Chapter 4

Role of Inter-firm Networks in Flexible Accumulation

Of the many factors that ensure efficiency in production for a flexible product market, the role of inter-firm networks is critical. Apart from such efficiency considerations, the quality of inter-firm relations has a serious bearing upon the pattern of accumulation and the distribution of its benefits among different types of capital in the cluster. In this chapter, we analyse the characteristics of inter-firm networks and their role in the capital accumulation process in the cotton knitwear cluster in Tiruppur. The extent of embedding of these networks within the local social milieu and the impact of this milieu upon the dynamic of network formation are then examined. Finally, we relate our empirical findings on the inter-firm relations in Tiruppur to networks said to characterise the model industrial district, where power sharing among various agents of the cluster is relatively equitable.

Before we undertake an examination of inter-firm relations within the production system, it is imperative we understand the role of traders and their relationship with producers within the cluster. Just as inter-firm relations within the formation are important, equally crucial is the mode of articulation of trading capital with manufacturing capital in the cluster. The role of traders in the organisation of production has been viewed differently in different strands of literature. In Marxist works, the role of traders or merchant capital is viewed as exploitative, and they are seen as exerting great control over the manufacturers through provision of credit and access to markets. As a consequence of their monopsonic power, they force the manufacturers to part with a substantial portion of the surplus value extracted from labour. Further, given their lack of expertise in production processes, they seldom facilitate introduction of innovations in
manufacturing. Rather, their intervention force manufacturers to intensify work processes to increase extraction of absolute surplus value. Though their role in realisation of surplus value through marketing and selling is acknowledged, their role as providers of vital information about distant markets and technological changes to the producers is generally neglected. The commodity chain literature, with its distinction between buyer-driven and producer-driven commodity chains too partly reflects this perception. While producer-driven commodity chains are seen as ones that promote innovations in the realm of production, buyer-driven chains are hypothesised to be oriented more towards innovations in marketing and design, to the neglect of the sphere of production, as traders are seldom capable of innovating in this realm.

The role of the trader in inter-firm networking is ignored in most analyses of industrial districts, with the exception of Knorringa (1996), Nadvi (1994), and Weijland (1994) who point to the trader’s critical role in influencing the path of the cluster. These studies also highlight the importance of the embeddedness of trader-producer relations in a social milieu that may or may not be conducive to a mutually beneficial interaction. The context of the present study further enhances the importance of this dimension. To manufacturers in a peripheral cluster, catering to a global market, access to market information and the ability to sell in such markets are crucial. Operating in a quota regime in most of its markets, it is essential for Tiruppur exporters to increase the value realised per garment to enhance their revenue, as the option of selling more of the same output is denied to them. Traders, thus, have a significant role to play in this regard. We address this crucial dimension of networking in the following section.

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1 "That the producer-capitalist is more progressive than the merchant was one of Marx’s conjectures made in the context of early industrialisation. Later scholarship on industrialisation and in Europe and Japan showed this conjecture to be irrelevant." (Roy 1999, 3360-61). However, such a reading of Marx is countered by David Harvey who argues that Marx was aware of the complementary role played by merchant capital in the realisation of surplus. “The merchant assumes all of the costs and responsibility for marketing in return for a slice of the surplus value produced. The advantage of all this to capitalist producers is, of course, a shortening of the turnover time, and economies in the costs of circulation (through economies of scale, specialization of function, etc. (1982, 71). Further, he adds, “On the one hand, the relationship is parasitic in the sense that the merchant creates no value but merely appropriates it. On the other hand, merchants’ capital can expand the surplus value realized by the producer through accelerating the turnover of capital and reducing the necessary costs of circulation” pp. (71-72). Thus, merchant capital plays two roles: one, an exploitative one and the other, a vital function in capital expansion. The extent of either of these effects is obviously context specific, conditioned by sector or region-specific factors.
A. Producer-Trader Networks

Lack of direct access to markets, its seasonality and flexible characteristics force exporters in Tiruppur to rely heavily on intermediate traders to sustain their production with a degree of stability. Prominent buyers who source garments from several countries, as discussed in Chapter 2, control these markets. Though garments are sold in supermarkets, departmental and chain stores in Europe and the USA, there are a range of agents who mediate between these outlets and the distant manufacturers (Gereffi 1994a, 217). Consequently, apart from production networks, direct exporters need to transact with traders who provide them with production orders for the export market. The nature of various types of networks in the Tiruppur knitwear formation is discussed below.

a) Importer-Direct Exporter Networks

Through the provision of orders for manufacturing garments, traders, to an extent, insulate the producers from market vagaries, since the producers get the required information on fashion trends through the orders given. This relationship can be best termed as ‘commercial contracting’ where trading agents commission producers to make available products with clear specifications.3

The first step for a successful exporter is to identify a reliable buyer and then to earn his/her trust. Information about the reliability of buyers is incomplete though of vital importance to the exporters. In most cases, especially in the initial phases, the exporters are paid only after the goods reach the importing countries. This lag between production and payment for the same vests this transaction with a high degree of risk and moral hazard as traders are in a position to gain through opportunistic behaviour.4 This is especially true when traders do have the option of shifting to other producers. In fact, 50 per cent of the well established direct exporters studied confirm such experiences in the past from importing agents. Hence, identifying reliable buyers becomes very important.

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2 In fact, according to key informants, the first major export orders for Tiruppur came from an Italian agent called Verona in the early 1980s, who further stayed on in Tiruppur to initiate the local manufacturers into the intricacies of production for the world market.

3 Watanabe distinguishes between two types of subcontracting; one, where the parent firm that offers the contract is a wholesaler or a retailer, which he terms as ‘commercial subcontracting’ and industrial subcontracting where the parent firm is a manufacturer. (1971, 54).

4 Moral hazards in contracts arise when information on the future behaviour of one agent is costly to acquire and costs of opportunistic behaviour by this agent is high for the other agent.
While there are published lists of buyers that contain names of bigger agents, the reliability of smaller, lesser-known ones are difficult to ascertain.

Another aspect of the knitwear market that necessitates a collaborative relationship with the traders arises from a lack of information on changes in future yarn prices. Export of cotton yarn has been liberalised since the early 1990s (Ramamurthy 2000, 564). The prices of yarn are thus subject to fluctuations in prices in the world market, since the last decade. Yarn prices constitute the bulk of production costs and the output prices are negotiated with traders based on the then prevailing prices of yarn. If the yarn prices increase after the contract and before purchase of yarn for production, the manufacturers may not be able to pass on the increased costs to the buyers. In fact, during the initial phase of field work in 1996, many firms suffered losses as yarn prices increased by as much as 33 per cent within a span of two months, forcing closure of quite a few firms (Periavar, interview by the author in Tiruppur, March 1995; Titoni Muthusamy interview, interviews with study firm respondents). This is yet another factor where collaboration backed by trust and understanding with the buyers is crucial to the exporters. The following table (No. 4.1) gives the number of traders that each direct exporter among the study firms transacts with.

Table 4.1
Quantitative Dimension of Buyer-Exporter Networks among Study Firms

<table>
<thead>
<tr>
<th>Number of Buyers</th>
<th>Number of Direct Exporter Study Firms</th>
<th>Turnover range (in Rs. Crores)</th>
<th>Average age of firms (years)</th>
</tr>
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<tbody>
<tr>
<td>1-2</td>
<td>10</td>
<td>1-3</td>
<td>4.5</td>
</tr>
<tr>
<td>3-5</td>
<td>7</td>
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<tr>
<td>&gt;10</td>
<td>6</td>
<td>&gt;15</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Fieldwork undertaken in 1995-96.

5 Raw material costs account for 70 to 80 per cent of the total production cost of a garment (information from study firms).

6 All the respondents felt a strong need for government intervention in this regard to stabilise yarn prices or at least provide ex-ante information on the extent of price rise in the next six months or so.

7 We have omitted one direct export firm that has a turnover of Rs. 25 crores, but only one buyer. This case will be discussed later.
The table points to many variations in the number of buyers that each firm negotiates with. Some established big exporters transact with as many as 50 buyers simultaneously, while one of them caters exclusively to a single buyer from Switzerland. Others, the smaller firms, restrict themselves to around 5 or even less number of buyers for any one season. By and large, we also observe from Table 4.1, a positive correspondence between the number of buyers and the firm size, expressed in terms of turnover. The relatively younger firms, who have moved into direct exports only of late have access to just one or two buyers. In fact, among the study firms, two firms that have moved into direct exports only in the last two years also functioned as part sub-contractors and undertook job orders from other direct exporters. Such firms, which constitute a substantial proportion of direct exporters, have fewer buyers not out of choice, but due to lack of access.

Though most firms cite problems with certain buyers resulting in losses and search for newer buyers at some point of time, all the well-established direct exporters have a regular set of buyers which accounts for 80 per cent of the orders received and with whom they conduct repeated transactions. They procure orders from these sets of buyers every year on a regular basis in addition to the chance orders that fluctuate from year to year. The bigger exporters also undertake regular trips abroad to contact new buyers and procure new orders. Given their diversified range of buyers, they can afford to risk transacting with new buyers. Even if it means failure, they can still sustain their business unlike the new exporters or the sub-contractors trying to enter into direct exports. Further, with more knowledge of trading networks, they are in a better position to access information on the reliability of trading agents.

To enhance the intensity of networking beyond mere 'commercial contracting', repetitive transactions over a period of time is essential. The newer exporters, though, do not have the experience to build a stable and trustworthy relationship with traders. Even otherwise, at times, it becomes difficult. As one sub-contractor who had undertaken direct exports earlier, but reverted back to sub-contracting remarked, “The first time, they give you an order, they pay you the entire amount even before delivery. Next time, they pay 50 per cent. On the third occasion, they say that they have a liquidity problem and delay it by a month. And then the next time, they disappear without a trace” (Owner KK, interview by

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8 Commercial contracting refers to the contracting out of production by merchants. Here, parent firms are not involved in production.
the author in Tiruppur, 11/12/1995). Though most direct exporters studied do not cite such frequent experiences, they concede that rejection of goods and lack of payment, citing minor faults, are common. On the other hand, informants cite many cases when direct exporter firms have suffered losses on account of this and were forced to close down. An oft-cited case is that of a pioneer direct exporter, City Knitting Co., which was forced to close down after the rejection of a major order. Since, the information on the reliability of the buyers are not revealed due to competition from peer manufacturers, even those that indulge in opportunistic behaviour remain unknown to others, unless the manufacturers are willing to share this important information.

The exporters send samples to the agents for approval after which, there is an element of bargaining before the order is approved. Here, bargaining is carried out between two agents with unequal power. The manufacturers in Tiruppur, to a large extent, are dependent on these buyers for an assured market for their products, and, in fact, undertake production only after the buyers approve the orders. On the other hand, though traders too prefer to transact with known producers who have an established reputation of commitment to the contract, they do have the option of shifting between producers, not only within Tiruppur, but also in other countries. Many respondents state that whenever the manufacturers negotiate for better prices, the traders cite lower prices offered by manufacturers from Bangladesh or China and would threaten to move to them with their orders. 9 This, in addition to competition from local manufacturers, forces them to bargain on unequal terms. 10 An oft-repeated complaint from the local exporters is the competition in recent years from non-local entrepreneurs who they claim to have no idea of the industry. According to them, these new exporters, due to the need to out-compete the established exporters to get a buyer quote, lower prices and end up finally making losses. 11 Since there are many such exporters, established exporters too are forced to cut down their prices to compete with such exporters.

9 This phenomenon is similar to that observed by Appelbaum and Gereffi in other regions as well (1994, 52). However, none of the respondents said that they have lost orders on account of citing higher prices. This suggests that direct exporters, at least till now, do enjoy a degree of profit level and settle for prices offered by the buyers.

10 The buyers normally negotiate with 4 or 5 exporters within Tiruppur for an order, the first time they source from Tiruppur. Once, the chosen exporter successfully completes this order, then, following orders normally are given to the same exporter after price haggling.

11 In fact, respondents from the small or new direct export firms confirm that they enter into certain contracts at break-even or even lesser prices with the hope that they would get better contracts in the future.
This intense price competition ensures that the final price is more to the advantage of the buyers, given their greater market power relative to the producers in Tiruppur. Nine of the direct exporters studied had suffered losses on account of price hike of yarn, as they could not pass it on to the buyers. Invariably, they are firms that have moved into direct exports of late and without long-term buyers. On the other hand, in 10 cases, all big direct exporters including three merchant exporters, respondents conceded that they could pass on most of the increase in costs to the selling price, as buyers would agree to take on the costs. However, these negotiations are possible only after a prolonged transactional relationship with the buyers after which buyers perceive an advantage of a long-term relationship with these producers.

Nevertheless, all but three exporter study firms agree upon a secular decline in profit margins, since the beginning of the export boom. All the direct exporters report a steep decline in the margins they enjoy. In the beginning of the export boom, margins of even 200 per cent were frequent, which led to rapid accumulation among the early exporters and a flow of capital from other sectors into the knitwear industry. The increase in the number of firms and the greater awareness about cost conditions among the buyers have led to a steady decline of margins which hover around 12 to 15 per cent at the time of fieldwork (except 20 per cent in one case). This decline, they attribute to rise in input costs, compounded by intense competition among firms in Tiruppur.

The squeezing of the producer’s margins does not appear to be accompanied by any erosion of the buyers’ margins. In fact, over a 10-year period, though the unit price per garment has increased in rupee terms, in dollar terms it has hardly increased (Manager AE, interview by the author in Tiruppur, 2/5/1996). While the average selling price per garment of the manufacturers from Tiruppur hovers around 2 US dollars, its final selling price in the markets of Europe and USA begins with a minimum of 10 dollars and goes up to 20 dollars (Owner ABE, interview by the author in Tiruppur, 10/4/1996). Thus, though the exporters report to get higher prices per garment at present as compared to the beginning of the export boom, it would appear that these higher prices, obtained in rupee terms, are more an outcome of the devaluation of the rupee against the dollar during this period. Though not supported by concrete data, it is safe to conjecture that the buyers’

12 Many old direct exporters suggest that while in the initial phases, they could be price setters, since 1990, the buyers have begun to set the output prices.
margins have remained steady on account of devaluation, despite offering moderate increases in purchase prices to the suppliers.\textsuperscript{13}\textsuperscript{14}

This discussion suggests that producers enjoy, at best, a rather loose relationship with buyers, confined mostly to provision of orders and product and process specifications and rarely, relaxation of terms of the contract. The buyers' role in upgradation of processes is however acknowledged by the older direct exporter study firms, as orders would be given to them only if certain types of machinery are used. Apart from such interactions, buyers, given their interaction with numerous producers across countries, seldom appear to enter into long-term relationships of trust and cooperation with the producers. Though further details of the extent of collaboration with the buyers will be discussed in a later chapter, here, we conclude by observing that apart from providing product information through the orders given, the interaction between the producers in Tiruppur cluster and the buyers is limited.

\textit{b) Merchant Exporter-Sub-contractor Networks}

Apart from the buyer-direct manufacturer exporters networks, a substantial section of sub-contractors undertake production on the basis of orders supplied by agents based in metropolitan cities like Delhi, Bombay or Chennai, in addition to merchant exporters who operate from offices set up in Tiruppur. This relationship too constitutes another channel of commercial contracting. Once again, little interaction with regard to product development or process improvements is observed. In fact, the relationship is tension-ridden, as the sub-contractors strive to bypass the merchant to negotiate with the buyer directly to ensure higher margins, by removing one level in the producer-trader-consumer chain. In the early phases, a few local manufacturers, including a study firm, moved into direct exports through this process. Such a movement is not open to all sub-contractors, as only few firms have the ability to enter into networks with global buyers. Further, of late, garment buyers are observed to minimise transaction costs by networking with as few exporters as possible, with trust playing a major role in determining the composition.

\textsuperscript{13} Six direct exporter study firms including two merchant exporters provide this information.

\textsuperscript{14} "The mark-up from manufacturer to retailer is typically 55 to 60 per cent, although large-lot sales to a single retailer (thirty thousand units or more) may reduce this margin to as low as 30 per cent or even less. Mark-ups vary considerably with the item and circumstances. Profits, which depend heavily on rapid turnover from manufacturer to retailer, also vary considerably; informants provided general estimates of 3 to 7 per cent" Gerrefi and Appelbaum 1994, 52-53.
Nevertheless, both respondents from study firms and key informants, state that exporters, including merchants, do not divulge details of their buyers for fear of competition.

As a result, the merchant exporters confine themselves to provision of orders and quality control during processing. Further, merchant exporters source various kinds of garments of which knitwear from Tiruppur forms only a share of their total sourcing. The merchant exporter firms studied here traded in woven garments as well and sourced from producers in Chennai, Bangalore and Delhi. Given their highly diversified pattern of sourcing, they hardly focus on improvements in production among individual suppliers.

c) Domestic Traders-Domestic Market Producers

On the contrary, in the domestic market, though most firms sell through agents, they do not face such risk. In fact, a few manufacturers for the domestic market in the premium segment or the innerwear segment, based in Tiruppur, undertake marketing and sale of their output as well. As for the rest, they are sold through agents to different outlets in the country. Some of them, however, have assured markets as they supply well established branded manufacturers who source from many firms in Tiruppur. The low end segment, which uses as raw material whatever is rejected in the quality conscious export market, resembles a ‘spot market’ transaction where producers take their produce to Erode, a nearby town every Monday and sell to retailers or wholesalers for sale elsewhere in the country.

Transactions with regard to the export market involve greater moral hazard and hold-up problems and hence require a high degree of trust or information while the domestic market, though marketing needs to be done, definitely involves less risk. As one respondent puts it, “In export business, if you have a reliable buyer, only production is a problem as quality and design requirements are high. In the domestic market, marketing is the main problem, not production. Designs are uniform and quality control is not very important. Only when you have big brands, you need to bother about design, quality, etc” (Owner, MIK, interview by the author in Tiruppur, 10/4/1995). In the latter market, since the goods are standardised, innerwear being the biggest component of output, a firm

15 A well-known branded innerwear manufacturer for the local market sourced from as many as 15 manufacturers in Tiruppur.

16 In other words, while marketing is possible in the domestic market, in exports, it is impossibility in the export market.
can have inventory stocks and retain their output for later sale. They can even shift from one agent to the other in case of opportunistic behaviour. Market information too is easily accessible to the producers. Even options of establishing their own brand names and retail outlets do exist, as found in the case of quite a few firms in Tiruppur.

d) Input Supplier-User Networks

Apart from these trading networks in the output market, there are also traders whom the producers interact with for purchase of inputs. Raw materials like yarn, dyes, other chemicals, thread and buttons, and machinery are sold through the various dealers that populate the town. Here, there is a wide disparity in the extent of interaction between them and the producers. While, in the former case, only the direct exporters need to network, here, even the sub-contractors need to transact with them. While direct exporters source their yarn supplies from a regular set of mills, the sub-contractors report frequent change of their suppliers of yarn.\textsuperscript{17} Though they cite defects in yarn quality as the reason for such change, informants refer to the payment delays or defaults by the sub-contractors. Again, none of the firms report any interaction with these agents other than purchase of inputs.

Producers of other inputs like dyes and printing chemicals, stitching thread, zip, etc., are all located outside Tiruppur and the local manufacturers interact only with the dealers who have their outlets in Tiruppur. Apart from the facility of availing credit, there appears to be no user-producer interaction with regard to product improvement or sharing of information. The fact that these producers of ancillary inputs do not belong to the region too appears to affect the extent of interaction.

To conclude, production for the export market depends for its success to a large extent on accessing reliable buyers who would place regular orders and do not default on payments. This is in contrast to domestic markets, where the relative power between the producers and the intermediate agents is less unequal. Confirming to stringent quality standards, higher fashion content and flexible output markets constitute important requirements as well. We, therefore, address the role of networking between producers in this regard in the next section.

\textsuperscript{17} The number does not exceed three in most cases.
B. Producer-Producer Networks

The process of reorganisation of the vertically integrated firm into the currently prevalent network of small firms specialising in various stages of the production process was discussed in the previous chapter. Here, we examine its intensity and role in ensuring flexibility in production. The finishing units, i.e., the direct exporters and sub-contractors network not only with staging firms, but also with other finishing units. As we observe in Chart 3.2, apart from contracting out portions of entire orders to the sub-contractors, contracting out specific finishing operations like stitching and packing to the job workers is also pervasive. Sub-contractors too are found to get stitching done through job workers. Networking with other sub-contractors too is evident.

The reasons for the origin of this mode of production organisation, to reiterate, are however different from the purpose it serves at present. Earlier, the need to remain outside the purview of factory legislation proved to be an important deterrent to the movement to large-scale units. Second, the recurrent ‘labour problems’ reduced the incentive for the producers to expand production within the same premise (Cawthorne 1993). Third, given the reservation of the industry for the small-scale sector, investments beyond a limit would render the unit ineligible for production. As a way out, producers split up operations and capacity across different units run by kinfolk and trustworthy employees, thereby making them legally separate entities. The last important factor that influenced this mode was the requirements of large space for bleaching and dyeing operations, and the growth in the number of operations. Thus, a complex of factors, ranging from government policies like reservation for small-scale sector and concessions to backward areas, to space economies and accumulation imperatives have conditioned the current mode of production organisation. Its role in facilitating ‘flexible’ production and the consequent impact of such output markets on the organisation of production, however, remains to be examined.

Analytically, we distinguish between horizontal and vertical inter-firm networking. This distinction is important as each type of networking facilitates production and innovation in specific ways (Asheim 1994). First, we delineate the extent of horizontal networking.
a) Horizontal Networking

In Tiruppur, horizontal inter-firm networks can consist of the following.

1. networking of direct exporters with other direct exporters
2. sub-contractors and job workers networking with other sub-contractors or job-workers
3. direct exporters networking with sub-contractors and/or job-workers
4. staging firms with other similar staging firms

Figure 4.1 depicts the various types of horizontal networks in Tiruppur knitwear formation

![Diagram of Horizontal Networks]

**Figure 4.1**

*Types of Horizontal Networks in Tiruppur Knitwear Formation*

Note: JW = job workers, SC = subcontractors, DE = direct exporters

In the context of Tiruppur, while (1), (2) and (4) can be said to constitute networks among autonomous firms, with fair distribution of power, the third one, viz., direct exporters with sub-contractors resembles the big-small firm horizontal networking 'organised from
above’ by the big firms, i.e., the direct exporters. With a view to comprehend the density of these networks, information was collected from the sample firms on the number of other firms that they network with horizontally. It is found that all but three of the direct exporters studied network with sub-contractors and job-workers in the course of production. On the other hand, the small-small firm networks between sub-contractors are rare. The same is the case of networks between direct exporters, though they have producer associations to represent their interests. Staging firms, once again, though they do have associations for groups of staging firms like that for dyers, the screen printers or fabricators, seldom network with each other in the course of production.

We begin with a description of the most dense among horizontal networks, between direct exporters and sub-contractors/job-workers. Most established direct exporters have sub-contractors undertaking production exclusively for them in addition to firms that produce for other direct exporters as well. The table 4.2 gives the number of sub-contractors that the direct exporter firms studied network with and the corresponding size of the parent firm expressed in terms of their annual turnover.

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18 This observation of the 'big' direct exporter sourcing orders from several smaller sub-contractors is similar to the big-small firm networking considered to be the predominant one in India (Holmstrom 1998, 20).
Table 4.2
Quantitative Dimension of Horizontal Inter-firm Networks

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Annual Turnover (in Rs. Lakhs)</th>
<th>Number of Sub-contractors</th>
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<tr>
<td>1</td>
<td>OS</td>
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</tr>
<tr>
<td>2</td>
<td>SE</td>
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<td>100</td>
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<td>OR Knits</td>
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<tr>
<td>32</td>
<td>CT Exports</td>
<td>5000</td>
<td>175</td>
</tr>
<tr>
<td>33</td>
<td>PP Exports</td>
<td>6000</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: The data refers to turnover and the extent of subcontracting for the year preceding fieldwork. One firm reports no sales, as they do not have any orders for that year. Names of study firms have been altered as a substantial section of them provided information only on the condition of anonymity.

Source: Fieldwork conducted in the period 1995-1996
Here, we include both job-workers and sub-contractors as sub-contractors. From the above table, it is clear that, a few exceptions apart, there is a close correspondence between the annual turnover and the number of sub-contractors supplying to them. One of the biggest firms that we studied had an annual turnover of Rs. 50 crores, had ownership stakes in around 20 separate finishing units and 10 staging units, in addition to having 100 sub-contractors of which 60 per cent cater exclusively to this firm. On an average, a leading export firm is found to have around 20 to 40 sub-contractors in addition to owning a few finishing and staging units of their own. 19 A smaller firm, with a turnover of say Rs. 1 to 3 crores, would have, on an average, 3 to 5 sub-contractors for finishing operations in addition to one or two old staging units. However, irrespective of size, apart from three firms, all direct exporters manufactured not more than 50 per cent of their output in-house, contracting the rest to the sub-contractors (Table 4.3).

Table 4.3
Proportion of Output Manufactured in-house among Direct Exporter Study firms (in per cent)

<table>
<thead>
<tr>
<th>Share of output</th>
<th>No. of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>80-99</td>
<td>0</td>
</tr>
<tr>
<td>60-79</td>
<td>5</td>
</tr>
<tr>
<td>40-59</td>
<td>8</td>
</tr>
<tr>
<td>20-39</td>
<td>4</td>
</tr>
<tr>
<td>&lt;20</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Fieldwork conducted in the period 1995-1996

Variations are found in the proportion of sub-contractors that cater exclusively to them. While all the bigger exporters had such subcontractors, the smaller direct exporters contracted out orders to firms that had to rely on other exporters as well to fulfil their capacity requirements. Thus, it is possible to identify a two-tiered sub contracting system, distinguished on the basis of the extent of relationship with direct exporters. While some of them have repeated transactions with specific exporters over a long period of time and do not take orders from other exporters, other sub-contractors are found to shift from one

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19 For our purpose, we define a leading firm as one with an annual turnover of over Rs. 20 crores.
exporter to the other frequently. The former constitute the first tier sub-contractors who cater exclusively to the big direct exporters and are given priority in grant of production orders over sub-contractors in the second tier. The second tier sub-contractors do not enjoy the patronage of any single exporter and have to negotiate simultaneously with a number of exporters to get orders for a particular season. Though the number would be limited to two or three per season, the composition changes frequently.

The choice of sub-contractors was guided by several factors with variations across firms. Though the respondents cite quality, adherence to delivery schedule and reliability as the deciding factors, the fieldwork and interview with key informants reveal that, often, the sub-contractors happen to be either former employees or known through family and kinship contacts. Subcontractor firms studied provide this information on the mode of establishing contact with direct exporters (table no. 4.4).

Table 4.4

Social Bases of Horizontal Ties among Study firms

<table>
<thead>
<tr>
<th>Mode of Contact</th>
<th>No. of Study Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinship</td>
<td>8</td>
</tr>
<tr>
<td>Employee</td>
<td>4</td>
</tr>
<tr>
<td>Formal</td>
<td>3</td>
</tr>
<tr>
<td>Same Native Place</td>
<td>2</td>
</tr>
<tr>
<td>Friend</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Source: Fieldwork conducted in the period 1995-1996

Thus, it appears that initial contacts are established through these modes, after which, a process of filtering on the basis of the above mentioned factors leads to a long-term relationship or otherwise. The owner of DME elaborated upon this process of finding sub-contractors (Interview by the author in Tiruppur, 18/4/1996). A former worker himself, when he received the first export orders, he undertook the entire production and just gave out 20 per cent of stitching to two job workers with whom he had networked even as a sub-contractor. Once the quantum of orders increased, he suggested to his nephew who was already working with him as a manager/supervisor to move out and set up a unit of his own. He also began to contract orders to three others, one a former worker and the other two who were distantly related to him. However, one of the two latter failed twice
to deliver on time and, to compound problems, the garments were dyed badly. This resulted in rejection of 5000 pieces by the buyer. Consequent to this, the exporter moved to another sub-contractor recommended by another relative of his, who was also a direct exporter. At present, he has over 20 sub-contractors, eight of them belonging to the first tier. All of them are known to the owner either through kinship or recommended by reliable sources or as former workers. Thus, we find that there is a movement from networks based on social ties to ones based on commitment to contractual terms. In some cases, establishment of contacts due to proximity to the premises of the parent firm is also observed. A big merchant exporter case firm, K.T Corp., to cite, contracts out orders to firms that are mostly situated within that neighbourhood. The respondent cites ensuring quality control at different stages of production as the prime reason for networking with spatially proximate sub-contractor firms.

Just as the buying agents enjoy a high degree of bargaining power vis-à-vis the direct exporters, by virtue of their control over the latter's output market, the exporters too, to a large extent exercise control over the output market. The factors guiding the choice of sub-contractors notwithstanding, the direct exporters enjoy a high degree of manoeuvrability vis-à-vis. the subcontractors. The sub-contractors and job-workers secure orders from only a limited number of parent firms (Table no. 4.5).

Table 4.5
No. of Customers of Subcontractor Study firms

<table>
<thead>
<tr>
<th>No. of Parent Firms</th>
<th>No. of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: Fieldwork conducted in the period 1995-1996

Most study firms source from only one or two direct exporters during a season. Only two firms supplied to 3 parent firms during the season they were interviewed. 50 per cent of the study firms enjoyed a stable relationship with their parent firms and clearly fall into the first tier, while the rest are found to shift their point of sourcing orders periodically.
The degree of stability appears to be largely an outcome of demand certainty. Year-to-year fluctuations in the quantum of orders received influence the extent of sourcing from this set of sub contractors. According to direct exporter respondents, even when there are below normal quantity of garments produced for that year, they do contract out to those in the first tier, as their in-house capacity does not go beyond 50 to 60 per cent in most cases. Hence, unless production dips below 50 per cent of normal output, sub-contractors are assured of a portion of the orders received by the direct exporters, despite lower output levels. Those in the second tier are not assured of even that degree of stability from a single direct exporter. Though they do have a set of firms from which they are more likely to get orders, on account of demand instability, they are forced to seek out different firms year to year to fulfil their capacity requirements. Nevertheless, these networks are extremely intense and appear to be critical to Tiruppur's success.

The sub-contractors and job workers network with the direct exporters on unequal terms. All respondent subcontractor firms agree that they tend to be price-takers due to the intense competition among them. Though the sub-contractors in the first tier enjoy a relatively closer relationship, the same cannot be said of those in the second tier, who move from one direct exporter to the other for every order. Payment delays, reduction in payment due to minor faults are all frequent complaints of the sub-contractors and job-workers against the direct exporters.

i) Other Horizontal Networks

Interactions among different sub-contractors are infrequent, except in the case of capacity sharing. 60 per cent of the sub-contractors studied report to use the machinery of other sub-contractors to increase their capacity for certain operations when production schedules need to be met. Job workers too share the orders given to them. When they have more orders for stitching than they can handle in a given period, they hand over the order to other known job workers. These other firms too would reciprocate such an exchange when they have a surplus of orders or when they need to deliver on time. Apart from such capacity sharing, interactions between them are limited despite having producer associations to represent their interests. Producer associations for direct exporters too are present as well as for staging firms. However, interaction between them in the realm of production is rare apart from the occasional capacity sharing reported by a few of the staging firms studied.
**b) Vertical Inter-firm Networks**

In the context of Tiruppur, vertical ties can take place among the following:

1. direct exporter with staging firms
2. sub-contractors with staging firms
3. firms specialising in one stage with firms specialising in other stages

The following chart (Figure 4.2) illustrates these types of networks:

**Figure 4.2**

Types of Vertical Ties in Tiruppur

![Diagram](image)

Note: DE = Direct Exporter; SC = Sub-Contractors

The finishing units, direct exporters and sub-contractors network with the numerous staging firms to complete the production schedule. These firms may belong to direct exporters or run by independent entrepreneurs. The independent staging firms undertake processing for a number of finishing units. We illustrate the density of these networks in Table 4.6.
We observe that the staging firms tend to network with a large number of firms unlike horizontal networking of the sub contracting units with direct exporters. The study firms have both sub-contractors and smaller direct exporters as their clients. The embroidery unit, though owned by a big direct exporter, serves other firms as well. The rest of the staging firms studied are independent units though the owners of a few of them had stakes in sub contracting finishing units too.

Few big direct exporters network with independent staging firms, as most of them own their staging units. Thus, in these inter-firm networks, the sub-contractors predominate. The direct manufacturer exporters, especially the established ones, have their own staging units, which cater to their finishing units though not exclusively. This is especially true of the new staging units. The older staging units owned by the exporters, on the other hand, cater exclusively to their own finishing units, as these operations are required for most orders procured by the parent firm. However, this does not preclude these exporters from networking with independent staging firms as well, on occasions that demand additional processing capacity.

On the contrary, 90 per cent of the sub-contractors studied own only one finishing unit and no ancillary units. Owners of two of the bigger units owned an additional finishing unit. One of them was a part owner of a dyeing unit and another of a fabrication unit. Hence, these firms rely much more on networking for ancillary operations than the direct exporters. It is therefore clear that inter-firm networking constitutes an important means of networking in the textile industry.

Table 4.6
Networking of Staging and Finishing Units (Select Study Firms)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Study Firms</th>
<th>Number of Finishing Units Catered to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing</td>
<td>2</td>
<td>1, 20</td>
</tr>
<tr>
<td>Dyeing and Bleaching</td>
<td>3</td>
<td>5, 15, 15</td>
</tr>
<tr>
<td>Curing</td>
<td>2</td>
<td>10, 45</td>
</tr>
<tr>
<td>Embroidery</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Raising</td>
<td>2</td>
<td>40, 125</td>
</tr>
<tr>
<td>Calendering</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Fabrication</td>
<td>2</td>
<td>20, 80</td>
</tr>
<tr>
<td>Button Fixing</td>
<td>1</td>
<td>800</td>
</tr>
</tbody>
</table>

Source: Fieldwork conducted in the period 1995-1996
of organising production for most firms in the cluster. Having provided empirical support to the prevalence of intense networking, horizontal and vertical, we now move on to examine the modes in which it facilitates flexibility in production. In the ensuing sections, we seek to understand the role played by inter-firm networks within the cluster in facilitating production for a flexible product market.

C. Importance of Networking

a) Realises Scale and Scope Economies in Production

The basic T-shirts market, that dominated Tiruppur's export basket in the 1980s, is slowly being lost to competing nations such as Bangladesh and China. Simultaneously, as elaborated in Chapter 2, Tiruppur has been able to move gradually upward into the semi-fashion segment that requires greater emphasis on quality than before. The following table (No. 4.7), which provides the output profile of select manufacturer exporter study firms, would be more indicative of this phenomenon.

<table>
<thead>
<tr>
<th>Firms</th>
<th>Men's Wear</th>
<th>Women's Wear</th>
<th>Children's Wear</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10000, 5000</td>
<td>2000, 250</td>
<td>1000</td>
</tr>
<tr>
<td>2</td>
<td>50000, 25000, 8000</td>
<td>7500, 2000</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>55000, 30000, 4500, 2000, 500</td>
<td>100, 10000, 3000</td>
<td>5000, 3000, 250</td>
</tr>
<tr>
<td>4</td>
<td>75000, 35000, 20000, 7500, 7500, 500, 250</td>
<td>5000, 100, 500, 10000</td>
<td>15000, 10000, 400, 25, 60</td>
</tr>
<tr>
<td>5</td>
<td>55000, 15000, 10000, 1000</td>
<td>15000, 750, 100, 50</td>
<td>10000, 750, 500</td>
</tr>
</tbody>
</table>

Source: Fieldwork conducted in the period 1995-1996

According to the direct exporters studied and other key informants, Tiruppur's mode of organising production is better equipped to cater to demand in this segment, when compared to other competing regions like China and Bangladesh. This appears to have been made possible largely by virtue of flexible linkages, horizontal and vertical, that the finishing units in Tiruppur establish with other firms.

The traders who source their garments from the direct exporters in Tiruppur cater to a number of retail outlets where garments of a wide range need to be sold. Though chain stores and super markets tend to target specific segments, even a single outlet needs to
sell garments belonging to different types and segments. Further, the intermediate traders often tend to supply more than one kind of retail outlet (Buyer LG, interview by the author in Tiruppur, 12/6/1995). Thus, in many instances, the intermediate traders such as those who represent overseas buying offices and trading companies need to source different kinds of garments simultaneously (Appelbaum and Gereffi 1994, 46). Though the production of each individual garment may be economical in a specific region, given the costs and risks involved in negotiating with numerous producers, the traders prefer to source them from a single producer to minimise the costs of transaction involved. In such cases, producers in Tiruppur are preferred to producers elsewhere. The buyer cited above explains this phenomenon better (Buyer LG, interview).

The buyer continues to source garments from other countries like China and Bangladesh. To illustrate why sourcing from Tiruppur is more cost-effective, he provides an example. This year, he placed a 50,000-piece order of basic T-shirts to his supplier in Tiruppur, which, under normal circumstances, would have been placed with China. He had two other orders of 8,000 and 700 pieces respectively to be processed as well. These two orders would be expensive if they were sent to China. “The smallest unit in China has at least 100 machines and you can’t go there for orders with anything less than 10,000 pieces. It is not cost effective for them, especially when additional operations need to be carried out. Here, I know that Tiruppur is good for the smaller orders. But I didn’t want to go elsewhere for the other order as it involves more time and effort. Quality control needs to be stringent at every stage, but I can manage that” (Buyer LG interview). The buyer went on to add that quota constraints too force agents to source from many countries, despite their preference for one.

The buyers’ need to source multiple types of garments drew Tiruppur into the global production network. This need has proved influential, as the following examples illustrate. TF, a study firm, caters exclusively to the woven garment segment. The brother-in-law of a leading knitwear export firm runs the firm. The latter’s buyers suggested the possibility of sourcing woven garments too from the same exporter. They felt that it would be easy for them to source both types of garments from the same supplier or even the region, as it helps them minimise risk and effort. Subsequently, the

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20 Bonacich and Waller cite the case of Levi Strauss, a major U.S garment firm sourcing from as many as 600 contractors from 22 countries worldwide including India. Similarly, Beeba's Creations, a firm specialising in women's sportswear, sources from 16 countries including India (1994, 94-98).
exporter encouraged the respondent to set up a firm to manufacture woven garments, the orders to be secured from the former's buyers. The rise of this firm is, therefore, purely an outcome of the need on the buyer's part to minimise transaction costs by contracting with fewer and more reliable suppliers. To the buyer, the knitwear exporter serves as a guarantor for the transactions that they conduct with this new firm manufacturing woven garments. To the exporter, on the other hand, it means economies of both scope and scale, as the new firm would use the processing facilities of the staging units run by them (Manager, TF Exports, interview by the author in Tiruppur, 21/5/1995).

The market for knitwear too comprises diverse types of garments. Most exporters in Tiruppur get orders consisting of two or more kinds of garments. One set may need complicated screen-printing while another may require embroidery. The next order may need neither of the above processes and would fall in the 'basic' category. Embellishments like fancy collars and even different kinds of fabric would have to be used for different garment orders. It is extremely risky for an individual firm to invest in all the machinery requirements for such a diversified output market. With changing designs and fabric requirements, housing all the required machinery under a single roof may lead to large-scale unutilised capacity and prove quite unprofitable. On the other hand, by realigning the configuration of inter-firm networks in accordance with the specificities of each order, the firm can easily fulfil its production requirements. Thus, networks of small firms realise not only economies of scope but also scale economies by networking with each other. This aspect of networking is equally important in imparting collective efficiency to the cluster. Individual firms tend to enjoy scale economies by catering to numerous other small firms at other stages in the production process. This process can be illustrated well through a study of the mode of organising production by a study firm.

The firm, with an annual turnover of Rs. 3 crores in 1995-96, had received an order from a German buyer -- a few months before the fieldwork -- consisting of three kinds of garments. Two of them were men's T-shirts. While one set had to be only dyed the other required printing as well as a fancy collar. The third one was woman's nightwear that had to be knitted on a different kind of knitting machine. Further, the printing had to be of good quality and could be done only on a rotary printing machine. According to the owner, "A rotary printing machine costs Rs. 20 lakhs, and every year, I might get one or
two orders for rotary printing. So even if I am financially equipped to set up such a unit, I can make the venture profitable only if other firms too bring their rotary printing orders to my unit" (Owner, ABE, interview). The firm gave out its entire basic T-shirt order to one of its regular sub-contractors. The finishing operations for the other two sets of garments were undertaken within the parent firm. This firm owns a bleaching and dyeing unit. Sub-contractors to such firms normally network with staging firms run by the parent firm. This case was no different. Dyeing for all the three sets of garments were done by the parent firm’s dyeing unit. An independent staging firm did screen-printing, while rotary printing was given to a new unit that had been set up by a direct exporter known to this owner. This rotary-printing unit, owned by one of the bigger direct exporters takes orders from as many as 60 finishing units, consisting of both direct exporters and sub-contractors during the entire season. The screen-printing unit too has processed orders from several other finishing firms during the season.

Staging firms cite similar scale economies as important enabling factors to function optimally. The collar-stitching firm undertakes stitching of different kinds of collars. Such a machine, if installed in a vertically integrated unit, can be used only intermittently as only those orders procured by the same firm, and which require collars, can be stitched. This would lead to under-utilisation of the machine capacity and hence, not viable. On the contrary, by setting up an independent unit in the cluster, the firm can realise scale economies by stitching collars for many orders sourced by various firms in the cluster. The same can be said of the button-stitching firm, which caters to over 800 other firms. The embroidery unit, once again, sources from at least 20 firms at a given point in time. Thus, by virtue of networking, not only do the finishing units negotiate a highly diversified export market, but also ensure scale economies for the staging firms. This process further enable the creation of small firm-based capital accumulation as entrepreneurs with limited access to finance can afford to set up small, specialised staging units.

b) Role of Networking in Negotiating Uncertainty in Demand

Though the organisational strategy of sub-contracting of production to other firms was initiated largely to remain outside the realm of factory legislation and to overcome problems of having a large labour force, its role in the context of a changed product market assumes a different dimension. The wide variations in demand over the year, and
year-to-year fluctuations due to the vagaries of world supply and demand place severe limits on a capital accumulation strategy, based upon horizontal and vertical expansion. Further, though such market conditions are true of many consumer goods, it needs to be remembered that the knitwear industry is prone to more fluctuations than even other kinds of garments. 21

Apart from such fashion-driven fluctuations, the global market for cotton knitwear is highly seasonal with demand emanating primarily during the summer months. Even in a normal year, production ceases for at least 3 months for most firms in Tiruppur. The difference between normal and peak season demand can be seen in table 4.8.

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>0-20</th>
<th>21-40</th>
<th>41-60</th>
<th>61-80</th>
<th>81-100</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEs</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>SCs (ME)</td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>SCs (MFE)</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>8</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Section</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>10</td>
<td>17</td>
<td>14</td>
<td>8</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: DE=direct exporters, SC=sub-contractor, ME=merchant exporter, MFE=manufacturer exporter, Section=Job workers
Source: Fieldwork done during the period 1995-96

As can be seen from the table, eight study firms do not undertake production at all during off-season, whereas for another 14 firms, off-season output is only 20 to 40 per cent of their output during peak season. The seasonality in demand is especially observable in sub-contracting firms where most do not operate for three to four months a year. Job-workers mushroom during the peak season, only to revert to wage labour during off-season. Such seasonality and uncertainty prevent firms from investing in capacity creation to manufacture the entire output in-house. Firms find it more lucrative to contract out a portion of their output to other firms than to expand their in-house capacity to retain the production of the entire output within the firm. To limit their plant size to what they

21 "Because of abrupt changes in fashion tastes that are intensified by seasonal and climatic factors, cyclical changes are more common in the knitwear industry than elsewhere, making factories with large amounts of fixed capital and many employees particularly vulnerable to economic downturns.” (Lazerson 1993, 201).
perceive to be sufficient to cater to roughly half their peak season demand appears to be the optimal strategy for most firms. Thus, while scale and scope economies are realised through vertical inter-firm networks, firms tend to cope with demand uncertainty primarily through horizontal networking.

All respondents agree upon the role of uncertain demand in limiting the finishing capacity of the direct exporters. Except two, all the study firms restrict their production capacity to a maximum of 60 per cent of their peak season demand. This share was found to vary across the study firms. While some firms retain as little as 20 to 25 per cent of the total orders for in-house production, by and large, direct exporters are found to manufacture 40 to 50 per cent of their total output. The rest is passed on to the sub-contractors. However, the difference in the proportion manufactured in-house across firms cannot be explained through consideration of a single factor such as demand uncertainty. Obviously, the extent of expansion is an indication of the confidence of the exporter in his/her ability to access future markets, which, in turn, hinges crucially on their relationship with the buying agents. However, we could not correlate this dimension with the proportion of output manufactured in-house, as information on the extent of reliability of the buyers could not be obtained. Respondents in a few direct export firms studied nevertheless do cite this dimension to be a key variable influencing their extent of outsourcing.

Ten firms studied -- four direct exporters and six subcontractors -- contracted out stitching to job workers during peak season when they cannot meet the delivery schedule if they were to do the entire stitching within their factory. The job-worker study firms too report that they undertake stitching for direct exporters during peak season, which, however, constitutes only a marginal share of their total output.

When the stable component of their demand increases, the firms tend to normally expand by way of setting up an additional finishing unit or by increasing the number of machines within the existing plant. An established direct exporter cited the process of the growth of his firm as an illustration (Manager KUF, interview by the author in Tiruppur, 21/3/1995). This firm had moved into direct exports in 1985 by virtue of an order from a French importer. At that point, this firm was also undertaking production for other direct exporters even after entry into direct exports. Over the next two years, the firm had managed to get orders from a few more buyers from Europe. Though their annual turnover had increased from Rs. 20 lakhs to Rs. 50 lakhs by 1988, the firm did not increase its
production capacity. Uncertainties like delays in payment, rejection of a small order, etc., rendered its position in the export market highly unstable. However, by 1989, the firm had established a good relationship with two buyers, one from Germany and the other from France. This encouraged them to invest in setting up another finishing unit with imported stitching machines and a dyeing and bleaching unit. By 1990, the firm had completely stopped taking orders from other direct exporters.

Even at present, the firm continues to produce only 40 per cent of its total output in-house. According to the respondent, “Even in the worst year, I don’t expect the orders to drop to anything less than 50 per cent of what I would get in a normal year. My subcontractors would, of course suffer, but I try to keep them satisfied by sharing a minor portion of the orders so that they stick with me. But if I have to produce everything within my firm, I would need at least three additional finishing units with a 12-seat power table. That would mean a fixed investment of nearly Rs. one crore. In this business, it is too risky to lock up so much money”.

On the other hand, merchant exporters, despite good access to buyers, do not undertake manufacturing. The ability to corner a substantial portion of the surplus generated without ‘soiling their hands’ in mundane production matters figures as an important factor in their considerations. Also, merchant exporters lack social capital that comes from belonging to the local region. As we observed earlier, networking between producers appears to be largely undertaken between those who already know each other though kinship or employment relationships or when introduced by others known to either of them. Such contacts are open only to 'locals' who have been in Tiruppur for a long time or those who know these agents. Thus, 'social capital' that enables entrepreneurs to elicit trust among other agents in the cluster is crucial to their success.

The importance of networking in coping with demand fluctuations is more clearly borne out by the two study firms that did not contract out any orders, except in case of garments that needs new processing techniques. One of them takes orders from only one buyer from Switzerland. He has been doing so for 8 years before the time of fieldwork. Initially the firm produced for an agent from Bombay, but later, the firm managed to access the Swiss buyer directly with a price less than that offered by the agent. Since then, they have

22The third study firm that did not contract out work was a new firm manufacturing only woven garments, which had just ventured into this sector.
established a stable relationship, whereby the firm has been able to get regular orders from this buyer. Placed in a relatively stable position on account of an informal long-term contract with his buyer, the owner perceives no advantage in contracting out to other firms. Employing over 600 workers spread over five spatially separate finishing units and all the old staging units plus a modern computerised embroidery unit, this firm enjoys the benefits of vertical integration. In fact, at the time of fieldwork, the firm had acquired land near its dyeing unit where it had plans of installing all the processing facilities under a single roof. Though this firm too produces only 60 per cent of its peak output during off-season, since it gets adequate prices and its market is less unpredictable, the owner can afford to expand capacity and integrate production vertically (Owner CSM, interview by the author in Tiruppur, 21/5/1996).

The other study firm that did not indulge in sub-contracting (refer Table no 4.2) has been one of the pioneering exporters in the early 1980s. Rejection of a major order had resulted in huge losses forcing the firm to limit itself to a smaller volume of output entirely produced in-house. According to the manager of the firm, sub-contracting leads to a number of problems like delays and poor quality that had earlier led to losses, which they prefer to avoid (Manager, SV Knittings, interview by the author in Tiruppur, 20/6/1995).

Though the two firms avoid sub-contracting for different reasons, implications of such behaviour are the same. On the demand side, firms are faced with both seasonality and uncertainties. On the other hand, not all firms have access to reliable sub-contractors. Hence, firms might avoid sub-contracting, either when their demand becomes more certain or when the risks of sub-contracting are high. The two cases discussed epitomise two extremes of organisational influence due to moral hazard or hold-up, one in the interaction with the traders and two, due to interaction with other producers within the cluster. However, the latter case might also be an indication of the influence of 'path dependence' in determining an organisation's accumulation strategy. Once, they suffered losses due to costs of transacting with sub-contractors, the firm continues to refrain from sub-contracting. However, these are exceptions in Tiruppur. Key informants

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23 Many of the other respondents cite this owner's relationship with the buyer as an ideal one which they would like to enjoy. To them, this owner faces the least risk in Tiruppur. This respondent too felt no need to access new buyers as he is confident of the long-term duration of this relationship.

24 Evolutionary theorists draw attention to the tendency of firms to continue to follow an established organisational routine despite it not being the most efficient one.
reveal that there are, at least, another two or three other firms in Tiruppur that carry out production completely in-house, albeit in separate units. In the short run, contracting out would imply a reduction in profits by the margins enjoyed by the sub-contractors. In the long run however, this arrangement definitely invests the firm with a degree of flexibility that enables them to cope with uncertain demand conditions by distributing the risks of manufacturing for a volatile market.

c) Role in Manufacturing Flexible Quantities

Another peculiarity of the product market that can be addressed through inter-firm networks is the wide differences in quantities required of each type of garment in a single order lot. Hence, ensuring flexible scale economies is an important requirement to cater to such a market. Though the share of garments meant for the US market has increased in recent years, Tiruppur’s major market continues to be Europe. While the orders from the US are normally of greater quantities with emphasis on quality, but less variety, the European market is characterised by relatively more diversified designs and smaller quantities (Manager JKC, interview by the author in Tiruppur, 23/5/1995). Further, it is said that the standards of quality are not as high as that of the US market. The firms in China, Bangladesh, Sri Lanka and other competing nations, according to the respondents, are held to be bigger in size, rendering their minimum efficient volume much higher than that of firms in Tiruppur.

Though there are big firms in Tiruppur, especially among the direct exporters, numerically, small and medium firms dominate the Tiruppur formation. Further, even among big exporters, though turnover is large, production is spread over a number of small units, with plant capacity of an individual unit being limited, and many having just a 6-seat power table with a few Singer machines. Even the staging firms too are of varying sizes with many dyeing units having only a couple of winches. Given the high investment costs and erratic demand for their output, modern staging firms too have just one machine. Such a structure has facilitated Tiruppur’s current production for a flexible volume market. Huge differences in the size of order lots processed are found among the study firms. Firms are found to manufacture as low as 250 or 500 pieces to as high as a lakh or to two lakh pieces. The ability of firms in Tiruppur to adjust production quantities to such an extent without loss of efficiency needs to be once again explained by ‘capacity contracting’ undertaken by direct exporters. Direct exporters invariably tend to split up
large volume orders into smaller ones that would then be contracted out to their sub-contractors. Uniformity of quality is ensured through quality controllers employed by direct exporters who undertake periodic visits to the sub-contractors' and the staging firms to supervise at critical stages. The method of manufacturing divergent quantities is elaborated below with the help of a case study.

One established direct exporter (Manager DME, interview) had secured an order of 2 lakh pieces (men’s T-shirts) from a big chain store in USA. He split up the order into ten orders of 20,000 pieces each and contracted it out to seven of its exclusive sub-contractors and three other firms that undertook production for other exporters as well. Such splitting up of large volume orders to be contracted to other firms is a recurrent phenomenon in Tiruppur; all the direct exporters studied used such ‘capacity contracting’ practices to overcome their limited production capacity. The study firm mentioned above simultaneously undertook production of two other types of garments; 2500 pieces of a T-shirt with a fancy collar and an intricate print, and the other, 500 pieces of a printed skirt. Such complicated orders need stringent quality control and hence exporters prefer to retain production of such garments in-house. Moreover, this prepares them to undertake manufacturing when re-orders come. Other firms studied too cite similar strategies.

Sub-contractors, too, enter into informal arrangements with one another to supplement finishing capacity when deadlines need to be met. Most sub-contractors report using the machines of their neighbours or of their kin. This is especially true of using chainlock machines, stitching on which is not a requirement for all orders, and firms share these stitching machines, as there would be redundant capacity in many firms and lower capacity in others. This informal sharing ensures better utilisation of capacity to the individual firms.

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25 Among the study firms, the biggest direct exporter employed over 60 quality controllers. The smaller firms had two or three senior workers acting as quality controllers.
d) Role in Speedy and Timely Delivery

Capital, as has been stressed in Marxist works, needs to increase the speed of circulation to enhance accumulation (Harvey 1982). This is facilitated not only by acceleration of fashion changes and improvements in modes of transport and communication, but also through introduction of new machinery to increase process speed or done through parallel processing through increase in capacity as discussed in the previous section. In garment manufacture, stitching, a highly labour-intensive activity, consumes the maximum time, and is least amenable to improvements in speed through automation. Hence, reduction in time has to be obtained more through capacity expansion. However, given the limits to such plant expansion posed by unstable market conditions, capacity enhancement is achieved through horizontal networks, whereby direct exporters pass on the excess orders to sub contractors.

The movement of Tiruppur’s knitwear cluster towards the semi-fashion market has made adherence to delivery schedules a critical factor in recent years. According to the owner of one direct exporter study firm, “It is almost impossible to deliver exactly on time. But what we can do is to supply with lesser delays than our competitors” (Manager CT Exports, interview by the author in Tiruppur, 31/5/1995). Quick delivery is rendered difficult by the high seasonality in production, as greater output needs to be produced within a short span of time. Moreover, the turnover periods have become shorter over the years. Respondents point out that while a standard order of, say, 25,000 pieces would be given a production period of two months in the mid and early 1980s, at present, it has been reduced by a week or two (Manager, AE, interview). Further, inability to stick to delivery schedules turns out to be very costly as delays in production would have to be compensated by transporting the products by air freight which is many times expensive, when compared to the usual mode of shipment by sea, incurring losses to the exporters. Horizontal networking once again plays an important role in the firms’ ability to negotiate these changes.

26 The faster the turnover cycle M-C-C'-M' takes place, greater would be the surplus value realised in a given period of time. Money (M) is used to buy input commodities 'C' which are transformed into output C' which then need to be sold to realise more capital M' for further expansion. Hence, lesser the time taken for capital M to move to M', greater will be the quantum of capital accruing to the capitalist in a given period of time.

27 In fact, according to Schmitz, finishing accounts for four-fifths of the total labour costs in garment making (1985, 101).
Both direct exporters and sub-contractors, when forced to comply with short production periods, not only split up orders with other sub-contractors, but also contract out specific finishing operations like stitching and checking. Job-workers who are mostly active only during the peak season undertake stitching either in households or separate premises for the bigger firms during the peak season. The contracting out of checking is nevertheless a new phenomenon and appears to have started only around 1997. At the time of fieldwork, advertisements were found in local newspapers placed by the new checking firms seeking orders from direct exporters and sub-contractors. Checking too, it needs to be remembered, involves considerable amount of labour, and in a finishing unit, after tailors, checkers numerically constitute the highest number. The greater emphasis on economies of time appears to have led to this enhanced division of labour within the industrial formation. Similarly, improvements in fabrication machinery, introduction of steam iron along with tumble-drying have all led to increase in speed of operations in addition to ensuring better quality.

e) Role in Providing a Spectrum of Technologies

The production of a range of garments belonging to different market segments requires use of a wide spectrum of technologies. The cluster's ability to not only move up the technological frontier, but also continue to simultaneously manufacture products based on cheaper and traditional methods has been crucial to its accumulation process. This has been enabled by the presence of and networking between firms positioned at different points in the technological spectrum. While some of the bigger export firms have installed modern and high quality processing techniques in 'new' staging firms, there are still numerous firms that still operate with 'outmoded' techniques, but which may be the only economically feasible technique for cheaper garments within the cluster. This can be better understood by an examination of technologies available for specific processes.

To begin with, let us consider fabrication. While most fabric requirements can be met by indigenous machinery manufactured in Ludhiana, certain kinds of fabric can be knitted only on imported machines. Further, some buyers insist on the use of imported machinery. Since the movement to an upmarket segment, a number of knitting units have been set up with imported machinery. Hence, when a buyer places orders for garments with different fabric bases, the supplier export firm can source fabric from separate firms with different kinds of machinery. This further helps the cluster as a whole to cope with
changes in fashion trends. At the time of fieldwork, there was a shift from 'fine' fabric based garments to garments using 'interlock' and 'jacquard' fabric. Many firms including two study firms were in the process of installing this new machinery. However, in the event of reversion back to 'fine' fabric in the future, there would be enough number of machines in the various firms in Tiruppur to cater to this shift. Further, mercerised fabric and even woollen knitting machines have been installed. The new raising units that have come up in Tiruppur in the 1990s have met the current increase in demand for 'raised' fabric. Earlier, firms had to source raised fabric from other centres like Madurai. This process obviously warrants a high degree of firm mortality, as firms specialising in operations meant for outdated fashions may be forced to close down if they cannot cope with changing requirements effectively.

The availability of different technologies can be found in other processing stages as well. In the case of dyeing, a few firms have installed the costly and technologically advanced soft-flow dyeing, while the traditional open winch dyeing continues to be the widely used technique. Yarn dyeing, a capital and technology intensive process can also be availed in Tiruppur. Screen-printing for cheaper garments and rotary printing for quality garments are available. High-priced garments require curing as well to remove the smell of the chemicals used in screen-printing. The new curing units that have come up in Tiruppur since the 1990s cater to this demand. Few modern compacting machines coexist with the numerous traditional steam calendering units. Shrinkage control and tumble-drying are resorted to in the case of higher priced garments. Thus, the availability of a wide range of machinery for specific processes imparts a lot of flexibility to the firms in Tiruppur with regard to the choice of technique. In the absence of such inter-firm networks, it is virtually impossible for individual firms to shift techniques from order to order, as is the norm at present. True, it would require a set of firms to operate at the lower end of the technology spectrum. Nevertheless, it does ensure a successful and efficient accumulation strategy for the cluster as a whole.

Apart from providing firms the flexibility to switch techniques, networking and agglomeration, contribute to use of newer technologies by ensuring scale economies that would otherwise be denied to an individual firm. It is not feasible for a fabrication unit to have knitting machines to produce all the types of fabric that the Tiruppur cluster as a whole uses, as it would lead to large-scale unutilised capacity. Sophisticated dyeing
would be needed only when the garment is high priced for which certain quality standards are to be met. Hence, even though big direct exporters have installed modern machinery, its use of the machinery would prove optimal only when manufacturers in Tiruppur as a whole take advantage of its availability. That this is increasingly done in Tiruppur is evident from the data presented in Table No. 4.6 on the number of firms that staging firms network with.

Firms established by the big exporters for specialised operations like tumble-drying, compacting, curing, raising, etc. therefore produce for the use of other exporters and sub-contractors as well. True, finishing units under the owner's control have priority access, but a major share of its output feeds into other firms. The economies of agglomeration facilitates firms to introduce sophisticated capital-intensive techniques, essential for movement into market segments characterised by competition based more on quality than on costs.

The above discussion highlights the various mechanisms through which inter-firm networks impart flexibility to capital in the knitwear industry in Tiruppur. The nature of inter-firm networks and its implications for different kinds of firms within this sector, however, need to be examined to understand the distribution of benefits of the accumulation process. To the extent that networking contributes to flexibility, it also leads to an increase in the number of transactions and hence transaction costs with its attendant implications for successful accumulation. Earlier, it was seen that traders/intermediaries minimise transaction costs by negotiating with as few exporters as possible.28 Producer firms, on the other hand, tend to network with numerous other producer firms in the course of production. It is therefore, important to understand the social milieu that suffuses these interactions.

Studies of networks in other regions have found that the costs of transactions are minimised when they are rooted in non-economic ties, based on kinship, caste, ethnicity or religion. To cite an example, a study by Christerson and Appelbaum (1995) points to the importance of ‘mining of communal capital’ to reduce costs of transaction, especially in decentralised sectors like garment industry marked by high intensity of transactions.

28 Of course, this is not to imply that this invests the exporters greater bargaining power vis-à-vis the traders. Many of the case firms pointed to the way in which buyers cite lower prices from producers in Bangladesh or China to bargain for a reduction in the prices quoted by them.
Again, studies by Beccattini (1990), Granovetter (1985) and Swedberg (1992) underline the role of the social milieu in which economic activity is embedded in facilitating networks between firms. Many successful industrial districts are found to be characterised by a distinct social milieu that fosters a set of values that influence the nature of inter-firm networks. These ties tend to provide a strong basis for mutual trust and codes of behaviour which are crucial to long term and repetitive transactions. Further, the social milieu facilitates the creation of agglomerative economies with regard to knowledge of the industry. To quote Nadvi, "Included in this is a bank of tacit knowledge related to manufacturing activity of the community, and often specific to that cluster. The codification of such knowledge and its transmission, particularly the dynamics of learning, takes place within the social place of the cluster" (1994, 217). Thus, transmission of skills, reproduction of the labour force and entrepreneurial ethos derive from a set of social norms specific to the region.

On the other hand, Knorringa (1996), in his study of the Agra footwear cluster, has pointed to the antagonism between traders and producers due to both religious and caste differences. This has led to a complete lack of co-operation in the realm of information exchange and technological innovation. Other studies on industrial clusters in India too point to the presence of caste and kinship networks. The diamond cutting clusters in Trichur and Surat (Joseph 1995, Kashyap and Tiwari 1986), the light engineering industry in Ludhiana (Tiwari 1999) and the surgical instruments cluster in Sialkot (Nadvi 1999) are cases in point.

The presence of such shared identities is said to influence the workings of a cluster in several ways. First, a community formed out of a shared history and/or geography can have a set of common values that foster entrepreneurship and work ethos. Second, a common set of values enables trust and reciprocity among members that would easily translate itself into the economic sphere. These socially conditioned codes of conduct would place limits on short run opportunistic behaviour and enforce a relationship of trust and long term stability, thereby encouraging firms to enter into networks without much risk. Third is its role in technological innovation and diffusion in the cluster. Firms, without fear of opportunistic behaviour on the part of contracting firms, can enter into mutually beneficial information exchange related to product and process improvements. Hence, an examination of the role of such extra-economic ties in enabling inter-firm
networks in Tiruppur assumes importance. It is to an examination of its role in Tiruppur that we turn to in the subsequent sections.

D. The Social Milieu

In India, an important social identity is the one based on caste.29 A majority of the entrepreneurs in Tiruppur, as already mentioned, hails from the agrarian Gounder caste, a landholding community organised in strong patriarchal family structures, linked by extensive kinship ties. Since the disintegration of the composite units led to a reduction in the set-up costs, small and medium peasants from this community could enter into the industry easily with capital from sale of their agricultural land. The rest of the manufacturers too, continue to be largely from the local region, despite a recent influx of non-local capital. The other major castes to which local entrepreneurs belong are the Chettairs and the Senguntha Mudaliars. The fact that the domination of the Gounders is near total is evident from the fact that almost all the office bearers of Tiruppur Exporters Association (TEA hereafter), a producer association for the manufacturer exporters, belong to this community.

This caste, given its traditional moorings in dry land farming, has been known for its adherence to a strong work ethos. Brenda Beck, in her important study of the Kongu region points to this characteristic of this community (1972, 28-29). Further, a number of non-locals interviewed agree that among the Gounders may be found a strict work ethics not easily found elsewhere.30 Further, it is a very close-knit community with strong networks created through marriage ties.31 These ties pervade many an inter-firm relation in Tiruppur. The role of these characteristics in contributing to Tiruppur’s growth is however hard to capture in more concrete terms. We do find that partners running study firms run by ‘local’ capital, except two, belong to the same caste. Often, kinship ties bind them. The role of kinship and in a few cases, ethnic ties in securing orders from direct exporters is however more evident.

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29 “In South Asia, caste identities are the leading criteria in delineating social groups within small-firm clusters. (Nadvi 1994, 219).
30 “In Tirunelveli district from where I come from, if workers are asked to work after 5.30, they would scratch their heads, ask for more money, and even if we pay them more, they may not be interested. Here, the workers slog for 16-18 hours without making any noise. This is especially true of the women workers here” Manager, SI, interview by the author in Tiruppur, 21/4/1995)
31 They have a strong caste association as well to promote the community’s interests.
Though a few sub-contractors to the direct exporters are erstwhile workers in the parent firm who are patronised due to this association alone, the role of kinship and other non-economic ties in securing a steady sub-contractor status was clear. Invariably, all the Gounder direct exporters had more sub-contractors from the same community. However, not all are related through kinship. Many sub-contractors are Gounder worker turned sub-contractors who are patronised by Gounder entrepreneurs. However, it is difficult to gauge the role played by caste ties in promoting these worker-entrepreneurs from the case studies undertaken. Similarly, all five sub-contractors to a Chettair direct exporter were Chettairs known to him through family and community contacts (Muthukumar, interview by the author in Tiruppur, 24/6/1996). A big direct exporter from Kerala had 20 sub-contractors, 13 of them from Kerala. Interestingly, 12 of them who manufacture exclusively for this parent firm are all from Kerala. Thus, caste and ethnic ties do appear to play a strong role in entrepreneurship formation. To the direct exporters, such ties reduce the risk of delays, commitment to quality, etc. while to the sub-contractors, it ensures a more stable flow of orders. Such ties are further held to prevent the opportunistic behaviour prone to rise in arms length transactions.

This is however not to say that people outside the kinship networks do not become sub-contractors. In fact, among the sub-contractors studied, as noted earlier, four who were not related to the owners of the parent firms were functioning as sub-contractors, after having been employees in their parent firm earlier. Of these two of them belonged to castes different from that of the owners of parent firms. Nevertheless, those within such caste or kinship networks do appear to enjoy certain privileges denied to those outside. Further, those closer in the kinship hierarchy enjoy greater privileges when compared to those further down. Nevertheless, sub-contractors linked to exporters through such ties tend to suffer less from payment delays or rejection as compared to those outside these networks.

When the direct exporter contracts out production, it is important that the sub-contractor sticks to quality and time requirements. Though the bigger, established ones tend to enforce it through quality controllers, the smaller firms are forced to rely on the implicit social sanctions involved in non-compliance. However, the threat of disruption of a possible long-term and remunerative relationship with the direct exporter as a means to ensure compliance should not be belittled. In spite of this, repeatedly, in the course of
fieldwork, local capitalists opined that Tiruppur’s business has been ‘spoilt’ by the entry of non-locals into this industry. According to them, the outsiders enter into this trade without any understanding of its nuances. All they are interested in is to make quick money. They quote unreasonably low rates, get orders and consequently suffer losses. In this process, they transfer the losses on to the sub-contractors and staging firms, by denying them payments. Frequently, in the course of fieldwork, the non-locals were referred to as ‘they’ and the locals as ‘we’. Thus, apart from kinship affiliations, there appears to be a strong regional identity as well, though the latter does not appear to play an active role, as kinship and caste identities do in inter-firm networking. The various ways in which the study firms benefit from such networks are elaborated below.

a) Facilitates Capital Mobilisation and Skill Acquisition

The institution of “kashtakoottu”, specific to the Tiruppur region, enables workers to set up units with the help of capital from kin members (Padmini and Jeyaranjan 1994). Further, we observed the role of dowry in mobilising capital for investment. Caste weddings play a critical role in expansion of kin networks. Thus, a member of one particular family hitherto unrelated to the industry, is likely to gain a foothold into it, if the family he marries into has an established interest in the industry. Further, these networks are also used to acquire managerial and entrepreneurial skills. The owner of one study firm, a Gounder, cites 15 to 20 other entrepreneurs from the same community, who had worked in his firm for a while before they moved on to set up units of their own (Ramasamy, interview). This firm is very illustrative of the process under discussion. Started in the early 1940s, it was one of the pioneering and largest firms in Tiruppur in the 1950s and 60s. The owner had been a worker in a Muslim-run knitwear firm during the 1930s before starting a unit with the help of capital from a relative who was running a grocery store.

According to him, “At that time, the industry was in the hands of Muslims and Chettairs. Gounders were only workers in these units. After I started my unit, I deliberately took upon the task of bringing the Gounders into this business”. Then he went onto cite a number of entrepreneurs, big direct exporters at present, who had worked under him in the 1950s, 1960s and 1970s. In many cases, he had provided them with machinery and contacts to undertake production of their own. And a large proportion of them came into contact with him through kinship ties.
Even, at present, many owners have worked in their relative’s firms for a period of six months to a year before moving out to set up firms of their own. Apart from the second-generation entrepreneurs taking over the family business, among the study firms, there were four firms where the owners who had been students earlier had worked in their relatives’ units.\textsuperscript{32} Knowledge of production organisation, capital management and negotiations with buyers and suppliers are all learnt through this process. Among kinfolk, such sharing of knowledge is not seen as harmful competition. Hence, though this sector cannot be labelled as ‘artisanal’, one important channel of acquisition of entrepreneurial skills is through traditional modes of apprenticeship.

\textit{b) Facilitates Information Flows}

The importance of establishing a direct and stable relationship with a trustworthy buyer to an individual firm’s success has already been discussed. Though it is possible to access buyers through addresses listed in Garment Importers’ Directory or other industry publications, the reliability of such buyers are far from established. As has happened to a number of firms in Tiruppur, delayed payments, failure to pay and rejection of the manufactured garments citing minor quality defects are all common. Of course, these problems can be avoided if payments are made through opening of a ‘letter of credit’ which ensures an advance deposit of half the total dues and payment of the rest immediately on delivery. However, for a number of sub-contractors, wanting to move onto the direct exporter status, irrespective of the mode of payment, the offer of an export order is a sufficient lure to take the order up. Since the buyers have a greater bargaining power vis-à-vis the producers, they could and often do refuse to open a ‘letter of credit’ and still get an exporter to supply to them.

Further, buyers willing to open a letter of credit would like to be assured of the quality and timeliness of delivery by the exporters. In this regard, kinship networks play an important role whereby established direct exporters introduce other family members who own finishing units to reputed buyers. Hence, they function as agents who reduce the information asymmetry that exists between the importer and the new exporting firm. Three of the study firms have become direct exporters through this process. In one case, TF exports, when a buyer wanted to import woven garments, the exporter helped his

\textsuperscript{32} Two are direct exporters and the remaining two, sub-contractors.
brother-in-law to set up a woven garment unit that continues to supply to that buyer. 33
Again, another new firm, after taking up sub-contracted work for only one year, was
introduced to a buyer through a relative direct exporter. The buyer, having placed all the
orders with the direct exporter, now places 25 per cent of the total orders with this firm.
As the owner of the new firm remarked “But for ‘periavar’ (the direct exporter who
happens to be his uncle), I can’t dream of becoming a direct exporter in a year’s time. 34
And moreover, I don’t have to worry about the reliability of the buyer” (Owner, F Knits,
interview by the author in Tiruppur, 29/3/1996). On the other hand, though not
acknowledged openly, by creating a series of obligatory relationships, the direct exporter,
to an extent, insures against any future risks that might befall him.

c) Facilitates Inter-Firm Networks

Extra-economic ties have an important role in facilitating production networks. A crucial
clue to this phenomenon is that while most producers are ‘locals’, traders invariably are
‘non-locals’ largely based in Bombay, Delhi or Chennai. It might be argued that traders
enjoy a good trader’s margin and hence are not forced to move into production. In fact,
the margins enjoyed by the traders, in most cases, are the same as that of the direct
exporters. One study merchant exporter firm actually reported a higher trader’s margin as
compared to that of the average manufacturer exporter. However, of late, severe
competition not only within Tiruppur, but also from producers in other countries like
Bangladesh and China, has led to considerable erosion of margins as the table 4.9 reveals.
As can be seen, profit margins reported by select study firms have declined in all cases,
due to higher competition within Tiruppur, and at present is roughly around 15 per cent
for exporters.

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33 This firm has already been discussed in another context earlier (p. 137-38).
34 ‘Periavar’ is a term used to refer to the family elder.
Table 4.9
Changes in Profit Margins for Direct Exporters
(Select Study Firms)

<table>
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<tr>
<th>Study Firms</th>
<th>Initial</th>
<th>1995/96</th>
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<tr>
<td>1</td>
<td>50</td>
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<td>2</td>
<td>25-30</td>
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<td>9</td>
<td>50-60</td>
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<td>10</td>
<td>30</td>
<td>14-17</td>
</tr>
</tbody>
</table>

Note: Profit margins are provided by respondents as the difference between their cost of production including that paid to contracted out work and their selling price as a percentage of the latter.
Source: Fieldwork undertaken during the period 1995-96

There are governmental concessions to manufacturer exporters as well that is denied to merchant exporters, providing further incentives to undertake manufacturing.

Despite all these factors, very few merchant exporters have moved into production in any significant manner. In such cases, production units have been set up only to register themselves as manufacturer exporters to avail of governmental concessions. Respondents from merchant exporter firms blame cultural factors for their inability to penetrate into the production system. According to them, lack of knowledge of the language and local specificities of networking places strong barriers to enter into manufacturing. A case in point that has been discussed earlier is the merchant exporter from Kerala who had moved into production for a short while only to realise the difficulties and confined himself to trade.

This firm has to be contrasted with a few other entrepreneurs from Kerala, who do undertake production, one of which was again part of our study. Hailing from the neighbouring district of Palghat, one such entrepreneur had a long business association as a yarn trader and hence knew quite a few of the local exporters and staging firms when he moved into production. This firm contracted out 75 per cent of its output to subcontractors who were known to him or bound by familial connections.
interview by the author in Tiruppur 9/5/1995). The importance of local ties and links can also be adduced from the fact that the finishing units studied invariably networked with staging firms owned by kin or by their former employers. According to one of them, "It makes things easier for us. In case of contingencies, when we have to finish up delivery on time, we can rely on these people to put in the extra effort" (Owner, AYE, interview by the author in Tiruppur, 15/3/1996).

Further, proprietors of staging firms may enter into partnership with friends or relatives to run a finishing unit. Such a contract works to their mutual benefit. Not only is the staging firm assured of a steady and reliable customer in the finishing firm, but the latter too has ready access to that specific process. These arrangements help reduce the risk and uncertainty involved in pure market transactions.

We have already cited the pervasiveness of kin networks among the sub-contractors of direct exporters studied in this research. Six sub-contractors studied had either relatives or friends as direct exporters who had promised them a regular supply of orders once they started production. Key informants reveal that such relationships play an important role in networking between firms. For instance, bleaching and dyeing would be contracted to units run by friends or family members where the firm would enjoy a definite priority in addition to a certain amount of commitment to quality and delivery time. The owner of a fabrication unit studied too had a son running a sub-contractor firm for exports, fabrication for which was exclusively done in this firm. This was also observed for a dyeing unit and bleaching unit. Such extra-economic ties, as stressed in industrial district literature, do appear to reduce transaction costs and contribute to the collective efficiency of Tiruppur in meeting delivery schedules and production of a wide range of orders.

d) Helps Smaller Firms to Withstand External Shocks

Another interesting observation is the role of kinship ties in helping small firms at the lower end of the hierarchy to tide over crises imposed by external factors. Smaller firms, both exporters and sub-contractors, are faced with recurrent problems of delayed payments and uncertain demand conditions. Under such circumstances, firms with kinship contacts are better placed to overcome these shortcomings. We elaborate upon this with the help of a case study. One of the bigger exporters, and an important member of the Tiruppur Exporters' Association, is a Gounder migrant from Dharapuram, a nearby
town, who moved to Tiruppur in the 1970s. Having established himself as one of the leading direct exporters, he has enabled six families related to him from Dharapuram to move and set up units in Tiruppur. Here again, the degree of closeness in the kinship hierarchy influences the degree of support extended. While his son-in-law was given charge of the main export unit, another close relative was helped to set up a unit and a set of foreign buyers introduced to his firm, enabling him to reach the direct exporter status right away. The other four families, not quite closely related, functioned either as subcontractors to this firm or as fabricators.

One of the two sub-contractors related to him, and who is also a part of our study, stressed the importance of such networks in tiding over risks. During the late 1994 and early 1995, the steep hike in yarn prices forced the closure of a number of small and new firms in Tiruppur. In this respondent’s case, the direct exporter partly bore the loss by converting it into a loan, and partly negotiated with the buyer to hike the price of the garment. The respondent felt that in the absence of such ties, he would have had no chance of surviving (Owner SIVG, interview by the author, 12/5/1995). In fact, the same hike in yarn price led to the closure of numerous similar small firms in Tiruppur during that period. Additionally, such small firms are provided assistance in purchase of inputs like yarn on credit from mills from which the parent firm procures yarn. Such interactions are, however, confined to firms in the first tier alone.

e) Reduces Scope for Opportunistic Behaviour

Kinship networks, by enabling ties beyond the economic realm, prevent agents from short-run opportunistic behaviour. In Tiruppur, until recently, access to credit had a major role to play in working capital management. As one respondent remarked half-jokingly, “In Tiruppur, to do business, you do not need money, only contacts. Once you know the right people, money would flow automatically” (Owner CLG, interview by the author in Tiruppur, 14/12/1995). Here, rather than property or material assets, it was social capital i.e., contacts through social networks that act as collateral for such credit. Input suppliers would supply raw materials on credit to both direct exporters and sub-contractors and wait for payments from them, until they, in turn, are paid by the firms to whom they supply. Next, staging operations like dyeing and bleaching, printing and calendering are all done by independent firms on credit and wait for payments to be cleared either from the foreign buyer or the direct exporter before being paid. Such trust-based credit
networks have obviously played an important role in enhancing the accumulation prospects of small firms. Entrepreneurs, enmeshed in kinship relations, enjoyed the benefits of trust-based credit transactions. Those members who had earned the trust of suppliers through prompt payments over a period of time would not only help other members to avail such facilities but also would be able to prevent any kind of opportunistic behaviour. Further, the above mentioned problems of sub-contractors like payment delays, deduction in payment due to quality problems, etc., are less for such firms.

Kinship networks, however, also exclude segments of capital that fall outside these networks. It also prevents collaboration from taking place across different caste or kinship networks. This is especially true for non-local capital, which faces serious constraints to production in Tiruppur cluster. A case in point is LG that has reverted to merchant exports after starting off as a manufacturer exporter. Owned by a Keralite, he says, "I don’t have a maaman or machaan to help me out. Without such ties production in Tiruppur is a headache." (Owner LG, interview by the author in Tiruppur, 12/6/1995).

The above discussion highlights the various modes through which caste and kinship ties facilitate the conduct of transactions within the cluster. The argument assumes that transactions take place between autonomous but inter-dependent manufacturers who do not force other agents into transactions, but enter into them in a mutually beneficial manner. In other words, the benefits of inter-firm transactions are shared equally between the transacting agents. Such a portrayal of transactions within inter-firm networks would mask the possible existence of unequal power among the agents. However, far from such an idealised version, transactions may also take place between agents with unequal bargaining power, thereby unequally distributing the benefits in the cluster (Herrigel 1993). The role of power in industrial districts needs to be addressed, as it is the distribution of power that conditions not only the present pattern of distribution of surplus, but also the future trajectory of accumulation within the cluster. In the following sections, we relate the empirical findings on the inter-firm networks in Tiruppur cluster to that held to prevail in an ideal industrial district.
E. Power in Inter-firm Networks

The presence of a large number of firms masks the high degree of control exercised by the bigger direct exporters over the rest of the firms in Tiruppur. In fact, the Tiruppur Exporters' Association, consists of around 400 members who account for more than 90 per cent of the manufacturer exporters from Tiruppur. Even considering the fact that a few direct exporters and the Bombay-based agents are not members, it appears that the remaining 2500 odd finishing units and nearly 3000 staging firms are heavily dependent on these direct exporters for getting a regular supply of orders.

Apart from the concentration of ownership observed by Cawthorne (1993, 11), the big direct exporters also control most production for the global market. This fact is borne out by the data furnished by the big exporter-participants of India Knit Fair '1996 held in Tiruppur (The Knit Fair Directory, 1996). The 50 odd firms which participated in the fair account for a turnover of 974 crores, which is almost half the total turnover of Tiruppur region as a whole for that year. This is as per the information given out by the AEPC data on knitwear exports from regional centres. The firms have also given their total group turnover. Though there are discrepancies like double counting and the presence of a few firms based in other centres, combining the two figures gives a value of nearly 1500 crores, which constitutes 75 per cent of the total turnover for the year 1995-96. This was further substantiated by an AEPC official, according to whom, around 100 exporters account for 80 per cent of the total exports (Sharma, AEPC Director, interview by the author in Tiruppur, 31/3/1995). Hence, it may be safely argued that the big exporters account for the major share of Tiruppur's exports. There is, therefore, a strong hierarchy of control, with the direct exporters (merchant and manufacturers) exerting a strong influence on the fortunes of the sub-contractors. Thus, unlike the industrial districts in Italy, most networks observed in Tiruppur are not formed between autonomous firms capable of exercising countervailing power on each other.

Of course, it is true that the market is not limited in size and avenues are open for subcontractors to move on to become direct exporters or for the smaller exporters to increase their turnover. However, there are barriers to such mobility due to the high transaction costs involved. On the one hand, given the high costs of negotiating with a larger number of firms involves substantial costs, often leading firms to prefer existing relationships over new ones. This illustrates the power dynamics at play, with larger firms maintaining control over smaller ones through these networks.
of suppliers, the traders prefer to negotiate with fewer suppliers who, in turn, would be responsible for contracting out the orders to other producers. On the other hand, difficulties involved in accessing buyers, in addition to presence of other risks, such as catering to a distant market, forces most sub-contractors and job-workers to restrict themselves to seek orders from the established exporters within Tiruppur. The structure of the output market appears to necessitate a hierarchy of production tiers.

Sub-contracting of production helps the bigger firms to pass on the shocks to smaller firms at the lower end of the hierarchy. Shocks are felt via a dip in the number of orders received. Now, most direct exporters process only a maximum of 60 per cent of the orders procured in house. Hence, a reduction in orders received and hence output, by even 40 per cent, will affect only the margins they would otherwise gain from sale of the sub-contractors’ output. During such periods, small firms dependent on the bigger firms for their orders, are thrown into crises. In fact, the sharp hike in hosiery yarn prices in December 1994 led to severe crises in the industry. While the big direct exporters survived due to the higher margins and closer relations with the buyers they enjoyed, more than 200 to 300 firms functioning as sub-contractors are stated to have closed down. Hence, the smaller firms, largely serve as ‘reservoirs of flexibility’ that enable the bigger firms to cushion themselves against shocks due to factors exogenous to the cluster. However, similar small firms, well-knit by kinship ties to bigger exporters, tend to offset the financial crises by sharing it with the latter.

The degree of control exercised by the direct exporters on the staging firms is, nevertheless, less, when compared to the sub-contractor finishing units. The staging firms do enjoy a high degree of autonomy, as each unit caters to a number of exporters, and are less dependent on a single client. However, there has been gradual erosion of the intensity of their networking with the direct exporters, since, at present, the large direct exporters own a number of staging units themselves. Till the late 1980s, exporters would expand largely by way of setting up an additional finishing unit and in few instances by setting up a dyeing unit. During the 1990s, the stable component of the output of the bigger direct exporters has increased after they established a stable relationship with some of their buyers. Consequently, a number of them have set up a variety of staging firms of their own, as is evident from the table below (Table 4.10).
Table 4.10
Extent of Vertical Integration among Direct Exporter Study Firms

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<th>No.</th>
<th>Name</th>
<th>Fab</th>
<th>D&amp;B</th>
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Note: Fab - Fabrication; D&B - Dyeing and Bleaching; Cal - Calendering; Prt - Printing; Emb - Embroidery; Bn Hol - Button Holing; Spn Mil - Spinning Mills; Turn Dry - Tumble Drying; Cur - Curing; Tot - Total; Turn over is in Rs. Lakhs.

*’ indicates the installation of that specific process in-house by the firm.

Source: Fieldwork conducted during the period 1995-96

Further, with a large number of sub-contractors being dependent on them, these firms find it viable to even install specialised machinery, for they could insist that the orders contracted out be processed in the parent firms' units. In fact, this was a regular complaint by the respondents in independent staging firms. They reason that their demand has been considerably reduced because, for processing, sub-contractors are forced into dependence on the direct exporters. Further evidence can be provided from the four
fabrication units studied. They cater to roughly around 50 finishing units each. Most of their customers are sub-contractors and domestic manufacturers. In fact, all the firms together supplied to only around 10 direct exporters and all relatively small firms at that. All the firms agreed that this was due to the big direct exporters having their own fabrication units. This phenomenon has serious implications for the intensity of inter-firm networks as well, since it erodes the basis of vertical networking to a fair extent.

Apart from gains in margins, the growing quality standards make the process of vertical integration an increasingly attractive proposition for the larger firms. In fact, we came across three big direct exporters who had plans to set up vertically integrated units in the near future. Thus, we witness a movement from regional integration, marked by inter-firm networks to greater functional integration, wherein bigger firms tend to undertake a larger number of processes in-house. However, the interaction among sub-contractors/job-workers and the staging firms are not marked by a hierarchy of control, as staging firms cater to many sub-contractors and sub-contractors too have the option of shifting from one staging firm to another if dissatisfied with the transaction. These networks therefore, come closest to the non-hierarchical networks between autonomous firms typical of industrial districts.

F. Competition vs. Co-operation

Based on the above discussion, we develop a table on the extent of co-operative relations in the cluster (Table 4.11). We observe that while certain inter-firm networks are marked by fair degree of co-operation, we do find an absence of such co-operative behaviour between many firm-types. This absence may be due to the imperative to compete with one another to survive or grow. Studies on industrial districts also emphasise the significance of co-existence of intense rivalry and co-operative alliances between various firms in the district (Spath 1994; Nadvi 1994). In Tiruppur too, inter-firm co-operation takes place amidst severe competition.
Table 4.11
Intensity of Co-operation in Tiruppur Cluster

<table>
<thead>
<tr>
<th></th>
<th>Exchange of Information and Experience</th>
<th>Sharing of Equipment</th>
<th>Training</th>
<th>Process/ Improvement</th>
<th>Use of Business Association</th>
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</thead>
<tbody>
<tr>
<td>Horizontal Co-operation</td>
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<tr>
<td>DE – DE</td>
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<td>Weak</td>
<td>Weak</td>
<td>Weak</td>
<td>Strong</td>
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<tr>
<td>SC – SC</td>
<td>Weak</td>
<td>Strong</td>
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<td>Weak</td>
<td>Weak</td>
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<tr>
<td>DE – SC</td>
<td>Weak</td>
<td>Strong</td>
<td>Weak</td>
<td>Moderate</td>
<td>Weak</td>
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<tr>
<td>DE/SC – JW</td>
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<td>Weak</td>
<td>Weak</td>
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<tr>
<td>Staging Firms – Staging Firm</td>
<td>Moderate</td>
<td>Weak</td>
<td>Weak</td>
<td>Weak</td>
<td>Strong</td>
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<td>Vertical Ties</td>
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<td>DE – Staging Firms</td>
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<td>SC – Staging Firms</td>
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<td>Staging Firms – Staging Firms</td>
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<td>With Buyers</td>
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<td>With Suppliers</td>
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<td>Moderate</td>
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Note: DE=direct exporters, SC=sub-contractor, JW=Job workers
Source: Fieldwork done during the period 1995-96

The impact of price-cutting is felt more by sub-contractors and job-workers who, without exception, complain of erosion of profit margins. According to two of them, it has become almost impossible for sub-contractors to function in rented spaces. With the proliferation of firms, land prices have appreciated to a considerable extent leading to high rents. The simultaneous increase in rents and the decline in profit margins have led to the failure of many firms in recent years. In the course of fieldwork, respondents were very willing to give examples of firms that have closed down in recent years due to this profit squeeze.

Added to this is the problem of 'debiting' by the direct exporters. A single order obtained by the direct exporter is split into smaller orders and contracted out to different sub-contractors. Let us assume that one lot of the entire order has not met the quality requirements of the importer and the corresponding amount is deducted from the amount due to the direct exporter. A number of sub-contractors felt that instead of passing on the loss to that sub-contractor, who had taken up that particular portion of the order, the direct
exporter would deduct from the payment due to all of them. This is because, in the absence of any contact with the importers, they have no avenue to know the extent and nature of rejection. Some of them also claim that even when the direct exporters are responsible for delayed production and hence transport by airfreight, the losses thus incurred were recovered from the sub-contractors. This phenomenon is acknowledged to be true in all discussions held with informants. Thus, the presence of a strong information asymmetry between the exporters and sub-contractors with regard to the nature of the contract between the exporters and buyers places the sub-contractors in a vulnerable situation. Thus, the risk arising out of information asymmetry between the buyers and the direct exporters is, in a sense, passed on to the direct exporters. This may even be another actor influencing exporters' decision to organise production through sub-contracting. However, sub-contractor firms in the first tier are shielded from such losses.

The sub-contractors also express strong dissatisfaction over the delayed payment by the direct exporters. Six study firms (from both sub-contractors and job-workers) report payment dues running into lakhs of rupees from the direct exporters. One respondent even felt that the money paid by the importer to the direct exporter is lent out through informal credit channels at high interest rates until the payment is made to the sub-contractors. Another firm, since its inception, has been taking orders from only one direct exporter, who happens to be the owner's relative. The rampant debiting and payment delays have prevented this firm from venturing out to new customers, according to the respondent. Once again, sub-contractors in the second tier happen to be the more likely victims of such opportunistic behaviour.

To overcome these problems, an association of sub-contractor manufacturers called Iruppur Export Knitwear Manufacturers' Association (TEKMA hereafter) has been formed. It was started with the basic objective of curtailing unhealthy competition among the sub-contractors, which had led to intense price wars among them in recent years. The association fixes prices for standard orders seasonally, to which the members are expected to stick to. Interestingly, of all the sub-contractor firms studied, only two are members of this association. The reason cited for not joining was the total ineffectiveness of this association in fostering any kind of co-operative behaviour between the sub-contractors. A respondent of one of these firms succinctly described this. "Three of us should go to meet an exporter for orders. We would decide beforehand not to settle for
anything below a commonly accepted price. Suppose the direct exporter rejects our offer. The next day, one of the three entrepreneurs would go back and take the order at the price fixed by the direct exporter!” (Owner BS, interview by the author in Tiruppur, 24/4/1996)

The scramble for orders prevents the smaller firms from entering into co-operative alliances with other sub-contractors. To an individual firm, establishment of a stable patron-client relationship with a direct exporter is strategically more advantageous than collaborating with fellow sub-contractors to bargain with the direct exporters. Most small firms are forced to accept orders at very low margins as this always opens up the possibility of a steady flow of orders from the direct exporter in the future, just as new direct exporters are stated to do in their contracting with buyers.

This is not to deny any kind of co-operation between these firms. Studies by Cawthorne (1995) and that by Padmini and Jeyaranjan (1994) have pointed out the nature of co-operative networks between firms in Tiruppur. We cited the sharing of machinery to meet sudden requirements during peak season was found in many a study firm. Short-term borrowing of capital to meet working capital requirements is also found in a few cases. However, these instances of co-operation largely take place within kinship and ethnic networks and those outside these networks do not enjoy these privileges.

Summary

In this chapter, we examined the role of inter-firm networks in facilitating a flexible accumulation process. We differentiated networks into vertical and horizontal networks among producers within the cluster and that between producers and traders. We find that producers’ interaction with traders/buyers in most cases is confined to that of a commercial contractor, i.e., production of garments according to specifications given by the buyers. Interactions that may enable producers to move up the value chain or nodes in the commodity chain are few. Only in a few cases, we find that long-term relations with buyers enable exporters to cope with demand uncertainty to a certain extent. Given the scramble for export orders among producers in Tiruppur and competition from producers in other peripheral regions like China and Bangladesh, buyers wield considerable power vis-à-vis the producers, when they transact with each other. Though competition among buyers and the need for buyers to minimise the costs of monitoring the producers do
prevent them from opportunistic behaviour to an extent, trust-based networking beneficial to the producers appear to be limited.

Of the networks between producers within Tiruppur, we find that kinship and ethnic ties play an important role in reducing transaction costs, so much so that, entrepreneurs outside of these networks find it difficult to undertake production in Tiruppur. Nevertheless, these inter-firm networks contribute considerably to generating flexibility in the production structure. While horizontal networks between finishing units primarily enable them achieve flexibility in quantity of output, vertical networks facilitate staging firms to realise scale economies and thereby enabling the introduction of new processes and new techniques in fabric processing.

Although inter-firm networks in Tiruppur possess some of the qualities that are said to characterise ideal small firm networks, they are distinctive as well. Unequal distribution of power between the direct exporters and the rest of the firms in Tiruppur has invested the direct exporters the ability to pass on the shocks to the smaller firms. The smaller firms tend to act as 'flexibility reservoirs' that enable firms at the higher end of the hierarchy to confront flexibility in demand. Though this has definitely contributed to the cluster's collective efficiency in negotiating a flexible a product market, the distribution of the benefits and risk hence obtained appears to be far from equal. In the next chapter, we seek to analyse the role of the labour market in addressing the specifities of Tiruppur's export markets and the consequent implications for labour.
Appendix 4.1
QUESTIONNAIRE FOR FIRM STUDY

Block 1:

1. Name of Firm:

2. Address:

3. Year of Establishment:

4. Registered/Unregistered:

5. Type of Organisation:
   a) Sole Proprietorship
   b) Partnership
   c) Pvt. Ltd.
   d) Public Ltd.

6. Ownership Characteristics:

   Name:
   Age:
   Caste:
   Educational Qualification:
   Previous Occupation:
   Place of Origin:
   Reason for Migrating:
   Period of Residence in Tiruppur:

7. How did you enter this industry?
   a) Previous experience as an employee
   b) Through relative and friends
   c) Other factors. (Specify)

Block II:

1. Nature of market:
   a) Domestic
   b) Export
   c) Domestic/Export

2. Position in the distribution chain:
   a) Direct exporter
   b) Sub-contractor to direct exporter
   c) Sub contractor to merchant exporter
   d) Sub-contractor to direct exporter and merchant exporter
   e) Direct exporter also undertaking production for other firms
   f) Primarily a merchant exporter, who also has production facilities
   g) Others, specify.
Questions to Direct Exporters:
3. What did you begin as?
   a) Direct exporter
   b) Subcontractor to direct exporter
   c) Subcontractor to merchant exporter
   d) Merchant exporter

   If a, b, or c, what were the factors that helped you to move to this status while many others have stagnated?

4. How were the initial contacts with customer/customers established?

5. From whom were production orders procured immediately?
   a) Wholesaler
   b) Retailer
   c) Others, specify.

6. And Now?
   a) Wholesaler
   b) Retailer
   c) Others, specify.

7. If there have been changes, what are the reasons?

8. What is the normal size of an order (give range)?

9. How many orders did you get in the last three years? Give details for the last one year:

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity</th>
<th>Time of Procurement</th>
<th>Time of Sale</th>
<th>Value of Sales</th>
</tr>
</thead>
</table>

10. Do the orders come from the same firm/firms?

11. If yes, what in your opinion, are the factors that enabled this patron-client nexus?

12. If no, what is the nature of competition with other firms? i.e. is there a tender system? If not, what criteria does the buyer adopt to place orders? Has it changed over time?

13. Who are your main competitors, within Tiruppur, within the country and abroad?

14. What in your opinion is the source of their competitiveness?
   a) cheap and skilled labour
   b) Flexibility with regard to working hours, employment conditions etc.
   c) Better machinery and equipment
   d) Good quality and cheap raw materials, power, water, etc.
   e) Proximity to markets and hence lower transportation costs
15. What are the major markets for your products? (Initial and now; respective shares, if possible).

<table>
<thead>
<tr>
<th>Initial</th>
<th>Quota countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-quota countries</td>
<td></td>
</tr>
<tr>
<td>Quota countries</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Present:</th>
<th>Quota countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-quota countries</td>
<td></td>
</tr>
<tr>
<td>Quota countries</td>
<td></td>
</tr>
</tbody>
</table>

16. If there are changes what are the factors responsible?
   a) Greater profit margins
   b) Greater unit value realisation
   c) Stiff competition forcing you to look for other outlets
   d) Government policy (elaborate)
   e) To reduce seasonality
   f) Others, specify

17. Is there a seasonality of demand? If so, what is the nature of the cycle? What are the factors that influence/determine this cycle?

   Peak demand (months):

   Low demand (months):

18. Are specific products subject to seasonality in demand? If so, give details.

<table>
<thead>
<tr>
<th>Product</th>
<th>Demand Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. What is the difference in the quantum of output between peak and low demand months?
Block III:

1. What are the products manufactured now? (Give break up in terms of fabric used, counts, final goods, etc).

<table>
<thead>
<tr>
<th>Products</th>
<th>Fabric used</th>
<th>Counts</th>
<th>% of total O/P</th>
<th>Manufactured since</th>
</tr>
</thead>
</table>

(If the shares have been changing over time, give the initial and final shares)

2. Has manufacture of any product been stopped at any point of time? If so, why? (Give details – this includes similar products but different fabric, counts, etc).

<table>
<thead>
<tr>
<th>Products</th>
<th>Fabric used</th>
<th>Counts</th>
<th>Stopped since</th>
<th>Reason for Stopping</th>
</tr>
</thead>
</table>

3. What are the factors responsible for this diversification?
   a) Changes in the market
   b) To reduce the fluctuations in demand
   c) Movement to higher value added products
   d) Others, specify.

4. Has this diversification resulted in higher realisation of value per unit of output?

Block IV:

1. Do you sub-contract?

2. If yes, what is the nature of subcontracting?
   a) Only specific operations
   b) Entire orders
   c) Both

3. Why do you subcontract?
   a) To avoid registration
   b) Inability to afford high fixed capital costs
   c) To offload peak season demand
   d) To avoid labour problems
   e) Others, specify.
   (If the reasons are different for various types of subcontracting, mention for each).

4. Is such subcontracting practice normally the case for all firms?
   If no, mention what kinds of firms normally indulge in this kind of subcontracting.
5. How do/did you choose your subcontractor?
   a) Relative
   b) Based on past experiences of working with him
   c) Proximity to your firm
   d) Earlier employee (mention work status)
   e) Others, specify

6. How is the selling price of the subcontractor's output fixed?

7. Are you satisfied with organising production through subcontracting? If not, what are the problems normally encountered?
   a) Inability to meet delivery schedule on time
   b) Poor quality control
   c) Higher cost
   d) Other, specify

8. What happens when there are defects in their output?

9. How often have you changed your subcontractor? Give reasons.

10. If there is no subcontracting, what are the reasons?
    a) Stable demand
    b) Need to maintain quality control
    c) Others, specify

11. Do you also undertake operations for other manufacturers/merchants? If so, what are they? Why?
    a) availability of specialised/modern equipment
    b) Others, specify

12. At what profit margins do the various subcontractors undertake orders?
    a) Knitting
    b) Bleaching
    c) Dyeing
    d) Calendering
    e) Printing
    f) Others, specify

13. Are they subject to fluctuations? If yes, of what nature?

General remarks:

Block V:

1. Do you buy or make knitted fabric? What are the respective advantages?

2. Whom do you procure yarn or fabric from?
   a) Mills
   b) Agents
c) Others, specify

3. Do you always prefer to use the same mill’s yarn or fabric? If so, why?

4. If not, how do you choose your supplier?

5. Are there any difficulties in getting regular supply of yarn? If so, what are they?

6. How many days’ requirement of stock or yarn is held?

7. Are there variations from order to order and over time in the quality of yarn required? Have the suppliers been able to respond to these changing requirements?

Block VI:

1. What is the nature of changes in your output prices over the past five years? Has it been increasing over time or has it been subject to fluctuations?

|----------|------------|------|------|------|------|------|

2. If the latter what are the influencing factors? Give accurate figures if possible.

3. Has your profit been affected by sudden changes in input prices (yarn/fabric)? How?

4. What are the factors that influence these changes in prices?

5. Can you give the rates at which yarn/fabric were purchased in the last three years?

6. Has the product composition changed in response to changes in input and output prices? (Give details).
Block VII:

1. Details of Production:

<table>
<thead>
<tr>
<th>Operations</th>
<th>Labour No. Male/ Female/ Children</th>
<th>Wages in Rupees Permanent rate / Temporary rate</th>
<th>Tools/Machinery Used</th>
<th>Skills/ Educational Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabrication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stitching</td>
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<tr>
<td>Over lock</td>
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<tr>
<td>Flat lock</td>
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<tr>
<td>Chain lock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewing M/c (Singer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embroidery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ironing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. What is the normal production period for a single batch?

3. Production cost break up:

Table B - Present
Capital invested (Fixed):

<table>
<thead>
<tr>
<th>Items</th>
<th>Initial</th>
<th>Additional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(For machinery, give both the cost at which they were purchased and the replacement value. For land give the current value also).

4. Working capital requires for processing one order; say 50,000 pieces.

<table>
<thead>
<tr>
<th>Items</th>
<th>Amount in Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td></td>
</tr>
<tr>
<td>Power and Fuel</td>
<td></td>
</tr>
<tr>
<td>Rent</td>
<td></td>
</tr>
<tr>
<td>Transport cost</td>
<td></td>
</tr>
<tr>
<td>Administration cost</td>
<td></td>
</tr>
<tr>
<td>Other expenses, specify</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

5. What percentage of production is dyed and printed?

Do you give it to outside agencies or do it in your own firm? – i.e. do you have your own bleaching and dyeing units? What are the advantages?


<table>
<thead>
<tr>
<th>Inputs</th>
<th>Supplying firm/firms</th>
<th>Problems encountered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buttons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zips</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size sticker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thread</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Mode of transport of raw materials

8. Mode of transport of intermediates

9. Mode of transport of finished goods

10. How do you choose your transport service?

11. How often have you changed the location of your firm? Give reasons.
12. Does the location of your firm in this particular place offer any special advantages in terms of access to inputs and infrastructure?

Block VIII:

1. How do/did you recruit labour?
   a) Through family connections
   b) By advertising
   c) Through friends
   d) Relatives
   e) Through job contractor
   f) Others, specify
   (This would be different for different operations. Mention for each operation.)

2. Do you prefer to recruit labour from
   a) Local workers
   b) Migrants
   c) Same caste (give reasons)
   d) Others

3. Employment status of workers: (including administrative staff)

<table>
<thead>
<tr>
<th>Job</th>
<th>Temporary</th>
<th>Permanent</th>
<th>Wages – Temporary rate</th>
<th>Wages – Permanent rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4. What are the reasons? Has it changed over time? If so, why? Is it normally the case in all firms?

5. Have the wages been hiked over a period of time? (Give wage data across different categories of workers for as many years as possible).

6. Has wage hikes reduced profit margins? Or is it that profits have increased more than wage increases?

7. What criteria do you adopt to give promotions?

8. Has diversification into new product lines or the use of imported machinery warranted new skills? (Elaborate).

9. If so, are old workers trained or new workers recruited?
10. In the absence of any formal training institutes in the vicinity, how do workers in Tiruppur equip themselves with new skills required? Have you imparted training to your workers? Has there been incidence of foreign firms training up workers here?

11. Has there been retrenchment of labour due to adoption of advanced technology in your firm/other firms?

12. Is there a high turnover of labour in your firm? What are the factors responsible?

13. Any strikes labour dispute in the history of the firm? If yes, what were the factors involved and how were they resolved?

14. Have you ever faced shortage of labour? If so, for which operations?

General remarks:

Block XI:

1. When you began, what was the machinery installed? (if second hand, mention)

<table>
<thead>
<tr>
<th>Machinery</th>
<th>Number</th>
<th>Purchase price</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knitting</td>
<td></td>
<td></td>
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<tr>
<td>Over lock</td>
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<td>Chain lock</td>
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<tr>
<td>Flat lock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. What are the additions/replacement to machine stock since then? (Suppliers, cost details).

<table>
<thead>
<tr>
<th>Machinery</th>
<th>Number</th>
<th>Purchase price</th>
<th>Supplier</th>
<th>Date of installment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knitting</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Over lock</td>
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<td>Chain lock</td>
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<td>Flat lock</td>
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</tr>
<tr>
<td>Singer</td>
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</tr>
</tbody>
</table>

3. If new and sophisticated machinery has been installed later, what made you to update technology?
   a) To keep pace with changes in other firms
   b) Insistence of the buyer
   c) Compulsions of product diversification
   d) Others, specify

4. If no changes: There are firms in Tiruppur and in competing nations, which have switched to advanced technology. Why haven’t you followed suit? Will this not undermine your competitiveness?
5. Have the machinery bought been found unsuitable to the local environment? If so, what kind of changes/alterations has been done to the machinery purchased? (As detailed as possible).

6. What are the advantages the new imported machines offer as compared to the earlier ones?

7. Has the use of new machinery reduced the need for labour, leading to retrenchment?

8. Do you feel the skill level of workers in Tiruppur is good enough to cope with changing environment?

9. What kind of technological upgradation have you undertaken with regard to communication with buyers and suppliers? (Give the initial mode of communication, the present mode and the reason for changes).

10. Does the production process need clearance form pollution board? If so, for what processes?

11. Has this led you to install pollution control equipment for your unit?

12. If not, why?

Block X:

1. What was the initial source of capital?
   a) Inheritance
   b) Personal savings
   c) Loan from relatives, friends
   d) Loan from the bank
   e) Other agencies like TIIC, SIDBI, etc
   f) Others, specify

2. How do you meet your working capital requirements?
   a) Advance from buyer
   b) Suppliers credit
   c) Bank credit
   d) Others, specify

Do you get credit from your suppliers? If yes, of what nature?

3. What was the source of capital for later expansion? (Purchase of additional land, building, machinery, etc).
   a) Profits reinvested
   b) Personal savings
   c) Loan from relatives, friends
   d) Loan from the bank
   e) Other agencies like TIIC, SIDBI, etc
   f) Others, specify
4. To what extent have banks and other state lending institutions been helpful in providing credit for expansion, purchase of new machinery, etc?

5. Name of the bank you work with and the reasons for that choice.

6. Do you have problems of payment from your buyers abroad? If yes, of what nature?

7. Do you avail of any incentives provided by the government for exporters? If yes, mention the nature of incentives provided.

8. If no, what are the reasons?

9. Average profit earned over the past five years?

10. Has the profit earned been
   a) Reinvested in the industry (give details)
   b) Invested in assets like house, car etc.
   c) Invested in shares, securities, etc.
   d) Others, specify

11. If not invested in the industry, what are the reasons?
   a) Too risky due to fluctuations in demand and supply
   b) Need to replay loans
   c) Others, specify

12. Do you own any other units that are ancillary to the knitting industry like bleaching, calendring, dyeing etc.? Or do you have units of the same kind located in other places? If yes, why did you set up different firms instead of expanding the same unit?

13. Has there been a decline in profit margins over the years due to increasing competition?

14. Do you belong to any trade/producer association -
   a) None
   b) SIHMA
   c) TEA
   d) Others

15. If yes, what are the benefits that you get by being a member?

16. Do you have any other business interests? If yes, give details.

17. Have you interacted with government research institutes like SITRA to sort out production problems? If yes, give details – are you satisfied with them? If not, give reasons.

18. What are the problems normally encountered with regard to supply of raw materials, labour, machinery, infrastructure, procurement of orders, etc?
19. What kind of intervention by the local municipality, state and central government do you envisage to overcome these problems?

Block XI:

Additional questions to subcontractors, direct and merchant exporters

1. Do you get orders from the same parent firm or from different firms?

2. How do you procure orders?

3. Do you have work throughout the year? What is the normal pattern of fluctuations?

4. Do you also give jobworks to other firms?

5. If yes, why?

6. Do you undertake production for the domestic market during off-season months? If no, why?

7. If there are “no work” months what other activities do you undertake during that period?

8. Why have you not been able to gain direct access to the export market?

9. If you were to export directly, would you be able to upgrade technology and wage levels?

10. How is the price of your output fixed?

11. What in your opinion, is the merchant exporter’s margin?

12. In case of rejections, are the losses borne by the merchant exporter or passed on to you?

13. How many times has it happened to you? (Give details).