Weaving Social Networks. Performance of small rural firms in India as an outcome of entrepreneurs' social and human capital

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Suresh Bhagavatula

VRIJE UNIVERSITEIT

Weaving Social Networks

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Chapter 1   THE OBJECTIVE OF THE STUDY

1.1 Introduction

In the past decade or so, an increasing number of individuals have chosen to set up their own enterprise but statistics show only about 40% of them survive beyond the first year (Bhide, 2000). The study of entrepreneurship attempts to understand the phenomenon of why and how people discover opportunities; and why only a few who pursue these opportunities attain success (Shane and Venkataraman, 2000). While entrepreneurship exists all over the world, most of the academic insights have come primarily from developed economies. The focus of such studies has typically been the industrial and high technology domains. Relatively little research has gone into how individuals set up and manage their firms in low technological domains[1].

This research examines firms in one such domain and applies to them certain theories, like the structural hole theory, that have been predominantly developed in the western economies. Supporting or extending entrepreneurship theories developed in the western economies into a different cultural and technological context will be the first broad contribution of this study. From an entrepreneurial research perspective, low technology firms or informal firms[2]- those that have no legal status - in developing countries represent nascent market capitalism. Their study allows a closer examination of how individual abilities influence business outcomes (Honig, 1998; Brush and Chaganti, 1998; Mueller and Thomas, 2000).

The context for this study is the handloom sector. It is a pre-market, pre-capitalist industry that makes fabric using hand-operated looms and provides employment to over 10 million people in India (Mukund and Sundari, 2001). In the last few decades the demand for fabric grew rapidly in the country but large textile industries could not be established because of the governmental policies and handloom and smaller powerloom benefited from these policies. The popular belief is that the handloom industry has survived only because of government support[3]. 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). Machines that produce fabric cannot compete with handloom because of the ease with which fabric with new and elaborate designs can be woven on hand - operated looms. Finer and delicate yarn can be used in handloom because it is hand operated unlike in the machines that require yarn of a particular strength. Intricate designs can be embellished during the weaving process because

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[1] Here low technology, implies those technologies that were developed before the industrial revolution.

[2] Informal sector suggests the range of small and micro scale enterprises which are unregistered and/or do not pay tax. For a review of literature on the informal sector, see Gërxhani (1999); on economic anthropology, see Stewart (1991), and on small enterprises, see Van Dijk (2000)

[3] 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.

the process can be stopped and restarted at will, which cannot be done on automated looms. However, if one were to look at the handloom industry over the years, little has changed in the production technology but that is not true with respect to the market. Handloom industry was able to reinvent itself and address the design and material demands of the growing higher end markets. At the centre of these market transactions are the entrepreneurs, in this case, the master weavers[4]. Even though 75% of the weavers work under master weavers very little is known about them (GOI, 1996). 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. This study, while testing some entrepreneurship theories, also adds to the inadequate body of work on what is undoubtedly a dominant marketing channel in the handloom industry.

In the past, government support was extended only to weavers within the cooperative sector. Historically, the government set up cooperatives so that the weavers could come out of the 'clutches' of master weavers who were extremely exploitative and paid them very little for their work. However, since only about 25% of weavers were able to benefit from these initiatives (GOI, 1996) in spite of huge funding, the government began to withdraw support to cooperatives and instead started to initiate programs that involve all the marketing channels (entrepreneurs, cooperatives and NGOs) as with the industrial cluster development program. The cluster development program has been instituted by UNIDO (UN Industrial Development Organization) because clusters are seen to be an appropriate form of industrial organization to nurture dynamic firms that can compete at various national and international levels. As the research context for this study is the firms in handloom cluster, the findings can be extrapolated to add value to cluster literature and policy makers as well.

The network perspective is a lens which lends itself most appropriately to study entrepreneurs in low technology clusters. Firstly, it is a new area of inquiry within the field of entrepreneurship (Hoang and Antoncic, 2003); and secondly, this perspective is well-suited to study entrepreneurs in low technological industry in emerging economies. In these industries, the competitive advantage one entrepreneur gains over the other is not a result of education – there are no formal educational programs that train people to work in these industries. In addition, technology is so simple that virtually anybody has access to it. Therefore, the competitive advantage of one entrepreneur over the other is only due to the business and social networks that these entrepreneurs nurture. These networks govern their production and provide them with vital information about new opportunities and resources and also help them market their products.

1.1.1 The network perspective of entrepreneurship

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, was given a formal shape by Aldrich and Zimmer (pg. 8, 1986). They suggest that entrepreneurs are *embedded in networks of continuing social relations. Within complex networks of relationships, entrepreneurship is facilitated or constrained by linkages between aspiring entrepreneurs, resources and opportunities.'*

Initially, network research focused on the role of social connections in the process of an individual becoming an entrepreneur (Birley, 1985; Aldrich and Zimmer, 1986). Later, as both social network analysis and knowledge about entrepreneurship grew, more attention was given to understanding the influence of the finer elements of social networks on entrepreneurial outcomes such as opportunity recognition, resource mobilization, trust building, etc. (Elfring and Hulsink, 2003, 2007; Florin et al. 2003; Xiao and Tsui, 2007). In the recent past, isolating the characteristics of a 'good network' (Moran, 2005; Acquaah, 2007) has been a dominant theme in network literature. It assumes that not all networks provide the same levels of advantage to entrepreneurs; specifically, researchers argue that some social networks are better suited to assist entrepreneurs than others (Burt, 2000).

Two main attributes, relational embeddedness and structural embeddedness (Gulati, 1995), have been used to illustrate what constitutes better networks. Relational embeddedness indicates the strength of the relationship an individual has with each of his contacts. Structural embeddedness refers to the structure of the social network surrounding the individual. Prior research has segregated relational and structural embeddedness into smaller components and debated on benefits that each of these provides to entrepreneurs (Rowley et al. 2000; Steier and Greenwood, 2000).

Relational embeddedness is broadly categorized as either weak or strong depending on some characteristics of the ties. Ties are said to be strong if the contacts know each other for a significant period of time or if they interact frequently. Weak ties, on the other hand, are those contacts with whom the individual does not spend much time (Granovetter, 1973). Structural embeddedness is often defined in terms of network density or closely related concepts like 'structural holes' - a term indicating the holes within the social structure (Burt, 1992). If many members of an individual's network know each other, the structure of the network is believed to be dense, otherwise, it is considered sparse. Sparse networks contain more structural holes[5].

The advantage that individuals receive by virtue of their networks is considered their 'social capital'. It reflects the goodwill that is contained in social relationships, that which can be used to facilitate action (See Bourdieu, 1985 or Lin, 2001 for more information on social capital). The discussion and elaboration of social capital will be taken up in the subsequent section, while developing the framework for this research.

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[4]Although in principle entrepreneurs could be either masculine or feminine but in the handloom industry master weavers are all males. Hence gender specific references will be used in this thesis.

[5]More details on social capital are provided in Section 3.3 and measurement of social capital is given in Section 4.6.1

1.2 Research Framework

1.2.1 Social Capital

While there is consensus that the social capital of an individual plays a role in his professional endeavours, understanding the source of social capital and the process by which advantages accrue to individuals is still debated. There are two main streams within the discussions related to structural and relational embeddedness, which will be elaborated to form a cornerstone of this research.

One group argues that a network where every contact of the entrepreneur knows most of the other contacts is beneficial to the entrepreneur. In networks with dense structures called 'closed networks', people are likely to know each other for a longer period of time; and are likely to have a history of interactions. This increases the levels of trust among the network contacts. In addition, such network structures create easy mechanisms for governance because the network members can exclude any defaulting member from further economic interactions (Coleman, 1988). Such networks are also likely to provide 'fine-tuned' information, which can quickly be transformed into successful opportunities (Uzzi, 1996, 1997). Furthermore, if during these economic exchanges, differences of opinion arise between the parties involved, they are more likely to 'voice' their differences and sort them out, rather than 'exiting' the relationship (Aldrich et al. 1997), which means that closed networks are likely to create 'more problem-solving arrangements' (Larson and Starr, 1993).

Another group of scholars (Granovetter, 1973, 1983; Burt 1992, 2000) contends that information about opportunities and resources are unevenly spread. They suggest that strong ties and closed networks provide information that other parties are already aware of (so-called 'redundant information'). This means that if an entrepreneur is to identify opportunities, he will have to reach out to other parts of society. Weak ties or acquaintances are likely to provide new information because they are likely to be moving in distant social circles (Granovetter, 1973). In addition, networks where the members do not or hardly know each other provide new information. Burt (1992) refers to these networks as having many holes in the social structure. In addition, such networks also offer bridging opportunities that enable the entrepreneur to go beyond his immediate network. Consequently, weak ties coupled with sparse networks are beneficial to entrepreneurs.

Recent studies, however, indicate that neither sparse nor closed networks by themselves offer the optimum solution. It is important to have the right mix of strong and weak ties, and dense and sparse network elements. However, the configuration of this mix varies depending on various issues, such as the industrial and technological environmental conditions surrounding the industry (Rowley et al. 2000). In addition, the type of innovation an entrepreneur is pursuing, specifically whether it is incremental or radical in nature, necessitates different network configurations (Elfring and Hulsink, 2003). Table 1.1 recaptures the main lines of debates within the network perspective.

Table 1.1 Summary of the debates in Network Entrepreneurship

Issue	Author	Main Argument
Dense versus sparse networks	Burt (1992, 2000)	In sparse networks the chances of having contacts who do not know one another increases. Such non-redundant contacts are likely to be sources of new information that potentially generates benefits for the entrepreneur.
	Coleman (1988)	In networks that are dense, people know one another for significant periods of time and are likely to generate higher levels of trust. Also, the fear of being ostracised restricts opportunistic behaviour. Hence dense networks create situations where quick and efficient exchange relationships can be nurtured.
Weak versus strong ties	Granovetter (1973, 1983)	Acquaintances whom we do not meet often (weak ties) are important sources of vital information. Weak ties can be viewed as bridges between clusters of strong relationships, and could bring in new information from distant circles.
	Uzzi (1996, 1997)	Strong ties are important because they provide access to fine-grained information. This helps firms reduce their search for alternative sources of information or exchange partners, which in turn can result in greater economic advantages
Mixed ties	Rowley et al. (2000); Elfring and Hulsink (2003)	It is important to have both strong and weak ties but the constitution of the mix depends on the prevailing industrial environment.

1.2.2 Human Capital

Though the importance of networks in successful entrepreneurial ventures cannot be denied, just having a good network may not ensure success. According to Shane (2000), different people have different lifestyles therefore each of them is likely to develop a diverse social network. This network in turn enables or restricts the stock of information each person has access to. While it can be said that everyone receives information all the time, only a few capable entrepreneurs are able to identify opportunities and fewer still are able to successfully exploit them. According to Shaver and Scott (1991) people discover opportunities because of their superior information processing ability and search techniques. Some entrepreneurs may be better than others in collecting and processing one type of information while others may be better at processing another type of information (Casson and Wadeson, 2007). This ability to process information can be said to be dependent on the 'knowledge corridor' that exists

within each individual (Venkataraman, 1997). Factors like education, family background and experience make a difference; so every entrepreneur will have a corridor that is different from that of his competitors. It also plays a vital role in filtering and transforming incoming information into potential sources of opportunities. This is regarded as the entrepreneur's human capital (Honig, 1998). Understanding how the human capital of entrepreneurs influences the performance of their firms forms the second cornerstone of this research.

Entrepreneurship literature on the topic does find empirical support (Bates, 1985, Cooper et al. 1995, Honig, 1998; Dimov and Shepard, 2005; Delmar and Shane, 2006). For example, entrepreneurs with a college education had a significantly lesser chance of failing than those who did not (Bates, 1990). In addition, he also found that those with higher education were able to secure loans from commercial banks. Furthermore, Chandler and Hanks (1998) find that entrepreneurs with higher human capital require lesser financial capital to survive than those with lower human capital.

In addition to knowledge, past experience, either at the managerial level or the technical level equips entrepreneurs with insights into how the industry operates. Experienced entrepreneurs are better enabled to evaluate opportunities since they are likely to be more adept at recognising opportunistic patterns, to know what information channels to tap. Baron and Ensley (2006) believe that entrepreneurs are able to develop frameworks that detect connections between independent events or trends to find patterns to 'connect the dots' (ibid. pg. 1331) and thereby identify new products or services. Ventures whose founding teams have previous start-up or industrial experience are more likely to survive (Delmar and Shane 2006). However, having past experience in one or even multiple start-ups did not matter. The authors found that start-ups whose founding teams had previous experience performed better by managing to have higher sales.

Research question

To summarise, the social networks that entrepreneurs develop constitutes their social capital; the stock of knowledge and experience is their human capital. The broad research question underlying this study is to **understand the impact that this social and human capital have in influencing the performance of entrepreneurial firms in low technology clusters.**

1.2.3 Entrepreneurial Process

In line with Elfring and Hulsink (2003), this study distinguishes two entrepreneurial processes – opportunity recognition and resource mobilization – that intervene between human and social capital and the outcome variable: performance. Since the origin of any entrepreneurial activity is opportunity recognition (Shane and Venkataraman, 2000), it is taken as the first entrepreneurial process. It is also important for entrepreneurs to acquire the resources required to realise their opportunity. This is the second entrepreneurial process. By distinguishing between these two entrepreneurial processes, the challenge put forward by Stuart and Sorenson (2005): to disentangle the network effects that concern opportunity recognition from the network consequences resulting from mobilization of resources, can be addressed. This distinction helps in improving our understanding of the underlying mechanisms of network effects on the functioning of entrepreneurial firms. Summarized, this research focuses on:

How social capital and human capital influence the entrepreneur's capability to recognize opportunities and to mobilize resources in low technology clusters and how these capabilities in turn influence their firm's performance.

At the outset this research aims to support and extend some of the arguments discussed in the previous two sections.

1.2.3.1 Opportunity recognition

Casson (1982) defines entrepreneurial opportunities as openings that bring into existence new goods, services, raw materials and organizational methods that allow output to be sold at prices that are above production costs. Sarasvathy and Venkataraman (2002) identify three types of opportunities, based on Buchanan and Vanberg's (1991) definition of markets as an allocation process, a discovery process or a creative process. In allocating markets, entrepreneurs know the sources of supply and demand and bring them together. In discovery markets, i.e. when only one side – either demand or supply – exists, the non-existent side will have to be discovered. Finally, when neither supply nor demand exists, both need to be to be created. Since market information is unevenly distributed in society, it enables some entrepreneurs with access to information to identify opportunities (Burt, 1992; Kirzner, 1997). While information asymmetry does not influence creative markets, it plays an important role in enabling entrepreneurship in allocating markets as well as discovery markets, since in both these processes successful entrepreneurs are those who know more about either the demand or the supply.

Opportunity recognition is considered to be central to the entrepreneurial process. Other studies (Hills et al. 1997; Singh et al. 1999; Elfring and Hulsink, 2003) have also emphasised the importance of social networks in identifying opportunities. They confirmed that entrepreneurs often rely on their social networks to access information and resources crucial to the growth of their firms. Hill et al. (1997) found that those who used social networks for opportunity recognition, identified more opportunities than those who sourced them individually. Elfring and Hulsink (2003) argue that social networks influence intermediate processes of opportunity recognition and resource mobilisation, and that these processes in turn determine a firm's performance. As a first step, this research explores how the social networks of entrepreneurs regulate their opportunity recognition capabilities.

Sub research question 1: How, and to what extent, does structural and relational embeddedness of entrepreneurs influence their opportunity recognition capability?

Sub research question 2: How, and to what extent, does the human capital of entrepreneurs influence their opportunity recognition capability?

1.2.3.2 Resource Mobilization

Resource mobilization is important in the venturing process. Entrepreneurs often do not have the required resources to explore identified opportunities. Social networks of entrepreneurs do shape their success in identifying resources. Birley (1985) and Zimmer and Aldrich

(1986) have shown that entrepreneurs look for financial and other kinds of support from close friends and family, especially at the start of their ventures.

While obtaining resources is important, greater benefits accrue to an entrepreneur if he is able to draw resources from his network at lower costs. The effort needed to acquire a minimum number of assets at the lowest possible cost (Ansoff, 1979) is called 'asset parsimony'. This is a strategy to achieve competitive advantage. Rather than pay the market price for resources such as labour and material, advice through arm's length contact and social transactions through network ties can help acquire resources at lower values (Elfring and Hulsink, 2003). Ties, especially network members representing strong ties, may be more highly motivated to help entrepreneurs. Weak ties are more suited to help entrepreneurs search for 'critical asset providers' such as customers, raw material suppliers and investors.

Sub research question 3: How, and to what degree, does structural and relational embeddedness of entrepreneurs influence their resource mobilization capabilities?

Sub research question 4: How, and to what degree, does the human capital of entrepreneurs influence their resource mobilizing capabilities?

1.2.3.3 Intervening variables

This study extends the current debate in the networks perspective by taking into account Ahuja's (2000) purpose or objective of the network as a contingency factor, which in this case is opportunity recognition or resource mobilization. By distinguishing between these two entrepreneurial processes, we address the challenge put forward by Stuart and Sorenson (2005) to disentangle the network effects that concern opportunity recognition from the network consequences from mobilization of resources. This distinction also enables in improving our understanding of the underlying mechanisms of network effects on the functioning of entrepreneurial firms.

Sub research question 5: How, and to what degree, does the opportunity recognition capability of entrepreneurs influence their firm's performance, controlled for the direct effect of social and human capital?

Sub research question 6: How, and to what degree, does the resource mobilisation capability of entrepreneurs influence their firm's performance, controlled for the direct effect of social and human capital?

1.2.4 The research process

In order to understand these research questions, a two step research process was set up. Qualitative interviews were used as an initial exploratory exercise to understand the sector. The primary concern was to comprehend what constitutes opportunities and resources[6] within the context of handloom. A questionnaire was developed and tested. In the second phase - the quantitative part - the questionnaire was administered in various handloom clusters to generate the data.

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[6] Measurements of Opportunity Recognition and Resource Mobilization and other variables are given in Section 4.6

1.3 Practical implication for the research context

The textile industry in India is very complex. At one technological end of this industry are looms in areas like Tiruppur, Erode, etc. that produce fabric for the world markets using sophisticated machinery. At the other technological end are looms producing fabric using ancient hand operated looms mostly for the domestic markets. In between these two extremes a number of intermediate technologies exist making it difficult to present a complete picture of Indian textile industry.

The handloom industry has survived for a thousand years and the sector has been examined from various perspectives for over hundred and fifty years[7] (more information about the context is provided in Chapter 2). However, this thesis directly addresses issues pertaining to the field of entrepreneurship. In handloom industry, entrepreneurship research can focus on two overlapping lenses: the small enterprises perspective (because it is an industry comprising of small enterprises that are based out of rural India) as well as industrial cluster perspective (because it comprises of enterprises that are in close proximity to each other) The results of this study, especially the qualitative part, can be of value to both these streams. The following sections discuss both these positions in greater detail.

1.3.1 Entrepreneurial Studies

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). Rural non-farm enterprises are popularly categorized under micro and small enterprises (MSE)[8]. The fact that MSEs are important to a nation's economy was first recognized by Hart (1971) and ILO (1972). Subsequently, many developing countries with the assistance of aid agencies like ILO, USAID and the World Bank initiated programmes to stimulate, assist, and nurture MSEs. The topic was explored by many others following Hart and ILO but a large number of them were carried out either at the macro level (i.e. the industry) or the intermediate level (i.e. along the sub-sector or 'economic spheres')[9].

Unlike many other rural industries, entrepreneurs in handloom industry have not been examined extensively. As mentioned earlier, one of the main reasons was the exploitation of weavers by master weavers. The government tried to address the issue by encouraging and supporting weavers' cooperatives by spending huge sums of money; consequently most of the studies on handloom focused either on the evaluation of the handloom policies of the government (Srinivasulu, 1997; Niranjana and Vinayan, 2001; Dev et al. 2008) or on the working of the weavers' cooperatives (Mukund and Sundari, 1998). It is only in the recent past that

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[7] One of the oft cited references is that of Marx (1853). An article in the New York Daily Tribune lists out how the British systematically destroyed Indian industry in the early parts of the 19th century of which handloom was the largest.

[8] The other popular terms are the informal sector, unorganized sector, small scale industries (Gerxhani, 1999)

[9] Exploration of the sub-sectors started in the 1980s with the publication of Boomgard et al. (1986); while the concept of economic spheres became popular in the 1970s after the publication of Barth (1967)

the focus has shifted to the work of master weavers (Bharatan, 1988; Mukund and Sundari, 2001). It has thus come to light that the advantages entrepreneurs have over other market channels in this sector are a result of the social networks these master weavers develop to govern production and receive information about market demands (Mukund and Sundari, 2001; Cable et al. 1986). This study aims to extend our understanding of how master weavers operate, by elucidating the characteristic of their networks. This can be considered the first contribution of this study to the context.

1.3.2 Cluster studies

Many low technology industries in the non-farm rural sector exist in close proximity to each other. Small firms that are situated in the same geographic area can derive greater competitive advantage than those that are isolated (Sengenberger and Pyke, 1992). Such areas are called industrial clusters (Schmitz, 1999; Porter, 1990). That it is possible for a cluster of small firms producing similar products to demonstrate economies of scale similar to large enterprises was posited by Marshal (1920). He argued that when small enterprises are located close to each other they will be in a position to attract a pool of skilled labour that could enable firms to recruit the right kind of talent. This proximity could also lead to subsidiary units being set up to provide required raw material or semi-finished products. Clusters will tend to attract customers as they are likely to have a greater choice of products. Most importantly, the nearness of the units would ensure that innovative ideas disseminated quickly across the cluster; to pursue these innovative ideas, the labour may have to learn new skills; the entrepreneur may have to explore new markets, experiment with new raw materials etc. When many such instances occur, the capability of all the stakeholders rises and the entrepreneurs are thus in a position to explore many new opportunities. In such instances, new firms will come up and survival rates will climb (Yeung, 2000; Thornton and Fynn, 2003; Rocha and Sternberg, 2005). This is the second contribution of this study: to provide an answer to the question of the role that human and social capital entrepreneurs play in the development of handloom clusters.

Understanding this process is important for the handloom industry because the government is investing heavily in the cluster model. Both central and state governments are aiming to develop 1000 high and low technology industrial clusters in the country, which include handloom clusters. In addition, a special handloom cluster development program has been taken up at a cost equivalent to almost $10 million to upgrade 20 special clusters across the country. In providing some insights into the sector, this study may help policy makers draft better and effective support mechanisms for this industry.

1.4 Structure of the thesis

Chapter 2 broadly describes the handloom sector as it has evolved over the last hundred and fifty years. This chapter also highlights the nature of government support offered to the industry and describes the rather chaotic support system. It appears that the growth in the sector has little to do with government programs but rather, the ability of the entrepreneurs to capitalise on the windows of opportunity that open up intermittently. Chapter 3 provides a brief overview of small enterprise development and industrial clusters literature along with a detailed discussion on social capital and entrepreneurship literature. The rest of the chapter

is dedicated to developing the research framework and hypotheses. Gaining entry into the sector and understanding how it works is detailed in Chapter 4. The chapter also describes the process by which qualitative and quantitative data were collected. Chapter 5 discusses in depth the results of the qualitative study. One of the primary tasks here is to understand how entrepreneurs in the handloom industry function and how they utilise their social networks to enhance their business activities. This was important from the point of view of trying to understand what constitutes opportunity recognition and resource mobilisation in order to develop the questionnaire for the section on quantitative study. Chapter 6 contains the results of the quantitative study. And finally, Chapter 7 re-examines the research question in light of the findings of the study. The chapter concludes with an analysis of the theoretical and practical outcomes of the study.

Chapter 2   THE STUDY DOMAIN

2.1 Introduction

Handloom has had a long history because until the advent of machines cloth all over the world was made by hand operated looms. This scenario changed in the wake of the industrial revolution when mill-made cloth began to be produced (von Tunzelmann, 1978). Slowly, hand operated looms gave way to large cloth mills. In India, however, the handloom sector still exists. Currently, millions of people are employed in the sector using technology that is both labour intensive and low on productivity, in terms of quantity per loom. The sector has major markets across the country and minor market overseas.

It is likely that the handloom industry survived by finding niche markets where mass produced cloth could not compete. This chapter provides an overview of the handloom industry. The first section has a brief history; the second looks at the role of major players in the sector; the third is divided into two parts-one describes the policy and support government provides through the cooperative sector and the other, the new support mechanism that government is providing for all the stakeholders in the industry through the cluster development program; the final section lists out gaps in research related work.

2.2 Handloom in India

India has always been known for its cotton fabric. The earliest textile finds were at Mohenjo-Daro, an archaeological site of the third millennium BC (Gillow and Barnard, 1999). The hand-produced cloth used extremely simple technology and serviced both domestic as well as export markets.

Cooper and Gillow (1996, pg. 2) explain the reasons why Indian handloom fabric dominated the world market for thousands of years: *'Having mastered the techniques of cotton processing in the days of the Indus valley civilisation, long before any culture, India then assimilated the process of silk manufacture, brought from China by way of Assam. Above all, however, the hallmark of Indian textile genius was its mastery of dyes and the use of mordant to make them fast and to form different colour combinations. This was to lead to the growth of an enormous textile industry with a vast geographical spread… the flexibility with which Indian craftsmen were able to adapt their designs to suit any particular market, combined with their technical mastery, gave them the advantage they needed to make Indian textiles a vital component of both seaborne and overland Asian trading. The coming of Europeans, following in the wake of Vasco da Gama, only intensified textile production and spread Indian cloth over a wider area, as by now it was not only vital to the spice trade but was also sold in West Africa, the Levant, the West Indies and the Americas.'*

It was only after the industrial revolution that the demand for Indian handloom cloth declined. By the 1850s the British had established themselves firmly in India and royal patronage of weavers began to shrink rapidly. This was the first blow. The second came with the growth of

railways that enabled British-made factory-produced cloth to be sold across the country. The final blow however came from frequent famines due to which many people including weavers perished. Those that survived were in no position to purchase fabric.

At the turn of the 20th century, the British government started development programs to improve the condition of the weavers. This move was aimed at countering the nationalists who blamed colonialist policies for the state of Indian industry in general and the handloom sector in particular. One program was to organise the weavers into cooperatives and the other was to improve technology. Around this time, cheaper mill cloth started to be produced in India as well and by 1907, mill-made fabric, both from India and abroad, captured more than half the market share. However, about three decades later the growth had tapered off leaving mills with a 57% share while the handloom sector retained 30% (Harnetty, 1991; Roy, 1999). Although there were many programs the government initiated the survival of this traditional sector cannot be attributed entirely to them. The handloom industry had demonstrated tremendous resilience which had been strengthened by its fight to overcome obstacles such as famine, competition from mill cloth, and the decline of nobility (Specker, 1989; Harnetty, 1991).

Harnetty's research (1991) on the 19th century handloom industry shows that there are at least two reasons for its survival. One is that the industry adapted itself to mill-made yarn because of which there was considerable qualitative improvement in the finished product, which in turn positively impacted marketability. Most importantly, Harnetty attributed the continued existence of handloom to the unchanging clothing habit of women. According to him, while men's clothing was dramatically transformed in the nineteenth century, that of women remained the same. In addition to this, the handloom sector countered competition from the mill sector by reaching out to new markets segments (Roy 1999, Specker, 1989, Harnetty, 1991, Yanagisawa, 1993). In the late 19th century Indians were taken as indentured labour to Africa and Southeast Asia and a new demand for handloom was created in these regions (Yanagisawa, 1993, pg. 3) which contributed significantly to the survival and development of the industry.

2.2.1 Technology Innovation in handloom

In the early half of the 20th century, the looms were of the throw-shuttle type - an extremely primitive form where two people had to operate the shuttle by hand by throwing it from one end to the other, while a third person operated the pedal. In the second half of the century weavers started to use the fly shuttle, where one person could operate the loom, which naturally improved the production by about 4 times. On the other hand, within the context of technology development, fly shuttle was patented in the18th century. Hence it too over hundred and fifty years before fly shuttle started to appear in India. Even today, most looms in India are pit-looms, where the weaver sits on the ground with his feet in the earthen-pit to operate the loom. Few weavers have migrated to the more comfortable frame looms, where the weavers sits on a stool and operates the loom. The subsequent innovations in the weaving – using the dobby or the jacquard to produce more intricate weaving patterns - are relatively new in Indian handloom industry but are known to the world for close to two centuries. The reason for the slow uptake of technology in the handloom sector is because the technology is greatly linked to the markets it serves. Considering that many weavers were poor and master weavers

reluctant to invest for the sake of innovation, it was only when an innovation enabled better sales, was it adopted or in some cases subsidies provided by the government may have also played a role in technology adoption.

2.2.2 Market Innovation in handloom

Handloom industry was the major producer of fabric in this country until the early 1900s. While most of the production was for the common people, some handloom areas produced unique designs on silk fabric that were worn by the nobles and the royal families. There was no need for any innovation because the fabric that most people used was of poor quality with minimal designs.

After the country got independence from the British, the royalty declined but with Nehruvian policy of socialism, industrialization did not take place quickly and this enabled handloom to survive. Furthermore, since handloom industry supported millions of people in rural areas and due to the influence of Gandhian thought, the new Indian government could ignore the employment capabilities and therefore enacted reservation policies that eventually stunted the growth of the industrial fabric. However, as the country started to develop and people started to have higher purchasing power, the need for silk fabric and more expensive products started to grow. Although the handloom process is very slow compared to the mechanised looms it can be used to weave exquisite and complex designs, which the mechanised looms cannot. It is this combination of the ability to produce exquisite designs required by the Indian women and the growth in the markets for finer fabric that ensured the survival of the industry. The markets, on the other hand, are not evenly distributed across the country. For instance, the design preferences of people in the eastern part of the country are unlikely to be the same as that of the western part. There has to be certain element of customization to the regional design preferences. Also appropriate networks have to be nurtured stores in various parts of the country so that the products reach the final consumers and the preferences of the consumers reach the master weavers. With master weavers being small, they have to develop routines to deal with more powerful store owners. The failure of the cooperatives could be attributed to the fact that they did not spend time and effort to develop networks connecting the producers and the retail stores. Because of this disconnect, the products from the cooperatives were lesser marketable than the master weaver products.

Hence, to reiterate, it was only when the market demanded unique products that the stakeholders in the handloom industry started to seek something new, which enabled technologies such as dobby, jacquard and new designs and patterns came into the forefront of handloom production. For the same reason of better sales, handloom industry took up to new raw material (new and finer types of yarn, dyes and zari) quickly.

2.2.3 Prior research work in Handloom

Considering its long history it is not easy to discuss handloom industry in India because there are various sub research areas that have interested academicians. Marx (1853) argued how British rulers in India have systematically de-industrialised India and handloom featured strongly in this article. This de-industrialization argument continues to remain a part of the academic discussion (Bagchi, 1976; Harnetty, 1991; Clingingsmith and Williamson, 2008).

Acting on the some strong voices that resulted from Marx's article, the British Government and subsequently the Indian government have developed policies to support the handloom sector and one of the main activities of the support was the formation of weavers' cooperative. Analyzing and criticizing some of the governmental activities forms another set of academic debates (Jain, 1985; Srinivasulu, 1996, 1997, Mukund and Sundari, 1998; Mooij, 2002). Another set of scholars are interested in the overall picture of the industry either in the past or in the present (Mukund and Sundari, 2001, Meher, 1995; Roy, 2002). Recently some set of scholars were interested in identifying marketing patterns in handloom industry and these papers were collated into a special issue of Economic and Political Weekly, a reputed Indian journal (August 5-17, 2006 Vo.41 No.31). Given these various subthemes within handloom, the focus of this thesis is only on understanding the role of social networks in the performance of master weaver firms, a theory that was developed and tested in the developed economies and on high technology industries. While this topic of research may seem completely out of context if one take into account the previous literature in handloom industry but studying networks of small entrepreneurs in emerging economy is not. Long (1968) has qualitatively shown that networks matters and successful entrepreneurs are those that mange their networks more efficiently.

While most of the handloom industry operates under the master weaver segment, barring Cable et. al (1986), Bharatan (1988), Mukund and Sundari (2001) and Sundari and Niranjana (2006) little research has been done on master weavers. It could be so because many of the researchers in handloom are also part of organizations that support weavers' cooperatives and hence the propensity to focus on the cooperative sector than on the master weaver sector. In addition support for the cooperative sector comes from the fact that it is widely believed that master weavers while generating large profits for themselves pay low wages to the weavers. In addition, from the low wages the craftsmen receive, the master weavers are said to recover a part of the loan for which usurious rates of interests are charged. Many weavers are said to be living impoverished lives because of the low wages their labour generates. While this may be true in the past but it is certainly not true now. As some of our results have shown new master weavers firms were established by weavers who were careful not to get entrapped in debt. Hence by studying how master weavers function, one can develop policies that can assist in enabling a better competitive environment wherein both weavers as well as master weavers flourish.

2.3 Current handloom markets

Instead of going into details of how market shares of textile sectors in India have changed over the last century, the handloom Census data has been used to show how current markets are distributed. In the last two decades, the handloom industry has controlled about a quarter of the total cloth market in the country, as can be seen in Table 2.2. The figures in brackets indicate the percentage of the annual fabric production for the year.

Table 2.1 Production of cloth by sector in million square meters (CMIE: Table 148, 1996)

Year	Mill-made	Handloom	Powerloom	Hosiery	Total
1980-81	4,533 (36.4)	3,109(25.0)	4,802 (38.6)	-	12444 (100)
1984-85	3,593 (26.5)	3,639 (26.9)	6,316 (46.6)	-	13548 (100)
1990-91	2,720 (13.4)	4,888 (24.0)	10,988 (54.0)	1,758 (8.6)	20354 (100)
1994-95	1,782 (6.4)	6,028 (21.6)	16,516 (59.3)	3,544 (12.7)	27870 (100)

The table shows that the large mill industry has been the worst hit in the last two decades. The biggest gainer has been the powerloom industry. Powerlooms are small decentralised fabric production units that use a variety of technologies ranging from a simple motor fitted to a loom to more sophisticated methods. In a sense, it can also be categorised as the mill sector but there is a difference in the scale of production. Powerlooms are smaller, and hence the production capacity of each unit is lower than that of a textile mill. From 1990, the hosiery industry (that produces T-shirts, sporting wear, etc.) has been growing rapidly. The figures in the table show that the handloom industry has not only been able to control about 20 % of the market share, it has actually been growing in terms of production volume.

Since handlooms have always found niche markets to service and as mentioned earlier the survival of the sector can to a large extent be attributed to the continued popularity of traditional women's dresses. Indeed, from the data (1987-88) given in Table 2.3, it is obvious that even now, the bulk of production is happening in one kind of women's clothing – the sari.

Table 2.2 Handloom production data (NCAER, 1988)

State	Monthly production (million meter)	Monthly production of cloth per loom per month (meter)	Looms producing Sari (%)
Andhra Pradesh	23.75	111.27	42.2
Assam	11.13	8.56	5.1
Manipur	6.66	24.97	0.2
Tamil Nadu	41.67	103.64	39.2
Uttar Pradesh	61.31	251.59	36.2
West Bengal	65.99	207.19	47.4
India	298.80	82.73	20.1

Mukund and Sundari (2001) write that in both Tamil Nadu and Andhra Pradesh more than 70% of the looms produce traditional wear – sari, dhoti and lungi. On the other hand, Uttar Pradesh and West Bengal manufacture more non-traditional products like shirt material, bed sheets, dress material and dhurries (carpets).

To sum up, the handloom industry has survived by targeting those sections of society that demand more from their cloth in terms of quality than what the mill sector could produce.

Production has alternated between high quality products and low quality products, depending on the demand. Contrary to the government's dim view of the handloom industry as a sunset sector, it has shown tremendous resilience and survival instinct.

2.4 Forms of operating organizations

Handloom products, like any product from crafts-based industries, have intermediaries between the producers and the markets. The two main types of intermediaries are master weavers and cooperatives. However, there is a new, but not very large channel consisting of fair trade institutions and the independent weaver, who has until now interacted with the market himself without any intermediaries. However, the numbers of such independent weavers are decreasing.

Master weavers are those weavers who have stopped weaving and have started production or trading or both. Historically, the origin of this segment can be traced back to the 19th century. There are two reasons why they came into being. Weavers started utilising machine made yarn at this time but the spinning units were in England. So a series of intermediaries came into existence to distribute this raw material. Secondly, when the British East India Company wanted to purchase fabric, they found it easier to appoint middlemen who would supervise the production and bring the products to its offices, rather than deal directly with the weavers. Thus the middlemen started controlling the production, distancing the weaver from the markets.

In India, unlike in other countries, cooperatives have traditionally been nurtured only by the government. It has invested large amounts of money in the cooperative sector and instituted several organisations to channel support to the sector. The government therefore has a large say in the way in which cooperatives are run. In spite of the benefits a weaver gets by being in the cooperative fold, more than 70% of the weavers still operate under the free market economy (GOI, 1999). According to Mukund and Sundari (2001, pg. 100), the presence of a huge number of master weavers in the sector shows that the industry produces highly marketable goods.

Figure 2.1 is a schematized representation of the handloom industry. It shows the interaction between the various entities before the products are brought to the markets. As illustrated, the central players in this sector are master weavers and cooperatives. NGOs are recent entrants and their operations are at a significantly lower level than the other two.

2.4.1 Master weavers

Cable et al. (1986) have described how master weavers operate and much of the material in this section borrows from their study. Master weavers are middlemen who organise the production and marketing of weavers' output. Every master weaver has a group of weavers who work under him and regular customers. The weaver receives raw material from the master weaver and converts it into products for the intermediary. The master weaver then takes these products to the markets. The feedback he receives from the market is transmitted to the weaver so that marketable goods are produced. This system of production is called 'putting out system' (Cable et al. 1986). The master weaver purchases the raw material (yarn, zari and

dyes) himself or from another trader. Zari is a thin metal wire that is woven into the cotton or silk thread and used as embellishment. In small production clusters, few traders sell all three. However, in larger clusters, each of these raw materials is sold separately by individual traders. A complex system of credit has evolved for the supply of raw material, which differs from master weaver to master weaver depending on the kind of relationship he develops with the supplier.

Each weaver gets a fixed amount of raw material and the master weaver knows how many meters of cloth can be made from the material. The weaver then takes this raw material home and returns the finished goods. However, the economic transactions between the master weaver and the weaver are complex. Each weaver gets a loan before he starts working for a master weaver. This is recovered from his wages. Once the amount has been repaid he seeks another loan. In addition, from time to time weavers require money for household purposes and more often than not, the master weaver loans him this money too. In the past master weavers paid very little to the weavers but with advent of cooperatives, the wages are now comparable (Mukund and Sundari, 2001).
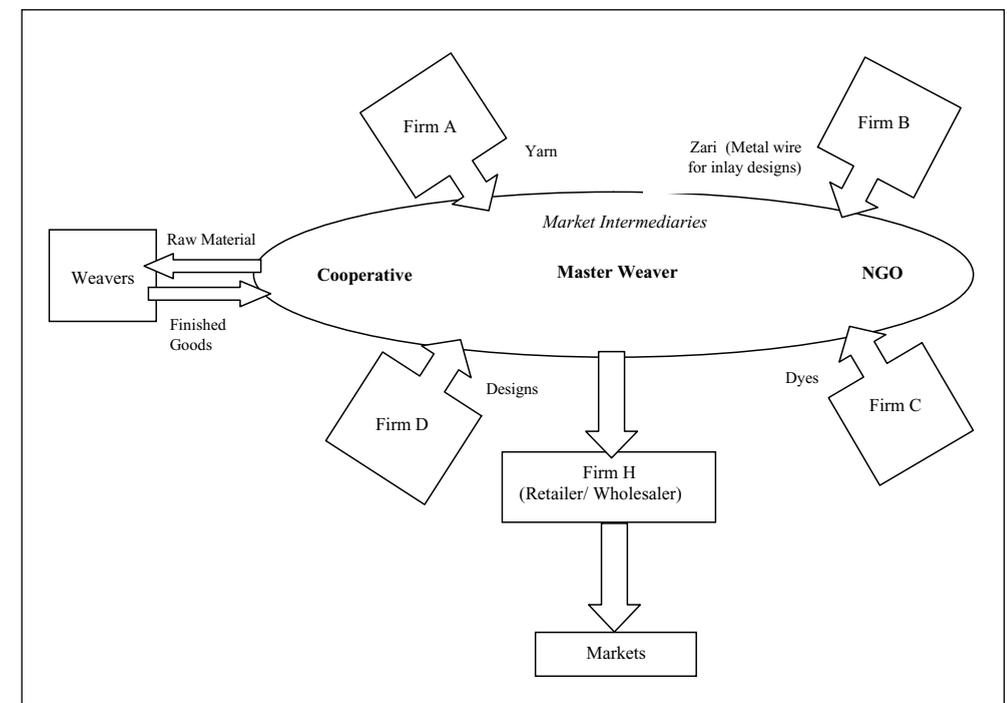
Figure 2.1 A Stylised representation of the handloom industry

With respect to marketing, the master weavers take the products to various retail outlets in urban and semi urban areas. These areas could be nearby towns or neighbouring states or sometimes distant parts of the country. More often than not, the transactions between the master weaver and the market are on credit. The maximum credit period is usually one

month. However, master weavers claim that repayment is rarely full. Chapter 5 has more information on master weavers.

2.4.2 Cooperatives

Cooperatives have been formed so that weavers get regular wages. According to Cable et al. (1986), the structure of cooperatives has not changed for decades. At the village level there are primary producer cooperatives. The function of these units is to group the weavers and offer them raw materials and assistance in marketing. These cooperatives form an apex cooperative society at the regional or state level. The apex bodies are responsible for yarn procurement (usually from cooperative spinning mills) and market the goods in areas outside the coverage of the primary cooperatives. They are part of the All India Fabric Marketing Cooperative Society Limited which runs eight stores across the country selling products from various states.

Compared with the entrepreneurial activities of the master weaver, the cooperatives have had to work within a highly bureaucratic system which inhibits entrepreneurship at every level. The system includes centralised procurement and distribution of raw material to weaving cooperatives. These cooperatives give out yarn to its member weavers and receive finished cloth from them. Payment is calculated in a complex fashion, taking into account the size of cloth and amount of yarn. Mukund and Sundari (2001, pg. 142) report that *'all successful cooperatives have worked well because they have circumvented government regulations to the extent possible and have managed to market their own output taking advantage of the latest marketing trends.'*

Nonetheless, the situation is now changing rapidly. The apex body of cooperatives is in great financial difficulties. They are unable to purchase stock from producing cooperatives. This has created unstable situations where cooperatives are not able to provide work for their members. In areas where there are master weavers, some of the members have begun to take up job-work from them. But where there are no master weavers, craftsmen are facing a dilemma over whether to continue in the trade or migrate to other areas or maybe even shift to other livelihoods.

2.4.3 Non Government Organizations

Various kinds of NGOs are involved in the handloom industry but the core objective of each varies. Some of them are focused on increasing the political awareness of the weavers in order to lobby for government support; some others are training weavers to improve their production skills, and some other are helping them market their goods. Mukund and Sundari (2001) mention Dastkar Andhra as one of the NGOs that has made a significant contribution to the development of the weavers. However, NGOs can only play a limited role since they can only supplement the government's efforts and cannot be a substitute for it. Because of lack of material on NGO operations, only the working of Dastkar Andhra (DA) has been dealt with in this chapter. Their internal reports have been made available to this study on request.

Dastkar Andhra was founded in 1989 mainly to provide marketing design support to a weav-

ers group (ibid. pg. 143). They also train weavers in the natural dyeing technique, which has not only helped revive a long lost traditional skill but is also an alternative for chemical colours. Initially they started working with four families and a small factory of carpet weavers. It was while working with this group that the NGO realised that there are many bottlenecks-like finding good wool, designs that can be marketed, etc.- that need to be negotiated to produce carpets of high quality. DA always perceived itself to be a temporary agent and hence had to take greater responsibility in training the weavers so that they could take over the processes when time came for the NGO to withdraw. It took eight years for DA to enable these weavers to stand on their own.

Their success with the weavers prompted the Crafts Council of India, an apex body that has revived many craft forms in the country, to seek their assistance for another set of artisan workers. This group makes free hand drawings in a style that keeps alive an ancient tradition. But because of lack of support and opportunities there was a danger of the art form dying out. DA worked with these artists for five years and was able to train the craftsmen to function on their own. Armed with the experience they had gained with these groups, the NGO started getting involved with more cooperatives so that they could train them to learn the technique of natural dyeing and also provide them with marketing support.

Initial marketing efforts involved conducting exhibitions across the country. This form of marketing proved to be quite effective since DA did not have to spend a lot of time and effort trying to search for customers. These exhibitions have now become regular events in city calendars. The group gained customers who wanted a continuous supply of fabric and DA started working with more cooperatives and weavers. Central to the marketing success of DA is the importance given to colours and designs. DA has its own design studio that generates various kinds of samples. These samples are sent to customers who then place orders. Other NGOs too have started to participate in these exhibitions thereby creating a kind of 'brand'. This helps to market the products easily.

Although Dastkar Andhra has been successful in its many ventures, there are organisational constraints, and as a single entity they cannot be expected to grow beyond a certain limit.

2.5 Government policies for the handloom sector

This section examines government policies pertaining to cooperatives. It also looks at the new policy mechanism that envisages support to the industry through the industrial cluster approach.

2.5.1 Support for cooperatives

Post Independence the Indian government not only continued the policies of the British government but also strengthened some of them. Cooperatives were set up and affiliated entities established to assist the cooperatives. In addition, new policies and laws were created to enable weavers to develop in a cohesive manner. The efforts of the government were in four main directions as shown in Table 2.3. The focus of the interventions, as can be seen from the table, is on organisation, modernisation, protection and welfare. As a part of organisation intervention, new institutions were constituted to help cooperatives source raw material,

provide credit and market their goods; modernisation centred on improving loom productivity; several protectionist laws were passed and subsidies provided to safeguard the industry. Welfare schemes were introduced to provide weavers with houses, medical facilities and insurance.

Table 2.3 Government interventions in handloom (Mukund and Sundari, 2001)

Direction of the intervention	Specific actions
Organisation	With weavers' cooperatives as the final link, the government has set up many institutions, both at national and state levels to assist with sourcing raw material, credit, and marketing.
Modernisation	This is achieved by improving the productivity of the loom, by introducing new designs and training weavers..
Protection/subsidies	Raw material and credit made available to weavers at subsidised rates in addition to passing laws to ensure that certain products be made only by handloom weavers. Marketing is also supported through subsidies.
Welfare schemes	Providing insurance facilities, housing credit, etc.

To achieve these goals, the government created various organisations both at the state and national levels. The specific roles of various organisations have been tabulated in Table 2.4

Table 2.4 Roles of various organisations supporting handloom (Compiled from GOI, 1996)

Institution	Data base	Human Resource	Research and Dev.	Welfare	Doc./Edu.	Promotion	Finance	Marketing	Coord. Bet. Org.	Review	Training	Strategy/ Policy	Raw Mat.
DC	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	
AIHB						✓		✓	✓	✓			
WSC	✓		✓		✓	✓					✓		
IIHT					✓						✓		
NHDC						✓		✓					✓
ACASH						✓		✓	✓		✓		
State Bodies	✓	✓		✓		✓	✓		✓		✓	✓	

DC: Development Commissioner, **AIHB**: All India Handloom Board; **WSC**: Weavers Service Centre; **IIHT**: Indian Institute of Handloom Technology; **NHDC**: National Handloom Development Corporation; **ACASH**: Association of Corporations and Apex Societies of Handlooms

From the table it is clear that multiple organisations have similar goals. However, roles are not defined clearly. For instance, six organisations are supposed to be involved in promotion. What aspect of promotion each one handles is not specified. Similarly, marketing is the function of three organisations and research and development is entrusted to two others. How should these organisations interact or cooperate so that their research and development connects with the needs of the markets? The lack of clarity means that the onus is on the head of the organisation to decide where the focus should be. To add to the confusion, such jobs are typically transferable, so when the heads of these institutions move to another department, it is not necessary that the new person continue with what his/her predecessor has initiated. Therefore the focus of the organisation is likely to shift each time a new person takes charge.

2.5.2 Support for cluster development

It was in the midst of the policy level uncertainty that the Government of India was introduced to the concept of cluster development through UNIDO. Up until then the government had various polices for small enterprises known as small scale industries (SSI). One such policy involved reservations, i.e. only SSIs could manufacture certain products.

A UNIDO pilot study (Gulati, 1997) found that there were about 350 SSI clusters and 2000 artisanal clusters in India. Combined, they contributed about 35% to India's industrial output. UNDIO developed a methodology for promoting clusters where the approach is built on three assumptions. That clustering and networking among small enterprises promotes competition; that public policy can help facilitate clustering and networking; that support groups of enterprises are more efficient than individual enterprises (UNIDO, 2003). Individual implementing agencies were given the freedom to develop their own variations.

The integrated handloom cluster development program was started with an objective to initiate a specialised plan to revitalise 20 clusters across India. The actual activities identified to realise these objectives revolved around developing social capital and trust among the various stakeholders; developing a vision for the cluster that includes all the stakeholders, enumerated through a cluster action plan; increasing the capacity of the stakeholders; assessing the various business development services and developing a system for monitoring and evaluation to enable feedback. The administrative structure for this program is multi-layered. At the top is the nodal agency, the Development Commissioner of Handloom, based in Delhi. At the next level is the implementing agency, which could be a state government unit, a quasi-government agency or even an NGO. At the local level is a cluster development agent (CDA), in charge of the cluster development coordination group. The members of the group might be government officials, bank managers, members of the export support service agencies etc. The primary task of this group is to ensure that the cluster development program remained on the same path as the cluster diagnostics report prepared by the implementing agency. To cut across all the levels and to provide the backbone for all operations, is the National Resource Agency. The agency shares its expertise on clusters and how to promote clusters. Overseeing all this is an apex body consisting of seven officials from various government bodies. In addition to giving strategic direction, they approve budget, action plans and proposals. Thus, through coordinated bureaucracy, the government hopes to revitalise handloom clusters.

2.6 Missing links in handloom research

The government statistics show that over 75% of the weavers work outside the cooperative sector mainly under master weavers. In addition many of these cooperative have shut down due to lack of members or markets in recent years. Yet, the government continues to develop programs for cooperatives. Researchers (Mukund and Sundari, 2001; Niranjan and Soumya, 2001) have called for a debate on the prospects of the sector, especially since master weavers' products have been able to find markets in exactly the same locations where the marketing outlets of cooperatives have been unable to sell. Even discount sales offered by the cooperatives have not found takers. This could be due to the fact that the products manufactured by cooperatives are completely out of sync with the market. The retail outlets, which have direct access to the customers, do not send feedback to the designer and weavers as to what the current needs of the markets are. Even though the cluster development program is supposed to involve all stakeholders, a casual glance at the structure indicates that the government may not want to rethink the top-down model of functioning.

The market feedback system of the master weavers ensures that the products are sold easily in the open market. However, there is as yet no clear understanding of how this system works. For example, how does a master weaver translate the market information he receives from his clients into products? Furthermore, master weavers do not have access to institutional finance unlike cooperatives. Taking into account the product mix that is required to be able to sell effectively, and considering that the skills of weavers are uniform in a given geographic area, how do master weavers organise their production in multiple locations? The answers to some of these queries are elaborated in Chapter 5.

From an industrial cluster perspective, social capital has been imagined to be an outcome social bonding between stakeholders. As mentioned in Chapter 1, bridging - the ability to connect to disconnected parts of one's network – either through weak ties or sparse network with structural holes can also be considered as social capital. Hence, this study will explore the working of the weak ties on sparse network on handloom clusters.

Chapter 3   LITERATURE REVIEW AND RESEARCH FRAMEWORK

3.1 Introduction

This chapter deals with literature on the research topic - entrepreneurship and networks. Entrepreneurship is a relatively new area of research in management science but there has been a tremendous growth in writings on this topic in recent years (Shane, 2003). There are varying streams, each with a different focus. The first one addresses only the traits of the individual and is also known as the supply side perspective; the second focuses only on the external forces or the environment surrounding the entrepreneur and is also known as the demand side perspective. The third perspective, which is more recent, does not focus completely on the individual or the environment but takes an in-between view. The network perspective fits into this third perspective and it looks at how the linkages the entrepreneur brings into his environment facilitates or constrains entrepreneurship.

The organisation of this chapter is as follows: the first section provides a general backdrop to various perspectives of entrepreneurship, both in western and non-western contexts. The second deals with the network theory of social capital. The third focuses on social networks and how they impact entrepreneurial activities. The fourth and fifth sections develop the research framework and hypotheses for this study.

3.2 Literature backdrop: Entrepreneurship studies

3.2.1 Prior work in entrepreneurship in the non-western context

The research context is non-western and based on a low technology industry. It is therefore important to understand the academic work that has already been done on similar topics. Economic anthropology is a field of study that has primarily looks at non-market exchanges in traditional and primitive societies, and on the transformation of societies from non-market to market economies. The interest in understanding economic transactions within the realm of anthropology was particularly high between 1950 and the late 1970s (Stewart, 1991). Thus there were studies on the role of the entrepreneur in social change (Barth, 1963), understanding the exchange spheres in Darfur (Barth, 1967), the way rural communities in India organised their production and system of rewards (Epstein, 1967), religious belief and its influence in economic change in Java (Geertz, 1956), the change in economics as societies developed (Geertz, 1963), analysing entrepreneurship as a differential response to change (Long, 1977), entrepreneurship in Indian towns (Nafziger, 1977) and, the process of setting up an enterprise (de Montoya, 2000).

Barth (1963, 1967) wrote about how a Fur language speaking society in Darfur, Sudan, organised their exchange processes. To understand how the local economy worked, he conceptualised an 'economic sphere'. An economic sphere is one in which all transactions follow the same rules. Transaction between spheres may or may not be possible. To illustrate this

idea, Barth found two main economic spheres in the area: one where all transactions are done with cash and the other, where all transactions are carried out with labour and beer. This society does not permit an exchange between beer and cash or labour and cash; the sphere containing labour and beer is ranked higher. While this works for an ethnic community, what happens when outsiders come in? They circumvent the barriers and seek profit by exploiting the discrepancies in the system. Barth concluded that there might be a re-evaluation in the group as a result of exploitation, thereby curtailing the scope for profit.

Long (1977) argued that Barth's model did not 'focus upon an analysis of decision-making of specific individuals or categories of individuals'. The model is able to present opportunities or constraints faced by individuals as a result of 'the structure of interpersonal relationships in which the entrepreneur or the potential entrepreneur is embedded in'. It does not take into account information concerning alternatives and outcomes. Long proposed instead, an 'actor-oriented' perspective, where social relationships are the outcome of face-to-face interactions, and evolve over time. To lend credence to his argument, Long used his research work in the mountain regions of Peru (1972, 1973). He showed that merchants and traders use their social networks to seek information as well as resources for their ventures. He also demonstrated that these entrepreneurs use their current networks to reach out to networks that are beyond their local areas.

In many ways, the analysis and the findings of Long are consistent with recent developments in entrepreneurship, predominantly in the western hemisphere, where social relations are found to significantly influence entrepreneurial performance (Aldrich, 1987; Elfring and Hulsink, 2003). There is enough evidence to support the argument that social networks are important to entrepreneurs irrespective of technology and location. This study benefits from the research work that has been done in the last few decades. It proposes to extend Long's theory on how entrepreneurs in low technological domains within developing countries use their social networks. Since the research domain involves a traditional industry in a lesser developed country, following sections will highlight thought processes that have relevance to economic and sociology.

3.2.2 Entrepreneurship - economists' perspectives

What follows is a brief discussion of the work of three economists - Schumpeter, Liebenstein and Kirzner. Their work has been crucial in entrepreneurial research.

There have been an occasional reference to entrepreneurs in economic literature in the 18th and 19th century but was not until early 20th century that a theory of entrepreneurship was advocated. Schumpeter (1911) considers entrepreneurship to be the catalyst that disrupts the stationary circular flow of the economy. Entrepreneurship initiates and sustains the process of development. Although Schumpeter was not the first person to recognise the importance of the role of the entrepreneur in the economy, he was the first to discuss in detail the qualities and actions of the entrepreneur. The Schumpeterian entrepreneur has the ability to innovate and thereby disrupt the economic equilibrium by introducing a new product that did not exist earlier. He explains that an innovation is deemed to have taken place when a new good is introduced or an earlier good modified, when new methods of production are developed, when new markets are opened up, new raw materials are identified and finally, when a new organisation is created.

Schumpeter's definition of entrepreneurship is based on the above-mentioned five functions and the Schumpeterian entrepreneur can be seen as an important catalyst for economic change, although his function appears only temporary. According to Schumpeter further technological advances and changes are carried out by teams of workers and scientists operating in large monopolistic organisations. The Schumpeterian entrepreneur, therefore, is an extraordinary person who causes 'creative disruption'; this has often led researchers to look for an exclusive trait in an entrepreneur.

Leibenstein (1968) pointed out that the theory of competition implied that there is no need for entrepreneurship. He argued that there is a distinct and critical role for entrepreneurs in an economy. The reasons being that firstly, the contract for labour is incomplete; secondly, the production function is partly unknown and thirdly, not all factors of production can be marketed. Taking these into account, Leibenstein introduced another type of entrepreneur – the 'routine' entrepreneur. A routine entrepreneur is someone who coordinates and takes care of a well established concern, in which some parts of the production function in use are well known; such an individual operates in well established and clearly defined markets. So according to Leibenstein, an entrepreneur is someone who connects different markets and who is capable of making up for market deficiencies.

Drawing from the works of Ludwig von Mises and Federich Hayek, Kirzner (1997) developed the concept of entrepreneurial alertness and the discovery of opportunities. He saw entrepreneurial discovery as a gradual but systemic explorative process towards equilibrium. This differs from Schumpeter's 'exploitative' process of disturbing the equilibrium. Central to the exploratory process is the notion of 'imperfect information'. According to Kirzner, it is the 'alertness' to these imperfections in information that lead to entrepreneurial discovery. Opportunities are often created due to 'entrepreneurial errors which have resulted in shortages, surplus and misallocated resources' (ibid. pg. 70). These earlier errors are detected by the entrepreneur who then purchases where prices are low and sells where prices are high. Kirzner explained that in a world that is changing continuously in terms of resource availability and technological possibilities, entrepreneurship cannot propel a market towards complete equilibrium.

While the works of Schumpeter and Kirzner continue to influence current academics, Leibenstein's work is now almost forgotten. However, it is important from the perspective of identifying who an entrepreneur is. In the handloom industry, radical innovations that have disrupted the equilibrium are few and far between. Most of the entrepreneurs are either Kirznerian or Leibensteinian in nature rather than Schumpeterian. Apart from economists, psychologists and sociologist have also studied entrepreneurs and developed alternative theories of entrepreneurship. These are briefly dealt with in the following section. The focus is on the entrepreneur and the environment, also known as supply and demand perspectives respectively.

3.2.3 Supply and demand perspectives of entrepreneurship

The supply side perspective attempts to explain entrepreneurship as being linked to certain traits of the entrepreneur. The demand side perspective argues that entrepreneurship is a result of the larger techno-socio-cultural environment.

McClelland's research on 'need for achievement (N-Arch)' has had a great bearing on promoting these theories. Brockhaus and Horwitz (1985) identified four main personality traits: need for achievement; internal locus of control; a propensity for taking high risk; and a tolerance for ambiguity. There are certain qualities that make up the N-Arch as described by McClelland's 'Achieving Society' (1967): taking responsibility for decisions; setting goals and accomplishing them and desiring feedback. Although experiments have shown that entrepreneurs do have a high N-Arch, it does not predict entrepreneurship. Similarly, another personality trait is internal locus of control. Rotter (1966) explained it as a tendency to perceive events as an outcome of behaviour, i.e. by controlling ones behaviour one can control events. Entrepreneurs are believed to have a high internal locus of control. However, subsequent research has shown that this trait is not limited to entrepreneurs alone; non-entrepreneurs who are highly motivated also have this personality trait. The tendency to take risk is also associated with entrepreneurs. It may not be wrong to presume that entrepreneurs should possess an enhanced appetite for risks if they are to pursue opportunities. Yet, as it is with the other personality-based concepts, this too is true for both entrepreneurs and non-entrepreneurs.

The demand side perspective identifies certain environments that are more likely to support entrepreneurship than others. Some of the factors may include competency destroying or competency enhancing technological change (Tushman and Anderson, 1986), and population ecology (Hannan and Freeman, 1987; Aldrich, 1999). Certain new technology can destroy the existing competencies of firms and entrepreneurs thereby rendering them useless. There is simply no scope for the old technology to survive. New firms will emerge out of the new technology or old firms that discard the old and embrace the new will continue to survive. Competency enhancing technologies are those that evolve radically from old technology, but where old competencies are required to be able to succeed. Population ecology theory suggests that technological environment changes constantly and those firms that adapt to the changed environment survive while others will not. Aldrich (1999) uses Darwin's theory of evolution-the process of variation, selection, retention and struggle—to explain how the population ecology system works within organisations.

There has been some criticism of both these perspectives. According to Scott (2001) entrepreneurial behaviour is episodic, i.e. people do not behave the same way all the time and hence engage in entrepreneurial behaviour only at particular points in time, and that too in response to specific situations. Therefore, it is impossible to account for entrepreneurship solely by examining trait-based approaches. Besides, he argues, entrepreneurship does not occur spontaneously because of the environment but requires individuals to pursue opportunities. Therefore any amount of investigation of the environment alone is unlikely to provide explanations for entrepreneurship.

In the handloom industry there has been no technological change for centuries. Most of the innovations have been incremental in nature. The occasional radical change came in the form of a new product rather than new technology. Whenever an entrepreneur identifies an incremental or radical innovation, he explores the possibility of profiting from it by investigating his current market network. If he requires resources and markets that are beyond his current network, he would have to use a variety of means to expand his network to access them. Handloom entrepreneurs, while using the same technology had only to change their business networks to profit from these radical or incremental product innovations. Social networks

are important for entrepreneurs. Through social networks, entrepreneurs can reach out to resources that are beyond his control. The advantage that individuals receive by virtue of their networks is considered their 'social capital'. It reflects the goodwill that is contained in social relationships, that which can be used to facilitate action.

3.3 Network theory of social capital

This section introduces the concept of social capital and its relationship with social networks. To begin with, the concept of social capital is briefly detailed out. Subsequently, the relationship between the social networks and social capital is explained. The section ends with a discussion on how various forms of network embeddedness influence social capital.

3.3.1 Social capital

Social capital is the benefit that groups or individuals receive by virtue of their ties with others (Portes 1998). The interpretation of social capital depends on the unit of analysis, which could be either an individual or a group. To understand an entrepreneur, the individual approach fits best. The phrase has become popular since it was coined and is increasingly being used in a wide range of social science disciplines (Adler and Kwon, 1999).

To delve deeper into the understanding of social capital, Fukuyama (2001, pg. 8) uses what he calls 'radius of trust'. He submits that every community has a certain radius of trust, which is a 'circle of people among whom co-operative norms are operative'. For social capital to have positive influence, he explains, the radius of trust should be larger than the group itself. When the circle of trust is smaller than the group, then there is a small clique that has access to this cooperation while the rest are kept out. Hence, modern society itself is a series of concentric and overlapping radii of trust.

Social capital has many definitions. Adler and Kwon (2000) collate the definitions into three different groups: an external focus that highlights the relationship an actor maintains with other actors; an internal focus on the relationship between actors within a collective; and a combination of the two. The first group believes that social capital accumulates outside the ego. It is what the ego's networks possess. This could reside either in the relational aspect or the structural aspect of the networks. Ties are important but the absence of ties increases the chances of brokering between unconnected parts (Burt, 1992). The second group assumes that the entrepreneur is part of a larger collective and that social capital could belong to the entire collective or to parts in it (Fukuyama, 2001). The third group is neutral as regards the internal/external dimension (Adler and Kwon 2003). They see relations between an employee and his colleagues in a firm as being external to the employee but internal to the firm. They define social capital as 'the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects the flow from the information, influence, and solidarity it makes available to the actor' (pg. 23). The actor in this study is the entrepreneur and hence social capital can be taken to be the goodwill, information and other advantages he receives by the virtue of the social obligations he nurtures, which manifests through the social network he maintains.

3.3.2 Networks and Social capital

Networks are an important component of social capital. Lin (1999) states that it is through the resources embedded in the social networks that social capital is built. He defines social capital as 'resources embedded in a social structure which are accessed and/or mobilised in purposive actions' (pg. 7). This definition contains three ingredients: resources embedded in a social structure, accessibility to, and mobilisation of, such social resources. The social capital construct originated while attempting to understand how democracies work but it was Granovetter who first concluded that social relationships influence all economic actions.

In his classical paper 'Economic Action and Social structure: The problem of embeddedness' (1985), Granovetter analyses how economic behaviour is affected by social relationships. It is generally accepted that in pre-market economies, social relations play a role in economic exchanges. Economic transactions in capitalistic societies are no longer defined by social relationships or kinship obligations of the transacting individuals, but are instead negotiated by individuals who are rational calculators of individual gain. By arguing against both these 'over socialised' and 'under socialised' models, Granovetter proposes that 'actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to social categories that they happen to occupy, instead, their attempts at purposive actions are instead embedded in concrete ongoing systems of social relationships.'.

Coincidentally, one can recast an earlier work of Granovetter- the first instance when a network attribute was shown to be beneficial in a competitive arena. While researching on how people find jobs he discovered that it was through acquaintances that most people got jobs and not family or close friends. Based on this research, he published the classical paper, 'The strength of weak ties' (1973). Every individual has a set of close contacts who are frequently in touch with each other, and also a set of acquaintances that he seldom meets. Since close contacts meet or interact often, the individual knows most of what his contact knows. However, an acquaintance also has a set of close contacts and the information/knowledge that this group possesses is completely different. When weak ties are 'bridged' there will always be information benefit for individuals. Therefore, weak ties can be seen as an important medium that keeps society connected.

Improving on Granovetter's argument, Burt (1992) indicates that there is something in a person's location within the social structure that brings a competitive advantage, getting him a higher rate of return. He calls this 'structural holes' - holes in social structure. Of relevance to this construct is not the number of weak ties but lack of ties between the contacts. Such a network structure is argued to provide the individual access to diverse clusters of information. Burt says that opportunities are everywhere but it is the information benefits of networks that define who knows about these opportunities, when they know, and who participates in them. To explain this point, he develops three forms of benefits: access, timings and referrals. It is as important to receive information, as it is to receive it on time so that benefits can be derived.

Such benefit will follow only if the one receives the information before anyone else does. Finally, since we cannot be everywhere all the time, it is referrals-getting one's name mentioned at the right place and time-that get a person advantage over his competition. Referrals are positive forces for future opportunities. Another advantage of referrals is the legitimacy it brings. It increases the value of the person under consideration. Unlike weak ties, Burt says that in networks that are full of structural holes, the central individual is likely to have control or brokering benefits. A structural hole connects two disconnected contacts[10] and by being between these two contacts, the person spanning the structural hole can broker this connection and gain significantly through the negotiation.

While there are some common aspects in Burt's benefits of network structure and Granovetter's weak ties, there are also some differences. Burt (1992; 2000) opines that receiving non-redundant information is important to remain competitive, but unlike Granovetter, he sees disadvantages in the size of a network. Increasing the size of the network without considering diversity can 'cripple the network', because of the time required to maintain large networks. He also believes that it is not the number of weak ties that matter, but the number of different groups that these ties reach out to, since each group is likely to provide a different set of information.

3.4 Social networks and Entrepreneurship

It is clear that social networks play a significant role in the competitive edge an individual may have but how do networks play a role in enabling entrepreneurship?

That social networks play an important and central role in the process of new venture creation was first observed by Birley (1985). While exploring how helpful formal sources (banks, lawyers, business centres, etc.) and informal sources (family, friends, etc) were during an entrepreneur's start-up process, she found that informal sources played a more significant role in making resources available to entrepreneurs. Birley without realising the importance of her finding, interprets this reliance on informal sources as an outcome of a lack of awareness on the part of formal sources. Other researchers like Aldrich and Zimmer (1986) see informal sources as a universal phenomenon and imagine entrepreneurs to be 'embedded in networks of continuing social relations. Within complex networks of relationships, entrepreneurship is facilitated or constrained by linkages between aspiring entrepreneurs, resources and opportunities.'(pg. 8).

A network of an individual can be extended indefinitely to include people (customers, suppliers, creditors, etc.) and their acquaintances. To develop a concept that truncates the social networks into meaningful levels, Aldrich and Zimmer conceptualise a 'role-set' and an 'action-set'. A role set consists of all the individuals who have a direct relationship with the entrepreneur and who play an important role in his life viz. customers, suppliers, creditors, trade associations, etc. An action set consists of a group of people with whom the entrepreneur forms a temporary alliance for a limited purpose. The network of an entrepreneur is the total of all role and action sets.

A study anchored in India by Ramachandran et al. (1993) echoes Birley's findings about family and friends playing an important role in networking. They discovered that networks are

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[10] According to Burt such a structural hole vanishes if these two disconnected contacts are by chance connected to the same individual also known as structural equivalence.

dynamic, people move from a state of active to latent networking and from an inner circle to an outer circle. Caste and religion seem to be unimportant in networking whereas education and prior experience are important. In a longitudinal study spanning nine months, Aldrich et al. (1987) explored social network characteristics like size, accessibility and diversity and connected them to business founding and business profitability. They noted that there are some variations in the relationship between network characteristics and the entrepreneurial stage. In the setting up stage they observed that 'developing contacts' was more significant whereas in the early stages of business 'maintaining contacts' became more important.

In the last ten years, researchers have emphasised the importance of networks in the survival and growth of entrepreneurial ventures. Brüderl and Prisendorfer (1998) wondered why previous research on the subject had not yielded satisfactory results. They attributed it to small sample sizes and to the exclusion of important variables that needed control; an adequately designed study that uses a wider range and elaborate statistical techniques should offer better insights, they felt. Central to their study are the constructs of 'network success hypothesis' and 'network compensation hypothesis'. The first is based on the idea that by having better networks entrepreneurs would not only experience higher chances of survival but also greater growth..While this argument is not new, the compensation hypothesis is. The authors theorise that entrepreneurs who have little human or financial capital invest greater time and effort in developing and maintaining the networks so that this shortcoming is compensated. They tested these hypotheses on a sample set of 1710 firms. While they found some support for the network success hypothesis, there was not enough in the findings to endorse the network compensation hypothesis.

Since Brüderl and Prisendorfer and other early researchers defined these constructs subjectively and this in turn, rendered cross comparison between studies difficult. To overcome this, some of the later work on social networks and entrepreneurship adopted the classification of forms of embeddedness that Zukin and DiMaggio (1990) proposed. They divided embeddedness into four categories - structural, relational, cognitive and cultural-and explored how they influence entrepreneurship. Of the four, cognitive embeddedness is the least researched within the entrepreneurship domain. Cultural embeddedness is the shared beliefs and values that shape economic aims. According to Gulati (1998: 296) 'relational embeddedness or cohesion perspectives on networks stress the role of direct cohesive ties as a mechanism for gaining fine-grained information... Structural embeddedness or positional perspective on networks go beyond the immediate ties of firms and emphasise the informational value of the structural position these partners occupy in the network.'.

Thus far, entrepreneurship research, within the network perspective, has produced contradictory and confusing conclusions about how firms should be embedded in networks (Rowley, et al. 2000). Both strong ties and weak ties (Relational embeddedness) are believed to be positively related to a firm's performance. Weak ties are associated with non-redundant information (Granovetter, 1973) and strong ties with fine-tuned information and trust (Larson, 1992; Uzzi, 1997). Similarly, dense and sparse ties (structural embeddedness) are also considered to be positively related to a firm's performance. Burt's (1992) concept of structural holes and Coleman's (1988) closure form of social capital show that different forms of structural embeddedness can be beneficial to firms. Although taking a unified embeddedness perspective has led to many developments in the networks perspective of entrepreneurship, there are

several questions that still need to be answered. Academic debates on the subject can fine-tune our understanding of the role networks play in entrepreneurial success. The research boundaries for this study will be demarcated in the following section.

3.5 The research framework

Although the importance of networks in successful entrepreneurial ventures is beyond argument, merely having a good network does not ensure success (Bruderl and Prisendorfer, 1998). Entrepreneurs will need to put their networks 'to use'. This research proposes that the entrepreneurship process is an amalgamation of 'individual capabilities and opportunities' (Shane and Venkataraman, 2000) as well as 'opportunities and resources' (Stevenson and Jarillo, 1991). Also, since network configurations of entrepreneurs vary, we can assume that that certain entrepreneurs have networks that are better suited for spotting opportunities and accessing resources. Further, human capital in the form of education, skill and experience filters the information that the network brings and helps identify suitable opportunities and resources. Hence the performance of ventures is not just dependant on social networks but rather, a combination of social network and human capital that influence opportunity recognition and resource mobilisation.
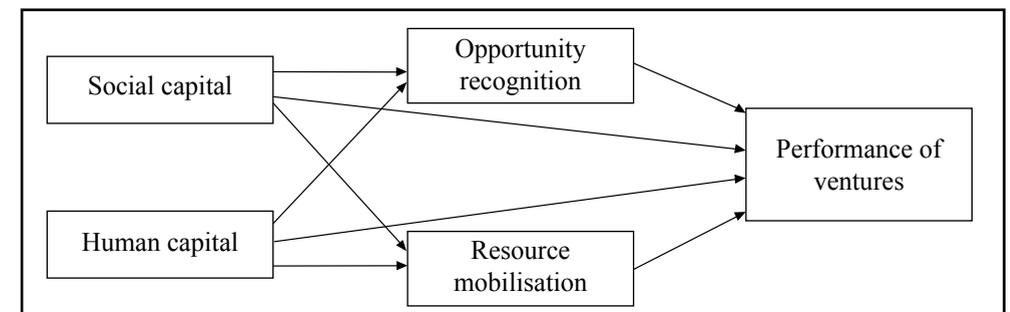
Figure 3.1 The research framework

The main research question is:

> **In the context of low technology clusters, how and to what degree does social and human capital of entrepreneurs influence the capacity to recognize opportunities and mobilize resources and how and to what degree do these two capabilities in turn influence the performance of their firms?**

3.5.1 Social capital and competitive advantage for entrepreneurship

From a theoretical point of view, it is important to understand the kind of benefits structural and relational embeddedness might bring to an entrepreneur. Appendix II tabulates much of the work done on various aspects of embeddedness, and the respective results related to entrepreneurs. These include both theoretical as well as empirical work. Some of the verifiable work relevant to this research is presented in Table 3.1. This table is divided into four segments. Each segment discusses the findings of the research work pertaining to structural, relational, mixed embeddedness and entrepreneurship aspects.

The first section tabulates how the structure of the social network of entrepreneurs influences entrepreneurial performance. Here, the works of McEvily and Zaheer (1999); Lee and Tsang (2001) found support for the argument that some network structures are better suited for entrepreneurs while some others Batjargal (2003); Jessen and Greve (2002) could not. The results of relational embeddedness and entrepreneurial performance are summarised in the second section. Rowley et al. (2000) have found weak ties to be beneficial to entrepreneurs whereas others have found more profit in strong ties (Bruderl and Preisendorfer, 1998; Ramachandran et al. 1993). The third section lists out some work by scholars like Rowley et al. (2000), and Elfring and Hulsink (2003) who argue that both strong and weak ties are important and that different configurations of social networks are beneficial to different processes of entrepreneurs but depend on contingencies like industry, stage of firm, level of innovation, etc.

It is clear from the table that there is no congruence in the findings on the process through which networks influence entrepreneurship. The conclusions of this study can directly support or extend some of these determinations. In the subsequent sections, each of the constructs in the framework will be elaborated upon. Taking into account the context and the exploratory nature of this research, instead of identifying a particular hypothesis to be tested, this study adopts an alternative hypothesis approach for each of the debates on structural and relational embeddedness, and these alternative hypotheses will be tested for their validity.

Table 3.1 Important empirical work in network entrepreneurship (Collated by the author)

	Researcher	Description of study	Findings
Section 1	McEvily and Zaheer (1999)	▪ They propose that a firm's embeddedness in a network of ties is an important source of variation in the acquisition of competitive capabilities based on two differentiating facets: bridging ties and linkages to regional institutions	▪ Support for Burt's non-redundancy in a firm's advice network explains acquisition of capabilities and participation in regional institutions. While infrequency of interaction and geographic dispersion of the advice network did not show significant results.
	Lee and Tsang (2001)	▪ Effects of entrepreneurial personality traits, background and networking activities of Chinese entrepreneurs in SME in Singapore. ▪ Variables used: need for achievement, internal locus of control, self-reliance and extroversion, education, experience, size and frequency of communication	▪ Need for achievement, number of partners and experience are positively related to venture growth. ▪ Network size assists larger firms more than smaller firms. Frequency of interaction assists smaller firms more than larger firms
	Batjargal, Bat (2003)	▪ Impact of entrepreneurs' social capital (based on structural, relational and resource embeddedness) on firms' performance in post-soviet Russia	▪ Network size indirectly affects economic actions, network heterophily negatively correlates to performance, and weak ties are beneficial whereas strong ties are not. ▪ High position alters do not increase performance but the ability to seek more from a network plays a significant role in the performance. ▪ No evidence of structural embeddedness (density and structural holes)

(Table Contd.)

Table 3.1 Important empirical work in network entrepreneurship (Contd.)

	Researcher	Description of study	Findings
	Jenssen and Greve (2002)	▪ Exploring if simple measures like number and strength of ties are more important for entrepreneurs than redundancy because many weak and strong ties increase the entrepreneur's access to resources.	▪ Redundancy does not have positive relation to a business start-up success. Contrary to theory, it was positively related to access to information and support. Higher redundancy together with a higher number of ties affects access to information. For finance the effect of strong ties is slightly higher than that of weak ties
Section 2	Rowley, et al. (2000)	▪ Explores the contingency approach to investigate the conditions under which sparse/dense networks and strong/weak ties are positively related to firm performance	▪ Weak ties are positively related to the firm performance. Strong ties argument (builds trust based governance, reciprocity and mutual gain) is not supported. ▪ There is also interaction effect between relational embeddedness, structural embeddedness and environment conditions. ▪ No support for either Burt's structural holes or Coleman's closure. ▪ Density was found to be beneficial in the exploitation context
	Bruderl and Preisendorfer (1998)	▪ Studied the network success hypothesis based on 1700 respondents	▪ Strong ties seem to be more important than weak ties. ▪ The hypothesis that entrepreneurs compensate for shortfalls in human financial capital by resorting to network support did not find confirmation.

(Table Contd.)

Table 3.1 Important empirical work in network entrepreneurship (Contd.)

	Researcher	Description of study	Findings
	Ramachandran, Ramanarayan and Sunderajan (1993)	Social networking in small enterprises in two states of India. The focus was on the subjective experiences of acquiring critical resources required for the firm.	▪ Family and friends play an important role in networking. They also found that networks are dynamic when people move from a state of active to latent networking and from inner circle to outer circle. Caste and religion seem to be unimportant in networking. Education and prior experience were important.
	Renzulli et al. (2000)	▪ Social capital, gender and likelihood of starting an enterprise. ▪ Variables: Heterogeneity, Kin composition, Gender, age, marriage, prior employment, size, proportion of women, children, education	▪ A high proportion of kin and homogeneity in the network is more important than being a female or having high proportion of females in the network.
Section 3	Rowley, et al. (2000)	▪ Explore the contingency approach to explore the conditions under which sparse/dense networks and strong/weak ties are positively related to firm performance	▪ Weak ties are positively related to the firm performance. Strong tie argument (builds trust based governance, reciprocity and mutual gain) is not supported. ▪ There is also interaction effect between relational embeddedness, structural embeddedness and environment conditions. ▪ No support for either Burt's structural holes or Coleman's closure. ▪ Density was found to be beneficial for exploitation context

(Table Contd.)

Table 3.1 Important empirical work in network entrepreneurship (Contd.)

	Researcher	Description of study	Findings
	Elfring and Hulsink (2003)	▪ Explore the role of networks in the emergence and early growth of a venture through three entrepreneurial processes: opportunity recognition, resource mobilization and obtaining legitimacy. ▪ Contingency factors : Strong and/or weak ties, degree of innovation (radical or incremental)	▪ Strong ties are important for securing resources ▪ Important for radical innovation: mix of strong and weak ties, especially strong ties for opportunity discover and tacit knowledge transfer, with weak ties assisting in gaining legitimacy. ▪ Important for incremental innovation are weak ties are important for opportunities and strong ties strong ties for legitimacy in the context of incremental innovation.
	Jenssen, (2001)	▪ Explored how social networks and entrepreneurial resources relate to and impact on entrepreneurship in Norway ▪ Social network approach can explain why people in the same cultural context and with the same psychological traits act differently ▪ Variables used: strength of relationships and network size, information resources, affective resources (motivation) and financial resources	▪ Both resources and social networks have direct impact on entrepreneurship ▪ Both weak and strong ties are important in the initial network (before the start-up) after which strong ties become more important

3.6 Hypotheses Development

This section develops the hypotheses for study taking into account the two types of embeddedness – human capital and finally, the intervening variables.

3.6.1 Relational embeddedness

There are two different views on relational embeddedness. One set of scholars argue that weak ties are more advantageous than strong ties, and another supports the reverse. Granovet-

ter (1973, pg. 1361) defines tie strength as 'a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterise the tie.' Weak ties are assumed to be acquaintances on who little time and effort are invested, whereas strong ties require frequent attention to maintain the status.

Granovetter (1983, pg. 202) points out that each of the acquaintances in turn has a dense cluster of strong ties with who they interact frequently. One can therefore presume that society is comprised of individuals with a set of strong ties in their immediate circle and who are linked indirectly to another set of strong ties through a weak tie. This implies that the weak tie may not necessarily be solely a casual acquaintance but a bridge between two densely knit clusters of ties. It can be said that ties that are constellates of strong ties would be isolated if this bridge did not exist. It is important to distinguish, however, between weak ties and bridges. While all weak ties do not necessarily become bridges, Granovetter does emphasis that all bridges are weak ties. If one looks at how information flows across the social system, those with a greater number of weak ties tend to have information from far ends of the society, whereas those with fewer ties tend to be confined to the news from their immediate surroundings. This means that not only are those with fewer weak ties likely to be deprived of information; they are likely to be at a disadvantage when it comes to recognising opportunities in a competitive arena. As regards the diffusion of ideas, when Rogers (1995) tested the idea of the weak tie in relation with the adoption of family planning during a ten-year period, he found that weak ties were indeed effective in spreading the message. Friedkin (1980), on the other hand, studied the scientific community to see if bridges are in fact weak ties. He found that there were eleven instances when bridging had taken place and 69% of them were found to be weak ties[11]. Friedkin found out that strong ties did not offer a bridging facility as they encouraged triadic closure. To extend Granovetter's argument to entrepreneurship, one would have to look at the information requirement of an entrepreneur. As Kirzner (1997) notes, entrepreneurial opportunities are an outcome of novel information. Since information is improperly distributed in the social system, it is incumbent upon the weak ties of the entrepreneur to provide the necessary diversity in the information, so that profits can be derived from it.

Strong ties are found to provide 'thick information' (Larson, 1992) or 'fine-tuned information' (Uzzi, 1996). Uzzi, while studying the New York apparel industry found that information that was exchanged within strong ties was more proprietary and tacit in nature. Strong ties that resulted from years of interaction between the exchange partners enabled each of them to provide the other with information that was devoid of noise. Furthermore, Uzzi found that at times the information also contained technical know-how or tacit knowledge that made the other firm more competitive or more responsive to the environment. For instance, a manufacturer passing on information about a 'hot selling' product to his embedded ties, thereby giving his close ties an advantage in meeting future demands (Uzzi, 1997, pg. 46). Hence, thick information transfer facilitates a beneficial type of inter-firm co-ordination and learning in a way that is difficult to emulate. Moreover, strong ties ensure trust and reciprocity that enables partners to exchange ideas on easy governance mechanisms. Larson (1992) found that when exchange partners got in touch with each other through a strong tie, they

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[11] A Two scientists were said to have a weak tie if one reported having spoken to the other about his current work, but the other did not reciprocate. On the other hand if the exchange of information was mutual, the tie was understood to be strong.

rarely drew up formal contracts. And even when they did, the relevance of such contacts was discounted. However, it is not that grievances do not arise between partners bound by a strong tie. In such cases, rather than exit the relationship, strong ties permit both partners to voice their grievances and thereby create a setting where joint problem-solving exercises are undertaken. Uzzi (1996) discovered that firms in an embedded relationship willingly helped one another without much ado when a problem arose. Hence, joint problem-solving ensures that partners stay in a relationship, help each other learn and innovate.

The outcomes of joint problem-solving and fine information exchange enable exchange partners bounded by strong ties to attain 'economies of time' (Uzzi 1997, pg. 49). Time is the scarcest resource that people have and its allocation patterns influence entire economies. Strong ties enable contract details to be drawn out before an exchange takes place. To prevent opportunism, they are either negotiated on the fly or after production is complete. In addition, fine information exchange helps firms understand each others' production methods so that the decision making time is hastened. Joint problem-solving arrangements ensure that hitches that crop up while the production is in process are taken care of as and when they arise. These advantages ensure maximum possible economies of time, which in turn increases the efficiency of the market by reducing waste and making certain that fast-selling products do not run out of stock.

Taking into account the debates that exist within the relational embeddedness construct, we arrive at our first set of alternating hypotheses:

Hypothesis 1a: *The larger the number of strong ties a master weaver possesses, the more resources he mobilises*

Hypothesis 1b: *The larger the number of weak ties a master weaver possesses, the more resources he mobilises*

Hypothesis 2a: *The larger the number of strong ties a master weaver possesses, the more opportunities he identifies*

Hypothesis 2b: *The larger the number of weak ties a master weaver possesses, the more opportunities he identifies*

Hypothesis 3a: *The larger the number of strong ties a master weaver possesses, the better his firm's performance*

Hypothesis 3b: *The larger the number of weak ties a master weaver possesses, the better his firm's performance*

3.6.2 Structural embeddedness

The structure of the social network of an entrepreneur can indicates who gets to resources and opportunities that may lie within it. Structure can extend from a few loose connections to a set of dense connections. However, for the sake of convenience, a distinction can be made between structures that are sparse and structures that are dense. For instance, certain actors may be better connected and hence have a competitive advantage over those who are poorly connected. Academics agree that some individuals are better connected, but do not necessar-

ily agree on what being 'better connected' entails. Coleman's (1988) observation that actors in a dense network have a competitive advantage is in complete contrast to Burt's (1992) concept of structural holes. Structural holes are holes in social structures that surround the focal actor, which is in fact a sparse network having largely disconnected partners. Coleman (1988) notes that a densely knit group of actors or rather, networks that have high closure, have higher social capital and therefore have an advantage over those groups of actors who are poorly connected. The advantage comes from the idea that closely knit groups have a greater propensity for instilling collective norms that ensure that obligations are compensated for, expectations are respected and opportunistic behaviour is minimal, which in fact is the right setting for securing trust and cooperation between partners.

On the other hand, Burt (1992) argues that social networks that have many holes in them—implying that the actors have few connections between them—bring many advantages to the focal actor. His analysis reveals that opportunities spring everywhere, whether in new institutions, projects that need personnel, new jobs, new proposals etc. Certain social networks, because of higher optimisation, have the potential to deliver information regarding these opportunities to their respective focal actor. Since information is not spread evenly, not everyone has access to the same kind. Access refers to receiving a valuable piece of information. A person's social network becomes an antenna that receives signals from various parts of the social structure. There are times when the person receiving a piece of information has no use for it and therefore passes it on to someone else. It is indeed important to receive information from far corners of the social structure. It is equally or perhaps even more important to be able to utilise the information on time because it increases the value of the opportunity. Finally, referrals ensure that a person's name gets mentioned at the right place and at the right time. As Burt puts it, referrals are a positive force for future opportunities.

While it may be presumed that having a network that has a large number of partners could provide the benefits mentioned above, Burt notes that such an action could impair the network. Every contact needs time and effort to maintain and both resources are limited. Hence, increasing one's network may not be the most efficient strategy. There is a probability that contacts that know and interact with each other bring in the same kind of information to the focal actor. But Burt argues that having contacts who know one another may bring in superfluous information. To highlight this redundancy, he introduces the term 'structural holes' to indicate the separation between non-redundant contacts. Structural holes bring in non-redundant information and within this non-redundant information lie opportunities which can be translated into profits. Burt suggests therefore that there is considerable competitive advantage in having more structural holes in one's network.

In addition to bringing in diverse information, structural holes can induce an additional benefit, control about alters. At times, a focal actor receives a particular piece of information, which he realises can be of greater use to somebody else in his network. He can thus pass on the entire information to another, thereby gaining an obligation. He can also control whether some or all of it can be passed on and what advantages could be derived by doing so. Alternatively, there may be a situation where one of the focal actor's contacts is in need of a person who can add value to his venture. If the focal actor has such a contact in some part of his network, he brings these two together and creates a situation wherein he potentially gains from negotiating their relationship.

These debates within structural embeddedness bring us to the next set of alternating hypotheses.

Hypothesis 4a: *The denser[12] the master weaver's network, the more resources he mobilises.*

Hypothesis 4b: *The sparser the master weaver's network, the more resources he mobilises.*

Hypothesis 5a: *The denser the master weaver's network, the more opportunities he identifies.*

Hypothesis 5b: *The sparser the master weaver's network, the more opportunities he identifies.*

Hypothesis 6a: *The denser the master weaver's network is, the better his firm's performance.*

Hypothesis 6b: *The sparser the master weaver's network, the better his firm's performance.*

3.6.3 Human capital

Though the importance of networks in successful entrepreneurial ventures can not be in doubt, merely having a good network may not ensure success. According to Shane (2000) different people have different lifestyles, therefore each of them is likely to develop a dissimilar social network. This network in turn enables or restricts the stock of information each of them have access to.

While it is true that everyone receives information all the time, only a few capable entrepreneurs are able to identify opportunities and fewer still are able to successfully exploit them. Yu (2001) believes that the argument 'everyone is surrounded by opportunities, but they only exist once they have been seen,' is contradictory. He explains that an entrepreneur's mental construct plays a central role in the process of opportunity identification, and that it is not the knowledge itself, but the way people apply knowledge that is crucial to recognizing opportunities. For an individual to benefit from an opportunity, he or she must discover that it has a value (Shane, 2000). According to Shaver and Scott (1991) people discover opportunities because of their superior information processing ability and search techniques.

Some entrepreneurs may be better than others at collecting and processing one type of information while others may be better at processing another kind (Casson and Wadeson, 2007). This ability to process information can be said to be dependent on the 'knowledge corridor' that exists within them (Venkataraman, 1997). The nature of the corridor depends on factors like education, family background and experience. Therefore, it is highly likely that every entrepreneur will have a corridor that is different from his competitors. It plays a vital role in filtering and transforming incoming information into potential sources of opportunities

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[12] Dense networks are those that have few structural holes and sparse networks are those that have more structural holes.

and is more popularly recognised as the entrepreneur's human capital (Honig, 1998). Understanding how human capital influences the performance of an individual's firm and forms the second cornerstone of this research.

Entrepreneurship literature shows that the theoretical argument that human capital influences firm performance does find empirical support (Bates, 1985, Cooper et al. 1994, Honig, 1999; Dimov and Shepard, 2005; Delmar and Shane, 2006). It has been found that entrepreneurs with a college education have had a significantly lesser chance of failing than those who did not (Bates, 1985). In addition, he also found that those with higher education were able to secure loans from commercial banks. Chandler and Hanks (1998) find that entrepreneurs with higher human capital required lesser financial capital to survive when compared to those with lower human capital.

In addition to knowledge, it is past experience either at the managerial or technical level that gives entrepreneurs insights into how the industry operates. Experienced entrepreneurs will be better at evaluating opportunities since they are likely to recognise patterns and know what information channels to tap. Baron and Ensley (2006) believe that entrepreneurs are able to develop frameworks that notice connections between independent events or trends to detect patterns wherein they can 'connect the dots' (ibid. pg. 1331) between these trends to identify new products or services. Ventures whose founding teams have had previous start-up or industrial experience are more likely to survive (Delmar and Shane, 2006). However, it was found that having past experience in one start-up or past experience with multiple start-ups did not matter. The authors found that start-ups whose founding teams had previous start-up experience performed better by managing to have higher sales.

This brings us to the next set of hypotheses:

Hypothesis 7: *The greater the master weaver' human capital, the more resources he mobilises.*

Hypothesis 8: *The greater the master weaver's human capital, the more opportunities he identifies.*

Hypothesis 9: *The greater the master weaver's human capital, the better his firm's performance.*

3.6.4 Intervening variables

Recent studies indicate that neither sparse nor closed networks by themselves offer the optimum solution (Rowley et al. 2000; Elfring and Hulsink, 2003). The authors of these studies believe that it is important to have the right mix of strong and weak ties, and of dense and sparse networks. This mix is contingent upon various aspects, such as the industrial, technological and environmental conditions that surround the industry. The purpose or objective of the network (Ahuja, 2000), and the entrepreneurial process of recognising opportunities and mobilising resources are other contingency factors this study has identified.

Entrepreneurs use their networks strategically to identify opportunities and follow it up by mobilising resources to pursue the opportunity (Elfring and Hulsink, 2003; Stuart and So-

renson, 2005, 2007; Jack et al. 2008). Entrepreneurs can identify opportunities either by active search or passive search (Ardchivilli 2003). When it is an entrepreneur who initiates the search, it is considered to be active in nature. Whereas when an entrepreneur identifies an opportunity by accident, or because of information provided by his network it is thought to be passive. Entrepreneurial alertness is a key attribute in a passive rather than active search. Resource mobilization is more strategic than opportunities. Entrepreneurs have to initiate a search once they have identified a suitable opportunity to pursue.

By distinguishing these two entrepreneurial processes the challenge posed by Stuart and Sorenson (2005, 2007) – to disentangle the network effects with regard to opportunity recognition from the network consequences for the mobilization of resources can be addressed. This distinction will help improve our understanding of the underlying mechanisms of network effects in the functioning of entrepreneurial firms.

The model of this study maintains that when the two intervening variables of opportunity recognition and resource mobilisation increase, the performance of the firm is also likely to record an upward swing. This brings us to the final set of hypotheses:

Hypothesis 10:   *The more opportunities a master weaver identifies, the better his firm's performance.*

Hypothesis 11:   *The more resources a master weaver mobilises, the better his firm's performance.*

Chapter 4   RESEARCH STRATEGY AND METHODS

4.1 Background

This chapter describes the methods used for collecting data for this study. It also elaborates on the problems, and solutions that were used to overcome them. The data was collected using a combination of qualitative and quantitative methods, keeping in mind the exploratory nature of research. Such a combination is believed to contribute to the understanding of research questions of the type posed in this study (Streefkerk, 1993).

Research on rural areas in developing countries relies predominantly on primary data collection as little secondary data exists. Section 4.2 describes the reasons for this as far as the handloom sector is concerned. The following section describes the process of establishing initial contact with the handloom sector. In section 4.4 the research design of the qualitative and quantitative categories is elaborated along with reliability and validity issues where applicable. Finally, the issue of operationalization of the variables is discussed in section 4.5. Considering that the variables constituting the constructs are a result of the semi-structured interviews with the master weavers, this section could also be seen as the first set of results of the research.

4.2 Data collection in rural areas of developing countries

To understand issues related to the rural areas of developing countries, more often than not, researchers depend on primary data collection since few secondary sources exist. In India, government records are the most important sources of data on rural industry. Although previous researchers have had issues with the accuracy of data obtained from the government India (Streefkerk, 1993; Harris 1991), such data, whenever it is available, does provide a basic picture of the industry. In the case of handloom, since the government has always focused on the co-operative sector, all data that is available is related to handloom co-operatives and therefore was of little use to this study.

An important secondary source has been the academic work of scholars. In case of the handloom industry in India, there are two dominant themes. The first one centres on Karl Marx's assertion that the British systemically de-industrialised India. Since handloom was the largest industry before the arrival of the British, many scholars have explored the impact of colonial policies on the demise of this industry from a Marxist point of view (Harnetty 1991). After Independence, the government of India has provided support to handloom through policy and subsidy, mainly routed through the co-operative sector. Therefore, the focus of the second set of scholars is on the working of co-operatives and enabling policies. While these research efforts did provide some background information on the handloom industry, they were not really of much assistance in this instance since there is so little on how master weavers function. Because of this gap, a mixed methodology has been used to give an in-depth picture of the master weaver segment, followed by a quantitative survey.

4.3 Familiarization with the Handloom Industry

The geographical location for data collection was the state of Andhra Pradesh in South India. Andhra Pradesh is among the four largest producers of handloom in the country. Most of the production is organised in a clustered form around few main towns or villages. The cluster usually takes the name of the central town or village. Over time, each cluster has evolved a specialised form of weaving that enables master weavers to market their products with little competition from other weaving clusters.

Since minimal relevant secondary data is available on handloom clusters to select the clusters for this study the expertise of a few key organisations was relied upon. Initially, the Handloom Department of the government was contacted. But since their mandate is limited to the cooperative sector and independent weavers and they had little knowledge about the functioning of master weavers. Nonetheless, they furnished the names of NGOs that work in the handloom sector who could perhaps be of assistance. One such NGO - Dastkar Andhra, with over two decades of experience with handloom - provided support for the entire duration of the study. It was with the assistance of this NGO that the clusters were selected. Contacts were established with key figures in the Pochampalli cluster to mark the beginning of data collection.

Handloom is an industry with low entry barriers. This results in competition from new players all the time. Master weavers do not have access to institutional finance and they raise the funds required for their operation from private sources at high interest rates. Most often, the competitive advantage one master weaver has over the other results in his withholding market information from others. Secrecy is one of the key strategies used by master weavers because anyone with a rudimentary knowledge of sales and production, and some capital can establish a firm. This reluctance to part with either market or business information, makes him a highly suspicious character in the eyes of the cooperatives and many NGOs.

The unwillingness of small entrepreneurs to discuss matters related to their business has not gone unnoticed by previous researchers. According to Harris (1991) many researchers have found that merchants are extremely secretive and it is difficult to elicit answers from them, especially about the financial and marketing details of their firms. In order to make the merchant comfortable enough to talk about their firms, she advises researchers to make multiple trips to the field and participate in discussions that are of least importance to the researcher. Streefkerk (1993) suggests that the researcher might often have to adopt creative techniques that are not prescribed in text books.

In many primary research initiatives it is often the case where only one or two respondents understand the need for such an effort and cooperate by providing the researcher with breakthrough insights that set the path for the research study. Such was the case with this study; interactions with Dastkar Andhra and a master weaver from the Uppada cluster helped find solutions to some of the issues, the details of which have been articulated in the subsequent sections.

4.3.1 Initial headway and some problems

The research was initiated by approaching the officials in the Department of Handlooms,

Government of Andhra Pradesh. However, they did not have enough information on master weavers because interactions with such a group are virtually nonexistent. However, they were willing to arrange meetings with local officials in various districts across the state. They also suggested that Dastkar Andhra may be a good place to start. As mentioned in Chapter 2 Section 2.4.3, Dastkar Andhra has been fairly successful in both marketing as well as training weavers in new techniques of weaving and dyeing using natural colours. The NGO in turn helped establish contact with a state-level weavers' organisation. It was through this connection that the first contacts were made with master weavers.

The first field visit was to a prosperous weaving cluster surrounding the village of Pochampalli near the city of Hyderabad. The production takes place in many villages but goods are mainly sold from Pochampalli. Master weavers sell through small outlets that are situated on the main street. Since a master weaver performs multiple tasks there are times when appointments are not honoured. Many interviews had to be conducted even as the master weaver performed his daily tasks.

Meetings with master weavers followed more or less the same pattern:

> Most master weavers received me warmly and politely enquired about the nature of my visit. Initially he would not be forthcoming to my questions, watching carefully to measure my reaction. He needed to make sure that I was neither from the government nor a competitor seeking information on the sly. He continued to perform various tasks as he spoke and would be frequently interrupted by visitors. In addition to customers and weavers, friends and fellow master weavers also drop by. If the visitor was not a customer or supplier, he would also be invited to join in the conversation. Otherwise, there are three ways in which he would keep me occupied in order to finish his business with the visitor. First, he would offer refreshments; second, he would ask his assistant to show me his products; third, he would depute an associate-in many instances a family member-to continue talking to me about the business. These methods were used individually or in combination depending on the time he needed to keep me otherwise engaged. When his business had been concluded he might continue his conversation with me, but, if for some reason, he had to take his customer/supplier to the weavers, he would apologise for breaking the interview, enquire about my next trip and promise to meet me then. Alternatively he would give me dates when he would be available next. More often than not, no interview was completed in one sitting. Multiple trips had to be made to finish an interview with a master weaver or to get a questionnaire filled out. Also, it was not as if all master weavers were approachable or provided relevant information. Initially, some of those who were uncomfortable talking business details with a stranger, would direct me to some other master weaver who they assured me was a better person to interview, or considered interruptions from visitors as an opportunity to stop the discussion altogether. These problems were resolved as the research proceeded.

Because the first visit was made possible through a third party, it is possible that the master weaver's responses might be influenced his relationship with the person. For instance, the first trip to the Pochampalli cluster was through the Secretary of the State level Weavers' Association. He took the initiative and introduced to me a few master weavers. However, these master weavers were not comfortable talking about business matters, perhaps because this person was an office bearer of the association that advocates weavers' rights including

timely payments and higher wages. Similarly, when meeting were organised through Dastkar Andhra, the intensity and quality of interaction depended on the image they had of the NGO. If the opinion was favourable, he would talk comfortably otherwise response would be guarded. A decision was therefore taken to visit villages independently and contact master weavers without any reference. This was the first strategy to ensure close to 100% response rate.

4.3.2 Overcoming logistical issues

Much of the handloom production happens in villages that are not easy to reach. For instance, a travel time of over sixteen hours was required to reach Pochampalli. Keeping this in mind Dastkar Andhra suggested that the first lot of interviews be conducted in Uppada cluster, closer to the researcher's home town. However, even this meant taking multiple modes of transport. First, a train or bus to a nodal point; then either public or private transport to the destination village; due to better frequency many prefer using private transport and normally people share these vehicles; they are therefore, more often than not filled with more passengers than they are designed for. However there is an advantage to travelling this way because it is a good place to strike a conversation with locals. If a visitor happens to be a customer they are promptly directed to friends or relatives. When the purpose of the visit was explained, they were helpful in not only informing me about what products were available where but also in guiding me to prominent master weavers. This method proved useful in Uppada, Mangalagiri and Pochampalli.

4.4 Research Design

In exploratory research, especially when the member of the research population is difficult to locate or when the population itself is not known (as with drug addicts, etc.) the technique of snowball sampling can be useful (Des Raj, 1972; Babbie, 2004). Babbie explains snowballing as a method of collecting data that involves meeting few members of the population who can be located easily. These individuals in turn are asked to provide information about where to locate a similar set of people. Thus the researcher can obtain a rough sketch of the population with little iteration.

If the research population is large and dispersed, Knorringa (1999) advices the use of 'multiple snowballs' technique in instances where the research population is large and dispersed; in this method, instead of developing one list from one source, multiple sources are used simultaneously. This way, each list can potentially take the researcher to a distinct set of respondents. Therefore, a list of master weavers was prepared with assistance from our first respondent. The second respondent was shown this list and asked to add names that he thought the first respondent may have missed. Since handloom clusters have only a limited number of master weavers, after passing on the list to the first set of respondents, only a few new names came up. The list was also shown to the person who was being interviewed. The advantage of using this method was that a master weaver could have an idea of who all had been interviewed and also of who else was on the list so that he felt less suspicious about the motive for interview.

This technique of meeting master weavers was further fine-tuned in subsequent clusters, by starting with the influential master weavers. The smaller master weavers then opened up more easily. This was strategy number two to ensure near 100% response rate. It also meant that extra trips were required to finish the initial set of interviews since the business operations of these master weavers were larger and interruptions proportionally so.

4.4.1 Qualitative data

Map of Andhra Pradesh
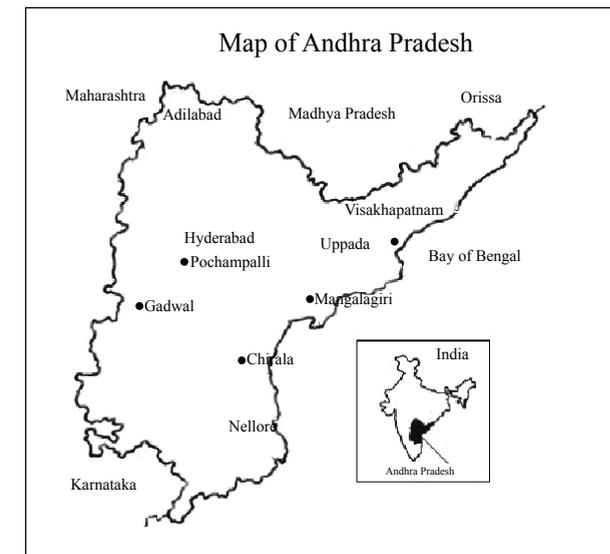
Figure 4.1 Map of the research area

This data was collected from 25 master weavers from five different clusters - shown as smaller dots in Figure 4.1. Four master weavers each from Mangalagiri, Chirala, Gadwal, and Pochampalli; and 9 from Uppada. Considering that Uppada cluster was logistically the easiest to access, many of the initial interviews were conducted here.

Since Uppada is very close to Kakinada town, many master weavers were accessible on telephones and it was possible to fix up appointments before making the trip. This helped in completing the interviews quickly because of two reasons. First, the master weaver knew the reason for the visit and second he made himself free at the scheduled time.

The interviews were conducted in a semi-structured format lasting many hours and multiple sessions. Babbie (2004, pg. 300) explains that a semi-structured or qualitative interview is *'an interaction between an interviewer and a respondent in which the interviewer has a general plan of enquiry but not a specific set of questions that may be asked with particular words and in a particular order... an interview is essentially a conversation in which the*

interviewer establishes a general direction for the conversation and pursues specific topics raised by the respondent.' In order to ensure that similar questions were asked of each master weaver, a broad set of questions were prepared. Wherever possible and permitted, notes-taking was substituted with tape-recording. This enabled me to conduct the interview in a smooth fashion, without interruptions. Also, the tape recorder made all the respondents take the event very seriously.

As mentioned earlier, there were two main objectives to the qualitative research. One was to understand how master weavers work in general-for framing questions related to how firms are set up, how markets are reached, etc. The other objective was to find out what constitutes human capital, opportunity recognition and resource mobilisation in the handloom industry.

To ensure reliability, two methods were used. In the first method, information could be considered reliable if two or more master weavers gave the same answers. In the second method, if instead a different response was received to the same query, extra information was solicited to understand the answer.

4.4.1.1 Reliability

Reliability of qualitative data goes up when the same question is posed to a respondent at different times and in different ways. If the responses are always the same, the data can be assumed to be reliable. The fact that multiple trips were made to master weavers to complete the interviews gave an opportunity to repeat the questions and cross check with previous responses. The questions for which qualitative interviews were expected to provide answers were primarily related to the organization of the master weaver segment within the handloom industry. Because technology is simple and the process of production fairly well known, there are no secrets when it comes to handloom manufacturing. Master weavers were comfortable answering these questions. It was more difficult to get answers on the business operations. The bigger master weavers were evasive when it came to queries related to the operation of their own firms. Here, multiple snowball technique played an important role. It was always possible to find a smaller master weaver who, knowing that more important master weavers had been interviewed, was more willing to talk and explain in detail the working of the business operations.

4.4.2 Quantitative data

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, 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). Depending on the comfort levels of the respondents, the wording and sequencing were modified for further encounters. The second phase was the actual data collection. The subsequent paragraphs explain in greater detail how these two phases were implemented.

The first version of the questionnaire was developed from a list of themes that are relevant to the master weavers, and based on available literature. It was framed subsequent to the com-

pletion of the first few interviews. Qualitative interviews were also used to test the questionnaire. The specific task in the testing phase was to find out if the master weaver understood the questions and could answer without any difficulty.

The trial period established that the master weavers were reluctant to part with information about their business networks. This problem was brought up with a local research team that has conducted a number of quantitative market studies for the Indian corporate sector. They suggested that I seek the assistance of a local MBA student. They explained that the reluctance to share information on trade and networks might stem from uncertainty about the intentions of the survey. They also felt that master weavers might be concerned that pertinent information could be leaked to government officials. However, they often speak to MBA students who work on projects with them, and might feel a greater degree of comfort and trust if one of them was involved. A student was thus selected in the early stages of questionnaire development, which right away enabled him to get a grasp of focus of the research.

The final questionnaire was a significantly modified version of the first one. For one thing, English had been abandoned in favour of Telugu, the local language It was tested in four clusters-Mangalagiri, Chirala, Gadwal and Pochampalli. Uppada was left out as there were too few master weavers.

The questionnaire was filled in by the research assistant in the course of a personal interview. The master weavers were given the questionnaire at the start of the interview, so that they could have an idea of the kind of information we expected to collect. This procedure also prevented them from getting impatient. The respondents who were part of the trial leg were paid subsequent visits to obtain answers to questions that were added later. These multiple visits gave us an ideal opportunity to cross check previous responses, especially in matters regarding financial dealings.

According to Babbie (2004, pg. 263), the advantages of adopting an interview survey are many. First, multiple trips assured us of a high response rate-in fact, close to 100%. More importantly, this method reduces the number of 'don't know' answers because difficult questions can be clarified. The most important part of the questionnaire was about the master weaver's networks and the relationship between the various alters of the master weaver. It was in this section that the advantage of having an interviewer fill the questions was most evident.

We collected data from 107 master weavers[13]. Thirty-seven from Pochampalli from a universe of about one hundred and twenty master weaver firms, thirty-three from about one hundred and fifty firms in Chirala, twenty-two from about eighty firms in Mangalagiri and fifteen from about fifty firms in Gadwal.

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[13] The broad idea was to get around 90-100 questionnaires filled. Since the data collection was done in parts and in different parts of the state, we had 107 in the end. The number of respondents we had from each cluster does correspond to the number of master weavers in each cluster.

4.5 Generating network data

This study aims to understand the networks of the individual master weavers; these are also known as 'ego-networks'. The ego is the person whose network is solicited and the alters are his contacts. Depending on the definition of a tie, personal networks may contain about 250 to 5,000 alters (Killworth et al. 1990). There are many tools to elicit networks. McCarthy et al. (1997) have used fifty generic first names as a cue to stimulate respondents to recall their alters. Wellman (1979) asked his respondents to name six persons 'outside your home that you feel close to'. Fischer (1982) asked the respondents to name all the people who would provide them with assistance; eight types of assistance were mentioned and up to eight names were written down for each type of assistance. Campbell and Lee (1991) used neighbourhood maps and asked their respondents to mark the houses the respondents had visited for more than ten minutes in the last six months. Lin and Dumin (1986) developed a position generator to elicit alters. They mentioned various occupations and asked the respondents if they knew any alters in these positions. The list of alters that is finally generated is the network to which the respondent has access.

However, the best known and most widely used instrument to collect egocentric network data in social surveys was first administered in the 1985 General Social Survey (GSS) (Bailey and Marsden, 1999). GSS is a nationwide survey aimed at understanding the personal networks of American citizens. The instrument is centred on a 'name generator', which when administered, generates the respondent's social network. Central to this name generator instrument is the question:

> From time to time, most people discuss important matters with other people. Looking back over the last six months - who are the people with whom you discussed an important personal matter? (pg. 288)

In light of the ease with which the name generator could be used in the area we investigated we adopted it to generate the network data. Firstly, in line with Campbell and Marsden, the most important business-related issues for a master weaver were identified through a qualitative study. The issues that are important to a master weaver are creating new designs, servicing the current wholesale clients (current markets), looking out for new wholesale clients (new markets), procurement and management of raw material, labour and finance. We used a name generator for each of these issues. The advantage of having these issues presented in a list is that they acted as cues enabling the respondents to remember the alters. As some researchers (Van der Poel, 1993) have stated, this method provides a better coverage of the ego's core network and increases data reliability (Burt, 1983).

This question is followed by 'name interpreter' details to gain deeper understanding of the characteristics of the respondent's alters and the type of relationship they have. These questions elicit information on the attributes of the alter like age, ethnicity, etc; dyadic features of the relationship between ego and alter, like intensity, duration, etc; and finally on the characteristics of the relationships between ego's alters. (Marsden 1993, pg. 400)

4.5.1 Reliability Issues of 'name generator' instrument

While it is important to develop an instrument that can elicit a list of alters of a respondent that is easy and simple to administer, it is also important to understand the reliability aspect of information that these instruments generate. Researchers like Campbell and Lee (1991) and Bailey and Marsden (1999) have considered at length the reliability issues of network delineation instruments. They list out two main reasons why understanding this aspect is important. First, they say that responses vary, depending on how the questions are worded, which reduces the reliability of the data obtained. Second, the respondent's understanding of the questions also modifies the alter's responses.

In addition to their own research on the neighbourhood networks in Nashville, Campbell and Lee (1991) compared and evaluated three existing studies that have used different name generators, which resulted in networks that are varied in terms of network size and density. These three studies are Wellman's (1979) East York survey, Fisher's (1982) Northern California Communities Study, the 1985 General Social Survey (GSS) (Marsden, 1987). They found out that the network size varied depending on the questions asked. The studies which resulted in larger networks have used multiple name generator questions. Studies that have had imposed boundary conditions have smaller network sizes. Size seems to have been affected by the wording of the name generator question. On the other hand, Campbell and Lee found out that network dimensions like density, composition and range were hardly sensitive to the wording.

Bailey and Marsden (1999) argue that though instruments containing name generator and name interpreter questions have become popular tools for eliciting network data of a respondent, it is still not clearly understood if the respondent interpreted the question in the same lines as the researcher. The main confusion, they explain, arises from the fact that the term 'important matters' has not been linked to any specific content domain and this in turn left the term to be interpreted by the respondent. Therefore in order to obtain reliable network data they suggest three types of modifications (pg. 304): separating the definition of important matters from the elicitation of alters; explaining the notion of important matters for the respondent; and specifying the content more precisely.

4.6 Operationalization

In this section, I will discuss how each of the constructs that form the framework of analysis has been operationalized in the questionnaire. Since the network aspect of the master weaver is the research core, I will start with a discussion about it. Subsequently, the rest of the constructs--human capital, resources, opportunities and performance-and their relation to the research domain, the handloom industry, will be fleshed out.

4.6.1 Network data

Keeping in mind what is already known about increasing the reliability of the 'name generator' network instrument, a two-step procedure was employed to generate network data. Firstly, as suggested by Campbell and Marsden, the most important business related issues for a master weaver were identified through a qualitative study. These issues or topics are

used to fill in the name generator questions; one name generator for each issue. The method of using multiple name generators provides a better coverage of the ego's core network (Van der Poel, 1993). Typically, a master weaver would start by naming those who assist him in each of those areas; and more often than not, the total network size was rarely less than five.

From the qualitative study, it was clear that the issues that are important for a master weaver are: creating new designs, servicing the current markets and the looking for new ones, procurement and management of raw material and raising and rotating finance. Also, by defining these important areas for the master weaver, the domain from where he has to seek answers is clarified. This delineation of the response domain by specifically wording the name generator questions overcomes the issue raised by Campbell and Lee (1991): that the network structure changed depending on how the name generator question was worded.

However, since my research predominantly involves firms that have been in existence for many years, two different time limits were used to delineate the master weaver's social network. In the first place, the master weavers were asked to elicit the names of those who helped them (with reference to the identified areas) at the time of start up. As a follow up, they were asked to add, if applicable, a number of contacts that are currently important for the firm. Since some of the contacts who helped them earlier might have become less important, the master weavers were also asked to rate the importance of the contacts. This was followed by the name interpreter questions, which solicited information on each of the alters. These questions probed the relational and structural aspects of the relationship. Based on these, the network variables were developed.

4.6.1.1 Network variables

The network variables used in this study are network size, network density, tie strength and network constraint.

Network size is taken as the total number of alters the master weaver is connected to. It is measured by simply counting the unique relationships or alters of the master weaver. Network density is the total number of relationships that exist between the master weaver and his unique alters, divided by the total number of ties that are theoretically possible (Burt, 1983).

Network constraint indicates the extent to which the master weaver is constrained by the structure of the network involving his alters (Burt, 1992). This measure, when low, indicates the advantage the master weaver acquires by developing connections with people that are not connected to each other. When the network constraint has a high value it indicates the lack of structural holes, as all or most of the master weaver's alters are engaged in relationships with one another. Both network density and network constraint were calculated by using the network analysis software UCINET 5.0 (Borgatti, et al. 2002)

Tie strength is the average strength of all the master weaver's relationships with his alters. Individual tie strengths were obtained by adding the values of three variables – caste, frequency of interaction, and duration of interaction. Duration was coded as 1 when the master weaver had known a contact for more than 10 years and 0 if this was not the case. Frequency was taken to be of value 1 when a master weaver met his alter once a week and 0 otherwise. Caste was valued at 1 when the alter and the master weaver belonged to the same caste and 0

otherwise. The average tie strength is measured by adding tie strength values for all the alters and dividing it by the number of alters.

The variables used in this study are described below and are also explained in the form of formulae in Table 4.1.

Table 4.1 Definition and measurement of network variables

Embeddedness Type	Variable	Measure	Remark
Structural	Network size	Number of alters that an ego is directly connected to.	
	Network Density	$$\frac{N*(N-1)}{2T}$$ Where T is the total number of ties and N is the number of contacts in the ego's network.	Measure popularised by Burt (1983) to indicate how dense the network is. Naturally, the higher this value, the higher is the density of the network.
	Network Constraint	$$\left(p_{ij} + \sum_q p_{iq} p_{qj}\right)^2, \quad q \neq i, j$$ Where i indicates the ego, j and q are two of the ego's contacts, p_{ij} is the proportional time investment of i in contact j, p_{iq} is the time investment of i in contact q and p_{qj} is the time investment of contact q in contact j.	Measure developed by Burt (1992) to indicate the extent to which an individual is constrained by the structure of the network involving his alters. The higher this value, the more redundant or constrained is the network.
Relational	Average strength of the ties	$$\frac{\sum S_{ij}}{N}$$ where S_{ij} indicates the strength between the ego i and contact j. N is the size of the ego's network S_{ij} = [Caste of i and j + Frequency of contact between i and j + Length of relation between i and j]	Adopted from Granovetter (1973). The variables were coded as follows: Caste = 1 if same or 0 otherwise; Frequency = 1 for once a week contact or 0 otherwise; Relationship = 1 if known for 10 years or more or 0=otherwise. The higher this value, the more strong the ties contained in i's network.

4.6.2 Opportunity recognition

Davidson and Honig (2003) explain that there is no way one can possibly know or take a sample from a universe of not-yet-discovered entrepreneurial opportunities. So researchers will have to develop indirect methods to measure opportunity recognition. Keeping in line with their suggestion, a proxy measure was developed to measure opportunity in this study. This measure consists of three variables:

- price of the most popular product as indicated by the master weaver. Popular products for each master weaver are different.

- ptprice range (the difference between the most expensive and the cheapest product produced by a master weaver), and

- number of new customers.

Price of the most popular product (in Rupees)

Since the handloom industry is a part of the fashion industry, the demand for a variety of colours, materials, designs and embellishments are high. A typical interaction in a retail show room is completely different from any textile retail store. Here, customers would normally ask the shop assistants to 'show different saris in the price range of Rs X - Rs. Y.' Alternatively, if the customer says 'we are here to purchase saris', the shop assistants might respond by asking 'at what price range?' This is because saris of different values and material have different sales counters. Customers normally examine dozens of saris before buying one. It is not uncommon for a woman to check out dozens of saris and leave the outlet without buying at all because she has not found the one with the kind of colour combination she wants. So a master weaver needs to produce a great variety of products across the price range and a variety of colour combinations for a particular price to remain competitive. Taking this into account, price is not just an indicator of material costs that were used in manufacturing a particular product; it is also what the market wants to pay for it ('the price as quality index') and hence becomes a good indicator of opportunities in the handloom industry. In our study we have assumed that saris or dress material of different designs are different products because they require a different set of inputs in the forms of raw material, weaving technique and designs.

Changing designs takes time. The reason for this is the requirement of extensive pre-loom activities before actual weaving starts. In addition, producing saris of different designs requires different production time. This is not a problem when customers pay the right price but in normal markets,[14] due to competition, retail owners tend to purchase at low prices so that they in turn can sell at low prices. One of the main issues for discussion is the payment for these design changes. These days, it is a matter of negotiation between showroom owners, master weavers and weavers as to who will bear the costs of changing the designs. To protect his interests a master weaver will try to identify the price range at which he is able produce

and sell easily. About 70% of his production will hover around this number. For instance, one master weaver may produce a variety of cotton saris that are about Rs. 600 while another might target around Rs. 300 while some others use silk and target a range of Rs. 1800. In this study, this is considered the 'price of the most popular product' and assumed to be one of the indicators of opportunities. Since there is a local term for it, it was possible to get this figure through a direct question.

Sale Price range (in Rupees)

To ensure a variety in production, master weavers have to manufacture products that are more and less expensive than the above mentioned 'most popular product'. This means that production costs will be higher or lower than the most popular product. We have taken the maximum range to be the difference between the most expensive and cheapest products. We assume this range captures the entire spectrum of products manufactured by a particular master weaver. Here again, the prices in Rupees were obtained through a straightforward question

Number of new clients

While the above two measures capture the product diversity, the variable 'new clients on credit' is assumed to indicate new markets that are to an extent secure. There could be any number of arm's length buyers, but when buyers start making repeat purchases, a master weaver could extend a line of credit. After this, the interaction between the parties reach a new level, as the master weaver may include the preferences of this wholesale client into his future product range or try to push his unsold product range from his existing markets through this new wholesale client. As this client is most likely from a different geographical location, he has been identified as a new market source.[15]

To arrive at the opportunity recognition figure, a factor analysis was used. The analysis shows that these three elements (price of most popular product, range and number of clients on credit) does form a single component that explains about 60% of the variance using principal component analysis. The factor scores of this single component have been used in the regression models as opportunity recognition.

4.6.3 Resource mobilization

At the start of this research, start-up finance, procuring new designs and labour were to be taken as resources. On receipt of the data, it was revealed that with an average age of a firm of close to 7 years the start-up financial data may not be relevant anymore as the master weaver may have infused more capital along the way. Hence this data was not used. The data generated by the question 'how often do you change designs?' had little variance and hence these could not be used.

Labour in the handloom industry can be divided into three different types – weavers, employees and contract weavers

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[14] Handloom demand goes up during festival times and the prices of products tend to increase during this period. This is also the period when transactions between the master weaver and the retail store owners are likely to be conducted in cash.

[15] A master weaver will not attempt to seek multiple clients in the same location within a city as these clients will be catering to the same market. An exception, however, could be large show rooms in central business districts of large cities since the number of people who come to shop in these zones are different and many.

Number of Weavers,

As mentioned in the chapter on the industry, each master weaver has a set of weavers working exclusively for him. A master weaver would have invested a part of his start-up capital in providing loans for these weavers and it is this loan that binds weavers to master weavers.

Number of Employees

Every master weaver has employees who perform many of the tasks in his absence. Employees are of two types - paid and unpaid. The unpaid employees are part of the extended family and perform all tasks including marketing and recovery of credit. Paid employees are mostly utilised to co-ordinate production and raw material. They are rarely sent out to the markets or to recover credit.

Number of Contract weavers

There is a new breed of weavers who work for a master weaver on contractual basis. They have repaid the loans that bound them to the master weavers. They can offer their services to whoever needs them most and are thereby in a better position to negotiate their wages.

In line with opportunity recognition, resource mobilisation has been taken as a factor score of the above three variables. These formed a single factor which explained close to 70% of the variance using principal component analysis. The factor scores of this component have been taken to represent resource mobilisation in our study.

4.6.4 Human capital

Since the handloom industry is mostly craft based, skill levels are required on mainly two fronts: understanding of production methods and how to run a business. But to be able to reach out to wholesale clients across the county it is advantageous for a master weaver to understand as many languages as possible. So the following constituent variables are taken as representatives of human capital.

- Experience in handloom industry
- Total skills
- Number of languages spoken

Experience in Handloom industry (in Years): It is important for a master weaver to have both weaving as well as business experience. Weaving experience will help him understand the process better and he can control the weavers better. At the same time it is important for a master weaver to know how to search for wholesale clients, how to supply products to them and most importantly how to recover credit from them. Hence, a mix of both will give a right level of experience which might translate into better performance. This was measured by adding the responses to two questions. The first question was the number of years he worked under a master weaver. The second question was the number of years he worked in a handloom related industry (yarn, dyes, finance, etc.)

Total Skill: Skills in handloom have been taken to constitute both weaving as well as design ability. To further differentiate between levels, knowledge and ability have been separated. The term 'knowledge' is used to indicate the cognitive understanding of how the process of designing or weaving works, whereas 'ability' would be the capability of a master weaver to do it himself. There is a need to differentiate between these two and this can be better understood with an example. For instance, in the case of weaving, second generation master weavers (whose father also happens to be a master weaver), do not have the ability to weave as they never had an opportunity to do so but because they have been looking at handloom fabrics for their entire life, they do have an understanding of how the weaving process works. On the other hand, master weavers who set up a firm after working as a weaver under another master weaver firm would have higher levels of both knowledge and ability to weave. Each of the master weavers interviewed was asked to compare himself to the most skilled person in his village and evaluate his weaving and design ability on a scale of 1 to 5 (Cronbach's alpha = 0.86). The total skills variable was obtained by taking an average value of the master weaver's responses.

Number of languages spoken: While Hindi is spoken widely in India, every state has its own language. When a master weaver knows a greater number of languages, he has the potential to have a larger number of wholesale clients or can have a larger set of such clients, from which he can choose with whom to interact. The respondents were therefore asked how many languages they speak, and their response was taken to be this variable.

4.6.5 Control variables

In addition to the independent variables, we believe there are two more variables that may influence performance, which we would like to control. These are Fresh start ups and Firm age. Fresh start-ups as compared to splinters from existing firms have lesser experience in conducting business. In the handloom industry there are two ways to become a master weaver. One is to work as a weaver under a master weaver for many years and then start out on one's own which I term fresh start-up. The other way is to start by inheriting part of the family firm. This, I term a splinter firm. The main difference between these two types is that the former, while having good skills in weaving and designing, has limited experience in running a business. The latter has lesser or sometimes no experience in weaving but has considerable exposure to running and managing a business. However, it is not that these people have no idea of weaving and designing: they do, but they cannot sit on a loom and weave. We expect splinter firms to be doing better than fresh firms because they have had experience in running a business.

Along similar lines, firms that have been in existence for longer would be in a better position to levy their experience in spotting opportunities and mobilising resources and hence perform better. So we expect older firms to be doing better than younger firms.

4.6.6 Dependent Variable

Three performance measures that Shane (2003) lists out are survival, growth and Initial Public Offering (IPO). Since many enterprises perish in the first year itself, survival is the first performance measure. The fact that these master weaver firms are in existence supports the

first performance measure. These firms never go IPO so this performance measure cannot be applied. Getting growth figures is a difficult proposition in the case of the handloom industry considering that these firms get splintered once in a while. Hence the performance of the firm is operationalized as 'annual cash turnover' in the year 2004. Normally, when seeking data from entrepreneurs, one assumes that they may not provide the correct figures. However, since multiple trips had to be made to complete each questionnaire, these figures were cross checked every time for reliability.

4.6.7 Summary of the variables

A summary of all the variables in this study is given in Table 4.3:

Table 4.2 A summary of the variables used in this study

Variable	Operationalization	Measure
Independent Variables		
Social capital	Network size	See Table 4.1
	Density	See Table 4.1
	Network constraint	See Table 4.1
	Tie Strength	See Table 4.1
Opportunity Recognition	Price of the most popular Product, product range Number of new clients	Factor score (principal component analysis on the three variables)
Resource Mobilisation	Number of weavers Number of employees number of contract weavers	Factor score (principal component analysis on the three variables)
Human capital	Experience	Number of years of experience in any handloom related business
	Total Skills	An average value of a self rated score between 1 to 5 for weaving and designing skills
	No. of languages	The number of languages the master spoke
Control Variables		
Fresh firm		Dummy variable of 0 indicating a fresh firm and 1 indicating a splinter firm
Firm age		Age of the firm in number of years
Dependent Variable		
Performance		Cash turnover in 2004

Chapter 5   THE WORKING OF MASTER WEAVERS

5.1 Introduction

According to government records, master weavers in the handloom industry support over 75% of the weavers. In spite of these great numbers, surprisingly little is known about how this system works. Until recently policy decisions were taken keeping in mind only the cooperative sector, which supports less than 20% of the weaver population. Since master weavers do not come under the purview of any support program, this channel does not receive any assistance from the government. A preliminary analysis based on secondary sources, is presented in Chapter 2. This chapter has a more detailed picture of a master weaver's operation; data used is from both qualitative and quantitative studies.

To briefly recapture what had been said in Chapter 2: the handloom industry primarily caters to the clothing needs of Indian women. The fact that Indian women continue to wear traditional dress – the sari or the salwar kameez – is probably one of the main reasons for the survival of this sector in India. Most men, on the other hand, had completely switched to western wear by the mid 20th century and don traditional clothes occasionally – mostly during festivals or religious functions.

The origins of master weavers can only be speculated. Some centuries ago, when India was among the world's advanced textile producers certain individuals who were familiar with the industry might have played the role of mediators between foreign purchasers and Indian weavers. This intermediary role may have become permanent even after the export markets declined and local markets started to become important. As to the question of who becomes a master weaver, perhaps in the past there may have been people from several castes but as of now all master weavers belong to one caste. While the cooperative and the NGO channels also produce furnishing products, master weavers mainly deal with saris and dress material and supply as per current market trends in the traditional textiles market.

In order to enable an easier understanding of the nuances of this industry we have assumed that a master weaver's operation has certain elements that are common with the other master weavers and certain elements that are unique. This chapter starts with a discussion on the common elements. The elements of network governance and content will be utilised to highlight the finer nuances. To do so, a combination of narrative (obtained from 25 interviews) and descriptive data (obtained from 107 survey responses) was used.

5.2 Descriptive data about master weavers

Quantitative data for this study was collected from the clusters of Mangalagiri, Chirala, Gadwal and Pochampalli. Table 5.1 has some basic information about the sample.

The sample size of each cluster loosely corresponds to the actual number of master weavers in the clusters. Chirala and Pochampalli are large clusters while Mangalagiri and Gadwal are smaller in size. The table shows that the average age of the master weavers in the sample is

Table 5.1 Basic information on master weavers

	Respondents		Firm Age			Firm Age		
	Number	Per-centage	Mini-mume	Maxi-mum	Aver-age	Mini-mum	Maxi-mum	Aver-age
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
All clusters	107	100	27	65	46.1	5	34	18.3

about 46 years. The average age of their firms is 18 years. The most recent firm is in business for 5 years and the youngest entrepreneur is 27 years of age. The oldest firm started 34 years ago and the oldest entrepreneur is 65 years old. The fact that no new ones have been established in any of the four clusters in the past 5 years perhaps indicates that the industry has reached saturation levels and offers few opportunities for fresh entrants. Gadwal's average firm and master weaver age is lower than those of the other clusters.

5.2.1 The start-up process of handloom firms

As mentioned in Chapter 4, there are two main routes to becoming a master weaver. The first is by establishing a new start-up and the other is to 'inherit' part of the family firm. Handloom is a family or kin oriented business involving either siblings or cousins. Siblings and cousins normally play managerial roles to begin with. When the firms become large, every stakeholder gets his share of the business in the form of cash, weavers and clients (retail stores across the country). In this study, such firms are referred to as 'splinter' firms. The other way to start a firm is when a weaver working for an intermediary - cooperative, NGO or a master weaver – sets up his own firm with financial support from family or elsewhere. They are referred to as 'fresh start-ups'. Unlike splinter groups, fresh start-ups are unlikely to have any business experience and learn the elements of managing a business through imitation, advice and mistakes.

Table 5.2 Start up process in handloom industry

	Respondents	Splinter firms		Fresh start-ups	
	Number	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
All clusters	107	39	36.4	68	63.6

The table shows that among those surveyed, there are more fresh start-ups (64%) than splinter firms, with the exception of Pochampalli. This is contrary to the perception that existing master weavers successfully restrict the entry of independent weavers. In Pochampalli about

55% of the firms came into existence due to splits in already existing firms; the growth in the number of firms in other clusters can be mainly attributed to independent weavers setting up their own firms. Perhaps the market demand for its products was more than the demand for other products from other clusters prompting stakeholders in family firms to opt for independent enterprises of their own.

5.3 Basic functions of a master weaver

A master weaver usually operates from his home where he has separate sections 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.

The master weaver is the key person in the handloom production value chain. Right from the purchase of yarn to delivery of the final product, his involvement is crucial for the survival of the industry. For the master weaver there are two separate spheres of operation – Production and Marketing. Finance and design play an important role in both. Figure 5.1 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.
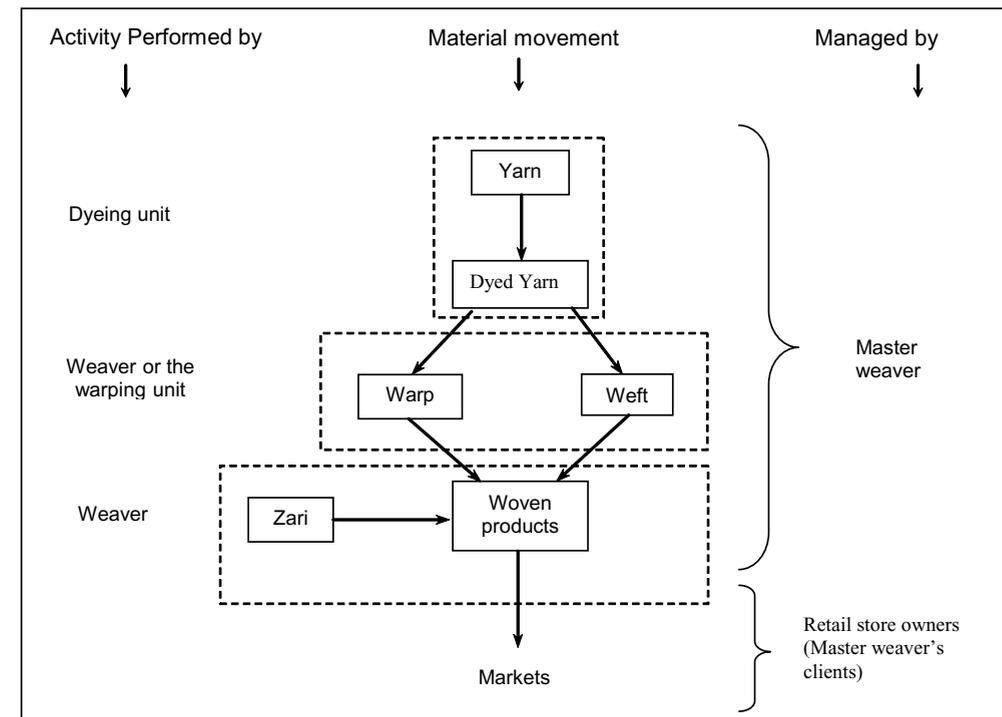

Figure 5.1 Handloom products value chain and governance.

The main raw material in the handloom industry is yarn. Coloured yarn in different hues is given to the weaver. He then 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 (metal drawn along a silk thread) to embellish the designs. A more detailed note on the weaving process with pictures can be found in Appendix III.

5.3.1 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. 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 done 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.

The fabric is mostly made in the weaver's home. When the weaver returns the finished goods, he is paid keeping in mind the complexity of work and labour involved. The master weaver deducts some amount for the repayment of the loan before payment is made 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 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.

5.3.2 Marketing

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 which 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 his 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 festival and marriage seasons and going down during monsoon, the master weaver has an upper hand during peak season when he gets repaid on time and the client has an upper hand during lean season when he gets an extended credit period. In order to survive, a master weaver has to continuously manipulate his clients, his suppliers and his weavers.

While visiting his clients, a master weaver tries to gauge the market demands. Each store has different clientele depending on location and different customers require 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. It is this market feedback channel that more or less ensures the production of marketable products.

In any case it is not possible for a master weaver to sell every product that is made. Some products do not come up to standard, either because of production flaws or damage in storing. Occasional mistakes are pardoned but if a weaver errs often he is penalised. Since these sub-standard products cannot be sold in normal markets, they are sold at discounted prices at non-seasonal sales.

5.3.3 Designs

Thousands of interactions between customers, store owners, master weavers and weavers take place over a course of several years. As a result every handloom cluster has developed signature patterns and designs that are unique to it. In the last few years, the government has been undertaking special projects to patent these products under the 'geographical indicator act' so that it becomes the proprietary property of that cluster and only weavers belonging to that group can use them. 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 will have to be translated into concrete weaving terms. For this the master weaver or weaver use graph paper but in cases where complex designs have to be developed and a consultant may be hired to do it on a computer and provide the master weaver with a print out. Graph papers or computer printouts are then stored carefully for future reference.

Once the product is made the master weaver, with his knowledge of what kind of product sells where, selects specific products for different clients. Sometime the clients want a particular design or even develop a design series that becomes their proprietary property. The master weaver is allowed to use the designs only if there is no fresh order for the product for six months. 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.

5.4 Governance in master weaver operations

Handloom production and marketing are labour intensive activities. Therefore master weavers develop complex governance mechanisms that are different from cooperatives and NGOs, to ensure the smooth operation of their business. In this subsection we examine these mechanisms in greater detail in the context of marketing and production. Wherever possible, the difference from other channels will be pointed out.

5.4.1 The production process

Handloom production process of each master weaver varies a little from place to place. For instance, the production may take place entirely in one village or be distributed across a cluster of villages. These clusters can be small - encompassing few villages as with Uppada - or large - spanning many villages like in the case of Pochampalli. Usually the cluster is named after the largest village/town around which the production takes place.

Table 5.3 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

The table 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 quite a 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.

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 are actually able to attract unpaid staff. Unpaid employees are normally family members and they are likely to be involved not just with production but with every aspect of a master weaver's business. On the other hand, paid employees mostly interact with weavers and man the business at the stores. If the unpaid assistants are part of the immediate family it is likely that they get 'pocket money' once in a while and some freedom to manage the production. Perhaps it for want of financial and administrative freedom that such helper eventually want to split from the firm and take their share (Section 5.2.1). Table 5.4 presents data on both types of assistance in the research areas.

Table 5.4 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. 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. Master weavers with large extended families have an advantage over small families when it comes to access to unpaid staff.

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 it is to supervise operations in a remote location master weavers have increasingly taken to subcontracting their work to contract weavers. Contract 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.

Table 5.5 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 5.5 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 fulltime weaver.

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 dealing 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 conontracting independent weavers since they are more amenable to being governed.

5.4.2 The Marketing process

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. 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 the goods and even refuse to place 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 have lost the credit amount but he many 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 clients' business performance. They rely on various secondary sources to seek information on the creditworthiness of their clients. For instance, a master weaver might engage the employees of the client in long informal chats, or enquire about his business health from other suppliers of other products. He may also keep track of footfalls at the client's shop both during peak as well as off-season to gauge the popularity of the store.

Cloth merchants' associations in towns and cities are equipped with dormitories to serve travellers 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. 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 where other master weavers stay as well and hence not much changes by way of the nature of the trade gossip.

Table 5.6 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 5.6 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

5.5 Social networks of master weavers

The looms that produce fabric for one 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 the social and business network of the entrepreneur-the connections to retails 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 success of their venture is heavily dependent on the inputs he obtains through them. One can even go so far as to say that in the handloom industry network connections matter more than they do in any other craft based industry.

Researchers analysing network literature found three elements critical to theoretical and empirical entrepreneurship research (Honig and Antoncic, 2003; Amit and Zott, 2001); these are the nature of the content exchanged between the network partners, the mechanism by which relationships are governed and the network structure that is created by cross cutting relationships between the partners. This section provides some descriptive statistics on the social networks of the master weavers

Table 5.7 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 network size of a master weaver is given in Table 5.7. It has been categorised into five levels with an increment of four alters in each category. Across the clusters, master weavers in Mangalagiri have the small networks and those in Pochampalli have the largest. The reason for this could be that Mangalagiri dress material gets sold in greater quantities to fewer buyers while Pochampalli that mainly produces saris that sell in fewer numbers, requiring larger business networks for production and supervision. 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 in-

dustry. 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 5.8 The composition of the master weavers' networks (in per cent)

Net Size	Ties Strength		Caste		
	Weak	Strong	Same	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

Table 5.8 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. Likewise, smaller networks have alters 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 differently[16]. It is also likely that these people are likely to be store owners or raw material suppliers rather most handloom production takes place in and around local villages.

Table 5.9 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	Fort-nightly	Month-ly	Chirala	
1-4	100	0	0	58	25	17	0	33.3	
5-8	66	23	11	32	31	21	16	51.5	
9-12	64	25	11	30	31	18	21	12.1	
13-16	64	32	5	29	31	22	18	3.0	
17-20	40	39	21	23	34	24	19	0	

According to Table 5.9, master weavers seem to have 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 on at least a weekly basis. This level of face to face interaction may be required considering the labour intensive activi-

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

ties 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 who the master weaver meets on a fortnightly or monthly basis are his clients and those he meets frequently are his weavers and suppliers.

5.5.1 Network Content

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. 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. 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. These include marketing, finance, product design and production. Table 5.10 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 issue with 83 per cent of the alters, finance with 75 per cent, design related issue 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 decreases multiplexity.

Table 5.10 Variations in the network content (in per cent)

Network Size	Marketing	Finance	Design	Production	Total
1-4	83	75	67	83	3.77
5-8	86	23	54	42	25.47
9-12	79	20	59	34	31.13
13-16	72	23	57	37	31.13
17-20	77	29	49	41	8.49

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.

Table 5.11 Network content and tie strength

Tie Strength	Marketing	Finance	Design	Production
Weak	43	35	21	17
Strong	57	65	79	83

Table 5.10 presents the data for the network content and tie strength. It shows that master weavers talk more to their strong ties than to weak ties. This is understandable enough; for one thing master weavers encounter their strong ties more often than they do the weak ties. Conversations with strong ties mostly centre around production related issues, and marketing features the least. Conversations with weak ties are dominated by marketing related issues while production related issues are rarely discussed.

5.6 Micro-Macro linkage

Social networks connect master weavers to their environment and provide useful business information. If for instance, one of them comes across novel information and acts upon it to bring about profitable action, the same networks feed this information back into the environment. Then other master weavers who constitute the environment can decide whether or not pursue similar action. It is this quality of linking the micro to the macro which Granovetter (1973) highlights as an important function of social networks. In the handloom industry, the micro-macro linkage helps the master weaver channel be more successful than the cooperative channel.

When one master produces a novel product the social networks delivers this information to the rest of the master weavers in the cluster. Some of them may do a full scale imitation and market it to their clients. Some others may work on the product and bring about an incremental innovation. This incremental innovation will be fed back into the system and over time the capability of the entire cluster will increase. There might even be market expansion and in such cases there is a scope for new businesses to come into existence. Although blatant imitation may not initially increase the capability of the cluster interactions with weak ties can prove useful-the master weaver is likely to gain ideas on incrementally modifying the innovation to suit the needs of his ties.

However, radical innovations are rare in handloom industry. Such innovations will definitely increase the market size and the scope for new business creation is high. In the course of this study three cases were discovered where individual master weavers were able to identify radical innovations. Although they were initially able to gain monopolistic advantage the social networks of other master weavers ensured that they too had access to these innovations. They in turn were able to imitate or modify and bring about their own alterations. Since the entire cluster was involved in the activity the capability of cluster grew and more importantly, these activities created enough new markets for weavers to set up their own ventures. To cater to the new demand, weavers from other parts of the state migrated to these clusters. They also began to produce lucrative designs and products that would fetch them better wages.

[17] The process of dyeing silk is different from cotton. Although he did learn how to dye silk but the colours were not fast and the fabrics bled colour each time they were washed. In order to succeed in his innovative pursuit, the greatest problem KAR faced was identifying the right technique to fasten the dye to the yarn.

5.7 Radical innovation and firm growth in handloom

This section presents three cases of radical innovation. A more detailed account follows in Appendix IV. Certainly there is a growth spurt in the number of firms when such innovations happen. However, this is only temporary.

5.7.1 The cases

A master weaver (KAR) in Pochampalli (Case 2 in Appendix IV) was able to produce a new kind of sari by using silk. Up until then, only cotton saris had been produced in the cluster. He used both his weak and strong ties to bring about this innovation. He used his weak ties to learn about silk weaving and dyeing techniques[17] and strong ties to identify the right weavers who would not leak the process of making the sari into the system. He also moved his production to a remote village to minimise the interactions of his weavers with other master weavers. One must remember that there are no patents in the handloom industry and entrepreneurs must resort to drastic measures to keep trade secrets. It took over a year for the other master weavers to get to know the process by which time KAR had managed to establish contact with the best and most prestigious retails stores across the country.

After the technique became well known other master weavers started to produce silk saris as well. The timing of the innovation was good since it corresponded with growth in income and the demand for the new kind of sari was high. Since the opportunity space was large and growing, many master weavers brought their strong ties into the business. This situation also helped many local weavers to become master weavers when there was a shortage of labour and weak tie networks helped bring in craftsmen from other parts of Andhra Pradesh.

The demand for these saris held on for close to a decade and the entire cluster did well economically. Although master weavers say that the demand dropped abruptly, they likely missed the signs of impending debacle. The market was saturated and it was no longer viable for newcomers to enter the business. While the going was good, no master weaver tried to change the product or spend time bringing in new innovations. With business began to plummet there was no alternative design to take the place of the product that had sustained the cluster for so long.

Uppada, unlike Pochampalli, is a small cluster with few master weavers. The innovation that changed the cluster was due to a sequence of actions that followed the learning of a new weaving technique that was introduced by one particular master weaver, SAR (Case 1 in Appendix IV). He had to leave his village Moolapeta due to financial difficulties and work for his cousin in Chirala cluster. The weaving technique there was completely different from Uppada and he worked there for 10 years before moving back to his village. While he was there, he mastered the technique of using a jacquard loom and after coming back he explored the possibility of setting up similar looms. The opportunity came up when he could use his political connection and his son's qualification to avail a loan. He was able to set up a single loom to evaluate the business while continuing to work on the local master weavers. At that time he had no idea that soon everyone in the village would opt out of normal looms and adopt jacquard looms. It started with his close friends first, they asked him to commission one loom and slowly it started to spread to other master weavers. Initially many of the local mas-

ter weavers were taking up contract weaving for those in Chirala but soon they could sell to some of their clients and some of their friends as well. One of the main reasons for the diffusion of the technique is the profits margins in jacquard – it was more than normal weaving.

Unlike the other two clusters where the radical innovation was immediately adopted by many, master weavers Mangalagiri were wary of the new dress material that one of the local master weavers, AKR (Case 3 in Appendix IV) produced. He was able to access the demand because of his political connections. A merchant in Bombay was looking for someone to produce a new type of product and an intermediary (structural hole) who was not interested in spending time developing this product passed on the query and the contact to AKR – what Uzzi (1997) terms as fine tuned information. He was interested and produced some samples which sold very quickly. The merchant was able to generate more orders as the product was accepted by the market but despite the successful marketing none of the local master weavers were interested in following suit. The reason for this scepticism was that some of them had had adverse experiences with prior innovations. Their reluctance to enter the fray enabled the early adapters to consolidate their market position. As the demand for the product increased, factory like 'sheds' were constructed for weavers to work during the day. In no other part of the research area do such sheds exist. It now became easy for the master weaver to control production; but weavers on their part began to form unions and restrict entry of outsiders while demanding higher wages. Although there is demand for the product, master weavers are now unable to hire those from non-weaving castes. To counter this some master weavers have contracted weavers based in a different area. Table 5.5 shows that master weavers in Mangalagiri have the maximum number of contract weavers.

5.7.2 Analysis of cluster growth

In all the three clusters, once the new product started to become popular rapid growth in demand followed; setting up a firm under such circumstances is easy. Raw material, labour as well as technology are available within the cluster itself. The hard job of overcoming the liability of newness (Stichcombe, 1965) is made easier because of market demand. When markets are favourable, many master weavers do not feel threatened and hence help even distant family or close friends set up their business. Soon, either because of the increase in the number of new businesses or because of the limited number of trained weavers, every cluster reaches saturation point. This process is explained by Hannan and Freeman (1989): initially, when the density of the organisations within a new market niche is low, legitimacy is also low as routines for reliable operations of firms are yet to be established. However, when an innovation comes in, in a short period of time the demand in the market and the knowledge of business routines firms will start to grow and the density of firms will gradually increase. At a later stage, the competition between various firms increases, and this is likely to result in a higher mortality rate. Ultimately a kind of equilibrium is achieved with a stable number of firms. This level is called 'carrying capacity'. This phase might continue for a long time. However, this situation will also pressurise all the firms in the cluster to start looking for new niches so that they can continue to survive. If and when such a new niche is discovered the cycle is set in motion once again. The dynamics of a firm's growth in a handloom cluster is illustrated in Figure 5.2.

All the three radical innovations resulted in more firms being established. But this increase will in a course of time lead to a situation where the cluster cannot carry more firms because of the limitation of resources-the equilibrium stage. This phase may last a few years or for decades. Once the product starts to become a little 'old fashioned', market demand will shrink and many firms close down and the process of decline will be set in motion as seen in Pochampalli and Gadwal.
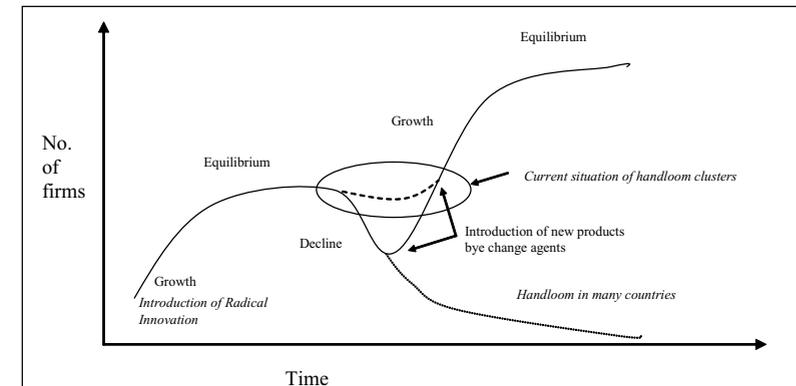
Figure 5.2 The life cycle of handloom firms in a cluster

Sometimes a new innovation may take place and the process will start all over again. As was seen in Uppada, a new innovation need not come only when the cluster is in decline; it can also happen when the cluster is in the equilibrium stage; in which case new growth may come about without great decline in the firm population. The implication of the evolution of handloom clusters on cluster policy comes up for discussion in the final chapter.

Chapter 6   RESULTS OF THE QUANTITATIVE SURVEY

6.1 Introduction

This chapter presents the results of the empirical survey. Three models are presented – the Resource Mobilization Model, the Opportunity Recognition Model and the Performance Model. Each model follows a similar procedure. First, the base model containing only the control variables is introduced. Subsequently, the human capital and social capital variables are added to the base model. Finally, all variables are put into one model. In the Performance model, in addition to the other two models, resource mobilisation and opportunity recognition are also taken into consideration through two extra steps. If in the final model any of the variables from the previous models lost their significance, it is assumed that the hypothesis related to that variable in question is not supported. See Figure 6.1 for a summary of the three models. The results of the regression analysis will be taken up in greater detail in the following chapter.
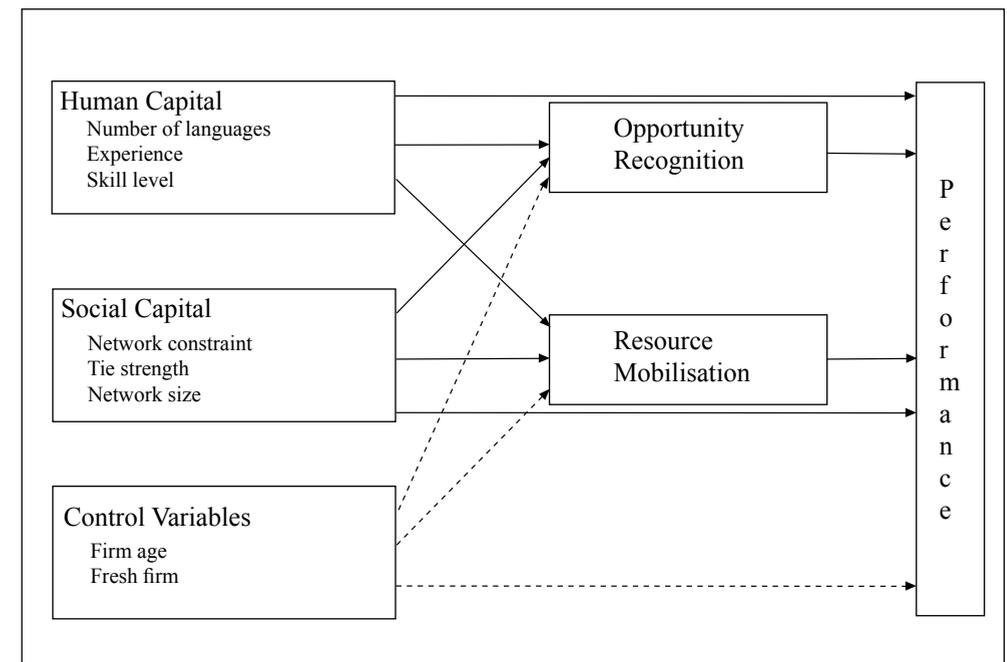
Figure 6.1 A causal model to explore the effects of Social Capital and Human Capital on performance

6.2 The correlation between the variables

The correlations between the all variables are given in Table 6.1. Of the two control variables, firm age correlates with all three human capital variables and one social capital variable – tie strength. Of the three human capital variables, experience and skill relate positively to each other, indicating the obvious—that the older the firm the higher the skill level (r=.572, p<.001) and experience (r=.443, p<.001) of the master weaver. However, firm age relates negatively to the number of languages a master weaver speaks (r=-.282, p<.001). This indicates that master weavers whose firms were founded later speak more languages than those having older firms. This may be due to the need to access the country's hinterland in search of new business since the established master weavers are likely to supply to closer areas.

As expected, the more experienced the master weavers are, the higher their skill level (r=.709, p<.001). It is interesting to note that there is a negative correlation between the number of languages spoken and experience (r=-.280, p<.001). This could be due to the fact that those master weavers who spent more number of years as weavers are likely to be older. In the weaving community, older people are more likely to be less educated than those who are young and are therefore less likely to know more languages. We can support this with our descriptive data which shows that among master weavers in the age group 20 to 40 (17 people), 23% speak at least two languages. In fact, in this age group there is no one who speaks only one language. In contrast, in the age group 40 to 50 (64 people) about 30% speak only one language and in the age group 50 to 60 (22 people) half of them knows only one language.

Skill correlates negatively with network size (r= -.213, p<.01) and positively with tie strength (r=.232, p <.01). This could be due to the fact that master weavers who are more skilled are likely to have worked longer under a master weaver before setting up their firms. In addition, they are likely to be older and, as mentioned above, likely to speak fewer languages. Both may inhibit a master weaver from having a larger social network. Similarly, they are likely to be hesitant to reach out to new contacts and might be more comfortable talking to their core group, which is reflected in the tie strength. The number of languages a master weaver speaks correlates negatively with network constraint (r= -.210, p <.01) as well as tie strength (r = - .211, p <.01). Those who speak more languages will be able to reach out to larger parts of the country and are likely to have sparser networks and weaker ties.

As far as the social capital variable is concerned, network size correlates negatively with constraint measures (r= -.501, p <.01). This indicates that the larger the network the less constrained it is. That network aggregate constraint decreases with size has already been observed by Burt (1993, pp 58).

The mediating variables – opportunity recognition and resource mobilisation – correlate only with the number of languages and not to other human capital variables. It has an effect on both of them (r= .389, p <.001 and r= .226, p<.01 respectively). Those who speak more languages are likely to explore a wider range of markets across the country and this enables them to spot more market opportunities. The positive correlation between resource mobilisation and number of languages perhaps could be due to the operationalization of the variable – a factor score of the number of weavers, contract weavers and employees. This correlation suggests, that master weavers who speak more languages are able to hire more contractual

weavers or employees. The social capital variable network constraint correlates negatively with opportunity recognition, but not with resource mobilization, while tie strength correlates with resource mobilization, but not with opportunity recognition. This indicates that master weavers having denser networks receive more resources but that master weavers having a sparser network on the other hand have a better chance of spotting opportunities.

Finally, firm performance correlates positively with the number of languages, resource mobilization, and opportunity recognition. As expected, master weavers who mobilize more resources and identify more opportunities do better. Considering that the handloom industry is in a state of flux due to competition from automated power looms, master weavers who speak more languages are more likely to access business from a larger pool.

Table 6.1 Correlation between the various variables used in the regression models

		Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Firm age	18.34	6.86										
2	Fresh firm	0.64	0.48	-.168*									
3	Average skill set	3.68	1.02	.572***	-.108								
4	Total experience	6.72	4.97	.443***	-.048	.709***							
5	Number of languages	2.29	1.07	-.285***	-.056	-.187*	-.280***						
6	Network size	11.05	3.88	.085	-.022	-.026	-.213*	.069					
7	Network constraint	0.33	0.12	.009	.129	-.023	.171	-.210*	-.501***				
8	Tie strength	2.10	0.44	.393***	.065	.185	.232*	-.211*	.067	.166			
9	Opportunity recognition	0.00	1.00	.018	-.065	.059	-.127	.389**	.082	-.341***	-.144		
10	Resource mobilisation	0.00	1.00	.104	-.090	.076	.076	.226*	.132	.046	.337***	-.070	
11	Performance	26.72	18.48	.125	-.102	.131	-.064	.269**	.138	-.164	.017	437**	.442**

$^+$ p <.10, * p < .05, ** p < .01, *** p < .001

6.3 Regression models for studying the direct effects

The three regression models are presented in this section. The effects of human capital and social capital on resource mobilisation are shown in the first regression model. This model verifies the hypotheses regarding the impact relational embeddedness, structural embeddedness, and human capital have on resource mobilization (i.e. hypotheses 1a/b, 4a/b, and 7). In the second model, opportunity recognition is the dependent variable, while human capital and social capital are again the independent variables. This model tests for similar effects

as in the resource mobilization model-the effects of relational and structural embeddedness, and human capital on opportunity recognition (i.c. hypotheses 2a/b, 5a/b, and 8). In the final model, performance is explained by human capital, social capital, and the impact of resource mobilisation and opportunity recognition (i.c. hypotheses 3a/b, 6a/b, and 9 through 11).

6.3.1 Influence of social and human capital on resource mobilization

Table 6.2 presents the results of the regression models for resource mobilization. The base model, only containing the control variables, explains little variance. The introduction of the human capital variables leads to a slight increase of the percentage of explained variance (from 1.9 to 4.1). Nevertheless the model does not have much exploratory power. Only the number of spoken languages is significant (β = .223, p <.05), whereas experience and skills hardly have an effect on the capability to mobilize recourses, implying that those who speak more languages identify more resources.

Table 6.2 Resource Mobilisation Models (standardized coefficients)

Variables		(Base)	Human Capital	Social Capital	Final (all variables)
Control	Fresh firm	.191 +	.250*	-.108	-.114
	Firm age	-.032	-.028	.068	.074
Human capital	Experience		.119		.038
	Average skill level		-.090		.046
	Total languages		.223*		.297**
Social capital	Network size			.113	.118
	Tie strength			.323**	.343**
	Network constraint			.119	.201+
	R^2	.041	.093	.169	.244
	Adj R^2	.019	.041	.120	.169
	F	1.9	1.7	3.5	3.3
	Sig.	.15	.12	.006	.003

+ p <.10, * p < .05, ** p < .01

In the social capital model[18] the significant explanatory variable is tie strength (β=0.323, p<.01). This means that the more strong ties a master weaver has, the more resources he mobilizes. This finding lends support to hypothesis H1a. The other two variables - network size[19] and constraint – have no effect on resource mobilization. The percentage of explained variance increases to 12.0.

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[18] The hypothesis that I am seeking answers for is to explore which form of network structure provides advantage to master weavers – is it a network that has more structural holes (Burt' argument) or a network that is more close (Coleman's argument). Either density or network constraint have been used in the literature to seek evidence to this argument. We have used both but dropped density measure in the models as there was strong correlation with the constraint measure and it was adequate to use one measure instead of both.

[19] While generating data, in order to accurately generate the network data I have provided a space for listing 20 alters with an explanation that it is not incumbent upon the respondent to fill all the twenty slots. Since network constraint varies with network size and because each entrepreneur had a different network size, we had to use network size in the regression model to identify the actual network constraint and not the variance induced by network size. Hence there is no hypothesis related to network size.

In the final model that contains all the variables, the number of languages (β=0.297, p< .01), and tie strength (β=0.343, p<.01) remain significant, but the effect of network constraint decreased but remained significant on the ten percent level (β=.201, p < .10). These findings indicate that the more number of languages a master weaver speaks and the larger the number of strong ties, the more resources he mobilizes, but also the more constrained, the master weaver's network is – where most people in his social network know the others – the more resources he mobilizes. This model explains almost 17 percent of the variance in the dependent variable.

Based on these results, the hypotheses that find support are H1a (the larger the number of strong ties, the more resources mobilized) and H4a (the denser the master weaver's network, the more resources mobilized). Hypothesis H7 (the greater the master weaver's amount of human capital, the more resources mobilized) is partially supported.

6.3.2 Influence of social and human capital on opportunity recognition

Table 6.3 presents the results of the regression models for opportunity recognition. The base model containing only the control variables shows little explanatory power.

Table 6.3 Opportunity Recognition Models (standardized coefficients)

Variables		(Base)	Human Capital	Social Capital	Final (all variables)
Control	Fresh firm	-.083	.012	-.011	.030
	Firm age	-.051	.032	-.024	.052
Human capital	Experience		-.267*		-.236+
	Average skill level		.259+		.111
	Total languages		.397**		.262**
Social capital	Network size			-.047	-.120
	Tie strength			.005	.069
	Network constraint			-.418**	-.370**
	R^2	.008	.20	.164	.287
	Adj R^2	-	.16	.116	.217
	F	.333	4.5	3.38	4.1
	Sig.	-	.001	.008	.000

+ p <.10, * p < .05, ** p < .01

The introduction of the human capital variables leads to an increase in the percentage of explained variance to 16. All the human capital variables – the number of spoken languages (β = .397, p <.01), experience (β= -.267, p<.05) and skills (β= .259, p<.10) – seem to significantly influence the capability to identify opportunity. While languages and skills seem to influence positively, experience seems to have a negative impact. This shows that as skill increases, the ability to recognise opportunities also increases. The same holds for the number of languages. Being more experienced on the other hand has a negative impact on this ability. This means that the longer a master weaver has worked as an employee in another firm before setting up his business, the less he is able to locate opportunities.

In the social capital model, the percentage variance explained by the model is lower. Only network constraint seems to be significant (β= -.418, p<.01). This indicates that less constraining social networks seem to be conducive for opportunity recognition. The other two variables - network size and tie strength - have no effect on opportunity recognition.

In the final model containing all the variables, two human capital variables remain significant. The more languages spoken has a positive effect on opportunity recognition (β= .262, p< .01) while experience has a mildly significant effect (β= -.236, p < .10). This implies that the more the number of languages a master weaver speaks the greater will be his ability to zero in on opportunities, but the more the experience the lower are his chances of identifying opportunities. However, the effect of the human capital variables decreases with the introduction of the social capital variables. With respect to the social capital variables only network constraint (β = -.370, p <.01) is significant. This is the strongest effect in the final model. It suggests that the lesser the constraint (or more the structural holes), the greater his ability to identify opportunities.

Based on these results, hypothesis H5b (the sparser the master weaver's network, the more opportunities he identifies) finds support. Hypothesis H8 (the greater the master weaver's amount of human capital, the more opportunities he identifies) is partially supported.

6.3.3 The final performance model

Resource mobilisation and opportunity recognition - dealt in the previous section as dependent variables – along with human and social capital, are used to understand the firm performance. To briefly recapitulate, performance is operationalized as the yearly cash turnover in 2004 (see Section 4.5.6). The results are shown in Table 6.4.

As it was with the previous models, the base model is insignificant and in addition, the model does not have any significant explanatory power.

Adding the human capital variables lead to a slight increase in the percentage of the explained variance (from 1.2 to 8.1). Of the human capital variables, experience (β = -.313, p<.01) and the number of languages are significant (β=.193, p<.10). This means that those who spent more years working as an employee in another firm have lower levels of performance whereas those who speak more languages are likely to perform better.

When social capital variables are introduced into the model, the explanatory power of the model decreases marginally to about 5%. Of the three social capital variables, only network constraint (β= -.183, p <.10) is significant. The negative sign indicates that more a master weaver is constrained by social network, the better his performance. This supports Burt's argument that entrepreneurs having networks with low constraint are likely to do well because they have better timed access to information and higher chances of being referred.

When resource mobilization is added to the model, the percentage of variance explained by the model increases from 4.5 to about 30. The effect of resource mobilization is very strong (β = .550, p < .001). This strong relation significance could be due to the fact that resource mobilization has been operationalized as the factor score of number of weavers, contract weavers, and employees working under each master weaver and firm performance has been

operationalized as annual turnover. So it is understandable those who have a larger workforce also have a larger turnover. The opportunity recognition model shows that the effect of opportunity recognition is significant (β = .351, p < .001), along with a control variable – firm age (β = .167, p < .10). This suggests that master weavers who recognize more opportunities, have a higher firm performance.

Table 6.4 Performance Models (standardized coefficients)

Variables		Base Model	Human Capital Model	Social Capital	RM	OR	Final (All Variables)
Control	Fresh firm	-.097	-.052	-.064	-.072	-.058	-.014
	Firm age	.131	.193	.152	.022	.167[+]	.069
Human capital	Experience		-.313*				-.242*
	Average skill level		.223				.127
	Total languages		.193[+]				-.130
Social capital	Network size			.117			-.052
	Tie strength			.031			-.190*
	Network constraint			-.183+			-.114
	Resource mob.				.55***		.683**
	Opportunity rec.					.351***	.332**
	R²	.033	.13	.098	.321	.159	.567
	Adj R²	.012	.081	.046	299	.132	.511
	F	1.6	2.7	1.9	14.4	.9	10.02
	Sig.	-	.026	.10	.000	.001	.000

$^+$ p <.10, * p < .05, ** p < .01, *** p < .001

In the final model, experience (β = -0.242, p < .01) is the only significant human capital variable, and tie strength, which was not significant earlier is the only significant social capital variable (β = -0.190, p < .01). The two intervening variables resource mobilization (β = 0.683, p < .01) and opportunity recognition (β = .332, p < .01) remain significant. A comparison with the two former models shows that, the number of languages spoken and network constraint have become insignificant while tie strength becomes significant, and the effect of resource mobilisation becomes stronger.

The hypotheses that find support are H3b (the larger the number of weak ties, the better the firm's performance), H10 (the more opportunities identified, the better the firm's performance) and H11 (the more resources mobilized, the better the firm's performance). Hypothesis H9 (the greater the amount of human capital, the better the firm's performance), is partially supported.

Chapter 7   DISCUSSION OF RESULTS AND CONCLUSION

7.1 A brief summary of previous chapters

This research attempts to understand a traditional rural industry in India. There are two objectives to the study. First is to bring in perspective from a different cultural background into the field of entrepreneurship and the second is to understand how individual actions of entrepreneurs influence the larger spatial context of industrial clusters in light of the fact that developing such clusters have become a dominant policy mechanism in India.

Social capital perspective has become popular in recent years in scholarly writing on entrepreneurship. This perspective is suitable for the study of entrepreneurs in low technological domains in emerging economies, mainly because in these industries, the competitive advantage is owed to the business networks the entrepreneurs have. Social capital perspective has helped extend our understanding of how businesses are created and managed in the western economies and can therefore easily be extended to newer cultural and technological settings like to India and to the handloom industry in particular. Although one can identify few debates within the social capital perspective (mainly relational versus structural embeddedness), central to these perspectives is the question 'what constitutes a good network?' It is this question that our research addresses. We argue that having a good network alone may not ensure success. Entrepreneurs need to put it to use; everyone receives information but only few recognise opportunities and even fewer successfully exploit them. This selective recognition we argue is due to varying human capital levels in entrepreneurs.

According to Shane (2000) people have different stocks of knowledge and this plays a vital role in transforming incoming information into potential sources of opportunities. The knowledge an individual has is his human capital. The broad research question underlying our study is to understand how human capital and social capital of entrepreneurs influence their firm's performance. Instead of directly linking human and social capital to performance, this study distinguishes two entrepreneurial processes that intervene in these relations, namely opportunity recognition and resource mobilization. Consequently, this research focuses on how opportunity recognition and resource mobilization are influenced by an entrepreneur's social capital and human capital; and how this impacts the firm's performance.

To arrive at answers, we adopted a methodology that involves both qualitative and quantitative analysis. The qualitative part, in the form of interviews, precedes the quantitative part. The rationale for doing this is two-fold. Firstly, the information gathered from the interviews helped develop the questionnaire. Secondly, the interviews provided additional insights into the findings of the quantitative study and helped identify the causalities between the derived constructs.

This chapter links the findings of the study to academic debates in entrepreneurship and social network literature. The chapter is divided into two parts. The first part focuses on en-

trepreneurship literature relevant to this study. The second explores the possibilities of how the study of social and entrepreneurial networks can add value to the study of clusters. Organizing industries around the cluster development model is the current favourite industrial organisation of Indian policy makers. The practical significance of the findings will also be discussed in detail. The study concludes with some pointers for future research.

Part I

7.2 Theoretical contributions

The primary focus of this research is to understand how human and social capital influences the business performance of master weaver firms in the handloom industry in India. Every master weaver firm works with similar technology. It is therefore assumed that the differences in performance of individual firms depend on the type of networks they develop. Networks which include the kind of weavers they employ, the type of suppliers they have, and the clients they supply to. At the beginning we felt that studying social networks of the master weavers was sufficient to gain an understanding of the performance. While the results show that not all the arguments could find support, sufficient insight has been acquired on how social networks function in the handloom industry.

First and foremost, the theoretical contribution extends the network paradigm to low technology industries in the context of a lesser developed country. So far, social capital studies in entrepreneurship have mainly been conducted either within high technological domains or developed western economies. Micro enterprises in rural areas, especially those that are non-agricultural in nature, have had an important role to play in the economic development of that area. That networks are important to entrepreneurs in developing countries has been pointed out by Long (1977). He argues that the opportunities and the constraints faced by an entrepreneur are contingent on the network of interpersonal relationships he is embedded in. This study has made it possible to conduct a quantitative analysis to understand the influence of networks on the workings of small entrepreneurs. From an entrepreneurial research perspective, the informal sector in developing countries is a form of nascent market capitalism; it allows a closer examination of the way individual abilities influence business outcomes (Honig, 1998; Brush and Chaganti, 1998; Mueller and Thomas, 2000).

The first contribution of this study is to extend the network theory of entrepreneurship developed in western social and cultural environments or high-technology domains of developing countries to the handloom industry. The findings for the handloom industry may also be used to understand craft-based industries, since they both need to satisfy highly differentiated demand conditions while using local resources (McAuley and Fillis, 2005; Paige and Littrell, 2002). The second contribution is that by disentangling resource mobilization from opportunity recognition as a contingency factor of network effects, it is possible to explain the finding that both closure and strong ties, and structural holes are required simultaneously. Closure and strong ties satisfy the need for resources locally and structural holes prove to be crucial for the recognition of opportunities in other communities.

From an industrial cluster perspective, this study shows that entrepreneurs who have networks consisting of many structural holes identify more opportunities and hence show better

performance. Low network constraint can also plays a role in the upgrading of clusters. This study shows that clusters (Mangalagiri, Uppada and Pochampalli) have largely benefitted due to members with networks outside the cluster and outside the dominant market channels. These master weavers brought in information about new products, which required all the stake holders in the cluster to acquire new capabilities in order to profit from it.

7.2.1 Relational embeddedness and entrepreneurship

The comparison between the results of this study and existing literature on the subject is presented in Table 7.1. It shows that the results of this study extend the strong tie and resource acquisition argument; hypotheses 1a and 3b found support while 1b, 2a, 2b and 3a could not be confirmed. The hypotheses are discussed below.

Table 7.1 Hypotheses related to relational embeddedness

Hypothesis		In this study	In the Literature
Number	Statement		
1a	The larger the number of strong ties a master weaver possesses, the more resources he mobilises	Supported	Supported: ■ Elfring and Hulsink (2003) ■ Jenssen and Greve (2002) ■ Aldrich and Reese (1993) ■ Bruderl and Prisendorfer (1998)
1b	The larger the number of weak ties a master weaver possesses, the more resources he mobilises	Not supported	No literature available
2a	The larger the number of strong ties a master weaver possesses, the more opportunities he identifies	Not supported	Supported, if innovation is incremental ■ Elfring and Hulsink (2003)
2b	The larger the number of weak ties a master weaver possesses, the more opportunities he identifies	Not supported	Supported, if innovation is radical ■ Elfring and Hulsink (2003) Supported ■ Singh et. al (1999) ■ Arenius and de Clercq (2005)
3a	The larger the number of strong ties a master weaver possesses, the better his firm's performance	Not supported	Not supported ■ Batjargal (2003) ■ Rowley et. al (2000) Supported ■ Bruderl and Prisendorfer (1998)
3b	The larger the number of weak ties a master weaver possesses, the better his firm's performance	Supported	Not supported ■ Bruderl and Prisendorfer (1998) ■ Jenssen (2001) Supported ■ Cooke and Wills (1999) ■ Rowley et. al (2000)

7.2.1.1 Hypotheses 1a/1b

Support for hypothesis 1a indicates that the stronger the ties the more the resources mobilized. As mentioned earlier, resource mobilization is a combination of the number of weavers, contract weavers and employees that work for the master weaver. In this study, a tie is said to be strong if the master weaver and his contact are of the same caste and if the duration and intensity of interactions between the master weaver and his link are high. Of the three variables that constitute resource mobilization (number of employees, contract weaver and weavers), hiring employees to manage the shop or coordinate production is completely within the control of the master weaver and he can increase or decrease their count at will. What is not under his control is the ability to increase or decrease his workforce instantaneously, since there are only a limited number of skilled weavers in a given area.

In the past, because of the limited workforce, a master weaver would 'bind' his weavers to himself by offering them loans - to construct looms and/or for domestic purposes – whenever required. As a result, the weaver could not work for another master weaver or become a master weaver himself until the loan amount was repaid. Master weavers have been known to compound interest on the loan, making it extremely difficult for weavers to repay the principal and the interest amount[20]. In recent times, however, things have changed. With cash sales having declined and credit dominating transactions, the financial requirements for production and marketing activities are getting higher. In such a scenario, a master weaver will rather invest money in expanding his range of products than dispense loans to weavers. This has led to the growth of a new cadre of weavers who work on contract basis. They do not take loans from master weavers and are therefore able to extract higher wages. Before a weaver opts to be contracted he often has to repay an existing loan. In a scenario where cash flows are intermittent and capital locked up as loans, master weavers are likely to leverage social assets (Venkataraman, 2003) like obligation, trust, charm, liking and friendship (Starr and Macmillan 1990). These social assets can be leveraged most through strong ties. As mentioned earlier, the total stock of weavers in any area is limited and to add to this, if some of them opt to become master weavers, the stock reduces further. As one master weaver elaborated,

There are two ways in which I get new weavers. I both ask our weavers and spread the word into the system through my family or close friends. This does work most of the time. Sometimes, our weavers may have to put in a good word for me. In addition, I do keep track of how the children of weavers are learning their skill. If any one of them shows promise, I immediately start to enquire about the well-being and offer assistance to help him increase his weaving ability. I also start to give small and relatively simple weaving jobs to begin the relationship.

So master weavers operate through family members who are from the same caste, friends who they meet frequently and with who they are likely to have an enduring relationship.

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[20] The popular belief is that master weavers (like traditional money lenders) manipulate the interest rates or repaid amount and exploit the 'bonded' condition of the weavers (or borrowers). One can imagine that the likelihood of an illiterate weaver being cheated is much higher than a literate one. However with more formal (microfinance, legal ROSCAs) and informal sources (illegal ROSCAs) of money being available the awareness of loans and repayment is much higher and the chances of being cheated on loan repayments are low these days.

Keeping the financial situation and the total stock of weavers in mind, it is likely that master weavers with strong ties will mobilize greater resources.

This study emphasises the linking of strong ties to positive performance by making a distinction between opportunity recognition and resource mobilization. This separation has brought about the realisation that strong ties play a crucial role in the resource acquisition process but not in the opportunity recognition process. This finding adds weight to the work of other researchers (Aldrich and Reese, 1993; Bruderl and Prisendorfer, 1998; Jessen and Greve, 2002; Elfring and Hulsink, 2003).

7.2.1.2 Hypotheses 2a/2b

In contrast to the effect of tie strength on resource mobilization, no support was found for the argument that tie strength plays a role in recognising opportunities. This contradicts the findings of earlier literature-that it is predominantly weak ties that play a role in this process (Singh et al. 1999; Arenius and Clercq, 2005; Elfring and Hulsink, 2003), the exception being that strong ties provide required legitimacy to entrepreneurs pursuing radical innovation (Elfring and Hulsink, 2003). Unlike the measurements of network structure which are more definite, measuring the strength of a relationship has been more researcher oriented. Various proxies have been taken to indicate tie strength. Alters who are relatives, friends and/or family have been taken be strong ties whereas business contacts, former co-workers, and/or acquaintance have been considered weak ties. This study has remained close to Granovetter's definition of tie strength as a combination of duration, frequency and intimacy of the relationship. Even so there does not seem to be any support for an argument on how tie strength influences opportunity recognition. Perhaps it is time we acknowledge that Marsden and Campbell (1984) were on the right track when they said that more in-depth work is required to identify true tie measure.

7.2.1.3 Hypotheses 3a/3b

During the qualitative study many of the individuals interviewed - whether members of NGOs or master weavers – opined that the handloom industry is kin based. Therefore, those who have more family members involved in the business are likely to perform better. However, contrary to their expectations our results supported the weak tie hypothesis (3b). One reason for this could be the growth in contract weaving. In the past, production across a large area needed to be overseen for which family members came in handy but as we found out, the availability of contract weavers in recent times has meant that a master weavers no longer needs to spend much time and effort supervising production by their kin.

Another reason could be the changes in the industrial environment in the textile industry. For years, handloom weavers have dominated the sari market in the country. However, there is tremendous competition from small mechanised powerlooms that are highly competitive and can produce cheaper products. Thus three of the clusters experienced recession, and only one recorded growth. In such circumstances the master weaver needs to explore new products for old markets or new markets for old products, on an ongoing basis. Developing new markets for old products may be a better strategy. This kind of probing requires a greater number of sparse and weak ties spanning a wide area in order to be more effective at marketing.

7.2.2 Structural embeddedness and entrepreneurship

Table 7.2 sums up the hypotheses related to structural embeddedness. Only hypotheses 4a and 5b found support. The results of previous studies regarding the effects of structural holes on the performance of organizations have not been conclusive. Some scholars have proved structural holes to be beneficial (Burt, 1992; McEvily and Zaheer, 1999) while others (Ahuja, 2000; Xiao and Tsui, 2007) have shown that they have detrimental effect.

Table 7.2 Hypotheses related to structural embeddedness

Hypothesis		In this study	In the Literature
Number	Statement		
4a	The denser the master weaver's network, the more resources he obtains	Supported	
4b	The sparser[21] the master weaver's network, the more resources he obtains	Not supported	Supported: ■ McEvily and Zaheer
5a	The denser the master weaver's network, the more opportunities he identifies	Not supported	
5b	The sparse the network of a master weaver, the more opportunities he identifies	Supported	Supported: ■ Arenius and Clercq (2005)
6a	The denser the master weaver's network, the better his firm's performance	Not supported	
6b	The sparser the network of a master weaver, the better his firm's performance	Not supported	Not supported ■ Batjargal (2003) ■ Greve (2005) ■ Rowley et. al (2000) Supported ■ Baum et. al (2007)

The key contingency in this study is the purpose of the networks. Also, the contribution of particular network structures is linked to two key entrepreneurial processes (Elfring and Hulsink, 2003). These entrepreneurial processes are generally accepted to have a substantial impact on performance (Stuart and Sorenson, 2005). By understanding the process in two parts, one focusing on the acquisition of resources and the other on the discovery of opportunities, it has been possible to reconcile the conflicting findings regarding the effects of structural holes. It was found that structural holes favour the discovery of opportunities, but have a negative effect on the ability to obtain resources. Firms operating in business environments rich in opportunities benefit more from structural holes than firms in stable environments.

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[21] As mentioned in Chapter 4, closeness and sparseness of a network has been operationalized on the number of structural holes. Sparse networks have more holes and closed networks few holes.

The purpose of networks for firms in a stable environment is more focused on acquisition of resources but structural holes have a detrimental effect on resource acquisition. Under such circumstances, closure is more important. In fact, for most firms, both aspects are important. The former benefits from networks rich in structural holes while the latter is boosted by closure. Thus, firms need both simultaneously. This result is in line with a recent study by Baum et al. (2007). It shows the contingent value of network structure for two entrepreneurial processes – resource acquisition benefitting from closure and opportunity discovery improving through structural holes. This contingency approach also adds value to the interpretation of Soda et al. (2004) regarding the temporary advantage of structural holes. The current research shows that network benefits relate to opportunity discovery in the handloom industry but once opportunities are discovered other network characteristics, such as closure and strong ties, come into play to exploit them.

7.2.2.1 Hypotheses 4a/4b

The results of this study support hypothesis 4a – dense networks play an important role in mobilizing resources. The resources mainly indicate the workforce – weavers, contract weavers, employees and family. Of the four, a master weaver has little control over the number of family members. For example, a master weaver may have one or more sons and nephews who share the business with him and he does not have any control over this number. On the other hand, depending on his level of operation a master weaver may hire as many employees as he wishes to. The issue of network can come into play only when he wants to get weavers to work under him. Since most of the weavers would be living in the same area, under normal circumstances, a master weaver would know them and require little assistance from his network. Networks come into play only when he wants weavers from another geographical zone. He would then need to use his network and identify appropriate people through a referral mechanism. This process of referral is a function of dense networks and strong ties. As one master weaver put it:

> Coming to know who is a good weaver is easy since we live in the same geographic area and many of us interact with each other often and we all know who is good and who is not. What would be new is if a young weaver is growing to be a skilful one. If we do come to know and if we want this person to work for us, then normally we approach his father or brother through our existing weaver network to convey our interest. If we are desperate, we approach them ourselves…If the weaver is from another geographical area, then we use our network to find out who could influence him and get him to start working for us.

7.2.2.2 Hypotheses 5a/b

It was found that sparse (not dense) networks (hypothesis 5b) bring in opportunities for master weavers. In the handloom industry, the opportunities are more Kirznerian type, i.e. master weavers look for discontinuities in the market and then address them. Central to the Austrian theory of economics is the idea that an uneven spread of information creates opportunities (Kirzner, 1997). Since information is central to the Kirznerian type of opportunities, sparse networks with structural holes then act as antennae by seeking novel information with potential opportunities for entrepreneurs. Schumpeterian type of opportunities (i.e. where

the equilibrium of the market place is disrupted) is a very rare occurence in the handloom industry. Introducing products like dress material in Mangalagiri and developing silk saris in Pochampalli are examples of such radical innovations.

An intrinsic feature of opportunities is entrepreneurial alertness. Kirzner defines it as an attitude of receptiveness to available but hitherto overlooked opportunities (1997, pg. 72). The information that a master weaver receives from his wholesale clients has to be collated and transformed into different products. Not only does a master weaver get his information from these clients, he is also constantly on a lookout for new combinations. It is this alertness that triggers ideas for innovations. The process of innovation is iterative; little information is added to the previous stock of ideas that the master weaver already possesses in order to come up with a new combination. This may increase the rent seeking capacity of a particular type of sari. As explained in Appendix III, the sari has certain set pattern (i.e. long border, short border, main body) that needs to be followed and there cannot be many changes to it. Hence the master weaver only changes the colour, the structure, adds embellishments, patterns, etc. All these changes can be categorised as incremental innovations.

It is important that master weavers receive information from various corners of the country in order to increase their chances of striking the right combination when it comes to colours, patterns and designs to make a highly marketable sari. The fact that network constraint is significant (5b) supports the argument that sparse networks that span structural holes bring in diverse information which the entrepreneur can take advantage of. This finding is in line with Burt (1992) - when master weavers have wholesale clients who are not aware of each other, the information that comes to the master weaver has high elements of diversity. The master weaver can then choose which of this information has the best potential to be translated into a marketable product.

7.2.2.3 Hypotheses 6a/6b

Performance in the form of annual cash turnover does not seem to relate significantly to any of the structural social capital variables. Although low network constraint seems to be significant in the social capital model, this implication is lost when human capital variables are introduced. In cases where there such a loss occurs, it is likely that there will be an indirect effect-it could be that network structures of the master weavers influence opportunity recognition first, and subsequently, performance.

7.2.3 Human capital and Entrepreneurship

A summary of the findings is presented in table 7.3.

7.2.3.1 Hypothesis 7

This hypothesis argues that when a master weaver speaks many languages he mobilizes more resources. Ability to speak more languages is unlikely to influence local weavers or local contract weavers who are likely to be speaking the same language. It is also not likely to influence the number of unpaid employees. It can be effective while engaging with contract weavers and paid employee from other parts of the country for producing a variety of products and for governing the production respectively.

Table 7.3 Hypotheses related to human capital

Hypothesis		In this study	In the Literature
Number	Statement		
Hypothesis 7	The more the human capital, the more the resources mobilized	Partially[22] supported	
Hypothesis 8	The more the human capital, the more the opportunities identified	Partially[23] Supported	Supported: ■ Davidson and Honig (2003)
Hypothesis 9	The more the human capital, the better his performance	Not supported	Supported ■ Cooper et al. (1994) Not supported ■ Delmar and Shane (2006) ■ Honig (1998) ■ Haber and Reichel (2007)

7.2.3.2 Hypothesis 8

India is divided into states mostly along linguistic lines. Therefore, those who speak more languages are able to travel longer distances and reach out to markets across many states. They find themselves in situations that can provide them with a greater number of opportunities. There are two ways by which one learns more languages-by living and working in another part of India (non-handloom related) or reaching/completing college education. Since no data has been collected on these variables no deeper insights are available.

Working on hypothesis 8 brought to light the fact that a master weaver's total experience has a negative impact on opportunity recognition. While entrepreneurs are on the constant lookout for new opportunities where existing resources can be better combined for more profit, not all opportunities will lead to higher profits. The process of opportunity recognition is a starting point for potentially profit ensuring activities to originate (Ardichvili et al. 2003). There is an inherent risk in every new gain seeking activity but it could be that this hazard is deflected by the more experienced master weavers. Those with longer experience of working under a master weaver may have noticed the number of times a particular opportunity did not succeed and is likely to be less inclined to pursue new opportunity when he becomes a master weaver himself.

Elfring and Hulsink (2003) suggest that new firms are better off seeking affiliates with prestigious businesses. Through this key contact they can reach out to new customers and partners. New master weavers who set up their firms after years of working for another firm are more inclined to be contract weavers for larger master weavers who supply to prestigious wholesale clients. Such contract weavers do not have to seek new opportunities to stay in business; all they have to do is make products as per the requirement of the master weaver. Also, many firms specialise only in certain types of products and the master weaver contacts them when he wants to outsource production for that particular good.

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[22] The human capital variable is the number of languages a master weaver speaks.

[23] The human capital variable is experience in any handloom related activity.

Another possibility is that the more experienced an entrepreneur, the greater his inclination to work with similarly experienced players (Kim and Aldrich, 2005), thereby creating a closed network. This is called homophily (McPherson, et al. 2001). In this study this notion is further extended by making a distinction between two key entrepreneurial processes to show that homophily has unintended consequences for opportunity recognition. The formation of a 'strategic network' is required in order to break from the tendency to socialize with kind and instead get in touch with others outside the immediate circle of network ties.

7.2.3.3 Hypothesis 9

Experience has a negative impact on the performance of a firm. Those master weavers who have spent many years working in the handloom industry to gain experience may lose out when they eventually set up their own business. Several scholars have found that experience has a negative relationship with performance as well (Honig, 1998; Haber and Reichel, 2007). However, Cooper et al. (1994) found the opposite to be true and these contradictory findings in the literature might have prompted Delmar and Shane (2006) to hypothesise that experience may have a non-linear relationship with performance. In other words, some experience is good for performance but too much may prove detrimental.

The handloom industry is mostly organised in the form of clusters. Whenever an innovation takes place there is a spurt in the master weaver population. So the later a master weaver comes in, the closer the cluster is to saturation point or carrying capacity (see Section 5.5.1 and Figure 5.2). Hence many prestigious retail stores may be serviced by those who established their business earlier and later entrants may have to settle for servicing smaller or newer stores, further limiting the opportunity space. The carrying capacity of a cluster is the possible number of new businesses that can come about from this new innovation considering that existing firms can also benefit from such innovations. Hence if a weaver waits too long before setting up the cluster could be closer to the carrying capacity and he could have fewer opportunities to pursue and profit from.

The outcome of this research shows that less experience is better in the handloom industry. The finding on negative significance of experience may be counter intuitive and partly relate to the operationalization of the variable as the number of years of experience in any handloom related business. This would include the weaver who produces fabric, those who work alongside the master weaver managing the business or even others who work in handloom-related business like finance or raw material.

The experience of managing a business in the handloom sector is not the same as working in an allied handloom activity. For one thing, experience is shown to have a negative impact on business—most of the skilled weavers will be already taken up by the existing master weavers. Training new manpower in handloom is a slow process because learning is hereditary – the skill usually passes from father to son, or uncle to nephew (or niece in recent times). Those who set up business earlier are likelier to have captured a significant share of the existing market. This means that new master weavers, even significantly experienced ones, may have to work with relatively new and inexperienced weavers and sell to clients who do not own the largest and the most popular retails outlets. Hence, the longer one waits to set up a firm, the more difficult it is to survive and grow. For instance, recent entrants in the Uppada

cluster are not able to get skilled weavers to work for them because none are available. While some new entrants may try to outsource their production to another cluster, others are training people from other castes in weaving techniques and subsequently employing them. Also, newly trained weavers have limited skills which restrict the development of an optimum product portfolio for the master weaver. One strategy for newcomers is to explore new markets in distant locations. For that, however, they may need to possess language skills; hence the finding that the more languages a master weaver speaks, the better his performance.

7.2.4 Intervening Variables

7.2.4.1 Hypothesis 10

The hypothesis 'the more opportunities a master weaver identifies, the better his performance' is supported. The discovery of opportunities in this industry does not require extraordinary resources or intellect. It only requires the right connections. Master weavers organise the production and marketing of their products. The ever-changing demands of the fashion industry extend to the handloom sector as well. A product that does not have the right look in terms of colour combination or patterns will not sell. Hence, opportunities in this industry are related to striking the right design combination. A master weaver knows what to produce and what is currently 'hot' because of his interactions with the wholesale clients who convey what the customers are looking for. Another source of opportunities is copying. Since production is typically concentrated in small areas, no information can remain secret for long and products get imitated very quickly.

Although this was not the focus of the study, it is hard to miss that NGOs and Fair Trade companies have managed to carve out a niche in the handloom industry. They have been able to create products for the upper class client and sell them through exclusive outlets. Most of these boutiques offer ready-to-wear apparel using natural dyes, which has little appeal for the cost-conscious mass market that most master weavers serve. Hence the designs and colour combinations that sell in these niche markets are unlikely to be copied by other master weavers.

7.2.4.2 Hypothesis 11

The hypothesis that 'the more resources a master weaver obtains, the better his performance' is supported. Those familiar with the informal sector may wonder at the choice of variables in this study (number of employees, contract and actual weavers) for resource mobilization. Normally, when it comes to finances, most of the start-up capital comes from the immediate family. In order to expand their ventures, master weavers seek finances from informal sources. These could be rotating, saving and credit associations (also known as chit funds in India). A group of people come together every month to pool a certain sum of money. This amount is then auctioned off among the members. The idea is to come up with bids that are lesser than the pooled money. The person with the lowest bid (or the one willing to take the greatest cut in principle) gets the money corresponding to the bid. The rest (pooled amount minus the bid amount) is then apportioned to the rest of the members as the interest amount for that month. In many clusters, yarn merchants also double up as credit providers with interest rates as high as 36% p.a. We could not put this down as resource in our study as master weavers are members of multiple schemes and are not willing to divulge many details.

When it comes to the labour or weavers, most of the training happens inside homes. The skills are hereditary though those from other castes are also taught weaving, if the requirement for new weavers increases sharply. For instance, in Uppada, children of fishermen are now employed as weavers. In Pochampalli, hundreds of people from other castes gave up their vocations to take up weaving. However, unlike weaving, knowledge transfer as far as managerial aspects of the industry are concerned is confined only to those belonging to the master weaver caste. This is clearly not open to other castes, especially in Andhra Pradesh where only people belonging to the weaving caste become master weavers. To quote a master weaver in Pochampalli:

There was only one instance of a person belonging to another caste (Vysya) setting up a master weaver firm but he soon went bankrupt as he did not know how to deal with the weavers. One does not know if this is intentional or unintentional, but stories like these stay in the memory of the locals and restrict the entry of other castes into the master weaver category.

Part II

7.3 Implications for policy makers

Clustering of small firms is beneficial to the overall survival and growth of the firms that constitute the clusters, according to Alfred Marshall. In his book 'Principles of Economics' (1920), he offers an explanation for why such clusters generate more competition compared with similar firms that exist in isolation. The increased competition, he says, is due to the external economies that are generated due to the presence of skilled manpower, raw material suppliers, technicians, and clients in a single area.

Handloom clusters are not static. They change and evolve continuously and this has not gone unnoticed by researchers. This section has salient details on the dynamic nature of clusters and it becomes quite clear that our understanding of cluster dynamics is not quite comprehensive. Drawing from the concept of complex adapting systems, networks, and from the finding of the qualitative study, I would like to speculate on how and why clusters evolve. This is useful in understanding clusters from a dynamic perspective (Chin-Huang et al. 2006; Sorenson, 2003; Martin and Sunley, 2003; Gordon and McCann, 2000)

Chapter 5 showed how networks have a positive influence on cluster dynamics. Ties spanning cluster boundaries are likely to bring in diverse information, which can transform the opportunity space available in the cluster. The process is not linear. In a cluster where a number of master weavers operate, and where every day every single one of them has numerous interactions with weavers, with customers, with suppliers and with other master weavers, the total number of interactions are be immeasurable. It is clear that clusters are a complex web of connections between the various stakeholders – entrepreneurs, suppliers, customers, institutions, etc.

7.3.1 Complex Adapting Systems

The history of every cluster is unique and the path dependency influenced by events specific

to that area (Feldman and Francis 2004). Hence a cluster is a sum of many small events, each leading to a different stage of evolution for that cluster. At the centre are the entrepreneurs, who, while pursing their individual interests may act collectively to shape the local environment that further the interests of their emerging industry (Feldman et al. 2005). The interactions that take place in a cluster are complex and random in nature. In order to understand the cluster evolution pattern, it might be useful to refer to the concept of Complex Adapting Systems.

Complex Adapting Systems (CAS), as the name suggests, is becoming central to the understanding of how complex systems function (Garcia, 2005; McCarthy et al. 2006). There have already been a few instances where CAS has been linked to entrepreneurship (Fuller and Moran, 2001) and cluster studies (Martin and Sunley, 2006). Wherever necessary, findings from the qualitative study (described in Chapter 5) will be quoted to substantiate claims.

If a master weaver operating in a cluster is considered to be an interacting element within a CAS, one notes that he performs many activities to organize production as well as marketing. For example, he provides loans to the weavers even before the production relationship is initiated. Subsequently, he purchases raw material from a local or distant supplier. These are then provided to the weavers. Once the products are made, they are sold to retail stores in urban and semi-urban areas. However, the similarity ends there. Each one sets up and operates his business differently, though when viewed from a cluster level, the firms may seem similar. At the level of an individual firm, the system of operation will vary, giving rise to a multitude of operating mechanisms and subsystems. This creates a very complex environment for each of the focal actors (master weavers, weavers, raw material suppliers, customers, etc).

CAS theory says that in such situations the actors create a simplified mental representation of the typical behaviour pattern of a master weaver. These mental maps are called 'schemata'. DiMaggio (1997) explains that schemata are mental models that constitute both representations of knowledge and an information processing mechanism. A focal actor develops such knowledge through two means: first, by repeatedly interacting with actors from other subsystems and learning their behaviour patterns through experience and second, through observing others' interactions with actors from a particular subsystem and engaging in social learning. For example, a master weaver who is looking for a customer for the first time is likely to meet clients and slowly gain an idea of what a customer typically wants. In addition, he also learns from other master weavers (through observation or through conversation) about how to transact with customers and how to recover credit. As he accumulates information, he begins to observe commonalities in the behaviour of customers. These commonalities constitute the basis for the development of a mental model of the behaviour of an average customer, and appropriate ways of conducting business with them. This model guides the master weaver's actions in his relationship with his customers. Over time, as more master weavers develop such schemata, their behaviour pattern and converges to a common schema at the sublevel. This schema then consists of shared interpretations among master weavers of the behaviour of customers and ways in which business can be conducted with them.

This happens in the case of other focal actors within the cluster too. The collective experience of one group guides its dealings with another group whether it is raw material suppliers, financers, weavers, customers, etc. Translating this into the language of entrepreneurship,

there are two abilities that actors require – knowledge and alertness – in order to identify opportunities in the economic system. The knowledge that entrepreneurs collate while interacting with actors from other subsystems is of three types: knowledge of the markets, knowledge of ways to serve the market and knowledge of customers' problems (Shane, 2000). This constitutes the core knowledge that enables actors to interpret information from various sources and identify opportunities and resources from them.

Once the schemata of each of the focal actors are set, the clusters can be said to contain 'deep structure', defined as 'relatively stable, largely implicit and continually recurring processes and patterns that underlie and guide surface, observable events and actions' (Heracleous and Barrett, 2001, pg. 8). If the markets that these economic actors serve are large enough, such stable systems with well defined 'deep structures' can provide easy paths for individuals to set up ventures and become entrepreneurs (Harrison et al. 2004). This is indicated in Figures 7.1 and 7.2 as T1. In the former, each firm is represented by a circle. The size of the dots indicates the size of the firm – large dots represent large firms. The arrow indicates the type of opportunities the firm is pursuing. Arrows pointing in the same direction indicates that the firms are pursuing similar opportunities. In the handloom clusters we surveyed, many weavers and employees who found themselves in a good financial position decided to become master weavers because of such deep structures. In Pochampalli, those who were part of managing the business (family members – strong ties) stepped out to set up their firms. In the other three clusters all new master weaver businesses were started by weavers who previously worked for other master weavers (Table 5.2). This happens because new entrepreneurs are able to exploit the knowledge, networks and reputation of their previous place of employment (Harrison 2004). At the equilibrium stage, which the T1 stage of the cluster represents, the opportunity for each firm is in congruence with the direction of the 'deep structure'.

As more and more firms get established, the cluster grows and slowly reaches its 'carrying capacity'. This means that master weavers who have newly set up their business try various activities most in the form of networking to identify weavers and new markets to increase their level of operation. They try to do things a little different from the norm in an attempt to identify niches that can provide them with sufficient resources or opportunities and enable them to grow. These are shown in Figure 7.1 as grey dots T2. Guiliani (2002) identifies entrepreneurs within clusters who find themselves in a position to channelize external knowledge towards the cluster, and who contribute towards diffusion of innovation by being technological gate keepers – who are likely to occupy large number of structural holes. Such individuals, while continuing to behave in accordance with the deep structure of the cluster the dotted arrows indicate, will be on a look out for better opportunity niches. All the three cases detailed in Appendix IV and discussed in Chapter 5 demonstrate this phenomenon. Silk weaving in Pochampalli, jacquard weaving in Uppada and dress material production in Mangalagiri were the result of such gate keepers pursuing new niches.

It is in this context that social networks are important. Entrepreneurs pursuing innovative ideas are lucky if their current suppliers are able to deliver the raw material required and if current customers are interested in the new product. More often than not this is not the case and new networks have to develop to support the innovations. In the case of KAR (case 2 in Chapter 5) he developed new networks in the process of picking up new skills and these new networks enabled him to develop a new kind of sari. Although the existing supplier was able to eventually source the raw material, he too had to use his networks to identify some someone who could provide him with the material during the experimental process. Since none of his existing customers showed interest, KAR had to use his network to identify new customers who were interested in this new product. SAR (case 1) on the other hand was able to identify a niche because he moved out of his cluster and worked elsewhere before returning to his home cluster. He used this opportunity to establish new contacts and was able to play the role of a broker. Advantageous situations are created when entrepreneurs span structural holes and are able to control the interactions that take place between the two unconnected parts of his network (Burt, 1992).

At a later stage the competition between firms grows more intense resulting in a higher mortality rate. In addition, policy, technology, raw material and markets can disrupt the deep structure of a system. When systems change, the actors within experiment with some non-routine action in order to change and adapt to the new situation. This stage is represented by T3. Systems may also experience changes from within. When a new action of one of the players brings about a more profitable situation, it is taken up for imitation by others actors as well. In the case of KAR, he knew he had managed to develop an innovative product and he also knew that others would be interested in the product. Just so that he derives as much competitive advantage as possible, he even sought an entirely new set of weavers from the hinterland. It took almost a year for others to start producing the same kind of sari. In the case of AKR (case 3) it was his network position that made him central in the new niche. Although another person was first asked to develop the new product – dress material -- he was not interested, and instead passed on the information to AKR. Other master weavers were not very keen either because they were convinced that the niche was small and temporary. Hence for about four years, AKR was at the centre of the expanding niche.

Cluster at Time T_1

Cluster at Time T_2

Cluster at Time T_3

Cluster at Time T_4

Cluster at Time T_5

Cluster at Time T_6
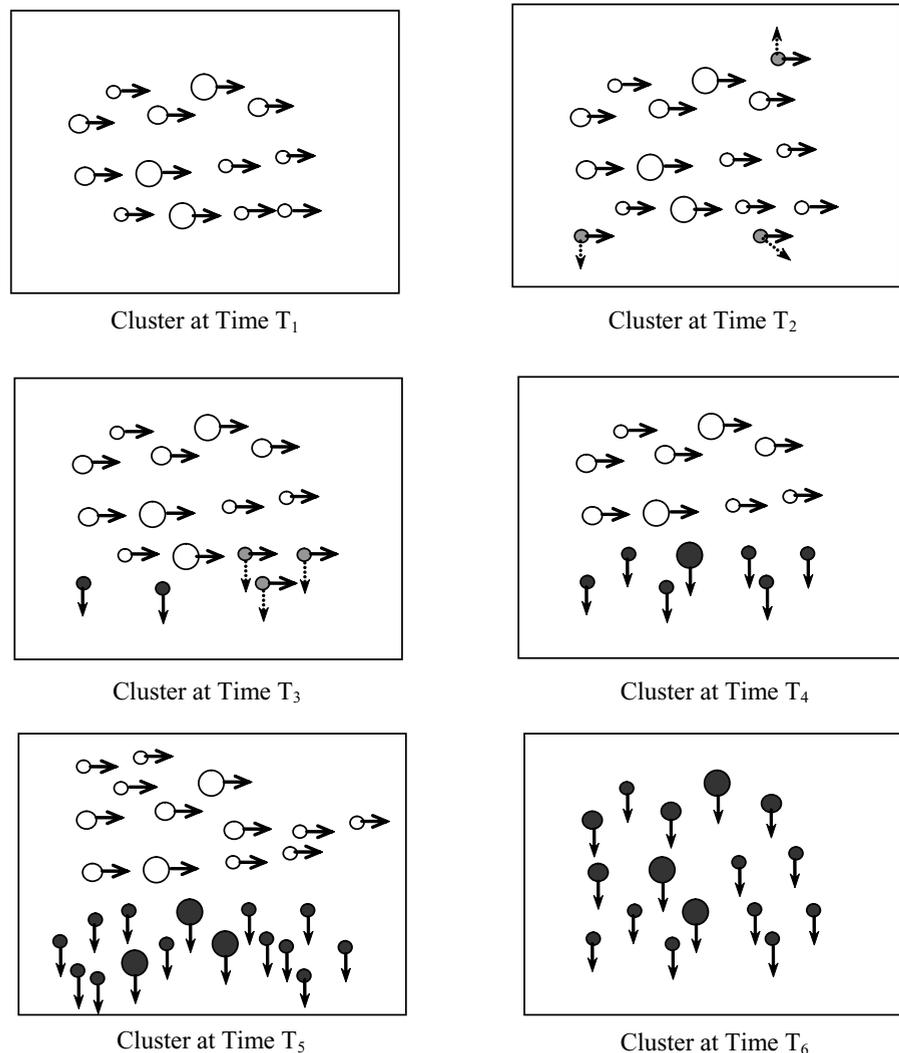
Figure 7.1 Stylised representation of actors within a cluster

In the situation T3, the black dots indicate successful non-routine action. The success has attracted a few other actors, represented as grey dots, attempting to try out the new non-routine action. However, if too many jump into the fray (T4) a great part of the cluster system may be altered because of the changed routine. This could give rise to situation T5, where two forms of deep structures can co-exist. The cluster offers entrepreneurial opportunities. If the new deep structure presents the actors with greater potential there may be a possibility that the entire cluster will adopt the new mode of working (situation T6). In the case of KAR and Pochampalli T3 led to T6. In the case of SAR and Uppada, T3 led to T5 - both jamdani and jaquard products are now made in the cluster. With AKR and Mangalagiri T3 led to T5. Mangalagiri now produces both dress material and saris.

7.3.2 Non-linearity in cluster and policy development

In each of the cases studied here, the development of the cluster was completely serendipitous. There was no central planning, there were no mission statements, and there were no action plans. UNIDO and Government of India have been extensively promoting cluster development based on 'collective efficiency' (Schmidt, 1999) and 'global value chain' (Gerefi, 1994) models. It is obvious that a single policy can not be extended to all clusters. Tödtling and Trippl (2005) have criticized such 'one size fits all' approach to cluster development policies.

One of the main drawbacks of these models is that they cannot explain the cluster evolution mechanism. Secondly, numerous transactions take place in clusters. A small action here and another action there give rise to new possibilities, which may well take the cluster in another direction. This indicates that the evolutionary path each cluster takes is unique and is dependent on its stakeholders – entrepreneurs, suppliers, customers and labour. To develop clusters, policy makers will have to show entrepreneurial qualities in order to identify large opportunity spaces that the cluster could potentially move in. Detailed industry and gap analysis could help legitimize the opportunity space. This could be done by identifying a few technology gate keepers (Giuliani, 2002) or early adapters and working with them initially. If other entrepreneurs in the cluster realise that the opportunity space is large enough, they will utilise their existing human and social capital to develop routines and capabilities in order to reach out to the new space. If the current human and social capital levels of the entrepreneurs prove insufficient, policy makers can identify specific capacity building programs to increase the capabilities of the various stakeholders. And once the stakeholders realise that the opportunity space is large and that new capabilities will help them reach this space, they are likely to pay market prices for such training programmes and governments need not offer any inducements or subsidies.

Another drawback that has arisen because of the faithful allegiance of the policy makers to the model is the overemphasis on foreign buyers (Eliasa, 2002). Focus on exports features heavily in the mission-vision statements of the cluster development program. Certainly in the case of small craft clusters, it is more important that cluster development activities focus on domestic buyers because once the project funding ceases, the entrepreneurs (master weavers and others) go back to their existing customers. Being part of an export chain is not possible for these micro enterprises when the domestic markets are so large. In fact some of the recent success stories like the Chanderi cluster (IDS, 2004) have become prosperous because one of the large Indian retailers, FabIndia, started purchasing many of their new products.

7.4 Concluding remarks

An important issue raised concerned the optimal network characteristic of firms in the handloom sector that influence the performance of master weaver firms. This study found that a network rich in structural holes is needed in order to recognize opportunities, whereas strong ties are needed to facilitate resource mobilization. This finding is different from the two stylized network characteristics found in Rowley et al. (2000). They found that firms in a traditional sector such as the steel industry benefit most from a dense network and from strong ties, while structural holes and weak ties are most beneficial to firms in an innovative

and changing sector such as the computer industry. A mix of both seems to best suit the handloom industry in India.

Findings for the handloom sector may well be true for all craft-based industries. Entrepreneurs in craft-based industries, of which handloom is a part, require networks that need to satisfy both highly differentiated and uncertain demand conditions and to mobilize local resources (McAuley and Fillis, 2005; Paige and Littrell, 2002). Entrepreneurs in craft-based industries benefit from structural holes for discovering opportunities. Often these opportunities are outside their local environment and structural holes contribute to the need to connect to potential customers in other communities. At the same time, entrepreneurs in craft-based industries have to build strong ties. Trust-based tie characteristics play a central role in the mobilization of local resources.

7.4.1 Limitation and future research

One of the main limitations of this study is that the data is cross-sectional in nature. Longitudinal data would explain how networks of entrepreneurs evolve over time. A longitudinal study may also shed light on how weak ties of entrepreneurs become strong ties and if these strong ties create a situation where the entrepreneur gets locked into the resulting relationships. Similarly, longitudinal studies may show how such 'locked-in' entrepreneurs manage their networks to get out of a disadvantaged situation.

Another limitation is the operationalization of the variables. Variables such as opportunity recognition and resource mobilization are narrowly defined, based on consequences rather than actual measures. Opportunities in this study have been operationalized through proxy measures using price and new customers. Similarly, resources were operationalized on just labour. Developing exact measures for these two variables can help understand the entrepreneurial processes better. Performance measure, in this study, is also a limitation. Overall turnover as reported by the entrepreneur has been taken as the performance measure. Future studies can explore the possibility of developing objective measures for these variables.

This study has looked at large handloom clusters. Looking into smaller clusters might make it possible to understand how entrepreneurs in both larger and smaller clusters network, and to see to what extent the pattern of networking and causal mechanism for performance is similar. Furthermore, only successful entrepreneurs were looked at. Future research can also examine networks of failed entrepreneurs to see if they are drastically different from the successful ones. While an attempt has been made to understand a single rural industry, applying the findings to other rural industries - even low technology ones - has not been possible.

It is important to understand the nature of information that flows through the networks to reach the entrepreneur; also how this information is processed by the entrepreneur to identify opportunities. It may be interesting to map the way the entrepreneur utilises the network in search of resources that are beyond his control. The independent variables -- opportunity recognition and resource mobilization - have an indirect effect on the dependent variable – performance. Specifically, the network structure is modified with human capital variables. This has had an influence on how resources are mobilised, opportunities recognised and how these finally affect the performance of these firms. Future studies can explore some of the indirect effects.

While it helps a master weaver to establish a strong relationship with weavers and suppliers, he is wary of developing close ties with wholesale clients. He has to balance the number of strong and weak relations with them. He gets market information from his friendly wholesale client but refrains from establishing such relationships with everyone. This aloof stance with clients enables a master weaver to 'decouple' from the relationship and demand repayment of credit (Granovetter 1995). Understanding how this process of decoupling works can be a research topic worth exploring.

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Appendix 1: The research questionnaire

RESEARCH QUESTIONNAIRE

Name _____ Age _____

Address: _____

_____ Tel ( ) _____

I Prior Knowledge

    1.a. Since when have you been a master weaver?

    1.b. What were you doing before you started this firm?

        ☐Worked under another master weaver No of yrs_____

         (Is this master weaver your ☐Relative_____ ☐Friend ☐Employer)

        ☐Worked in family unit which was a master weaver firm   No of yrs _____

        ☐Worked in a non-handloom related firm.   No of yrs_____
        ☐Other

1.c.   How do you rate your weaving skill? Elementary)   1 2 3 4 5   (Skilled)

1.d.   What is your knowledge of weaving? (Poor)   1 2 3 4 5   (Excellent)

1.e.   How do you rate your designing skill? (Elementary) 1 2 3 4 5   (Skilled)

1.f.   What is your knowledge of designing? (Poor)   1 2 3 4 5   (Excellent)

1.g.   What languages do you speak fluently? _____

1.h.   How did you start your own firm?]

- As a fragment of an earlier firm (☐ Family firm   ☐ Non family firm)

- By working for the master weaver till you had market of your own

- Stopped working for the master weaver and started afresh

- By supplying to master weavers (☐ incl. the earlier master weaver)

- As a contract weaver for another master weaver.

II   Details about clients

2.a.   While you were starting your firm, who helped you in getting your clients?

    _____   _____   _____

    (If you are not in touch with any of these please mark x next to the name)

    Who helps you in getting new client now?

    _____   _____   _____

2.b.   How many clients do you have now? ☐☐

2.c.   How percent of your early clients do you still retain?

    ☐ <10% ☐~25% ☐~50% ☐~75 % ☐~100%

2.d.   How many major clients do you have?

2.e.   How many new credit clients did you make last year? ☐☐

2.f.   How many credit clients left you last year?   ☐☐

2.g.   How do you supply products to new clients?

    ☐Credit only after few transactions ☐Credit if he comes through strong referral

    ☐Give them limited credit   ☐After checking his integrity
    how?_____*

    ☐Others _____
    *_____

2.l.   Did any of your new clients help you during your start up phase?

    _____ _____

III   Details about Designs

3.a.   While you were starting your firm, who helped you in getting designs?

    _____   _____   _____

    (If you are not in touch with any of these please mark x next to the name)

    Who helps you in getting new designs now?

    _____   _____   _____

3.b. On an average how often do you change designs in a year?

☐Frequently   ☐Monthly   ☐Quarterly   ☐Half yearly

☐Yearly   ☐Only if the product does not sell

3.c. How do you get the designs?

☐Adapt from hot selling products   ☐adapt from books

☐Purchase them   ☐adapt from traditional designs

☐Weaver makes them   ☐Other
_____

IV   Details about Raw material and products

4.a. While you were starting your firm, who helped you for your raw material?

_____   _____   _____

(If you are not in touch with any of these please mark x next to the name)

Who helps you in getting raw material now?

_____   _____   _____

4.b. What was your initial raw material? (☐ at start up, Now○)

☐Cotton○   ☐Silk ○   Others ☐ _____ ○

4.c. What where your initial products range? (☐ at start up, Now ○)

☐Sari   ○   ☐ Dress material   ○

☐Furnishings and Upholstery   ○   ☐ Yardage   ○

☐Dhoti/Lungi   ○   ☐ Chunni   ○

4.d. What was the initial cost range of your products?

Rs. _____   to   Rs. _____

What is the cost range of your products now?

Rs. _____   to   Rs. _____

What is the cost range of your maximum selling products?

Rs. _____   to   Rs. _____

4.e. How much interest free credit do you get for your raw materials?

Yarn   ☐ 1 Month   ☐ 2-3 Month   ☐ _____

Dyes   ☐ 1 Month   ☐ 2-3 Month   ☐ _____

Zari   ☐ 1 Month   ☐ 2-3 Month   ☐ _____

V   Details about Finances

5.a. How much did you invested in your firm?   ☐≤25,000   ☐≤50,000

☐≤100,000 ☐≤500,000 ☐≤1,000,000   ☐Rs._____

5.b. While you were starting your firm, who helped you in getting finances?

_____   _____   _____

(If you are not in touch with any of these please mark x next to the name)

Who helps you in getting finances now?

_____   _____   _____

5.c. Could you rank the importance of the following for your finances?

Banks __   Informal financial institutions __   Funds from family __

Selling family property __   Others __

5.d. What has been your average turnover in the last two years?   (1 Lakh = 10,000)

☐< 5 Lakhs   ☐5 -10 Lakhs   ☐10 - 15 Lakhs ☐15 - 25 Lakhs

☐25 – 35 Lakhs   ☐35 – 50 Lakhs ☐50 – 75 Lakhs Rs. _____

VI.   Other details of the firm

6.a. Where did you stay while supplying to markets during startup?

☐Relatives   ☐Friends   ☐Cloth merchants association

☐Lodge   ☐Clients   ☐Others _____

6.b. Was staying at this place useful for any of the following?

☐New Markets   ☐New designs   ☐Others _____

6.c. How many production centres do you have? _____

6.d. Who helps you in controlling these production centres other than your employees?

_____ _____ _____

6.e. How many partners did you have at start up? _____

What was the maximum number of partners this firm have? _____

How many partners do you have now? _____

6.f. How many employees did you have at start up? _____

What was the maximum number of employees this firm have? _____

How many partners do you have now? _____

6.g. How many people worked in your firm who are

neither your employees nor your partners at start up? _____

How many people worked in your firm who are

neither your employees nor your partners at start up? _____

6.h. How many weavers work for you? _____

6.i. What % of these weavers does not have loans? _____

6.j. How do you control weavers who don't have any loans from you?

☐Pay more wages ☐Others _____

VII. Related to trade

7.a. Why did you get into trading?

☐Easier to control ☐Higher profit margins

☐Inadequate finance for production ☐Better cash sales

☐Clients wanted these products and I cannot produce them in my cluster

☐Other _____

7.b. What product do you trade? ☐higher range ☐lower range ☐Same

7.c. How did you get to know this mater weaver who is supplying these products?

☐They are my relatives ☐My contact referred them

☐Found through my social network ☐Others_____

7.d. What percent of your total sales is from trade? _____

7.e. How is the repayment organised?

☐ Cash in instalment ____ ☐payment after realisation of cash ☐cash payment

8 a. Can you tell me some details about the people you named earlier? Also, please include any other people (friends, relatives, clients, weavers) who have been helpful to you but you have not mentioned earlier?

Name (put ✓ if fe-male)	What is the caste of this client?	Frequency of contact?	How did you meet him?	How was he useful to you?	How long do you know him?	What do you discuss with him?	How im-por-tant is he?	What does he do?	How is he connected to you?
1	☐ Same ☐ Other ☐ Don't know	☐weekly ☐fortnightly ☐monthly	☐ I met him ☐he came thro thro referral thro referral ☐thro friend ☐others ☐thro relative	☐Finance ☐Markets ☐Clients ☐New Markets ☐Designs ☐Weaver		☐Finance ☐Markets ☐Clients ☐New Markets ☐Designs ☐Weaver	☐1 ☐2 ☐3	☐ Handloom shop ☐ Other shop ☐ Employee ☐Other _____	☐ Relative ☐ Friend ☐Business
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

8b. Now, could you please tell about the relations between the listed persons? Put a ✓ if these person know each other.

																		1	
																	2		2
																3			3
															4				4
														5					5
													6						6
												7							7
											8								8
										9									9
									10										10
								11											11
							12												12
						13													13
					14														14
				15															15
			16																16
		17																	17
	18																		18
19																			19
																			20

8 c   During your firm start-up, in what activities did you focus on?

1	New Markets	++	+	0	+	++	New designs
2	New Markets	++	+	0	+	++	Negotiating product price
3	New Markets	++	+	0	+	++	Finding finance
4	New Markets	++	+	0	+	++	Modes of supply (credit)
5	New Markets	++	+	0	+	++	Negotiating weavers wages
6	New Markets	++	+	0	+	++	Finding Skilful weaves
7	New designs	++	+	0	+	++	Negotiating product price
8	New designs	++	+	0	+	++	Finding finance
9	New designs	++	+	0	+	++	Modes of supply (credit)
10	New designs	++	+	0	+	++	Negotiating weavers wages
11	New designs	++	+	0	+	++	Finding Skilled weaves
12	Negotiating product price	++	+	0	+	++	Finding finance
13	Negotiating product price	++	+	0	+	++	Modes of supply (credit)
14	Negotiating product price	++	+	0	+	++	Negotiating weavers wages
15	Negotiating product price	++	+	0	+	++	Finding Skilled weaves
16	Finding finance	++	+	0	+	++	Modes of supply (credit)
17	Finding finance	++	+	0	+	++	Negotiating weavers wages
18	Finding finance	++	+	0	+	++	Finding Skilled weaves
19	Modes of supply (credit)	++	+	0	+	++	Negotiating weavers wages
20	Modes of supply (credit)	++	+	0	+	++	Finding Skilled weaves
21	Negotiating weavers wages	++	+	0	+	++	Finding Skilled weaves

If your firm is about 5 years old, what do you focus on now?

1	New Markets	++	+	0	+	++	New designs
2	New Markets	++	+	0	+	++	Negotiating product prices
3	New Markets	++	+	0	+	++	Finding finance
4	New Markets	++	+	0	+	++	Modes of supply (credit)
5	New Markets	++	+	0	+	++	Negotiating weavers wages
6	New Markets	++	+	0	+	++	Trading
7	New designs						Negotiating product prices
8	New designs	++	+	0	+	++	Finding finance
9	New designs	++	+	0	+	++	Modes of supply (credit)
10	New designs	++	+	0	+	++	Negotiating weavers wages
11	New designs	++	+	0	+	++	Trading
12	Negotiating product prices	++	+	0	+	++	Finding finance
13	Negotiating product prices	++	+	0	+	++	Modes of supply (credit)
14	Negotiating product prices	++	+	0	+	++	Negotiating weavers wages
15	Negotiating product prices	++	+	0	+	++	Trading
16	Finding finance	++	+	0	+	++	Modes of supply (credit)
17	Finding finance	++	+	0	+	++	Negotiating weavers wages
18	Finding finance	++	+	0	+	++	Trading
19	Modes of supply (credit)						Negotiating weavers wages
20	Modes of supply (credit)						Trading
21	Negotiating weavers wages						Trading

Appendix 2: Review of social capital and entrepreneurship literature

Review of Social networks and Entrepreneurship Literature

Review of the classical paper that are not necessarily on entrepreneurship but upon which the subsequent research was based on:

v

Researcher	Year	Journal	Study	Description of key issue	Finding
Burt, Ronald	1997	ASQ	Presents argument and evidence for structural ecology of social capital that describes the value of social capital to in individual is contingent on the number of people doing the same work.	Social capital predicts that returns to intelligence, education, and seniority depend in some part on a person's location in the social structure of a market or a hierarchy. Social capital refers to opportunities. Structural holes are holes in social structures of markets. Network constraint: The extent to which the network is directly or indirectly concentrated in a single contact. More constrain means fewer structural holes	Information benefits are access, timing and referrals. Control benefits occur when a bridge is created between otherwise disconnected contacts. Social capital is especially valuable to managers with few peers.

Researcher	Year	Journal	Study	Description of key issue	Finding
Burt, Ronald	2000	Org. Behavior	Paper on the network structure of social capital drawing from evidence across various subjects of interest.	i. Metaphor vs. Mechanism ii. Evidence iii. Complementarity	Research and theory will better cumulate across studies if the focus is on network mechanism responsible for social capital effects then trying to integrate across metaphors of social capital Evidence shows a number of cases where the positive effects of social capital were evident but contingency factors were found The two leading network mechanisms could be brought together. Closure can be a significant contingency factor for value of brokerage. Structural holes are source of value added, but network closure can be essential to realising the value buried in the holes
Coleman, James	1988	Am. J. Soc	Introduces and illustrates the concept of social capital, its forms are described and the social structural conditions under which it arises are examined.	Social capital inheres in the structure of relations between actors and among actors	Closure of social networks where everyone knows everyone else is the best structure that facilitates social capital. This closures, he argues facilitates trust and creates sanctions against opportunism.
Granovetter Mark	1973	Am J Soc.	Analysis of social networks is suggested as a tool for linking micro and macro levels of sociological theories	Analysis of processes in interpersonal networks provides the most fruitful micro-macro bridge. It is through these networks that small-scale interactions become translated into large scale pattern, which in turn feedback into small groups.	Weak ties are more likely to link members of different groups than are strong ties. These are usually denounced as generative of alienation but in reality indispensable to individuals' opportunities and to their integration into communities whereas strong ties, breeding local cohesion, lead to overall fragmentation.

Researcher	Year	Journal	Study	Description of key issue	Finding
Granovetter Mark	1983	Soc. Theory	Reviews the empirical studies testing the hypothesis of 'strength of weak ties', and attempt to clarify some questions and broaden the hypothesis base	Individual with few weak ties will be deprived of information from distant parts of the social system and will be confined to the provincial news and views of their close friends.	Though weak ties provide access to information, strong ties have greater motivation to be of assistance and are typically more easily available. Not all weak ties are functional, only those acting as bridges between network segments.
Granovetter, Mark	1985	A J Soc	The paper concerns the extent to which economic action is embedded in structures of social relation, in modern industrial society.	Draws inputs from over-socialised concept of social structure and under-socialised concept of economic action and from New Institutional Economics	Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to social categories that they happen to occupy. Instead, their attempts at purposive actions are instead embedded in concrete, ongoing systems of social relationships.
Aldrich and Sakano	1994	Networks and Markets: Pacific Rim Investigations	Studied the personal networks of small and medium sized firms in five nations (Japan, US, Italy, Northern Ireland, Sweden)	Configuration of the network (Friend, business and family)	Large proportion of the owner's personal network members were met via a broker. One-fifth of the brokers were from owner's personal network.
Aldrich, Reese and Dubini	1989	Ent. & Reg. Development	Studied the potential and active entrepreneurs in the Research Triangle Area and Italy to find out if women have different networks than men and if these networks have any influence on their rates of business formation, survival and growth.	Difference in Workplace, family and marriage, organised social life should play a role in the difference in network between men and women. Three features of networks were used: Activity: the number of people contacted and time spent cultivating the network Diversity: the sex composition of the network Density: Extensiveness of ties between persons	There are no differences in networking activity between the two countries. Men have almost no women in their network whereas women contain more men. Network density is similar between men and women. Being married makes little significance to networks

Researcher	Year	Journal	Study	Description of key issue	Finding
Aldrich and Zimmer	1986	Art and Science of Ent.	Focuses on entrepreneurship as embedded in a social context, channelled and facilitated or constrained and inhibited by people's position in social networks.	Density, reachability and centrality Density: as above Reachability: refers to the presence of a path between two people of whatever distance.	Increasing salience of group boundaries and identity, leading persons to form new social ties and action sets increase the likelihood of entrepreneurial attempts by persons within that group and raise the probability of success Broker roles are central positions in networks resulting from people's attempts to minimise their transactions costs. Many entrepreneurs enjoy a broker's position. Entrepreneurs are more likely to be found in positions whose centrality is high and which are connected to lots of diverse information sources.
Anderson, and Miller	2003	J. of Socio-eco-nomics	Explores how entrepreneurial background impacts upon the development of social and human capital resources and demonstrates how these aspects the profitability and growth of new enterprises	Social capital: An asset that inheres in social relations and networks Human capital: skills and abilities	Entrepreneurs from higher socio-economic grouping have high endowments of human capital and social capital and will have greater opportunity to acquire and develop these resources and thus are more likely to start businesses characteristic by high growth and profitability potential.

Researcher	Year	Journal	Study	Description of key issue	Finding
Batjargal, Bat	2003	Org. Studies	Impact of entrepreneurs social capital (based on structural, relational and resource embeddedness) on their firm performance in post Soviet Russia.	Social capital: networks of relationships and assets located in these networks Structural embeddedness is the structure of the overall network of relations Relational embeddedness is the extent to which economic actions are affected by the quality of actors' personal relations Resource embeddedness resources that are contained in the network	Network size indirectly affects economic actions, network heterophiliy negatively correlates to performance, weak ties are beneficial where as strong ties are not High position alters do not increase performance but ability to seek more from network plays a significant role in performance. No evidence for structural embeddedness (density and structural holes)
Birley, Sue	1985	JBV	The extent to which the entrepreneur interacts with the networks in his local environment during the process of starting a new firm was studies.	During the start-up process the entrepreneur does not only seek resources like equipment, space and money but also advice, information and reassurance. In achieve this both formal and informal networks will be tapped.	Most of the firms started small and remained small. Contrary to the expectation, resources of raw material, supplies and equipment, space, employees were mainly sourced from informal networks containing family, friends and colleagues. The reason could be that entrepreneur did not know about the formal sources.
Borch and Arthur	1995	J. Mgmt. Studies	Reports and interprets experience from a case study of inter-organisational exchange governance in small firms.	Network success hypothesis: Entrepreneurs who can refer to a broad and diverse social network and who receive much support from their network are more successful.	The hypothesis was found to be valid. Strong ties seem to be more important than weak ties. The hypothesis that entrepreneurs compensate shortfalls in human financial capital by resorting to network support did not find confirmation.

Researcher	Year	Journal	Study	Description of key issue	Finding
Bruderl and Pre- isendorfer	1998	Small Bus. Eco- nomics	Based on 1700 Studied the net- work success hypothesis	Network suc- cess hypothesis: Entrepreneurs who can refer to a broad and diverse social network and who receive much support from their network are more successful.	The hypothesis was found to be valid. Strong ties seem to be more important than weak ties. The hypothesis that entrepreneurs compensate shortfalls in human finan- cial capital by resorting to network support did not find confirmation.
Cooke and Wills	1999	Small Bus. Eco- nomics	Explores the extent to which social capital is advanta- geous to small and medium enterprise growth, whether policies that encourage it are effective and whether policy makers should assimilate its central messages in their design of policy tools to promote busi- ness innovation and economic prosperity	Social capital consists of embeddedness and autonomy. Embed- dedness which can be defined by personal ties and networks of relations Autonomy a corol- lary to embedded- ness which indicates developing networks beyond community	Integrating SMEs to networks outside the cluster increases in- novation. Also linkages to ad- ministrators play an important role in greater success of such growth oriented programs.
Elfring and Hulsink	2003	Small Business Eco- nomics	Explores the role of networks in the emergence and early growth of a venture through three entrepre- neurial processes: opportunity rec- ognition, resource mobilization and obtaining legiti- macy. Contingency factors: Strong and/or weak ties, degree of innova- tion (radical or incremental)	- Radical innovation disrupts the existing economic conditions and require a change in the business con- text, instigated by a persuasive entrepre- neur - Incremental in- novation are more to do exploitation and competence-enhancing measures, enabling the entrepreneur to build on existing routines and skills	Strong ties are important for securing resources Important for radical innova- tion: mix of strong and weak ties, especially strong ties for opportunity discover and tacit knowledge transfer, with weak ties assisting in gaining legitimacy. Important for incremental innovation are weak ties for opportunities and strong ties for legitimacy.

Researcher	Year	Journal	Study	Description of key issue	Finding
Gilmore and Carson	2000	Strategic Change	Examines how owner-manager networks and how they are used. How and why they use networking at different periods in enterprise development.	Networking refers to the actual process of liaison with contacts within the network and it is about individuals and companies work- ing alongside each other and cooperating through the exchange and sharing of ideas, knowledge and tech- nology	Networks and networking activity do change consider- ably, moving from being reactive and social at the early stages, to a more proactive, professional approach as the enterprise develops and grows over time. The issue of handing over the owner-manager networks is important but in doing so many difficulties are experienced
Greve, Arent	1995	Scand. J. Mgmt	Analyses network structures and activities during different stages of entrepreneurship. Variables: network size, networking time, net. density, knowledge of an alter's alters, network contacts background.	Stage: i. Idea develop- ment, ii. Organizing the founding of firm, iii. Running a newly established firm	People in early stages of entrepreneurship have smaller networks and use less time networking than people in later stages. Significant: Alter background, important Not significant: Network density, alter knowledge and type of relation (fam., business or friend)
Greve, Arent	2003	Ent. Theory and Prac.	Compares the three early phases of establishing a business in four countries. The focus of this comparison is to understand how entrepreneurs in similar phases of establishment use the contacts to acquire resources.	As above	The network was the smallest in the first stage and larg- est in the second stage. US respondents have the largest networks, followed by Swed- ish, Italian and Norwegians. The size is not dependent on prior experience or age of the entrepreneur. Regarding the time invested in networking, entrepreneurs in 2nd stage spent the maximum amount of time, followed by those in 3rd stage. Those in 1st stage spent the least amount of time. Within the countries, Italians spent most time, followed by Sweden, US and Norway. With respect to time invested in maintaining a relationship, entrepreneurs in Stage 1 spent the least time. Those in Stage 2 and 3 spent the same amount of time. The countries are ranked as Italians, Swedish, US and Norway.

Researcher	Year	Journal	Study	Description of key issue	Finding
Hite, Julie	2003	Strategic Org.	What are the components of the social relationships of relationally embedded ties? How can relationally embedded network ties be classified to identify different types of embeddedness based on variations in social relations? What strategic implications can be drawn from a multidimensional view of relational embeddedness?	Combination of three social components were used: personal relationships, dyadic economic interaction and social capital.	Three types of uni-dimensional embeddedness: Personal, Competency and Hollow Personal embeddedness is built solely upon the personal knowledge, affect, or sociality based on personal relationship. Competency embeddedness is built upon a history of dyadic interactions. Hollow embeddedness are ties that have yet to offer perceived business value and are not built on personal ties. These are built from social capital alone Interactions between these three types of bi-dimensional embeddedness Functional embeddedness is built on dyadic economic interaction and social capital. Isolated embeddedness is built on dyadic economic interactions and personal embeddedness. Latent embeddedness means that although the network tie may be perceived to be in the business network, the relationship is actually characterised by very low level of dyadic economic interaction. Finally, the full embeddedness demonstrates high degree of all social components.
Hite and Hesterly	2001	SMJ	Whether cohesive networks of socially embedded ties or sparse networks rich in structural holes are more conducive to the success of new firms based on the firms evolution.	Two different stages of firm were taken into account: Emergence and early growth. Emergence stage begins with the organisation is legally created. Early growth is the point in the firm life cycle at which a firm makes clear strategic decisions to internationally grow beyond mere survival, viability, or sufficiency.	Embedded ties decrease, cohesiveness decreases, bridging structural holes will increase, as firm moves from emergence to early growth. The evolution of firm networks will be dominated by path dependent processes during emergence but will become more intentionally managed as time passes.

Researcher	Year	Journal	Study	Description of key issue	Finding
Jenssen, Jan Inge	2001	Ent. and innovation	Explored how social networks and entrepreneurial resources relate to and impact on entrepreneurship in Norway Social network approach can explain why people in the same cultural context and with the same psychological traits act differently Variables used: strength of relationships and network size, information resources, affective resources (motivation) and financial resources	Social networks are defined as patterns of lasting social relationships between people.	Both resources and social networks have direct impact on entrepreneurship Both weak and strong ties are important in the initial network (before the start-up) after which strong ties become important.
Jenssen and Greve	2002	Int. J. Ent. Behaviour and Research	Exploring if simple measures like number and strength of ties are more important for entrepreneurs than redundancy because many weak and strong ties increase the entrepreneur's access to resources.	Redundancy indicates the degree of overlap between entrepreneurs' contacts.	Redundancy does not have positive relation business start-up success. Contrary to theory, it was positively related to access to information and support. Higher redundancy together with a higher number of ties affects access to information. For finance the effect of strong ties is slightly higher than that of weak tie.
Johanisson, Bengt	1995	Ent. Reg. Development	Looks at how research on networks varies depending on paradigmatic assumptions.	Comprehension of socio-economic phenomenon in general and of entrepreneurship in particular is enhanced where the focus is on relationship between actors instead of on the properties of each individual actor.	A two by two matrix was constructed with either entrepreneurship as an innovative or organising endeavour and entrepreneur and dichotomising the environment as either stable and unambiguous or turbulent and ambiguous. This matrix was then used to discuss the finding in the network literature.

Researcher	Year	Journal	Study	Description of key issue	Finding
Johanisson, Bengt	2000	Black-well Hand-book of Entre-preneur-ship	Introduces the network vocabulary and elaborates on personal network-ing mode that is conducive to entrepreneurship. Also shows how entrepreneurial ventures emerge from personal networking.	Networks consists of interconnected dyadic relationships where the nodes may be roles, individuals or organisations Contents of networks could be information, exchange or influence	Committed members of the personal network help the entrepreneur to amplify the initiative and subsequent actions. Entrepreneurs rely on tacit knowledge, which mainly is transmitted social learning. Continuous entrepreneurship calls for perpetual venturing as opportunities and hence both entrepreneurship and network-ing remain crucial over the firm life span.
Larson and Starr	1992	Ent. Theory and Practice	Presents a network model of organisation formation and explains the transformation of exchange relationships.	Three stages of entre-preneurial networking activity: i. focusing on essential dyads ii. converting dyads to socioeconomic exchanges iii. Layering the ex-changes with multiple exchange process	At stage I, the business con-cept has been translated into a concrete implementation plan where the critical resources needed to move forward are identified At stage 2, increases the structure and density to the socioeconomic linkages where trust, reciprocity, investment and interdependence are the outcomes Stage 3, layers the initial exchange relationship with additional business func-tion, activities and levels of exchange. The successful outcome of Stages 1, 2 and 3 is the crystal-lisation of an individual/or-ganisational network made up of a critical mass of dyads that establish the new organisation as a viable entity.
Lee, and Tsang	2001	J. Mgmt. Studies	Effects of entrepreneurial personality traits, background and networking ac-tivities of Chinese entrepreneurs in SME in Singa-pore. Variables are need for achieve-ment, internal locus of control, self-reliance and extrover-sion, education, experience, size and frequency of communication		Need for achievement, number of partners, experience are positively related to venture growth. Network size assists larger firms than smaller firms. Fre-quency of interaction assists smaller than larger firms

Researcher	Year	Journal	Study	Description of key issue	Finding
McEvily and Zaheer	1999	SMJ	They propose that a firm's embed-dedness in a net-work of ties is an important source of variation in the acquisition of competitive capabilities based on two differ-entiating facets: bridging ties and linkages to regional institu-tions.	Bridging ties: Are those that link a focal firm to contacts in eco-nomic, professional and social circles not otherwise accessible to the firm. In geographic clusters, regional institutions that provide collective support services to firms in the region. These institutions facilitate the acquisi-tion of competitive capabilities by compil-ing and disseminating knowledge and by reducing search costs	Support for Burt's non redun-dancy in firm's advice network explains the acquisition of capabilities and participation in regional institutions. While infrequency of interaction and geographic dispersion of the advice network did not show significant results.
O'Donnel, Aodheen, et. Al	2001	Manage-ment Decision	Traces the de-velopment of the networks concept in the two strands of research that dominated the field of entrepre-neurship: inter-organisational networks and per-sonal networks	Popularity of network construct has led to misapplication and inconsistency	Work to be done: The process of networking, content of network relations, networks of established firms, relationship between two or more parties, social, economic and moral aspect of exchange, indirect relationships, longitu-dinal studies.
Ramachan-dran, Ra-manarayan and Sun-derajan	1993	Ent. Re-search: Global Perspec-tives	Social network-ing in small enterprises in two states of India. The focus was on the subjec-tive experiences of acquiring critical resources required for the firm.	Networking was not measured in terms of number of contacts, etc. but in terms of role and significance it occupies in the view of the concerned entre-preneur.	Family and friends play an important role in networking. They also found that networks are dynamic wherein people move from a state of active to latent networking and from inner circle to outer circle. Caste and religion seem to be unimportant in networking. Education and prior experience were important.
Renzulli and Aldrich	2000	Social Forces	Social capital, gender and likeli-hood of starting an enterprise. Variables: Heterogeneity, Kin composition, Gender, age, marriage, prior employment, size, proportion of women, children, education	Social capital: chan-nels of access to resources that inhere in someone's social relations.	High proportions of kin and homogeneity in the network is more important than being a female or having high propor-tion of females in the network.

Researcher	Year	Journal	Study	Description of key issue	Finding
Rowley, Behrens and Krackhardt	2000	SMJ	Explores the contingency approach to explore the conditions under which sparse/ dense networks and strong/weak ties are positively related to firm performance	There is an interaction effect between relational and structural embeddedness Degree of uncertainty and required rate of innovation in the environment influences the appropriate network configurations.	Weak ties are positively related to the firm performance. Strong tie argument (builds trust based governance, reciprocity and mutual gain) is not supported. There is also interaction effect between relational embeddedness, structural embeddedness and environment conditions. No support for either Burt's structural holes or Coleman's closure. Density was found to be beneficial for exploitation context
Schutjens and Stam	2003	Small Bus. Economics	Evolution of networks during first three years of startups. Variables studied: size of firm, innovation level, education, regional effect, industry type, gender, regional context, types of industry		Upstream contacts become increasingly commercial whereas downstream contacts become social. Extra regional relationships turn to intra regional relationships.
Starr and Macmillan	1990	SMJ	Examines the role of social contracting strategies in acquiring resources for new ventures		
Steier and Greenwood	2000	Organisation studies	Longitudinal study of the development and evolution of an angel financial network within a new firm. Also refines how theory of social capital and structural holes could be applied to entrepreneurial context	Networks: Nodes and relationships that connect them	Two main issues that entrepreneurs need to resolve while developing a network are : - attaining diversity while overcoming the problem of relationship overload - need to manage dependency by turning fragile ties into robust ties (multiplexity)

Researcher	Year	Journal	Study	Description of key issue	Finding
Uzzi, Brian	1996	Am. Soc. Review	Attempts to advance the concept of embeddedness beyond the level of a programmatic statement by developing a formulation that specifies how embeddedness and network structure affect economic action.	Organisational networks operate in an embedded logic of exchange that promotes economic performance through inter-firm resource pooling, cooperation, and coordinated adaptation but that also can derail performance by sealing off the firm in network from new information or opportunities that exist outside the network	The patterns of exchange relationships in an atomistic market is that of an expansive, undifferentiated macro network: Firms parcel out their orders among many exchange partners, forcing them to compete vigorously for business. Embeddedness yields positive returns only upto to a threshold point. Once this threshold is crossed, returns from embeddedness become negative.
Uzzi, Brian	1997	1997	Understanding the relationship between embeddedness and organisation networks by identifying components of embedded relationships and brings forward how embeddedness shapes organisational and economic outcomes.	The fundamental statement economic actions are embedded in ongoing social ties that at times facilitate and at time derail exchange suffers from theoretical indefiniteness.	Embedded ties give rise to trust since it is a governance structure that resides in the social relationship between and among individuals. Embedded ties give rise to tacit information that is acquired through learning by doing.
Zimmer and Aldrich	1987	Soc. Perspectives	Examines how ties to family affect three aspects of entrepreneurship (business founding, business success and business turnover) for Asian and white shop owner.	Business founding: extent to which owners learned of the availability of their business site through informal information channels; extent to which owners came from social origins that would prepare them for taking advantage of business opportunities; extent to which owners relied on family members and friends for raising capital	Social ties are important for all three processes, and their importance applies to both Asians and whites. Only in a few cases was difference in the way social networks were used found. Asian had more self employed father. Asians and whites had different sources of starting capital and tapped those sources to differing extents. Asians used family and friends more often than whites to help finance their businesses. Asians managed to get only about one-third funds from family and friends where as whites, they used family and friends got two-thirds of their capital. Asians hire more extended kin allowing longer operating hours.

Appendix 3: The weaving process in pictures

Yarn dyeing

Preparing the Warp (typically makes 6 saris)

Typical Sari (6 yards x 1.3 yards)

Pallu which is many woven patterns

Main body that has less design work than the pallu

The borders which has a small repeating pattern.

The weaving process

The pit in which the weaver sits and operates the pedals

The weft runs through here.

Lever to roll the finished cloth

Rope to operate the weft

Rope to operate the weft

The metallic thread used in embellishment and designs is called the zari
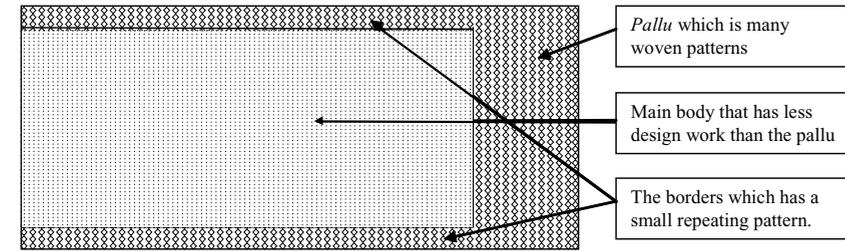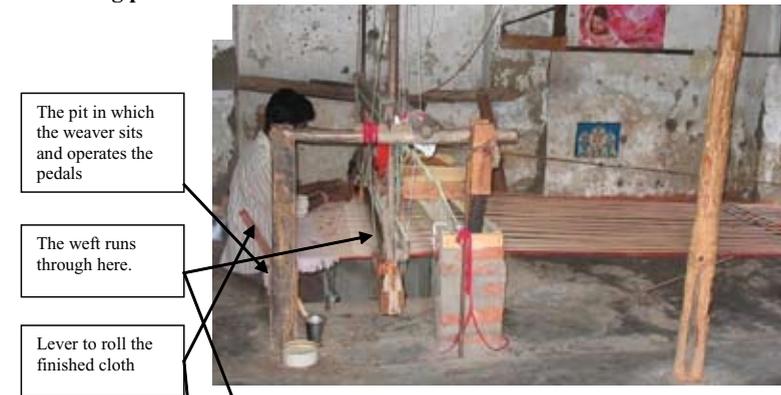
Appendix 4: Details of the cases discussed in Chapter 5

Case 1: SAR (Turnover: Rs. 400,000; partners: 1; Clients: (Master weaver in Chirala cluster)

SAR is a 46-year-old weaver who along with his father worked for a master weaver in the village of Moolapeta. Due to financial difficulties, he migrated to Chirala, a larger weaving cluster about 300 km away, when he was in his late twenties. At Chirala, he began work under his uncle, who was a master weaver there.

In his hometown Moolapeta, SAR used a primitive pit loom, whereas in Chirala he operated a Jacquard loom. In addition, he also learnt how to build and repair such a loom. Between these two clusters, in addition to technology, there were other differences as well. In Chirala, specialists, who are paid for their labour by the master weavers, perform the pre-loom activities like sizing, warping, etc. In Moolapeta, the weavers perform the pre-loom activities first. Since no extra payments are made for these activities, women usually perform these tasks during their free time.

Ten years later, when the financial situation of the family stabilised, they decided to move back to Moolapeta where they could easily find employment under a local master weaver. SAR along with his brother operated two pit looms for this master weaver for a few years. Although he had no difficulty in getting back to work on a pit loom, he felt that system of production was restricted.

Compared to the simple products of Moolapeta, Jacquard products are more expensive and have larger markets, thereby making it beneficial for both master weaver and the weaver. This made moving to Jacquard weaving attractive for SAR.

When SAR had saved/collected some money, he approached his cousin in Chirala to assist him in setting up a Jacquard loom in his house. This new activity had risk factors and a certain amount of uncertainty. SAR did not remove the pit looms as a safety net and made his brother work on it.

SAR then started working on the Jacquard loom. He made frequent trips to Chirala both to procure the pre-processed yarn and other raw materials and to supply the finished product. This operational setup continued for a few years until SAR was confident that he could completely shift to Jacquard weaving by upgrading the pit loom to a Jacquard loom.

It was around this time that SAR's son wanted to stop his studies and start weaving. He could not clear his high school exams. Yet, since he studied until high school, he was eligible for a subsidised self-employment loan from the bank under a special government programme. In order to get a loan, he would have to be backed by someone of repute in the local area.

SAR was active in a local political party and got the village president to back his son and thereby successfully procured the loan.

With this money, SAR added a new wing to his house and set up two new Jacquard looms. In addition, he installed an extra loom in his friend's house. The total number of Jacquard looms in the village increased to four. To enable these four Jacquard looms to operate continuously, SAR's trips to Chirala became more frequent.

When there was one Jacquard loom, the village had considered it an anomaly, but with four looms being operated successfully, a few other master weavers showed interest in adopting this technology. While his son and brother were working on the looms, SAR was involved in setting up these new looms. He also reduced the number of trips to Chirala and started to use the commercial transport systems to procure the raw materials and to send the finished products.

While SAR supplied raw material for these new jacquard looms, the master weavers who owned these looms did not have a ready market for the jacquard products. They had to look for their own markets. However, considering the uniqueness of the new products, they did not have any trouble in either getting new orders from their existing clients or in seeking new clients.

Case 2: KAR (Turnover Rs. 7,500,000, clients 25, partners 1)

When KAR grew up and learned the skills of weaving from his father, the handloom industry in Pochampalli was just starting to expand. The local weavers' cooperative was formed in 1956. It was because of this cooperative that the government funded experiments to make a sari with a 'telia rumal' design. A Telia rumal is a large 'tie and dye' handkerchief that had been made in Chirala and exported to Arabia during the pre-Jacquard era. The local term 'tie and dye' actually refers to the more commonly known technique of 'resist dyeing' which involves selective tying and dying of the yarn prior to weaving. The design patterns on the fabric emerge during the weaving process due to the selectively dyed yarn. This process is also known as 'Ikat'. If either the warp or the weft is dyed it is called "single ikat". If both warp and weft are dyed it is known as "double ikat". Part of the difficulty is the translation of the pattern into a complex dyeing process. The challenge of making double ikat is greater than that of making single ikat. Double ikat is made only in a couple of places in the world: one in Patola, Gujarat, India and the other in Bali, Indonesia.

Due to the efforts of the cooperative, telia rumal design was successfully adapted for sari weaving. Both local merchants and merchants from Calcutta were interested in the product and soon there were about one thousand looms producing that sari, in and around that village. The production and sales were controlled by the local cooperative.

KAR was working for the cooperative as a 'designer'. Due to his ability to come up with good designs, he was involved in the project of adapting telia rumal designs for sari production. When the Chairman of the Handloom Development Corporation, Kamala Devi Chatopadhaya came to Pochampalli and wanted the cooperative to start experimenting with Silk, KAR was one of the two persons in Pochampalli, selected to be trained in Varanasi, a reputed silk weaving centre in North India.

A master weaver who had heard of these experiments, wanted to invest some money in the project. He had a big order for silk shirts from America and wanted to experiment with multi coloured silk material. With the help of the Weaver Service Centre in Hyderabad, the so-

called 'American Shirts' were developed. Because of the poor quality of dyeing, these shirts were also known as bleeding Madras shirts. Inspite of the bleeding of the dye, this type of shirting continued to be popular for a few years.

After this experience, both the young weavers were offered jobs in Weavers Service Centres. KAR accepted the job but very soon decided to start his own firm. He returned to his village, produced a few cotton saris and initiated the marketing by going to traders in the city of Hyderabad, about 60 Km from Pochampalli.

KAR's dream was to revive the 'silk sari' project. Considering his limited resources, he had to bring in a few other people into the project. He convinced one of the local raw material suppliers of the potential of his project. The supplier delivered silk yarn from Bangalore on credit. While he was working in Varanasi, KAR got in touch with some outlets in Western India, which regularly purchased expensive Varanasi silk saris. He sent his first batch of 32 saris to four outlets in Bombay and one in Hyderabad. He strategically wanted Western India as his first market since they were exposed to the extremely complicated "double ikat" Patola sari, which only the rich can afford. The sari KAR produced was not as complicated as the Patola sari but it had a similar design and quality and was much cheaper.

The outlets in Bombay started placing more and more orders. KAR's next step was to start the production of this Patola-like sari. He went to Bombay, met the owners of the outlets and looked at the Patola sari carefully to comprehend its production. He then started experimenting and had design support from the wife of one of the owners of the outlets. In addition to showing him her sari collection, she also gathered many designs from her friends and sent them to him.

KAR worked with low quality silk until he was sure of the nuances of production. Once he was sure how the sari was to be produced, he was able to get orders from Bombay merchants. Instead of producing it in Pochampalli, KAR then went to a village where most of his relatives lived. He started producing this Patola kind of sari there. In a year or so, he extended his production to another village. Both these villages were producing about 2000 saris per year. Since the demand was quite high, he could now seek advances from the outlets in Bombay and long term credit from merchants supplying raw material.

In this cluster, for hundreds of years, cotton thread was used as the 'tying' medium. This was cumbersome and the cotton also absorbed the dye. The edges of the designs were therefore not smooth. To overcome this problem, KAR started using pieces of rubber from used cycle tubes as the tying material. This not only eased the task of 'tying' but also helped in keeping the design edges smooth. Even today, using 'used cycle tubes' is still very popular in the cluster since the material is cheap, durable and readily available.

As the sari demand started spreading to other large cities in Western India, KAR started helping his family and friends to set up their own production units. He could not meet the demand all by himself. Instead of taking the saris produced in the new units to areas where KAR was selling, the products were marketed in other parts of India. KAR and his sons are still the largest producers of the 'Patola type' sari in Pochampalli.

Case 3: AKR (Turnover Rs. 5,000,000; Clients 15, Partners 1)

Although, the family belonged to the weaving community, AKR's father worked as a carpenter in Mangalagiri town. It was not until AKR married, that he entered into the handloom sector. His brother-in-law was working for a local master weaver. Usually, in India, the "girl's" side of the family also assists the new groom to get a better life usually in cash or kind, referred to as dowry. In the case of AKR, it was given in the form of assistance by his brother-in-law to start a small handloom unit with 5 weavers.

The initial produce consisted of coarse saris. One of AKR's clients gave him a loan to increase his production. By 1990, the total number of looms had gone up to forty. Meanwhile, AKR had become an active member of one of the local political parties. It was due to this affiliation that he got his next breakthrough.

One of his colleagues at the local party office was given an order for a new type of product (dress material) by a fellow party member from Hyderabad. This local colleague was not involved in weaving. He asked AKR to produce the initial sample order for him. The sample sales were successful and the orders started to grow. The other master weavers in the town were not very enthusiastic to venture into the production of this new product, since they had some bad experience with shirting material a few years earlier. As a result, for about four years, only the initial set of producers and their family members of AKR were able to take advantage of the growing market of 'dress material'.

After a few years, wholesale merchants from Bombay approached AKR and asked him to start producing directly for them, instead of relying on a 'go-between' in Hyderabad. Since AKR's colleague at the party had passed away, he did not feel the same kind of obligation towards his sons and it was relatively easy for him to break the connection. Now AKR is active in politics and his son controls the productions. It was interesting to find that the brother-in-law who initiated AKR into weaving now works for AKR as a contract weaver and controls about seven looms.

SAMEVATTIG

In het afgelopen decennium is een toenemend aantal individuen een eigen onderneming gestart. Slechts 40% van hen overleefde het eerste ondernemingsjaar. Studie van het ondernemerschap poogt te begrijpen waarom en hoe mensen ondernemingsmogelijkheden ontdekken en waarom slechts een klein deel van hen succesvol is. Terwijl er overal ter wereld ondernemers zijn, hebben academische inzichten tot nu toe vooral betrekking op zogenaamde ontwikkelde landen. Er is daarnaast een zekere focus op hoog-technologische en/of industriële bedrijvigheid. De vraag hoe men een onderneming start en runt in technologisch weinig ontwikkelde bedrijfstakken (ontstaan vóór de industriële revolutie) heeft weinig of geen aandacht gehad. Dit onderzoek richt zich op ondernemers in zo'n oude, traditionele bedrijfstak in een ontwikkelingsland en probeert daarbij stukken (netwerk)theorie, ontwikkeld in een typisch Westerse industriële context, toe te passen. Die toepassing van Westerse ondernemerschapen netwerktheorie in een andersoortig kader vormt de eerste algemene wetenschappelijk bijdrage van deze studie.

Dat andersoortig kader is de handweefsector in India. Het betreft een oude industrie die al bestond voordat er sprake was van markt en kapitalisme, een industrie die middels handgedreven weefgetouwen stoffen produceert en daarmee werkgelegenheid biedt aan meer dan 10 miljoen mensen. In India wordt algemeen gedacht dat de handweefsector haar voortbestaan te danken heeft aan verregaande overheidssteun[1]. Een alternatief gezichtspunt suggereert dat de sector slechts kon overleven door een sterke flexibiliteit en dynamiek die het mogelijk maakten in te spelen op veranderende textielbehoeften en vorm te geven aan productinnovatie in termen van ontwerp en basismaterialen, m.n. daar waar het het groeiende hogere segment van de markt betreft. De drijvende kracht achter deze dynamiek wordt gevormd door ondernemers, in dit geval de master weavers. Terwijl 75% van alle Indiase wevers voor dergelijke ondernemers werkt, is er slechts weinig over hen geschreven. De aandacht, m.n. van overheidswege, ging vanwege politieke overwegingen voornamelijk uit naar de 'beschermde' cooperatieve sector. Deze studie kan o.a. gezien worden als een belangrijke aanzet om dit tekort aan aandacht voor de in meerdere opzichten veel belangrijkere niet-cooperatieve sector te compenseren.

Daartoe is gekozen voor een netwerkperspectief. Deze invalshoek lijkt om verschillende redenen op zijn plaats. Het netwerk is immers een nieuw en belangrijk concept op het gebied van ondernemerschapstudies. Bovendien is het bij uitstek geschikt voor onderzoek naar ondernemers in traditionele, laag-technologische bedrijfstakken in opkomende economieën. In hun onderlinge concurrentie putten ondernemers geen of nauwelijks voordelen uit verschillen in opleiding - er bestaan zelfs geen formele opleidingsprogramma's. Daarnaast is de gebruikte technologie zo eenvoudig dat iedereen het kan begrijpen en tot op zekere hoogte ook kan gebruiken. Zakelijke en sociale netwerken vormen mede daarom een uitzonderlijk belangrijke bron van competitieve voordelen. Het opbouwen en onderhouden van dergelijke netwerken is van zakelijk levensbelang. Netwerken vormen zowel het kader van productie en

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[1]Overheidsprogramma's betreffen het formeren van weverscooperaties en het beschermen van kleinschalige industrie, vooral door middel van reserveringen, waarbij b.v. sommige producten exclusief werden toebedeeld aan de handweefsector, m.n. aan de cooperaties.

marketing, als een bron van informatie over kansen op de afzetmarkt, nieuwe grondstoffen en innovatieve productie-ideeën.

het netwerkperpsectief

Het netwerkconcept speelt een belangrijke rol in recente onderzoeken op het gebied van ondernemerschap. Het netwerkperspectief impliceert dat ondernemers niet (mogen) worden gezien als opzichzelfstaande, onderling onafhankelijke actoren, zoals verondersteld binnen het gangbare economische denken. Aan de andere kant, wordt hun handelen ook niet volledig bepaald door hun omgeving, zoals een sociaal-cultureel perspectief suggereert. Het netwerkconcept impliceert dat het functioneren van ondernemers is ingebed in netwerken van langlopende sociale relaties. In complexe netwerken van relaties wordt ondernemerschap vergemakkelijkt dan wel bemoeilijkt door verbindingen tussen ondernemers, hulpbronnen en afzetmogelijkheden.

Er zijn twee eigenschappen die bepalend zijn voor de kwaliteit van een zakelijk netwerk: de relationele inbedding en de structurele inbedding. De relationele inbedding zegt iets over de sterkte van de band van een individu met zijn netwerkcontacten. De structurele inbedding

verwijst naar de structuur van het netwerk dat het individu omgeeft. Voorgaand onderzoek heeft een verdergaande differentiatie opgeleverd van relationele en structurele inbedding. Relationele inbedding wordt in algemene zin gecategoriseerd als zwak of sterk, afhankelijk van de aard van de betreffende banden. Die banden worden als sterk aangemerkt als de personen in het netwerk elkaar geruime tijd kennen en/of heel frequent contact met elkaar hebben. Zwakke banden betreffen contacten waaraan weinig tijd wordt besteed. Structurele inbedding wordt vaak gedefinieerd in termen van netwerkdichtheid en het daarmee samenhangende aantal structurele gaten - een term die verwijst naar gaten in de netwerkstructuur. Als de personen in het netwerk van een individu elkaar kennen, spreken we over een hoge netwerk dichtheid. Indien dat niet het geval is is de dichtheid laag. Netwerken van een lage dichtheid bevatten relatief veel structurele gaten.

De voordelen die een individu ten deel vallen via zijn netwerk kan men omschrijven in termen van 'sociaal kapitaal'. Zij komen voort uit de welwillendheid die opgesloten ligt in de sociale relaties en die kan worden gebruikt ten behoeve van zakelijke transacties.

Sociaal Kapitaal

Terwijl er overeenstemming is over het idee dat sociaal kapitaal bijdraagt aan het succes van een onderneming, is men het niet eens over de bron van dat kapitaal en de manier waarop het bijdraagt aan dat succes. Wat dit aangaat zijn er twee hoofdstandpunten die direct verband houden met de voorafgaande discussie over structurele en relationele inbedding.

Volgens het ene standpunt is m.n. een netwerk met hoge dichtheid (met veel langdurige onderlinge contacten: een relatief 'gesloten netwerk') goed voor een ondernemer. Op de eerste plaats biedt een dergelijk netwerk een hoge mate van vertrouwen - een zeer belangrijke basis voor zakelijke transacties. Ten tweede kunnen in een dergelijk netwerk wanbetalers gemakkelijk worden uitgesloten. Ten derde, levert zo'n netwerk gedetailleerd afgestemde infor-

matie die gemakkelijk kan worden omgezet in zakelijke kansen en mogelijkheden. Tenslotte, biedt de vertrouwde omgeving van een gesloten netwerk de mogelijkheid tot het uitspreken en bijleggen van mogelijke meningsverschillen: het vergroot de kans dat problemen worden opgelost

Het andere standpunt stelt dat informatie over mogelijkheden, kansen en hulpbronnen ongelijk is verspreid. Het suggereert dat sterke banden en gesloten netwerken vooral informatie bieden waarvan de betrokken partijen al lang op de hoogte zijn ('overbodige informatie'). Als een ondernemer op zoek is naar nieuwe kansen en mogelijkheden, zal hij vooral buiten zijn directe en min of meer gesloten kring moeten zoeken, bij mensen in de periferie van zijn netwerk met wie hij slechts een zwakke band heeft. Het zijn met name die (delen van) netwerken waarin de mensen elkaar minder goed kennen die nieuwe informatie opleveren. Ze kunnen bovendien fungeren als brug naar andere sferen, streken en mogelijkheden. Met andere woorden: zwakke banden en netwerken met een lage dichtheid zijn goed voor ondernemers.

Recente studies, echter, laten zien dat de dichtheid van netwerken op zich niet bepalend is voor zakelijk succes. Het gaat om de juiste mix van zwakke en sterke banden en van netwerkdelen met een hoge en een lage dichtheid. Het ideale mengsel hangt bovendien af van de industriële, technologische en sociaal-culturele omgeving, alsmede van het type innovatie (aanvullend dan wel radicaal) waarnaar de ondernemer op zoek is.

Menselijk Kapitaal

Het belang van netwerken voor succesvol ondernemen lijkt evident. Toch is een goed netwerk geen voldoende voorwaarde voor succes. Om te beginnen zijn netwerken afhankelijk van hun menselijk middelpunt. Mensen hebben verschillende levensstijlen die noodzakelijkerwijs ook in hun netwerk tot uiting komen. Elk van die netwerken levert een verschillend, uniek soort informatie op. Bovendien moet een ondernemer de informatie die uit zijn netwerk komt op zakelijke waarde weten te schatten. Hij moet in staat zijn de mogelijkheden te ontdekken en uiteindelijk die mogelijkheden ook uit kunnen buiten. Informatie komt niet aanwaaien, maar moet worden gezocht, 'ontdekt' en verwerkt. De vaardigheden die daarmee samenhangen zijn onder andere afhankelijk van zoiets ongrijpbaars als (ondernemers)talent en verschillen dan ook van persoon tot persoon.

Ze zijn tevens afhankelijk van meer tastbare factoren als kennis (opleiding) en ervaring (professionele loopbaan en familie-achtergrond) van de ondernemer in kwestie. Dergelijke factoren kunnen een groot verschil maken als het gaat om het filteren en selecteren van informatie en het vertalen van die informatie naar concrete zakelijke mogelijkheden. Het betreft hier het menselijk kapitaal van de ondernemer. Dit onderzoek wil een licht werpen op de relatieve invloed van dit menselijk kapitaal op het functioneren van de onderneming.

Het ondernemingsproces

In deze studie worden twee ondernemingsprocessen onderscheiden – het herkennen van kansen en het mobiliseren van hulpbronnen – die interveniëren tussen menselijk en sociaal kapitaal enerzijds en de mate van ondernemerssucces anderzijds. Omdat het ontstaan van

elke onderneming is gebaseerd op het herkennen van kansen en mogelijkheden, wordt dit aangemerkt als het eerste ondernemingsproces. Uiteraard is het ook van belang dat ondernemers zich een toegang tot hulpbronnen verschaffen om de herkende mogelijkheid tot werkelijkheid te maken. Dit kan worden gezien als het tweede ondernemingsproces. Door een onderscheid te maken tussen deze twee afzonderlijke ondernemingsprocessen, elk met hun eigen netwerk-inbreng, denkt dit onderzoek bij te dragen aan inzichten met betrekking tot de invloed van netwerken op het functioneren van een onderneming. Samengevat richt dit onderzoek zich op de vraag..

… hoe sociaal kapitaal en menselijk kapitaal bijdragen aan het vermogen van de ondernemer om zakelijke kansen te herkennen, hulpbronnen te mobiliseren en uiteindelijk de prestaties van de onderneming beïnvloeden.

De bovenstaande onderzoeksvraag is verder verfijnd in de vorm van 17 hypothesen. Die hypothesen stellen achtereenvolgens dat er een positief verband bestaat tussen enerzijds

(a) het aantal sterke/zwakke banden in het ondernemersnetwerk,

(b) de dichtheid (hoog/laag) van dat netwerk,

(c) het menselijk kapitaal van de ondernemer

en anderzijds

(a) de mobilisering van hulpbronnen,

(b) het identificeren van kansen

(c) de prestaties van de onderneming.

Voorts wordt een positief verband verondersteld tussen zowel het mobiliseren van hulpbronnen als het herkennen van zakelijke kansen/mogelijkheden en de prestaties van de onderneming.

Data verzameling en analyse

De data verzameling verliep in twee fasen. In de eerste (voornamelijk kwalitatieve) fase werden semi-gestructureerde interviews gehouden, voornamelijk met master weavers. Tijdens die interviews lag de nadruk op het opbouwen van een duidelijk beeld aangaande het functioneren van de handweefsector, m.n. van de master weavers en hun ondernemingen. De informatie verkregen door middel van die interviews vormde de basis voor het maken van een vaste vragenlijst die gebruikt werd in de tweede (meer kwantitatieve) fase waarin 107 master weavers uit vier grote weversclusters in Andhra Pradesh werden geïnterviewd.

De data werden vervolgens geanalyseerd door toepassing van hiërarchische regressiemodellen. Er werd gestart met een basismodel met de controle variabelen enerzijds en kansherkennings-en hulpbronnen-mobiliseringsvariabelen anderzijds. Dat model werd achtereenvolgens uitgebouwd met de menselijk kapitaal-variabelen en de sociaal kapitaal-variabelen. Later werd hetzelfde gedaan met ondernemingsprestaties als afhankelijke variabele. In dat

laatste model kregen de kansherkennings- en hulpbronnen-mobiliseringsvariabelen een interveniërend plaats.

Onderzoeksresultaten

Met betrekking tot relationele inbedding van netwerken laat het onderzoek zien dat er een duidelijk verband bestaat tussen het aantal sterke banden in een ondernemersnetwerk en de mobilisering van hulpbronnen. Voorts bestaat er een sterk verband tussen de hoeveelheid zwakke banden in een netwerk en de prestaties van de onderneming. Voor wat betreft structurele inbedding wijst de data-analyse naar een positief verband tussen netwerkdichtheid en het mobiliseren van hulpbronnen. Netwerken met lage dichtheden, daarentegen, komen vaker voor bij innovatieve ondernemingen die nieuwe kansen hebben geïdentificeerd.

Een belangrijke uitkomst aangaande menselijk kapitaal is dat het spreken van meerdere Indiase talen positief correleert met het identificeren van zakelijke kansen en mogelijkheden. India is verdeeld in een aanzienlijk aantal staten, waarvan de meesten een eigen taal hebben. *Master weavers* die een aantal van die talen spreken hebben een groter (geografisch) markt- en klantenbereik dan degenen die slechts hun eigen taal machtig zijn.

Er bestaat geen duidelijk verband tussen werkervaring als wever en het ontdekken van zakelijke mogelijkheden. De mogelijkheid bestaat dat een lang (werk)verblijf onder wevers eerder leidt tot geprefereerde samenwerking met overeenkomstig ervaren spelers (Kim & Aldrich, 2005) en uiteindelijk tot een gesloten netwerk. Dit verschijnsel wordt *homophily* genoemd (McPherson, et al. 2001). *Master weavers* die jaren ervaring hebben in de handweefsector doen het als ondernemers overwegend slechter dan minder ervaren ondernemers. Andere onderzoekers zijn tot soortgelijke uitkomsten gekomen. In algemene termen kan worden gesteld dat enige ervaring goed is voor de onderneming en leidt tot betere prestaties. 'Te veel' ervaring lijkt contraproductief te zijn.

Conclusies

Wat is een optimaal netwerk voor een ondernemer in de handweefindustrie in India? Dit onderzoek laat zien dat structurele gaten in een netwerk belangrijk zijn voor het identificeren van kansen en mogelijkheden, terwijl sterke banden nodig zijn voor het mobiliseren van hulpbronnen. Deze bevinding is in strijd met de uitkomsten van een onderzoek van Rowley et al. (2000). Dat onderzoek liet zien dat ondernemingen in de traditionele sector, zoals de staalindustrie, vooral baat hebben bij een netwerk met een hoge dichtheid en veel sterke banden. Voorts bleek dat netwerken met een lage dichtheid, veel structurele gaten en zwakke banden gunstig zijn voor in snel veranderende en innoverende sectoren, zoals de computerindustrie. Een mengsel van beiden lijkt het best te passen bij een onderneming in de handweefsector in India. Wellicht geldt dit laatste voor de hele Indiase kunstnijverheidssector. Ondernemers in die sector worden geconfronteerd met een zeer gedifferentieerde en onzekere vraag naar hun producten. Ze hebben baat bij een uitgestrekt netwerk met veel structurele gaten als het gaat om het identificeren van nieuwe zakelijke kansen en mogelijkheden. Tegelijkertijd moeten ze beschikken over sterke (vaak lokale) banden als het gaat om het mobiliseren van hulpbronnen. Met name waar het gaat om geld (krediet) spelen dergelijk vertrouwensbanden een centrale rol.

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