

**The working of entrepreneurs in a competitive low technology industry:
The case of master weavers in the handloom industry**

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Exploring the working of entrepreneurs in a low technology industry: The case of master weavers in the handloom industry

Abstract: It is virtually impossible for any industry to remain relevant for centuries but the handloom industry in India has been surviving since time immemorial. It is popularly believed that this industry has survived due to the monetary and regulatory interventions of the government. It is true that millions have been spent by the various governments in the last 100 years but the industry has also had the innate doggedness to survive and remain relevant to the current textile needs of the country. Textile entrepreneurs (also known as master weavers) have played an important role in making handloom extremely competitive. It is their tenacity to subsist when markets are down and their ability to innovate when the markets are up that has played a crucial role in the survival of the industry. Government of India has acknowledged that 75% of the weavers function under the master weaver segment but little is known about their functioning. This paper addresses the limited knowledge about these master weavers and throws light on their functioning. Two main entrepreneurial processes will be described – transaction costs and social capital. The aim is to document the entrepreneurial functioning of a master weaver and understand how he sells in the same markets where the cooperatives are unable to sell.

1. Introduction

The importance of small enterprises in rural areas in emerging economies is generally acknowledged by many researchers and practitioners (van Dijk, 2000). In a country like India, where about 70% of the people live in rural areas, non-farm enterprises are important for their ability to absorb excess labour that may not find employment in the farming sector (Lanjouw and Lanjouw, 2001). Many village enterprises in India are traditional in nature where the technology is not sophisticated and the training is informal passed on from older family members to the younger members. One of the largest family-based traditional industries in India is handloom.

The Handloom industry is a pre-market, pre-capitalist industry that produces fabric using hand-operated looms and provides employment to over 10 million people in India (Mukund and Sundari, 2001). The popular belief is that the handloom industry has survived only because of government support¹. However, an alternative viewpoint suggests that the industry endured because of its ability to adapt to the challenging needs of the textile markets of India by providing quality goods with skilful designs (Mukund and Sundari, 2001; Bharatan, 1988). A look at the handloom industry over the past years reveals that the changes in production technology are few but the changes in the market are substantial. While handlooms has been losing the low end market to the power looms, it has been gaining new ground in the high and mid-range markets with its creation of new niches. At the centre of these higher-end market transactions are entrepreneurs, in this case, the master weavers. There are

¹ Programs include formation of weavers' cooperatives and 'protecting' the small scale industry mainly through reservations – a process by which only handloom units were allowed to produce certain products for both domestic and export markets.

two facts about master weavers that make them an interesting subject of research first they are able to sell in the same markets where the cooperatives are unable to sell without subsidies. Second fact, which the government has now begun to acknowledge, is that 75% of all the weavers in the country work under master weavers (GOI, 1996). So how is it that majority of the weavers continue to work under master weavers even though, the local cooperatives are supposed to be more 'weaver friendly'? As things stand now, we have more understanding of why majority of weavers continue to work for master weavers – improper functioning of the cooperatives and the inability to provide work on a continuous basis. Hence although the wages of the cooperatives may be higher and fairer, what weavers seem to value more is continuity of work.

Till date, only few scholars (Cable et al. 1988; Mukund and Sundari, 2001; Niranjana and Sundari, 2006; Dev et al. 2008) have written about master weavers. Many of these, with an exception of Niranjana and Sundari, 2006, have taken a macro perspective of the sector with the entire sector being the unit of analysis. This study by adopting a micro perspective – individual operations of the master weavers – seeks answers to the broad question of how master weavers function and how are they able to sell in the same markets where the cooperative are failing to do so. There are two broad set of operating philosophies that seem to help the master weavers. First they strive extensively to keep their transaction costs low so that the price of the final product remains within the budget of the end customers. Second they remain close to the demands of the markets by using their social networks of contacts extensively.

This paper is divided into four parts. The first part introduces the working of master weavers and describes how they come into being and how they operate, the second part describes the process and activities that enable them to keep their transaction costs low, the third part focuses on the techniques that they use to be in close proximity to the markets. The bulk of the third part will be on analysing the social networks of the master weavers and their contribution to the success of the firm. The final part, describes the challenges master weavers face in managing their ventures.

For this study, a combination of narrative and descriptive data was used. Quantitative data for this study was collected from the clusters of Mangalagiri, Chirala, Gadwal and Pochampalli in Andhra Pradesh. The qualitative data was collected from 25 master weavers from five different clusters (the above four along with Uppada). Four master weavers each from Mangalagiri, Chirala, Gadwal, and Pochampalli; and nine

master weavers from Uppada were interviewed. Since the Uppada cluster was logistically the easiest to access, many of the initial interviews were conducted here. Quantitative data was collected using a set of questions regarding various aspects of a master weaver's operation and details of his social network. A two-fold process was used to develop the questionnaire. In the first part of this process, the pre-testing phase, the questionnaire had queries on the entrepreneur's background (human capital), on their current business activity and on their networking activities (social capital). Once the questionnaire was finalised it was administered in four clusters—Mangalagiri, Chirala, Gadwal and Pochampalli. Uppada was left out as there were too few master weavers. In total, quantitative data from 107 master weavers was collected.

2. The workings of master weavers

This section describes the working of master weaver starting from how they establish their firms, what are the various startup processes. This section also details out their operations with a focus on production and marketing.

2.1 Establishing a firm

Compared to the knowledge of the working of a master weaver, the knowledge of how master weavers come into existence is limited. There are many similarities between master weaver firms in the same cluster. A successful routine is quickly copied by the others.

The path to establishing a master weaver firm can be abstracted to two different routes. The first route is to 'inherit' part of the family firm. Handloom is primarily a family or kin-oriented business involving either siblings or cousins. Siblings and cousins usually play managerial roles to begin with. When the firms become large, every stakeholder gets his share of the business in the form of capital, employees and clients. The original firm is then splintered into many firms. The second route is that taken by weavers who after working for an intermediary – cooperative, NGO or a master weaver – for a while set up their own firms with financial support from family or elsewhere. Unlike splinter groups, the weavers who establish fresh start-ups are unlikely to have any business experience and learn the elements of managing a business by observing others and learning from their own mistakes. Other than those who are part of the weaving community, it is not easy for persons from any other caste to set up master weaver firms.

As one master weaver commented “*In the last 12 years in Pochampally, there were only two instances where someone from another caste set up a firm. Both these firms became bankrupt in less than a year.*” Managing a master weaver firm may require a lot of tacit knowledge that accrues through a mix of experience moderated by a sense of belonging to the same community. It may be due to this sense of belonging that it is possible for any weaver (and not members from other castes) to start his own firm, unless he is indebted to a master weaver. The most challenging part of starting one’s own firm is to raise the required capital and to recruit weavers as most of them would be under the aegis of another master weaver. An important factor in creating an enabling environment for new start-ups is the macro environment surrounding the village or cluster. During boom time, there are a number of opportunities for weavers to break their bonds with master weavers to establish their own firms because many individuals (especially raw material suppliers) would be willing to lend money but in normal times when there is lesser optimism of the industry, it may be more difficult. The basic demographics of the master weavers in the study area is given in Table 1.

Table 1: Master Weaver demographics

	Respondents		Entrepreneur Age			Firm Age		
	Number	Percentage	Minimum	Maximum	Average	Minimum	Maximum	Average
Pochampalli cluster	37	34.6	35	57	46.2	7	31	18.8
Gadwal cluster	15	14.0	27	52	41.0	5	24	14.9
Mangalagiri cluster	22	22.6	38	65	46.7	9	32	19.0
Chirala cluster	33	30.8	38	55	47.7	9	34	18.9
<i>All clusters</i>	<i>107</i>	<i>100</i>	<i>27</i>	<i>65</i>	<i>46.1</i>	<i>5</i>	<i>34</i>	<i>18.3</i>

This table shows that the average age of the master weavers in the sample is about 46 years. The average age of their firms is 18 years. The most recent firm has been in business for 5 years and the youngest entrepreneur is 27 years old. The oldest firm started 34 years ago and the oldest entrepreneur is 65 years old. The fact that no new firms have been established in any of the four clusters indicates that perhaps the industry has reached its saturation levels and offers few opportunities for fresh entrants. It was found that Gadwal’s average firm and master weaver age is lower than those of the other clusters. Of those that have started young, it was found that they do not come from master

weaver families but have started out on their own after working with another master weaver for a short while.

Table 2: Start up process in the handloom industry.

	Respondents	Splinter firms		Fresh start-ups	
		Number	Percentage	Number	Percentage
Pochampalli Cluster	37	20	54.1	17	45.9
Gadwal Cluster	15	6	40.0	9	60.0
Mangalagiri cluster	22	5	22.7	17	77.3
Chirala cluster	33	8	24.2	25	75.8
<i>All clusters</i>	<i>107</i>	<i>39</i>	<i>36.4</i>	<i>68</i>	<i>63.6</i>

The above table shows that among those surveyed, there are more fresh start-ups (64%) than splinter firms, with the exception of Pochampalli. This implies that given certain conditions, independent weavers do have possibilities of coming out of the ‘clutches’ of master weavers to establish their own ventures. It is the demand of a particular product that creates an enabling environment for weavers along with the characteristics of their social networks that seem to influence who is able to set up their own ventures. It is mostly through referrals (an important function of the social network) that weavers wanting to set up their own ventures reach weavers who will work for them and the clients who will purchase their products.

2.2. Spheres of Operation

A master weaver usually manages his business from his home where he has a separate section for transacting business with his weavers, for storing raw material and for displaying finished products. If his business grows, he may explore the possibility of setting up a small shop in the village. Any master weaver has to engage in two separate spheres of operation – **Production** and **Marketing**. Finance and design of new products play an important role in both. Figure 1 depicts the functioning of the various stakeholders in the handloom industry. The clients of the master weaver are the owners of textile stores in various urban and semi-urban areas and it is through them that the products reach their retail customers. The main raw material in the handloom industry is yarn. Coloured yarn in different hues is

given to the weaver who prepares the warp and the weft which are then woven to form the required fabric. In addition to coloured yarn, the weaver may also use Zari to embellish the designs.

Handloom Production

Handloom production can be viewed as a two-pronged operation comprising management of raw material and procuring finished products. Typically, a master weaver gets about two weeks' credit for his main raw material – the yarn and one to two weeks for zari and dyes. The weaver, when he receives the yarn initiates the weaving process with pre-loom activities like sizing the warp, preparing the weft, etc. The variations in the organisation of pre-loom activities differ according to the place of production. In certain areas, these pre-loom activities are carried out by women and children of the house and there is no explicit payment. In other areas, specialists do the pre-loom activities and are paid directly by the master weaver.

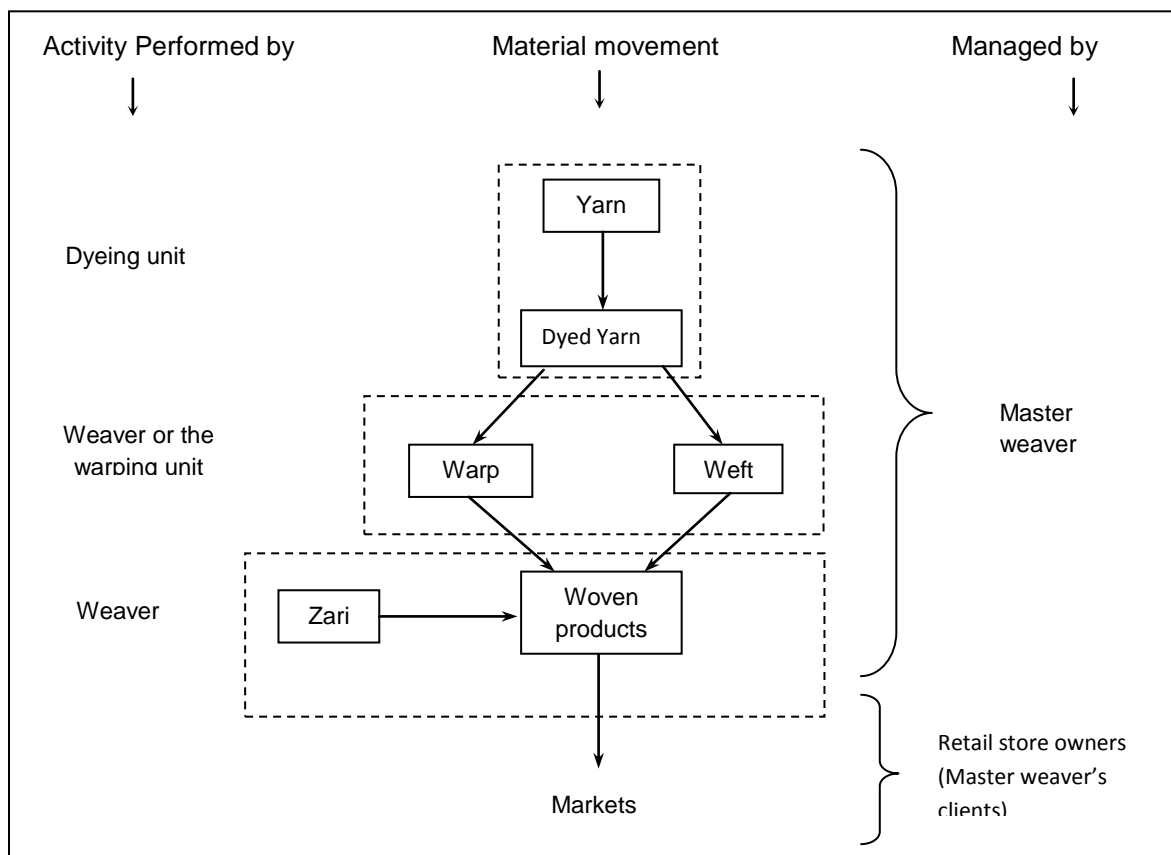


Figure 1: Handloom products value chain and governance

The fabric is mostly made in the weaver's home. When the weaver returns the finished goods, he is paid based on the complexity of work and labour involved. The master weaver deducts some amount for the repayment of the loan before making the payment to the weaver. The master weaver meticulously maintains a ledger where he records all financial dealings with his weavers. The weaver keeps a small pass book which is updated as and when the exchange of goods and money takes place. Once financial matters are settled, designs for the next batch of production are given. If the designs are simple then the details are orally conveyed to the weaver. Complex designs, on the other hand, are provided on a graph paper. In either case, intricate details are not gone into, giving room for the weaver to use his own creative skills. Since interactions between various stakeholders are conducted regularly, there are codes to describe basic patterns and colour combinations.

A relatively recent activity that seems to be getting popular is engaging contract weavers and/or mini master weavers (those with less than ten weavers under them) for production. Contract weavers are those who are working for multiple master weavers simultaneously. Only those weavers who are unencumbered through loans are able to convert themselves as contract weavers. Some of these are able to engage few other family members and distant relatives as well, in which case they can be termed as mini-master weavers. Some more details of this are presented in section 3.1

The competitive advantage for master weavers in this phase comes by keeping their transaction costs low. Key function in their operation is what could be termed as 'rotation of cash'. Master weavers continuously manipulate various stakeholders in order to survive. They try to extract longer credit periods from the raw material suppliers and also try to withhold payments to weavers or pay in parts. It is not that the stakeholders are unaware of this. They have developed some counter measures to overcome this. In large clusters like Pochampalli, raw material suppliers themselves come on a weekly or a fortnightly basis to recover their money. Weavers who do not have any loans from the master weavers and contract weavers are able to be in a better negotiating state in the payment schedule. The advantage of engaging in contract weavers/mini master weavers is that vital working capital is not stuck in the form of loans to weavers. Having extra capital enables master weavers to develop a bigger stock and also a wider product range.

From the social network perspective, master weavers also use their strong ties (a function of intensity, duration and frequency of interactions) frequently along with tact to vary the payment schedule

depending on his cash flow. Identification of good weavers also takes place through their social networks. More often than not, master weavers are being forced by their clients to maintain a wide repository of products, many of which cannot be made in their local cluster. In order to discover talented weavers/contract weavers in other clusters, referrals through strong ties are utilized.

Marketing

As mentioned earlier, the clients are retail store owners in various parts of the country. If they purchase regularly they are considered to be core clients; there are others who are irregular or occasional clients. The interactions between new clients and master weavers usually start small and the transactions are conducted in cash. After a few such instances some clients may switch to purchasing products on credit. An average master weaver has about 10 to 15 wholesale clients of whom 5 to 7 are likely to be core clients. A successful master weaver will have about 50 to 60 wholesale clients and 15 to 20 core clients.

In order to market his products and recover his credit, the master weaver makes a trip to each of the core clients' locations at least once a month. Although clients are allowed a credit period of one month, most master weavers will not be able to recover the credit in this period. Since handloom sales happen in cycles, going up during the festival and marriage seasons and going down during monsoon, the master weaver has an upper hand during peak season when he gets payments on time and the clients has an upper hand during lean season when he gets an extended credit period. In order to survive, a master weaver has to skillfully balance his time and energy between his clients, his suppliers and his weavers. This is where his individual social capital in form of access to resources (cash flows, credit periods, information) along with his history of interactions comes into play

While visiting his clients, a master weaver also tries to gauge the market demands. Each store has a different clientele depending on its location with different customers requiring different product ranges. If the customers do not find the product they want, they are likely to indicate this while interacting with the salesperson. This information is informally collated and passed on to the master weaver who then decides what new designs are to be produced. It is this market feedback channel that more or less ensures the production of marketable products. Some more issues related to marketing are discussed in section 3.2

Designs

Thousands of interactions between customers, store owners, master weavers and weavers take place over a course of several years to develop techniques and designs for handloom products. None of this is codified and remains in a tacit form. Hence social networks become important conduit to convert this tacit knowledge into products. In addition to the tacit knowledge that resides in handloom clusters, master weavers also borrow designs and colours from books and magazines, or copy from currently popular mill-made saris or silk saris. Once a master weaver decides to produce a particular design, it is translated into concrete weaving terms. For this the master weaver or weaver uses graph paper. In case of complex designs a consultant may be hired. These consultant usually work on a computer and provide the master weaver with a print out. It is rarely that these graph papers or computer printouts are then stored carefully for future reference.

After the product is made the master weaver, with his knowledge of what kind of product sells where, selects specific products for specific clients. Sometime the clients want a particular design or even develop a design series that supports their proprietary product. The master weaver is allowed to use the designs only if there is no fresh order for the product for pre agreed period of time. Although it is possible to customise designs for clients, master weavers are reluctant to experiment unless it is paid for as any change from the norm involves extra capital and labour. A master weaver will develop a new set of designs only when he feels that the existing ones may not have future markets.

3. How master weavers remain relevant

As mentioned earlier, compared to cooperatives, master weavers remain relevant for two main reasons. First they ensure that the costs involved in the business transactions are low. This ensures that the final product is within the price range that attracts customers. Second, they keep themselves close to the markets by being proactive in their interactions with various stakeholders. They use their social contacts intelligently to seek both business and market information along with other resources that their firms require at different times. This section discusses both these tactics in greater details.

3.1 Keeping the transaction costs low

If one were to compare the workings of cooperatives and master weavers, one finds that the Master weavers manage to sell more successfully because he knows how to keep transaction costs low. Some of

the techniques that master weavers use include – delaying payments (to weavers and to raw material suppliers), joint utilization of resources, negotiating longer credit time, hiring temporary staff, etc. These are commonly known in entrepreneurship literature as bootstrapping. So the tactics that master weavers use are amongst those commonly used by entrepreneurs across the world.

Handloom production and marketing are labour intensive activities. Therefore, master weavers develop governance mechanisms to ensure the smooth operation of their business. The handloom production process of each master weaver varies from place to place. For instance, the production may take place entirely in one village or is sometimes distributed across a cluster of villages. These clusters can be small – encompassing few villages as with Uppada – or large – spanning many villages as in Pochampalli.

The Geography of Production

The Table 3 shows that with the exception of Chirala where 94 per cent of master weavers organise their production in fewer than five different centres, production is generally distributed over a large number of villages. About 20-25 per cent of master weavers have more than 10 production centres. And almost 25 per cent of all master weavers (including in Chirala) have their fabric produced in one or two centres.

Table 3: Production centres of master weavers according to clusters

Number of production centres	Pochampalli		Gadwal		Mangalagiri		Chirala	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
1-2	5	13.5	2	13.3	3	13.6	16	48.5
3-5	9	24.3	3	20	4	18.2	15	45.5
6-10	14	37.8	7	46.7	9	40.9	2	6.0
>10	9	24.3	3	20	6	27.3	0	0
Total	37	100	15	100	22	100	33	100

Because of the spread of the area, it is not easy for master weavers to organise and supervise production entirely on their own; so they seek assistance. Each master weaver has some paid and some

unpaid employees. While it is normal for cooperatives as well as NGOs to have paid staff, it is unusual in the case of master weavers who try to keep the transaction costs low by engaging unpaid employees. These employees are normally members of the immediate or extended family. Unlike paid assistance which is normally used only for managing production, unpaid employees being part of the family are likely to be involved with every aspect of a master weaver’s business. More often than not, they get some ‘pocket money’ and some freedom to manage the production. While having unpaid staff, it is possible for master weavers to reduce the transaction costs but for want of financial and administrative freedom, these members eventually want to split from the firm or spinout on their own by taking away their share. Many master weavers consider splitting of the group quite a natural phenomenon. Table 4 presents data on both types of assistance in the research areas.

Table 4: Percentage of paid and unpaid assistance across the clusters

Number	Paid assistance				Unpaid assistance			
	Pochampalli	Gadwal	Mangalagiri	Chirala	Pochampalli	Gadwal	Mangalagiri	Chirala
1 - 2	50	84.6	47.4	53.1	60	75	62.5	83.3
3 - 5	40.6	15.4	47.4	43.8	40	25	37.5	16.7
6 - 10	9.4	0	5.3	3.1	0	0	0	0

About 50 per cent of all master weavers have one or two assistants. In Gadwal however, around 85 per cent of the master weavers have two paid staff. Considering that in Gadwal the firms are set up by younger master weavers, it is likely that their overall magnitude of operations may be lower and therefore are unlikely to have a larger support staff. A minimum of 60 per cent and a maximum of 83 per cent of all master weavers have about one or two people from the family helping them. It can be seen from the table that unpaid assistance is limited – no master weaver has six or more persons helping him. It is generally believed that master weavers with large extended families have a natural advantage over small families when it comes to access to unpaid staff and therefore they are likely to have larger businesses.

If a master weaver wants to diversify his product range he has to start working with weavers from clusters other than his own, where weaving characteristics are likely to be distinctly different. Considering how difficult and expensive it is to supervise operations in a remote location master

weavers have increasingly taken to subcontracting their work to contract weavers/mini master weavers. As mentioned earlier, contract weavers are those who work for multiple master weavers and mini master weavers are those who have a few weavers who work under them. From the master weaver's point of view he does not have to incur the cost of long distance management and the advantage for the contract weaver is that he does not have to undertake risky marketing activities. In our study we have not differentiated between contract weavers and mini master weavers and have clubbed both of them under contract weavers. This is because from a master weaver perspective, he just engages with one person, he is not concerned how this person gets the production organized.

Table 5: Percentage of weavers and contract weavers in each of the four clusters

Number	Weavers				Contract weavers			
	Pochampalli	Gadwal	Mangalagiri	Chirala	Pochampalli	Gadwal	Mangalagiri	Chirala
1 - 10	30.3	15.4	84.2	9.1	3.0	0	0	33.3
11 - 25	36.2	46.2	15.8	24.2	9.1	53.8	0	51.5
26 - 40	21.2	38.5	0	51.5	42.4	46.2	5.3	12.1
41 - 60	6.1	0	0	12.1	42.4	0	57.9	3.0
61 – 100	6.1	0	0	3.0	1	0	36.8	0

Table 5 shows the number of weavers and contract weavers linked to master weavers. With the exception of Chirala, where the average number of contract weavers is less than the average number of weavers, other centres have a relatively high percentage of contract weavers. There could be two reasons for this. Hiring contract weavers is economical and the relationship is strictly businesslike. Moreover, master weavers will not need to block their capital by providing loans the way they do for a full-time weaver leading to lower costs of operations.

Since each cluster has different skill sets, appointing contractual weavers in other clusters opens up opportunities for product diversification. The search for a contract weaver may be triggered by the master weaver's clients. Instead of dealing with dozens of master weavers in order to maintain a large portfolio, prestigious clients may prefer to deal with a limited number of master weavers but without losing out on the range of products. Hence, they may encourage a particular master weaver to become an intermediary between them and weavers from different clusters. This master weaver also has the

option of working with another master weaver but may prefer contracting independent weavers since they are more amenable to being governed.

3.2 Proximity to the markets

While a master weaver is effectively able to govern the production process, he has little leeway when it comes to marketing. To begin with, an important aspect of the marketing process is the recovery of credit from the core clients who are retail store owners. Although the entire business operation of a master weaver is dependent on this recovery, he is in no position to make a difficult and recalcitrant client repay what he owes him. If prompted too often, the client may turn around and return the all goods and decline placing further orders.

Master weavers believe that clients are unlikely to take such drastic action unless their business is performing badly. The worst case scenario for any master weaver is his clients going bankrupt. Not only would he lose the credit amount but he may not recover the unsold products until after the court proceedings are over, which may take months. It is therefore important for master weavers to continuously monitor the clients' business performance.

Channels for market information

Master weavers rely on various secondary sources to seek information on the creditworthiness of their clients. For instance, one master weaver said: *"I engage the employees of the client in long informal chats. Since they cannot be free when they are in the stores, I often take them out for a meal or for a tea and then find things out,"*; another master weaver said that *"I find out the business health from various sources - some of them can be raw material suppliers some of them could be fellow master weavers from other parts of the State. All of us realise that if we keep this information to ourselves, it can be dangerous for us."* Yet another master weaver said that *"I go casually during the festival time during peak hours, and also during off-season to identify the footfalls and gauge the popularity of the store."*

Cloth merchants' associations in many towns and cities all over India are equipped with dormitories to serve stakeholders from the industry. Not only does this arrangement reduce transaction costs considerably, it also gives master weavers a chance to catch up on trade gossip leading to strong social capital. In the course of talking shop they often come to know of potential clients. Once a master

weaver’s business is well established he may choose to stay at a slightly more upmarket lodge instead, since most other well-to-do master weavers begin to do this hence not much changes by way of the nature of the trade conversations.

Table 6 shows that most master weavers use lodges as well as dorms when on an out station trip. This could be because dorms can house only a limited number of people and lodges are the second option. The exception is master weavers from Mangalagiri who use only commercial lodging facilities when they travel. Mangalagiri dress material is popular in northern and western India, and perhaps dormitories are not popular in that region; perhaps the better markets are in large cities where dorms may not be centrally located. As regards the option of staying at a client’s residence, only an insignificant number from the Pochampalli cluster opt for it.

Table 6: Percentage break-up of lodging facilities used by master weavers

Place of stay	Pochampalli	Gadwal	Mangalagiri	Chirala
Only in Dorms	8.1	6.7	0	0
Only in Lodges	32.4	33.3	90.9	36.4
Both in Lodge and dorms	56.8	60.0	9.1	63.6
At clients residence	2.7	0	0	0

Social networks as a knowledge resource

In a low technology industry such as handlooms, the hand-operated looms and the skilled weavers who create the textiles are the key resource base. The looms that produce fabric for the master weaver are no different from those of his competitors. When it comes to the labour, some master weavers may have more skilled weavers than the others. Notwithstanding the weavers’ skills, the most significant factor in a success story is often the social and business network of the entrepreneur—the connections to retail store owners who pass crucial market information; suppliers who can provide sufficient credit and quality raw material; weavers who are able to quickly understand the market information and produce marketable products etc. Master weavers use their social networks extensively because the growth of their venture is heavily dependent on the inputs obtained through these networks.

In entrepreneurship literature, the network perspective recognizes that entrepreneurs are not atomised decision makers functioning as mutually independent beings in the way that the economic perspective assumes them to be. Nor are individuals completely conditioned by their environment as posited by the social and cultural perspective. This network concept, which has been a key area of entrepreneurship research in the recent past has sought to explain the differences in the performance of entrepreneurial firms by analysing the structure and relationships of the social networks of the entrepreneurs.

In a previous paper (Bhagavatula et al. 2010) we have shown that social networks often explain the differences in the capabilities of master weavers in identifying opportunities and mobilizing resources. In this section we provide some descriptive statistics on the social networks of the master weavers that provide an understanding of the basic functions of the networks. Intuitively, one can argue that it is through these networks that master weavers are able to identify talent, markets and resources that help them develop products that have high marketability.

Table 7 Network size of master weavers (in per cent)

Net Size	Pochampalli	Gadwal	Mangalagiri	Chirala	Total
1-4	2.8	6.7	9.1	0	3.77
5-8	11.1	26.7	63.6	15.2	25.47
9-12	25	40	18.2	42.4	31.13
13-16	38.9	20	9.1	42.4	31.13
17-20	22.2	6.7	0	0	8.49

The average number of contacts each master weaver has is taken as the network size and is given in Table 5.7. It has been categorised into five levels with an increment of four contacts in each category. Across the clusters, master weavers in Mangalagiri have the small networks and those in Pochampalli have the largest networks. The reason for this could be that Mangalagiri dress material has large sales to a few buyers, while Pochampalli, which mainly produces higher priced saris, sell in fewer numbers. On the other hand, the smaller network sizes of Mangalagiri master weavers may be linked to their staying in lodges rather than dorms when they travel, thereby reducing their chances of meeting people from the industry. Overall, less than 4 per cent of all master weavers had a network size of four or less and

less than 9 per cent have networks larger than sixteen, while close to 90 per cent have a network size between 5 and 16.

Table 8: The composition of the master weavers' networks (in per cent)

Net Size	Ties Strength		Same	Caste	
	Weak	Strong		Different	Do not know
1-4	18	82	75	25	0
5-8	38	62	60	26	14
9-12	39	61	62	19	19
13-16	38	62	62	22	16
17-20	45	55	61	21	18

One of the most important resources for an entrepreneur is information. Scholars like Kirzner (1997) believe that entrepreneurship happens because information is unevenly distributed in society. The patterns of social relationships abstracted into strong and weak ties have been shown to be important for identifying different types of information. Weak ties are argued to be sources of novel information (Granovetter, 1973) and bridging (Burt, 1992) to contacts in distant parts of the social strata. It is by virtue of this access to new information, that it is assumed that entrepreneurs identify new opportunities². In this study, a linear combination of duration of the relationship, frequency of contact and caste was used to identify whether or not a tie was weak or strong.

Table 8 shows that smaller networks are likely to be comprised of strong ties, whereas, as the network size grows, the numbers of weak ties are likely to increase correspondingly. The strength of a tie is calculated by a linear combination of duration, frequency and caste of the contact. Likewise, smaller networks have contacts from similar caste backgrounds. However, it is interesting to note that caste composition does not significantly vary as the network size builds up. Within the caste composition, there are a significant number of alters whose caste affiliations are not known to the master weavers. It is likely that these people are from other parts of the country where the caste system functions

² See Adler and Kwon, 2002 for a detailed review on the social capital and Hoang and Atoncic, 2003 and Jack, 2010 for a review on networks research in entrepreneurship

differently³. It is also possible that these people are store owners or raw material suppliers rather weavers who are in distant towns and cities and not around villages where handloom production takes place.

Table 9: Details of master weavers' relationships (in per cent)

Network Size	Duration of contact			Frequency of contact			
	More than 10 years	Between 10 to 5 years	Less than 5 years	Daily	Weekly	Fortnightly	Monthly
1-4	100	0	0	58	25	17	0
5-8	66	23	11	32	31	21	16
9-12	64	25	11	30	31	18	21
13-16	64	32	5	29	31	22	18
17-20	40	39	21	23	34	24	19

According to Table 9, master weavers seem to have a significant number of relationships spanning more than 10 years, irrespective of the network size. In addition, an entrepreneur meets about a quarter of his alters on a daily basis and almost half of his alters on a weekly basis. This level of face-to-face interaction may be required considering the labour intensive activities of the industry – production does not happen unless there is frequent contact with the weavers and clients do not return the credit unless they are prompted regularly. It is likely that most of those whom the master weaver meets on a fortnightly or monthly basis are his clients and those he meets more frequently are his weavers and suppliers.

Every master weaver's network is different from that of his competitors. This is because they each have their own background and social status and the people they come across will be different. In addition, if a master weaver speaks many languages it helps him reach out to a larger group and diverse social circles. The range in the network composition ensures that there is variety in the feedback too. Hence, it is important to understand what kind of information master weavers draw from their network. In order to ensure a certain consistency, a qualitative study was used to identify topics. The topics include marketing, finance, product design and production.

³ 'The People of India' (Anthropological Survey of India, 1985) lists about 2000 castes and 200,000 sub-castes across the country.

Table 10 shows the distribution of alters with whom master weavers discuss each of the above issues. The table shows that when the network size is small, master weavers discuss almost all issues with everyone in their network. When the network size is less than 5, master weavers discuss marketing related issues with 83 per cent of the alters (the contacts), finance with 75 per cent, design related issues with 67 per cent and production with 83 per cent. The numbers do not add up to 100 as master weavers discuss multiple issues with the same alter. Hence it can be said that greater levels of *multiplexity* – discussing multiple issues with the same contact – exist in smaller networks. As the network grows, the master weavers have an option of talking to specific individuals on specific topics which may decrease the multiplexity.

Table 10: Variations in the network content (in per cent)

Network Size	Marketing	Finance	Design	Production
1-4	83	75	67	83
5-8	86	23	54	42
9-12	79	20	59	34
13-16	72	23	57	37
17-20	77	29	49	41

The greatest drop in content as the network size grows seems to be in issues related to finance. This could be because the entrepreneur may choose to talk about finances only with a core group, usually family or close friends. On the other hand, marketing seems to be the most common network content as several master weavers bring it up with a significant number of alters. Perhaps it is exactly such persistent efforts at keeping their ear to the ground that makes them more successful as an entity than weavers' cooperatives.

4. Summing up

The Master weaver firms as a production and marketing channel have in many ways held the handloom industry for centuries, but there is little information on how they work⁴. The lack of literature on master weavers could perhaps be because it is implicitly assumed by policy makers as well as researchers that master weavers being private entrepreneurs are bad for the industry while cooperatives being public institutions are good. But is it really so simple? If one were to go by the statistics of providing employment, the master weaver segment provides livelihoods to about 70-80% of the weavers. If the criticism against the master weavers is that they pay low wages to the weavers or that they are exploitative in nature, they must be commended for providing continuous employment to the weavers.

If one were to view the handloom industry from a firm level, establishing a venture in handloom industry is fraught with risk. Firstly, master weavers need to raise capital and more often than not, they have to rely on informal financial systems that charge interest rates higher than 36%. Secondly, they need to coordinate their production, which spreads across various locations, to ensure that the products are marketable. Third, they need to market their products to retail stores, which are again spread across various locations. Cash transactions are rare in handloom marketing. Store owners need to be provided with credit periods of 30 to 90 days depending on the season. An immediate difficulty with sales on credit is the recovery of it.

Master weavers find it difficult to recover money from the textile stores. They have to make multiple trips to the stores and place innumerable phone calls to recover their money. Also, they need to tread a careful path in this recovery process because the store owner may turn around and refuse to purchase further stock if a master weaver is too forceful. Every master weaver has a story to tell about how thousands of Rupees in capital are locked up in the form of bad debt because the store owners defer payment for long periods stating bad business cycles. In some extreme cases, the store owners may even file an insolvency petition in which case the master weaver loses most of his capital. Fourth, many weavers require their master weavers to upgrade to more expensive looms which means that capital, which cannot be used in the production cycle, has to be infused initially and the profits are likely to come only later.

⁴ For an historical overview of the master weaver industry, refer to Ramaswamy (1985)

Finally, raw material needs to be purchased mostly on credit for about a period of a week to a fortnight which is much shorter than the sales cycles. Therefore, master weavers producing expensive fabric need to invest heavily in raw material upfront on the premise that the product will eventually be saleable and generate profits months later. It is not that the weavers do not know the difficulties in managing one's own business. They watch the operations of master weavers from close quarters and are aware of the undercurrents that the master weavers experience, especially the financial jugglery required, to operate a handloom venture. When given a choice many weavers are likely to remain under a master weaver even at low wages than set up their own ventures. Informal conversations with weavers reveals their choice of work – they prefer to work under a master weaver because he is much likely to provide work all around the year which is more important than higher wages that cooperatives occasionally provide.

In the weavers cooperatives, the members do know how to be entrepreneurial, but the bureaucracy and the strict rules restrict pursuing opportunities that are ephemeral although extremely profitable. If the cooperatives have to be entrepreneurial and be egalitarian at the same time, they will have to take some risk and encourage enterprising individuals who can straddle both profit making and profit sharing. Within cooperative societies, there are often individuals who are by nature eager to embrace greater common good. It is these weavers who require some training in being more entrepreneurial. It is likely that such individuals can usher in a new cooperative movement, which in the light of the current trends can be termed Cooperatives 2.0.

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