down the exports for half yearly period to 5050 crores compared to Rs. 5350 crores recorded in the corresponding period of 2007-08, a 6 % y-o-y decline.

2. Historical background

A water-starved town in western Tamilnadu, Tirupur is an unlikely success story. The land is dry and not very fertile; the Noyyal, a non-perennial river, and seasonal rains, are its only sources of water. It was a hardscrabble existence for most. People began to move away from agriculture to undertake small-scale manufacturing of briefs and vests (called jatti and banian in the local lingo). The high mineral content in the local water, which was the bane of agriculture, has played a big role in Tirupur's success in textiles. Clothes bleached with the local water came out whiter. This was before the arrival and extensive use of chemicals like chlorine in bleaching. That was how Tirupur made a name for itself in the grey and white briefs and vests market.

One important factor that has significantly contributed to Tirupur's success is the work ethic of the Gounder community. Almost 80 per cent of Tirupur's exporters come from this traditionally agricultural community; the men spent 12-14 hours on the farm as a matter of routine; and brought this ethic to the factory. Also, community connections help, especially in instances of new venture and capital/finance requirements. If someone bags an order he can't execute, he passes it on to a fellow community member. Trust and hard work have helped this agricultural community's first-generation entrepreneurs to build companies worth several hundred crores. The experience of Tirupur shows that strength of a local economic system, and its capacity to grow and to innovate, are closely related to the pattern of knowledge (thus cultural) stratification, to the territory itself and to learning capacity.

This township started with the production of low valued cotton hosiery items, mainly the under garments during the 1930's. The growth of the industry was slow till late 1930s. Knitting to this city was brought by Mr. Gulam Kadar in 1937. He established "Baby Knitting Industries" in Kaderpet area of Tirupur. It was followed by the establishment of second knitting unit by a woman, Mrs. Chellammal, in the name of Chellemmal Knitting.

A series of strikes in late 1930s in knitting factories in the neighbouring towns of Salem and Madurai resulted in the opening of new firms in Tirupur. Subsequently, it emerged as the prominent centre for knitwear in South India by 1940s. In 1942, 34 units were engaged in the

production of knitwear which were composite mills and the production was carried out in the same unit. There are also references to some units performing specific tasks/operations like bleaching and dyeing, located in the larger units. By 1961, the number of units rose to 230 and till early 1970s, the industry catered only to the domestic market. These units were mostly composite mills without any subcontracting system of production.

Tirupur's direct exports started with Italy. Verona, a garment importer from Italy came to Tirupur in 1978 through Mumbai exporters to buy white T-shirts. A lot of job workers were manufacturing garments for merchant exporters. He realized the potential and came to Tirupur the following year. Verona was the man who brought European business to Tirupur. On seeing the quality, others soon followed suit. In 1981 European retail chain C&A came. A handful of manufacturer exported garment worth Rs. 15 crore was exported in 1985. The next couple of year was windfall for Tirupur as exports touched Rs. 300 crore in 1990. Thus it was in the 1980s, the export market began to expand and subsequently Tirupur emerged as the largest exporter of cotton knitwear from the country, accounting for roughly 80 % of the total cotton knitwear.

Table 1: Vital Statistics of Tirupur

Parameter	Total	Male	Female	Percentage	Sex Ratio
Population	677978	351911	326067	100	927
Literates	469780	268023	201757	78.07	753
Illiterates	208198	83888	124310	21.93	1482
Workers	331095	239442	91653	48.84	383
Households	175891				
Total No of households	70543				
Electricity available to Population (per 1000)	949				

Source: UNIDO (2005)

3. Tirupur Industrial Cluster development & characteristics

A cluster can be defined as sectoral and geographical concentration of enterprises facing common opportunities and threats. The presence of MSMEs (Medium and Small Manufacturing Enterprises) in a cluster give rise to external economies like emergence and growth of specialized supplier of raw material, component and machinery, sector specific skills etc. It favours the emergence of technical, administrative and financial services, creates a conducive ground for development of inter-firm cooperation and also cooperation among public and private institutes to promote local production, innovation and collective learning¹. India has 388 documented industrial clusters, around 400 handloom clusters, about 3,000 handicraft clusters and 2,800 micro-enterprise clusters that contribute significantly to its economy, and provide employment to more than 20 million people.

“....Indian textile sector suffers from what has been referred to as a ‘cottage industry mentality’. However, the remarkable progression of the Tirupur hosiery cluster is an example of how a coherent action plan can synergies the resources and output of a large number of relatively small units....With the understanding that capacity building was the foundation for sustainability, the Tirupur cluster development programme focused on strengthening individual units throughout the production chain by providing linkages for technology, funding and training of personnel....” (Textile-Cluster on Move-EPW May 29, 2004)

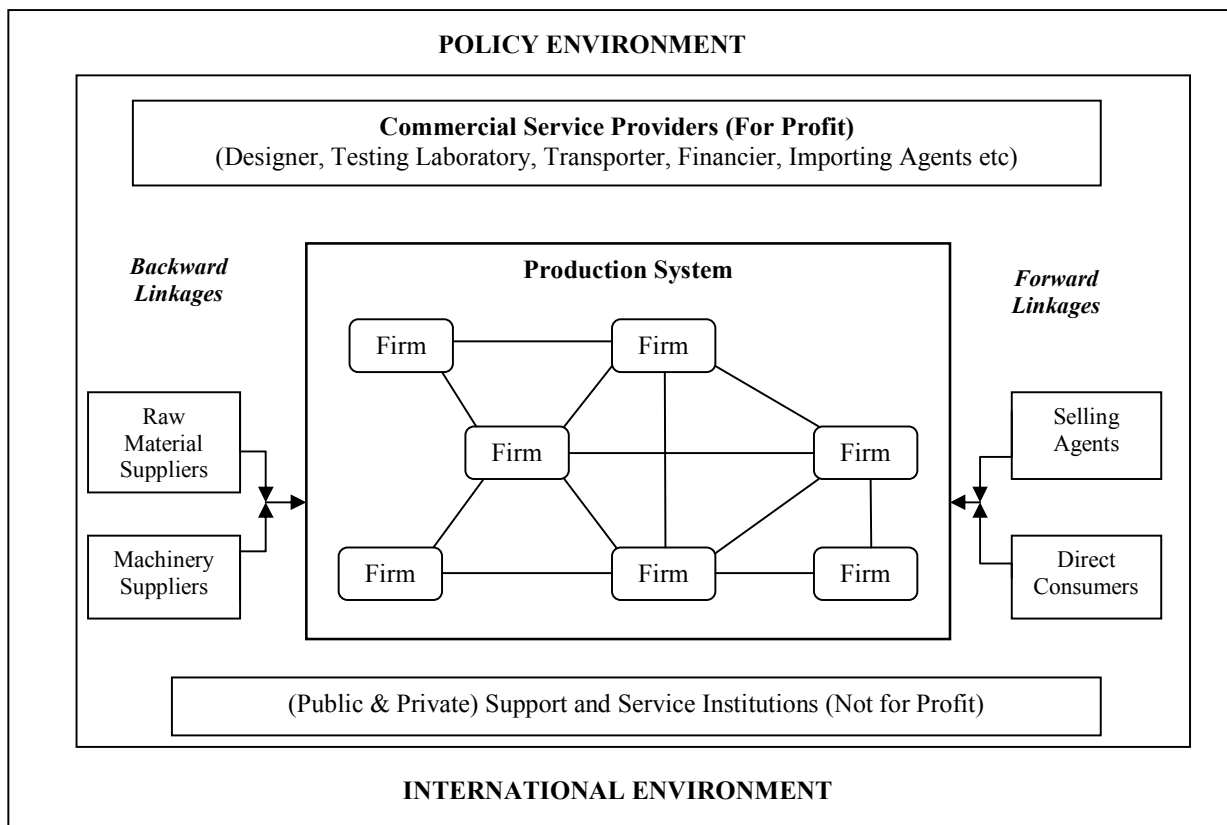
Benefits of cluster development programme-

- Reduced Transaction Cost
- Comparative Advantage
- Improved Access to Information
- More Innovations
- High Rate of Enterprise Development

¹ Enhancing competitiveness in business clusters through cluster development approach by Rajveer Singh, Apex Cluster Development Services New Delhi, India

- Institutionalization of Success
- Potential Opportunities for Technology Up-gradation
- Co-opetition or cooperative competition
- Efficiency

Chart 1: A Typical Cluster Map



Source: Enhancing competitiveness in business clusters through cluster development approach by Rajveer Singh

Tirupur, the heartland of the knitwear industry in India has a supplier base which consists essentially of manufacturer who are mostly integrated forward or backward if not vertical. There are number of spinners of yarn integrating forward to set up knitting plant; textile process house and then further integrating forward to become makers of garments. Tirupur textile industry has units all along the value chain of knitwear starting from spinning, knitting, wet processing, printing, garment manufacturing, embroidery, compacting, calendaring and exports. In addition there are ancillary units supplying buttons, laces, embroidery, cones and yarn processing etc. As

of 2008, the Tirupur cluster is comprise of total 6250 units in different value chain as documented by Tirupur Exporter association (TEA). The following table shows the composition of different units in the textile value chain in Tirupur.

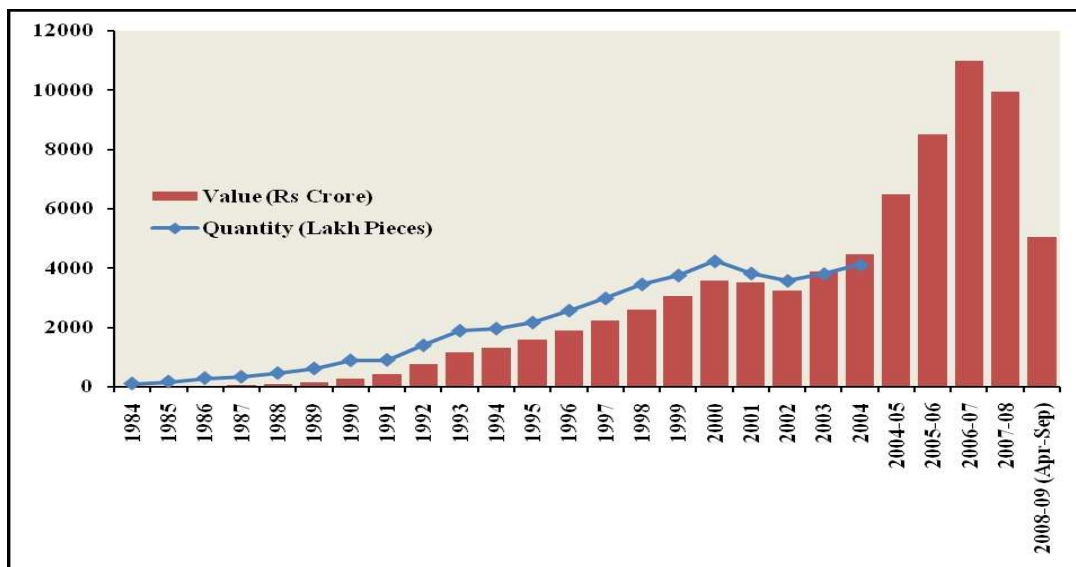
Table 2: Spread of Units in the Textile Value Chain in Tirupur Cluster

Value Chain Activities	Number of units
Garment Making	2500
Knitting Units	1500
Dyeing and Bleaching	700
Fabric Printing	500
Other Ancillary Units	500
Compacting and Calendaring	300
Embroidery	250
Total	6250

Source: Tirupur Exporter Association (TEA)

A notable feature of the industry in Tirupur has been its organization in house-hold workshops started mostly by owned funds of enterprising individuals. As the industry has developed as a faculty business, the entrepreneurs have developed highly specialized skills and aptitudes which have helped them to seize the quota generated opportunities of supplying to overseas demand. The predominant feature of Tirupur Textile Cluster is its cotton based knitted garments where majority of the units being in the proprietorship/partnership firm of organization controlled and directed by family management. Large numbers of units are involved in doing cutting; making and trimming (CMT) knitted fabrics in pieces. The presence of vertically integrated production units is limited in number but there is a high degree of subcontracting relationship to knitting, processing and finishing operation. And presence of this high degree of subcontracting and job work within a close community culture coupled with tremendous growth and innovations in value chain activities other than CMT has provided the required support system for the knitting industry in Tirupur. This growth is evident both in terms of capacity building across firms and export earnings of Tirupur (chart 2).

Chart 2: Yearly Export Growth (Value & Quantity)



Source: Tirupur Exporter Association (TEA)

Tirupur knitwear cluster has diversified its production basket from being the producers of basic knit garments for lower end of the domestic market to a range comprising, T-shirts, polo shirts, sportswear, sweat shirts, ladies dresses, children garment, nightwear, etc. The cluster reflects high degree of specialization in most areas including machinery supply besides every area of the manufacturing operation. Innovative business development services such a pre-production checks, initial and during production checks, product consultancy, laboratory testing, sourcing assistance are provided by several enthusiastic entrepreneurs that help the industry to improve. The role played by number of commerce and industry associations in Tirupur for various inter and intra firm disputes besides procedural formalities, information assistance and the lobbying role with the government need special mention. Currently, there are more than twenty industry associations which are operating in Tirupur and playing commendable role in helping the manufacturers.

Table 3: Commerce and Industry Associations in Tirupur

List of Associations
Apparel Export Promotion Council (AEPC)
Banian Cloth Manufacturers Association
Computer Embroidery Association
Indian Hosiery Yarn Mill Association
South India Hosiery Mfrs. Association
Tirupur Bleachers Association

List of Associations

Tirupur Collar Stitching Section Association
Tirupur Cotton Merchants Association
Tirupur Dyers Association
Tirupur Exporters Association
Tirupur Export Knitwear Industrial Complex Association
Tirupur Export Knitwear Mfrs. Association
Tirupur Export Knit Printers Association
Tirupur Hosiery Yarn Merchants Association
Tirupur Kaja Button Owners Association
Tirupur Merchants Association
Tirupur Narrow Tape Manufacturers Association
Tirupur Power Table Owners Association
Tirupur Power loom Association
Tirupur Screen Printing Association
Tirupur Steam Calendering Association
Textiles Committee

4. Strategies for development & growth-Firm Level Perspective

The emergence of Tirupur as the major knitted manufacturing cluster of India and export earner has been a result of the sheer hard-work from the part of entrepreneurs of the region, their willingness to evolve over the years to meet the international challenges and successful buildup of different levels of supply systems indigenously for a self operating system. Looking into the growth and development of firms, it is evident that the firms in Tirupur have not taken some uniform pattern or strategies of growth, rather individual firm tried to be part of the value chain in such a way that its expertise can be utilized fully and it can also gain maximum from the available system. The existing system of production and manufacturing in Tirupur clearly shows how division of labour and skills into different stages of garment making and a firm associating with one of the stages can be a very efficient way of growing in a cluster.

4.1 Primary Survey Sample

A primary survey was conducted to capture the growth and evolution of the firms and their different value chain links in Tirupur cluster. The survey included 8 firms (both CMT and composite units) and 7 government and private associations. While choosing firms, it was ensured that the sample includes diverse categories of firms, the table below shows the different attributes of firm characteristics in terms of ownership, turnover, employment and years of experience in production. Different levels of government and private association were also interviewed to identify the role of these associations in the functioning of Tirupur cluster.

Table 4: Sample Firms & Associations for the Primary Survey

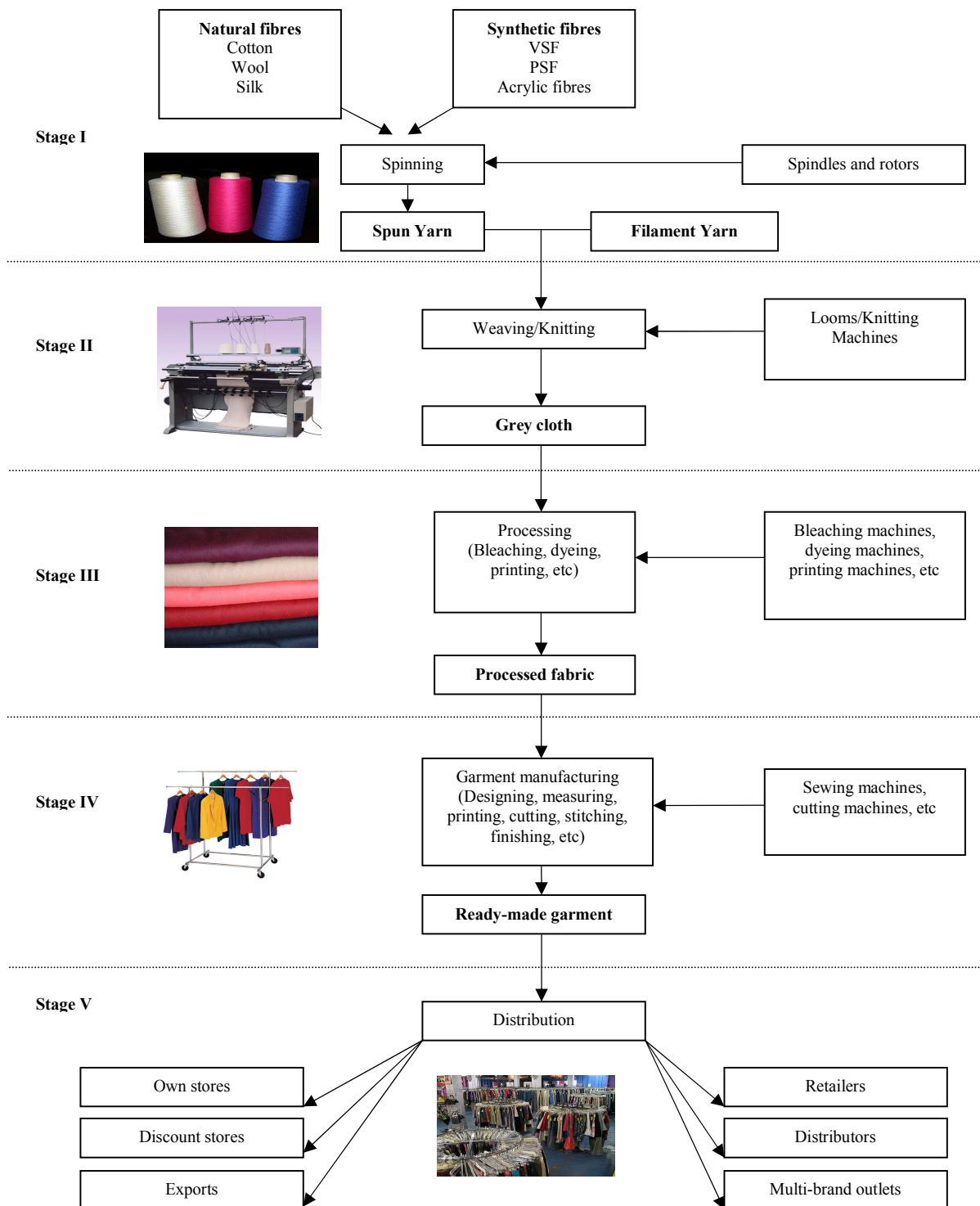
Firm	Incorporation	Ownership	Turnover (2007-08)	Employment
TR1	1994	Proprietorship	10 Cr	150
TR2	1973	Partnership	116 Cr	800
TR3	1964	Proprietorship	7 Cr	200
TR4	1991	Partnership	11 Cr	300
TR5	1989	Partnership	50 Cr	1000
TR6	1995	Partnership	4 Cr	100
TR7	1987	Proprietorship	16 Cr	1500
TR8	1980	Private Limited Company	120 Cr	600
Associations				
Tirupur Exporters Association (TEA)				
Textiles Committee				
South India Hosiery Manufacturers Association (SIHMA)				
Apparel Export Promotion Council (AEPC)				
Tirupur Export Knit Printers Association (TEKPA)				
Trade Union				
Tirupur Dyers Association				

As mentioned already, in terms of ownership, the firms in Tirupur are mostly partnership or proprietorship. The percentage of CMT units is largest and followed by Knitting Units, Dyeing and Bleaching, fabric Printing, Other Ancillary Units, Compacting and Calendaring, Embroidery etc. Following historical patterns of growth of individual firms from informal to formal and from small formal firms to midsize ones and then larger firm, it become evident that different sizes of firm coexist together which are associated with different value chains. So this traditional pattern of development from informal to formal and small to large size is absent in general and instead we observe both small informal and large establishments engaging in job-work for knitting, dyeing, compacting, printing and other processing jobs.

4.2 Overview of Industry, Market and Organizational Structure

The typical value chain of textile and garment industry is presented in the chart below (Chart 3) where firms get involved with different stages of production of garment.

Chart 3: Value chain of Textiles and Garments industry

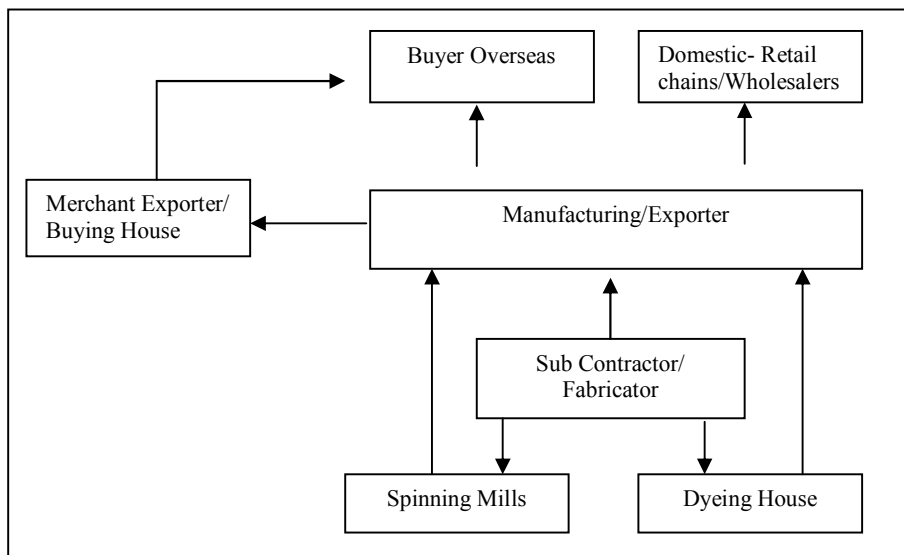


Source: Adopted from the report Enhancing Competitiveness of Indian Manufacturing Industry: Assistance in Policy Making by CRISIL for NMCC, GOI

The evidence from the sample firms shows that in Tirupur the firms are mostly involved with stages from II to V. But out of 6250 units 2500 units are involved in stage IV of readymade garment manufacturing. The coexistence of composite units which involves all the stages of production and ancillary units to support through job work, Tirupur cluster gives a very good example of a self-operating system.

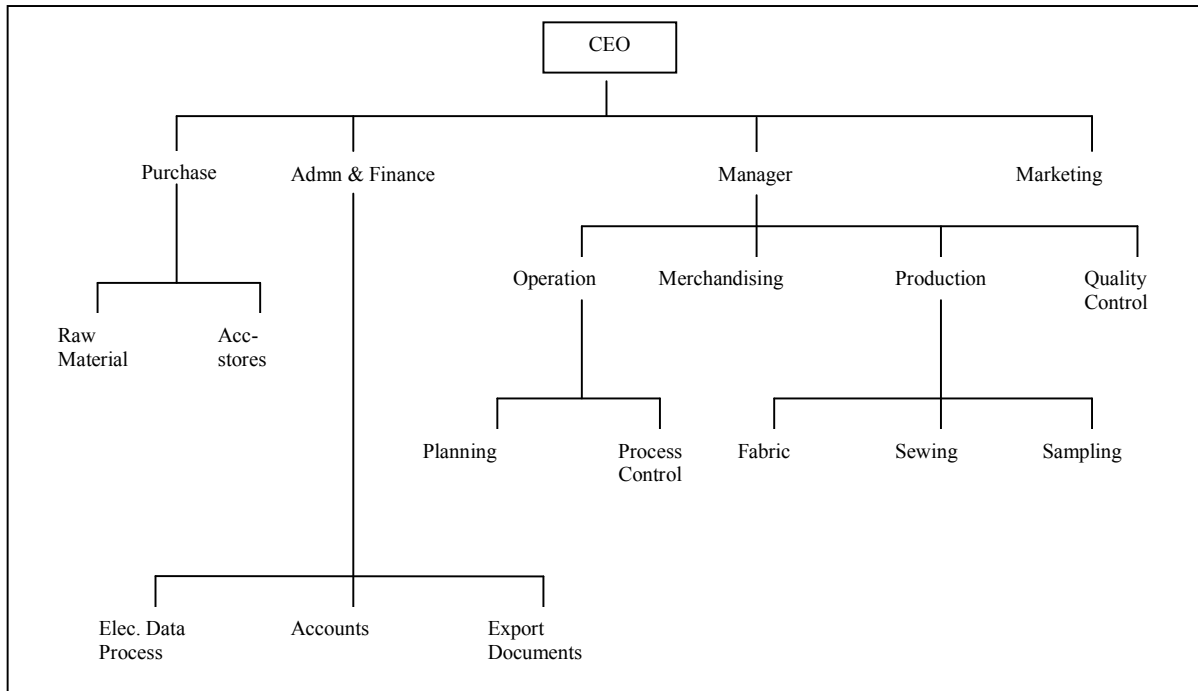
The market topography faced by the Tirupur manufacturer (mainly CMT units) involves, the supply linkages with spinning mills and dyeing units, where the subcontractors plays an important role by providing a two way linkages. The manufacturers are linked with domestic buying houses or merchant exporters who bring contracts on behalf of manufactures. The composite units also have direct linkage with overseas buyers for their exports or domestic retailers or wholesalers.

Chart 4: Market Topography for Manufactures



With cluster linkages getting more complex and addition of new commercial service providers in the process of garment manufacturing, the units/firms are gradually becoming more organized in executing the works. The typical organizational chart for a unit/firm is shown below for Tirupur knitted garment manufacturers.

Chart 5: Organizational Structure of a Firm



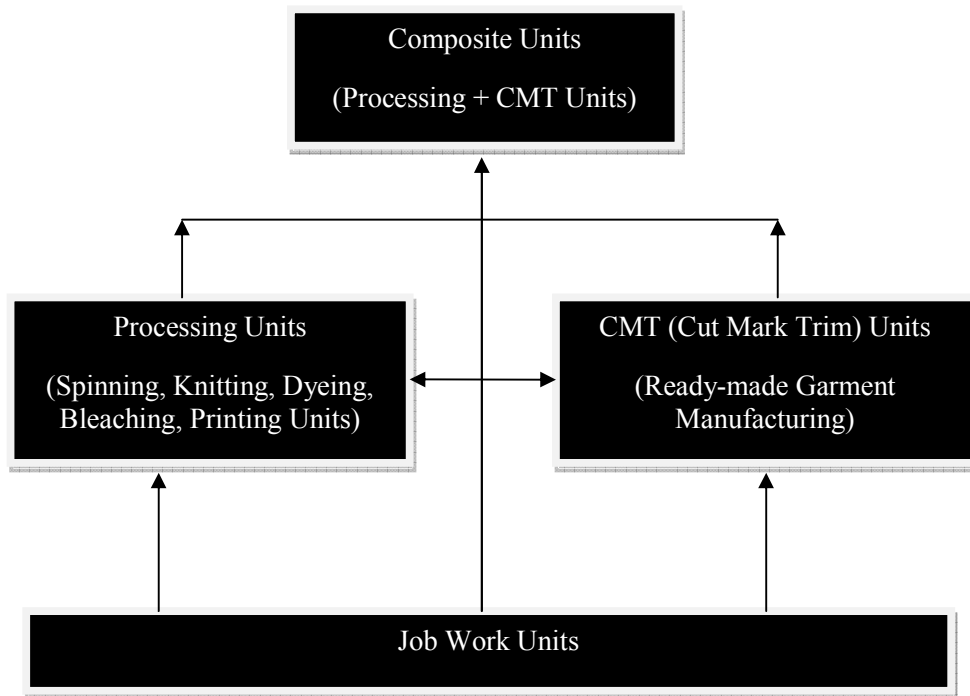
4.3 Firm Level Evidence

4.3.1 Evolution Firms in Tirupur

As we have already mentioned that, it is difficult to identify specific pattern of firms growth but tracing down the historical patterns of growth of individual firms in Tirupur from the primary survey, the study tries to identify four major pattern of development for firms. The first set of firms like firms TR-1, TR-3 and TR-6 which have initiated their operation as job work units and with gradual investment in machinery and permanent factory set-up, they have moved up the ladder as CMT (Cutting-Marking-Trimming) units. Going back to the chart-3, we can observe that these are the firms which are operating mainly in the stage-IV of the textile value chain. These CMT units or the readymade garment manufactures contract out activities of knitting, dyeing, printing and sequencing etc to the processing units. The processing units are those which are involved with stage I, II and III of the textile value chain. Their main activities (Chart-3) start with converting spun yarn/filament yarn to grey fabric and then to processed fabric which involves spinning, knitting, bleaching, dyeing and printing. These were the second set of firms which developed in the region to support the whole value chain. There are units which are

undertaking all these process under the same factory set-up but there are other small job-work units which involved with only one or two activities.

Chart 6: Evolution Firms in Tirupur



The third set of units (firms like TR-4 and TR-5) are those which have remained as CMT units but to streamline their backward linkages with the raw material suppliers and process of knitting, dyeing, printing etc, have developed a close collaboration with processing units. This collaboration can be of investing capital on partnership basis on the processing unit but keeping the processing activities outside the CMT set-up or the collaboration which have developed because of long term business relationship of subcontracting.

In the present globalized business scenario, the ability to handle small order, customized quantities are no more becoming a niche advantage for cluster like Tirupur. There is a need of initiation of strategies for moving up in the value chain to demonstrate economies of scale in production operation to improve its international market share both in volume and value terms. And also to improve its unit value realization through making value added apparels. This has induced the fourth set of units to go for vertical integration with combining both processing and

CMT together to meet the export market requirement both in terms of volume and international standard. With the removal of quota regime and multi fiber agreement (MFA), firms like TR-2, TR-7 and TR-8 had made investment to internalize the whole process of garment manufacturing into one factory set-up to meet international standard and compliance regulations.

4.3.2 Standard of Textile Technology in Tirupur

Tirupur has crossed the landmark figure of Rs. 10000 crores (2006-07, chart-2) in exports and has been growing continuously at an average of 12% per annum². This global integration calls for close look at the advantage of producing and adding value to the products manufactured in India. The competitive advantage can be built only through improvement of productivity, quality enrichment and economy of production. It is in this context that the market for latest modern machinery and technology is also viewed as very promising.

The 80% of India's knitted garment exports comes out of the units located in Tirupur and over the years Tirupur has been able to update its manufacturer with the latest technology available in the international market. On the question of standard of in-house technology, all the firms interviewed emphasized on the fact that, in any stage of the production they are not lagged to their competitor countries in recent available technologies. This was evident from the fact that in all the interviewed firms the share of imported machines in total installed machines is 100 %, and the main sources are Japan, China, Taiwan and Hong-Kong. In majority of the CMT units the fixed investment made mainly in installation of new stitching and cutting machines which have more than doubled their capacity. The most visible changes in terms of technological development has occurred mainly in sectors like dyeing, processing and printing and industry association and government agencies like textile committee has provided significant contribution³. On an average the man to machine ratio in an apparel firm is 2:1 and across all the interviewed firms 35% to 25% of the workforce do not need machines to work and the activities involve checking and packaging. In a CMT unit the proportion of man to machine ratio is 1:1 for stitching and for cutting it is 3:1.

²Barring the last crisis year

³ Details of role of industry and government associations in later section

The energy costs in textile washing, bleaching, dyeing, printing and finishing, which already compose up to 10% of the total costs, is the future challenge for the garment manufacturers. The firms are reacting with new machines and process controls to save energy. With more than 75% of Tirupur exports going to USA and EU, firms are concern that the new REACH law for dyeing works and equipment in Europe- an EU draft law for reforming chemical policy in the area of registration, evaluation and authorization of chemicals- will result in substantial changes in dye formulas and process engineering and thus need more exposure to internationally available technologies to remain competitive in the market.

4.3.3 Labour force utilization in Tirupur knitting industry

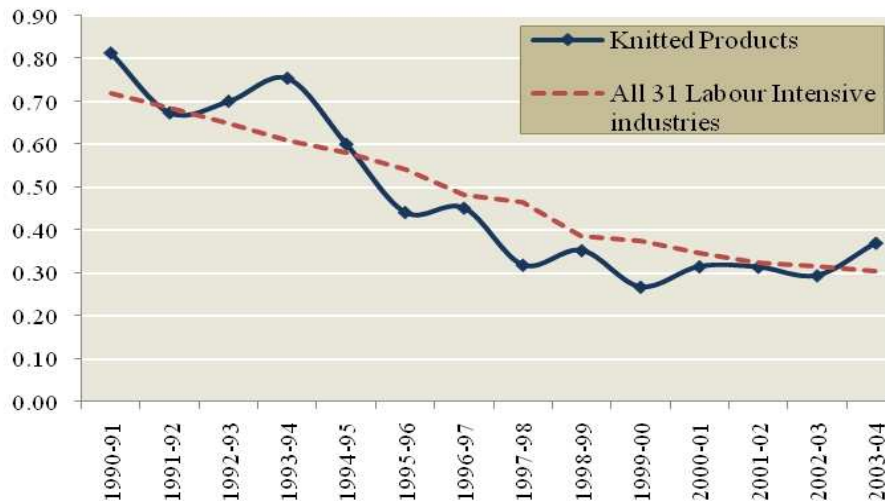
According to the firm sources, Tirupur knitting industry employs more than 3.5 lakhs of people which include both local as well as migrated labour force from the nearby districts and states. The labour force available for the firms in and around Tirupur is of agricultural base and as such the level of skills have always been a problem for the manufacturers. But even in the absence of formal training in and within firms, the average time spent required for an agricultural labour to absorb in the production process is three weeks. There two system of payment in Tirupur and according to trade union representative, 30 % of the workforce are under piece rate and rest work under shift basis. Most of the manufacturers work with contractor for their contract labour and almost 40 % of the workforce is under contract basis. The average number of shifts across almost all units is one and half. Though Textile and clothing sector is considered as very labour intensive and of low skilled level but introduction of new technologies in different value chain activities like dyeing, processing, printing etc, the skill requirement has increased.

Looking at the change of labour intensity in Indian organized manufacturing, Das et.al (2009) identified 31 industries as the labour intensive industries during 1990-91 to 2003-04. Out of these 31 labour intensive industries, the manufacturing of knitted products (1730⁴) ranked 8th in terms of labour intensity during 1990-91 to 2003-04. The chart-7 shows the yearly change in labour intensity of the knitted product section of Indian manufacturing along with the average labour intensity of all the labour intensive industries. The manufacturing of knitted products has

⁴ NIC98 classification

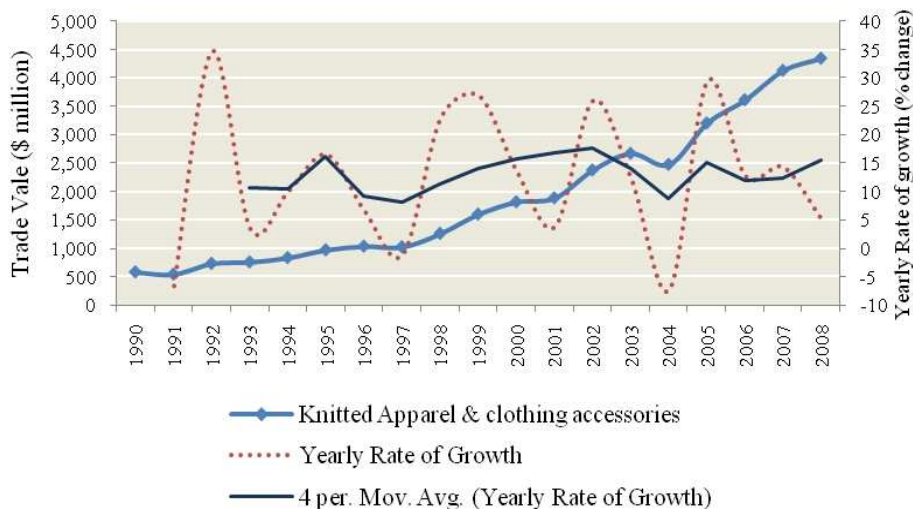
experienced a continuous decline in labour intensity till 1990-00 but after that it has shown slight improvement till 2003-04. This trend can be expected because, after 1997-98, India's exports of knitted apparel and clothing accessories to the world has experienced a jump (chart-8, 4 year moving average trade growth) which had led to more absorption of labour into the industry.

Chart 7: Yearly change in Labour Intensity



Source: Das et.al (2009)

Chart 8: India's export of knitted apparel to the world



Source: COMTRADE

But the data on working factories and employment collected from the office of the Deputy Inspector of Factories, Tirupur, which records data on all registered factories, shows gross

underestimation. As Chari (2000) puts it, very few knitwear factories register due to potential problems in terms of compliance with labour laws.

Table 5: Working factories and employment in the private sector, Tirupur Division

NIC-2003	Industry	2007		2008	
		No of Factories	No of Workers	No of Factories	No of Workers
01405	Cotton ginning	7	82	6	54
15142	Manufacture of vegetable oils and fats	3	23	0	0
15203	Manufacture of butter, cream, ghee	1	19	1	16
15204	Manufacture of pasteurized milk	1	23	0	0
15312	Rice milling	0	0	1	12
15321	Manufacture of starch	0	0	1	6
17111	Preparation and spinning of cotton fiber	21	2130	16	2005
17121	Finishing of cotton and blended cotton textiles	277	8164	260	7873
17236	Manufacture of tapes and wicks	2	18	0	0
17301	Manufacture of knitted and crocheted cotton textile products	1304	49753	877	49789
21029	Manufacture of other containers and boxes of paper	7	70	3	44
22190	Other publishing	3	15	1	42
25207	Manufacture of tableware, kitchenware and other household articles	2	33	0	0
50200	Maintenance and repair of motor vehicles	4	63	2	78
50404	Maintenance and repair of motor cycles	1	8	0	0
	Total	1633	60401	1168	59919
	Share of Manufacture of knitted and crocheted cotton textile products	79.9	82.4	75.1	83.1

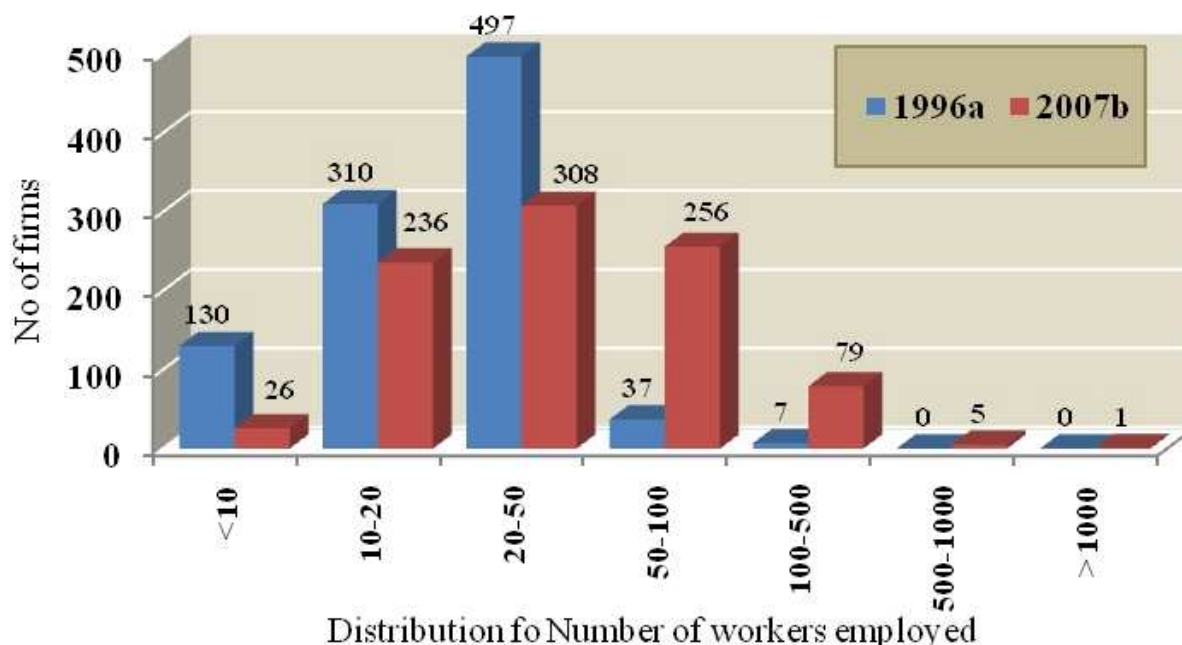
Source: Office of the Deputy Inspector of Factories, Tirupur

These data show knitwear accounts for more than 75% of the working factories identified and more than 80% of the employment (in 2008). But when we compare the absolute numbers with the estimate provided by the Tirupur Exporters Associations (TEA), there is a huge underestimation both in terms of factory setup⁵ and also in number of people employed in knitwear industry. Now looking at the distribution of knitwear factories by number of workers employed from the data collected from Deputy Inspector of Factories in the survey and comparing with Chari (2000), we can observe that distribution has shifted to medium and large

⁵ Refer Table-2

manufacturing units during 1996 to 2007 as oppose to a shift to smaller units⁶ during 1986 to 1996 (Chart 9).

Chart 9: Change in size distribution of knitwear factories



Source: ^aChari (2000), ^bOffice of the Deputy Inspector of Factories, Tirupur

The distribution of factories by number of workers shows that over the last one decade, skewness of the firm concentration in small and medium size of employment has normalized. Though the average has remained same and maximum numbers of firms have employment in the range 20 to 50, the share of 59 % of knitwear firms falls in the range 10-50 and share of 62% of knitwear firms falls in the range of 20-100. This shift of distribution towards medium and large firms⁷ explains the significance of economies of scale of production to remain competitive in the export market. The firms have highlighted that over years there has been tremendous increase in their capacity with installment of new and advance machines both in the processing and CMT units but the average capacity utilization of capacity in the factories have gone down to 50 to 60 %.

The main reason for under utilization of capacities or existence of excess capacity is the lack of demand. But it is also related to lack of skilled man-power in the reason. The survey firms emphasized that there is a huge scarcity of production workers in Tirupur and mainly skilled

⁶ As compared by Chari (2000)

⁷ In terms of employment

workers. With emergence of number of managerial and textile oriented institutions, there is no scarcity of managerial labour-force and supervisors in the region but the major scarcity is for categories like master tailors and cutters and sometime for helpers. As firm TR-3 pointed out, lot more new investment is coming into Tirupur of the scale of 1000 machines, which is leading to this scarcity. There are other businesses which are mushrooming in the area. The production workers are mainly the agricultural labour and during off season they work with the apparel industry but with new public expenditures coming into states, like NREGA⁸, they have now alternate job opportunities to stay in the villages. Also, the standard of living is very high in Tirupur and workers have to spend more than 25% of their monthly income on rent to remain in and around the city for the job, explained by the Trade Union office at Tirupur. The existing three categories of production workers are:

Table 6: The Categories of Production workers

Categories	Activities	Shift ⁹ rate (Rs)
First Categories	Cutting, Stitching, Ironing, Packing	175
Second categories	Checking	115
Third categories	Helper	102

Source: Trade Union office, Tirupur

The very specific feature of the industrial workforce in Southern states of India is the very high percentage of female workers. This is more prominent in the state of Tamilnadu and the average ratio of male to female in Tirupur knitting industry is 50%. If we take the example of firm TR-7 which is large firm with 1500 workers, the distribution of male to female workers in CMT activities are as follows:

Table 7: Distribution of male to female workers in CMT activities

Activities	Male: Female
Power Table	Flat Lock-50% male Inter Lock-50% female
Stitching machines	90% male
Cutting	100% male
Checking	100% female
Ironing	100% male
Packaging	50% male 50% female

Source: Survey Questionnaire

⁸ National Rural Employment Guarantee Act (NREGA)

⁹ One shift is of 8 hours

4.3.4 Source of Finance in knitting firms

In looking at the source of finance for Tirupur knitting firms for their new investment (new land, building, machinery & equipment etc) and working capital (inventories, accounts receivable and cash etc) both bank credit and internal retain earnings play important role. On an average, as stated by surveyed firms, in case of new investment 60 to 70% of fund sources are family funds or retain earnings and rest is bank credit. In case of working capital 60 to 70% funds are raised from banks. Another aspect of finance in terms of its accessibility has not been a major issue for the operation and growth of firm's business. This can be trace back to the age old social network based lending which is a pervasive phenomenon in most of the developing world. Though Tirupur knitting industry is comprised of majorly unorganized factory set-up, but they are self organized into their own community based network.

As Banerjee & Munshi (2000) put it, social networks play an important role in facilitating economic activity when markets function imperfectly, particularly in the developing world. It is usually argued that this is because long-term relationships, the possibility of social sanctions and the smooth flow of information within the network make possible transactions that would not otherwise happen. They show that under reasonable conditions social network capital generates rather specific pattern of migration and investment. In particular, migrants to locations where they do not have access to their community's lending networks will tend to have higher ability than the traditional residents of that location, but will invest less relative to their ability. Comparing the growth rate of output (which, they argue, proxies well for ability) with investment between garment firms owned by migrants to Tirupur and local people, they find that local people have slower output growth but invest substantially more at all levels of experience. They also find a positive correlation between investment and growth within any single community. This community based network helps in generating both formal and informal credit.

Until the late 1980s Tirupur was dominated by Gounders, who are traditionally agriculturalist from the area. However, in the last decade a number of people from all over the rest of India have entered the Tirupur industry, attracted by its success as an export centre. Chari (2000) has also highlighted the importance of Gounder community network in terms of source of and access to finance in Tirupur industrial development.

According to Banerjee & Munshi (2000):

“.....The data shows that Gounders start their business with substantially more capital than the Outsiders, and use substantially more capital per unit of production at every level of experience, consistent with the view that they have better access to capital. We also find that output trajectories are steeper for Outsiders than for the Gounders. Starting with lower output levels, the Outsiders ultimately surpass the Gounders after about five years of export experience, yet they continue to maintain lower levels of capital stock. The fact that output grows faster for Outsiders than for Gounders despite the fact that they invest less, we take as evidence that Outsiders have higher ability: thus is certainly what our theory predicts. Thus Outsiders with higher ability invest less than the insider, which suggests in turn that there are substantial distortions in this industry....”

Though the current study does not intend to substantiate this theory of access and use of capital in Tirupur knitting industry, due to lack of two sets of sample firms as insider and outsider, but would like to highlight the case of firm TR-5, which was the single Outsider (in the words of Banerjee & Munshi for garment firms owned by migrants to Tirupur) in the sample. What is particular about the firm in the sample is the source of financing their investments. The owner was a Charter Accountant, who came to Tirupur from Mumbai in 1987. From 1987 to 1989, he involved himself as sourcing person, sourcing garments from different companies for export. In 1989, he started a sampling unit and in 1991, he started a knitting unit for job work. Over the years the firm has developed close associations with Processing Unit and invested capital on partnership basis in that unit. They also have 10 years of very close relationship with their customer and have not had any issue. On the source of finance, the firm has operated over the years on the principle that, almost 95% of the source of investment should come from its internal retained earnings. This has been to keep the leverage ratio as low as possible to meet the unforeseen risk of export market fluctuations in terms of exchange rate and demand fall. The firm has experienced 30% growth in its export in the last five years. The reasons cited by the owner of this firm for internalizing the source of its investment capital, though are not because of any distortion in the credit market, but looking at its growth pattern and source of finance, we also can not dismiss Banerjee & Munshi's hypothesis.

4.3.5 Role of Associations in firms' growth

There are number of local representative institutions and support bodies¹⁰, as well as initiatives on the part of the State, that have had an important impact on the development of the knitwear sector in Tirupur. In terms of more targeted institutional support to the local knitwear industry, a few organizations stand out: the Textiles Committee under the Ministry of Textiles, Apparel Export Promotion Council (AEPC); the South Indian Hosiery Manufacturers' Association (SIHMA), more dynamic, Tirupur Exporters Association (TEA) that represents the city's knitwear exporters; and Knit Cloth Manufacturer's Association (KNITMA), Tirupur Dyers Association and Tirupur Export Knit Printers Association (UNIDO,2005).

The exporters' association, Tirupur Exporters Association (TEA), has definitely aided the cluster's growth. In addition to organizing international trade fairs in Tirupur, it collaborates with the National Institute of Fashion Technology (NIFT), to establish a fashion and training institute in Tirupur. It has embarked upon an ambitious plan to improve the urban infrastructure of Tirupur, in collaboration with a state government agency and a global private firm. This would mean the privatization of domestic water supply to Tirupur, the first of its kind in the country. TEA's lobbying has led to the establishment of an inland container depot in Tirupur (Vijayabaskar, 2005). Some of the major initiatives undertaken by TEA for industrial development, marketing and promotion:

- Tirupur Exporters' Knitwear Industrial Complex (TEKIC): TEKIC is a most modern industrial complex, sprawling in a 100 acres site consisting of 189 industrial sheds exclusively for manufacture of knitwear for exporters
- New Tirupur Area Development Corporation Limited (NTADCL): A Public limited company promoted by TEA jointly with the Government of Tamilnadu, Government of India and Infrastructure Leasing and Financial Services Limited (IL&FS) to supply water from Cauvery River.
- Netaji Apparel Park: The first apparel park set up under Apparel Park for Export (APE) scheme in India. The park has 53 knitwear export Unit and contributes Rs. 1500/- crores per

¹⁰ See Table 3 for the list of associations

annum for knitwear export turnover of Tirupur. It provides direct employment to more than 15000/- persons.

- India Knit Fair: To promote exports and help the buyers in selecting their requirements of the Knitwear and suppliers, TEA is holding, jointly with AEPC, a knitwear fair since 1995 and promoted a society-India Knit Fair Association- to create permanent trade fair facilities in Tirupur

Textiles Committee, under the Ministry of Textiles, as corollary to its main objective of ensuring the quality of textiles and textiles machinery, has been entrusted with the functions to undertake, assist and encourage, scientific, technological and economic research, to establish standard specifications for textiles, textile machinery and the packing materials, to establish laboratories for the testing of textiles and textile machinery and to provide training in the techniques of quality control. The cluster development programme of Textile Committee is initiating various capacity building activities through Industry Associations for the SME Industry to retain its cost, differential & niche advantage factors. Through proper networking with private & public business development service providers, common facility centers are also being established in SME associations for their members to face the challenges in terms of cost competitiveness, consolidation of capacities, and compliance to various international requirements.

Development of ancillarisation & reduction of idle capacities in Tirupur cluster are the two main objectives of the “subcontracting exchange”-one such common facility centre established in Tirupur Industrial Federation. For reduction of idle capacities through the fair distribution of orders, a database of buyers and sellers of products/services are created and maintained through a portal by the textile committee.

South India Hosiery Manufactures Association (SIHMA) is one of the oldest associations established in 1951 with 60 export members and 1200 domestic members assisting them to get financial assistance from the banks and financial institutions. On the procedural front, assistance is also provided in getting the registration certificate of small-scale industry, RBI Code, exports import license issued. SIHMA also offers various human resource development training programmes in areas like women entrepreneurship training through Small Industries Service

Institute (SISI), Computer Aided Design (CAD) course for exporters, skill up-gradation courses for merchandisers in pattern making, quality control and facilitating ISO certification etc.

Initially, Apparel Export Promotion Council (AEPC) was to act as both in a regulatory as well as a promotional role in the local knitwear industry. Before the removal of quotas and Multi Fiber Agreement, in Tirupur as Cawthorne (1990) had put it, AEPC had a dual role: to administer the export of garments via the management of a quota system (which regulates the amounts that individual producers can export) and to deal with the implications of bilateral trade agreements in force with importing countries and secondly to promote the export of Indian garments. But after the quota removal, their role has got redefined. Currently, AEPC is involved with three main activities, firstly issuing of certificate of origin and import certificate, secondly developing man power in the region through initiative like Apparel Training and Design Centre and Institute of Apparel Management and thirdly coordinate overseas and domestic fair with the help of Tirupur Exporters Association (TEA).

As with other export clusters it is apparent that local institutions, especially representative trade bodies, have played an important part in channeling relevant market, technical and trade information and know-how to local producers. In Tirupur this has involved the arranging of trade fairs and the organization of trade delegations to seek out new markets. Increasingly, it would appear that such institutions will have an even greater role in raising quality standards, improving local technologies and enhancing the cluster's design capabilities (UNIDO, 1995).

4.3.6 The Problem in Operation and Growth of Business

The discussion with the survey firms and industry association has brought out numbers of bottlenecks currently existing in Tirupur knitwear industry which need serious attention to remain competitive in the market.

The firstly the most important bottleneck which firms are facing is the shortage of power supply. All the interviewed firm highlighted the fact that every medium and large firm are operating under the 50% power shortage which they are meeting through diesel operated generator. To give an example, firm TR-4, which is employing more than 300 workers with a turnover of Rs.

11 crores, needs on an average 16000 units of power but state electricity board, is providing only 8000 unit and rest is being met by generator.

One of the most significant challenges for the Tirupur textile industry today is water. Textile production, particularly dyeing and bleaching, can be water intensive and can generate large quantities of effluent. Tirupur is in a dry, water-scarce region, and the rapid expansion of the textile industry has taken place in an unplanned manner, with no associated development of supporting infrastructure or institutional capacity. As a result, the growth has led to the depletion of groundwater reserves and a serious deterioration in environmental quality of both surface and ground water.

The growth in the industry demands specialized training institutes to provide advanced skills. Currently, though there are institutions in the nearby areas like Coimbatore, the need for establishment of skill development institutions with requisite exposure on IT advancements. As cited by most of the firm, the access to land is very serious problem for the new investment to come into the industry. It has also culminated as very high standard of living in the Tirupur area and created shortage of labour migration to the city out off agriculture to work in the knitting industry. The other issues of concern are under utilization of machinery resources, concentration of seasonable products, and concentration on low end products, poor internal road conditions and more dependency on foreign design/designers etc. There is need of proactive action in terms of access to market information and emerging market trends and product innovations and diversification.

5. Conclusion

This study was to understand a comprehensive account of the Tirupur Knitwear industry to bring out its major patterns of growth and chief characteristics. The study tried to inquiry into the causes of the specific size composition of firms and relates it to the historical and institutional characteristics of the development of industry in this region of Tamilnadu.

As Vijayabaskar (2005) puts it and evident from the historical perspective of Tirupur's development and growth as the "Dollar City" of India, Tirupur's foray into the world market is

much less an outcome of any strategic government intervention as compared to other clusters in India. Its entry was facilitated by its growth as a major producer of knitwear for the domestic market, which in turn owes to its nearness to cotton growing regions and easy access to raw materials, relatively low wage costs and a specialization in cotton garments. The lower wage costs prevailing in the region is also partly due to its location in a semi-arid region with little prospects for agricultural employment. Another important but accidental outcome that has stood Tirupur in good stead has been the reservation of garment production in the small-scale sector by the government. This has led to the proliferation of a dense layer of subcontracting networks to remain 'small' which in turn facilitates the cluster to derive scale and scope economies.

During 1980s when the dominance of Tirupur as supplier of vests and briefs to the domestic market declined with the growth of hosiery industry in many pockets in Northern India, the demand for T-shirts in the international markets was picked up and hence the scope for exports widened. Developed countries were shrinking their garment making capacities for various reasons and commenced sourcing garments from developing countries that could make and supply garments at comparatively cheap prices due to a number of inherent advantages that they were having in raw material, labour cost and so on. The second generation entrepreneurs who had inherited the management of hosiery factories were ambitious, gauged the potentials of export markets efficiently and boldly ventured into international business. Thus, the important growth factors of this cluster have been pro-active marketing, adaptation to latest technology and inter firm production arrangements. However, the major issues that concerns this industry for the sustainability of growth in the future relates to constant supply of human capital both skilled and unskilled, infrastructure and organization matters together with the challenges faced by the volatile export market.

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