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Micro, Small and Medium Enterprise Upgrading in India

Caroline Reeg

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Learning from success cases

Caroline Reeg

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Bonn, June 2013 Caroline Reeg

1 A synthesis paper on the joint research findings will be published in October 2013. The publications for the Egypt and Philippines case studies are available on the DIE's webpage: www.die-gdi.de.

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Abbreviations

ADB	Asian Development Bank
BDS	Business development services
BPO	Business Process Outsourcing
CAGR	Compound annual growth rate
DIE	Deutsches Institut für Entwicklungspolitik
GDP	Gross Domestic Product
GIZ	Gesellschaft für Internationale Zusammenarbeit
GVC	Global value chains
ICT	Information and Communication Technology
ITO	Information Technology Outsourcing
KfW	Kreditanstalt für Wiederaufbau
KPO	Knowledge Process Outsourcing
L&F	Leather & Footwear
MFA	Multi-Fibre Agreement
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MSE	Micro and small enterprise
MSME	Micro, small and medium enterprise
NASSCOM	National Association of Software and Services Companies
NCR	National Capital Region
R&D	Research & Development
SaaS	Software as a Service
SEZ	Special Economic Zone

SIDBI	Small Industries Development Bank of India
SME	Small and medium enterprise
SSI	Small scale industry
T&G	Textiles & Garments
TUFS	Technology Upgradation Fund Scheme
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

Executive summary

In developing countries micro and small enterprises (MSEs) constitute a large part of the industrial fabric, which is why policymakers and scholars alike look at small-scale entrepreneurs as important development agents in society. By offering possibilities to gain income, training and work experience, micro and small enterprises are said to provide livelihoods to millions of people worldwide (Altenburg / Eckhardt 2006). Moreover, donors and policymakers stylize small enterprises as drivers of private sector development.

However, the view of micro and small enterprises as being a seedbed for future enterprise growth and upgrading is open to doubt. Across developed and developing economies empirical observations suggest that most micro and small enterprises are stagnating (Mead 1994; Mead / Liedholm 1998; Cotter 1996; Fajnzylber / Maloney / Montes-Rojas 2006; Fajnzylber / Maloney / Montes-Rojas 2009). Only a minority of these firms manage to upgrade their businesses to the next level of productivity, assets and employment (Berner / Gomez / Knorringa 2008). Typically, few small enterprises pass the threshold of 20 employees. As a result, there is a "missing middle" between the poles of large and micro and small enterprises, respectively.

Generally, the term upgrading has been used to indicate the need for a qualitative improvement in economic production and performance. The need to upgrade productive capabilities has been applied to different units of analysis, e.g. enterprise clusters, economic sectors, industries and latecomer economies in general. However, this paper will exclusively follow a disaggregated view on upgrading by single enterprises. Thus, the focus of attention is on the firm and its individual efforts to increase its return on investment and value added in production. Accordingly, this study understands enterprise upgrading as growth of MSMEs through firm-level innovation.

This study contributes to filling the gap in the empirical literature on MSE upgrading. The Indian MSME upgrading case study is part of a three-country research project aiming at studying MSME enterprise upgrading dynamics in Egypt, Philippines and India conducted by the

German Development Institute (DIE). The aim of this research is to explain which factors affect enterprise upgrading and how those enterprises that graduated into higher size segments have managed to do so. Accordingly, this study is guided by the following research questions:

1. Why do some micro and small enterprises succeed in making progress while others do not?
2. What are the critical success factors that facilitate the increase in employment, assets and production capabilities?
3. How does the process of micro and small enterprise upgrading unfold?

In order to answer these questions this study adopted a qualitative research design, in which the main objective is to identify a critical mass of successful "upgraders" and to systematically document and analyse their experiences in-depth compared to enterprises which have not upgraded ("non-upgraders"). Empirical research in India covering the National Capital Region (NCR), Jaipur (Rajasthan) and surrounding as well as northern parts of Tamil Nadu, including Chennai, was conducted. This study covers the Information and Communication Technology (ICT), the Textiles and Garments (T&G) and the Leather and Footwear (L&F) sectors. The core element of our research mission was a survey with 93 entrepreneurs that consisted of 42 upgraders and 51 non-upgraders. The author is aware of the limitation of this research design as it provides only a very small sample of "upgraders" and the data allows only few snapshots on some causal relations in the process of MSE upgrading. However, the quality and depth of the data as well as the breath may be valid for the regions and sectors covered by the study.

The question as of why some MSMEs in developing countries innovate and grow and others do not has been subject of interdisciplinary discussions. Generally, factors as to why enterprises differ in their performance to innovate and grow can be divided between those that relate to the internal quality of the firm and those external to the firm. According to this twofold categorization further sub-levels of upgrading determinants have been identified in our conceptual framework: entrepreneur characteristics (1), enterprise characteristics (2), social (3) and business networks (4) and the business environment (5).

All told, while in a given context some factors will be more important than others, there is no such a thing as a 'recipe' for enterprise success or a 'theory' of firm development. This is not a new insight. Empirical research in many countries has shown that monocausal approaches fall short in explaining the very idiosyncratic and cumulative process of enterprise upgrading. The heterogeneity among micro and small enterprises across and within countries in terms of business environments, interconnectivity with networks, abilities and strategies implies that along the way different factors will play a role at different times.

While understanding the development of micro and small firms the main objective of this study is to learn from success cases of firms: "upgraders". In 2000 Morris et al. (2000, 50 f.) suggested different stylized scenarios of how MSMEs in India could transform and upgrade enterprises with higher levels of productivity into successful MSMEs. They suggest three successful trajectories for MSMEs to upgrade: (i) transforming traditional firms, (ii) growing trader manufacturers and (iii) firms at the beginning of the "high road": Depending on the developmental path, enterprises will face certain challenges, making particular factors combined instrumental to succeed in upgrading. Thus, depending on a developmental trajectory, success factors and their combinations supporting upgrading will vary.

In order to identify different upgrading trajectories and the positive factors driving this process, the gathered data has been analysed in two ways. First, characteristics of upgraders and non-upgraders were systematically compared in order to identify differences between the two samples across sectors. Second, in-depth analysis of upgraders and non-upgraders at the sector level provides deeper insights into group differences as well as differing combinations of success in upgrading.

Across sectors, the study advances with ten major messages:

1. *Micro and small enterprise (MSE) upgrading takes place!* Upgraders are indeed an exception, however, there are a considerable number of entrepreneurs who manage to innovate and grow their businesses incrementally. Depending on the sector, this process might take more than a few years, in fact, upgrading of

traditional manufacturing businesses was being initiated and carried forward by one or two generations, involving processes of market and product reorientation and fundamental technological transformation. Also, as enterprise upgrading is an incremental process many achievements by MSEs in innovating in products and services are constantly threatened by market shocks and therefore growth in employment is difficult to sustain steadily. Accordingly, there exists variation in upgrading trajectories.

2. *Sectors and regions matter:* When explaining micro and small enterprise upgrading the country, sectoral as well as regional context has to be taken into account. India is a complex political union of 26 states which all strongly vary in their socio-cultural and economic conditions. Enterprises are embedded in different regional settings providing them with different opportunities that define the boundaries of what is possible for an individual company. Further, depending on booms and busts in certain sectors there exist more or less viable market opportunities for an MSE to start a company or a new product line. Thus policy recommendations have to be tailored not only specific to a certain country and region, but should further build on trends in certain product and service categories which requires sector know-how. The latter differentiation is of vital importance as the nature of the enterprises' economic activities strongly determines available coping strategies and upgrading trajectories.

3. *Micro and small enterprise (MSE) upgrading requires a combination of success factors:* This explorative research aimed to show that while public debates very often highlight simplified monocausal explanations in explaining enterprise development, such as access to finance, the embeddedness in a cluster or its informal status, enterprise upgrading is a phenomenon that depends on certain *combinations* of success factors. Enterprises find themselves confronted with several challenges and upgrading constraints for which they need a variety of coping strategies and success factors. However, how these particular combinations of success factors materialize strongly relates to the country and sector context, which is why it is dangerous to formulate a generalized "winning"

strategy for MSEs. Rather, in its sector-specific Subchapters on the ICT, T&G and L&F sectors this study has shown that the factor ingredients of these combinations can vary greatly. A major take-away though is that enterprise success strongly relies on the interaction of a well-informed, educated and socially-embedded entrepreneur using his personal networks to compensate for various deficits in the business environment, such as lack of finance. This implies that while entrepreneurs can compensate to a large degree for deficits in the business environment MSE success rates will be higher where entrepreneurial drive and the provision of soft and hard infrastructure go hand in hand.

4. *Entry barriers for woman entrepreneurs exist:* While there have been several policy efforts to support and increase entrepreneurship among women in India, e.g. microfinance schemes with relaxed interest rates, there seem to still exist huge entry barriers for women. The sample consists of 93 interviews, of which only 4 were with women entrepreneurs. Accordingly, no inferences of the relative performance of women compared to men can be made; however, this sampling outcome implies that there are strong entry barriers for women in becoming an entrepreneur. Those women who were taking up entrepreneurship were all owning a business in the textiles and garments sector; they were highly educated and reported to having a very supportive and understanding family and social network assisting them in their business. The reasons for this outcome are manifold. Interviews with woman entrepreneurs indicated that family obligations and social norms influence the individual preferences and decisions of potentially equipped business women. While there are exceptions, it appears that entry barriers are historically and culturally rooted and therefore will change only slowly.

5. *The entrepreneur's capabilities and social exposure matter a lot:* Most of the identified success factors across all three sectors are strongly associated with the entrepreneur's human capital as well as his embeddedness in particular quality networks. While recent literature has highlighted external variables such as registration procedures, access to finance and informality, the qualities of the

entrepreneur as well as those of his social milieu seem to be underestimated. Yet, the case of upgraders shows that these "soft" variables are much more important than recent literature has stated. Most success factors in the end depend on entrepreneur and network characteristics such as quality of education, quality work experience, motivation, family background and quality networks. The entrepreneurs' coping strategies to overcome challenges such as access to finance, access to markets and access to workers largely relied on their own capabilities to makes use of their own or their social and business networks knowledge and capital resources. Accordingly, this study can support notions of a strong identity and networkled economy in the studied sub-sectors (Meagher 2010).

6. *Informality is not a constraint to upgrading in itself!* Formalization is the outcome rather than the driver of upgrading. Many entrepreneurs upgraded their business out of the informal sector and formalized after they had sustained growth for a longer period of time. For many enterprises, it was a deliberate decision to remain informal due the perceived advantages and disadvantages of registration. Once enterprise had stable orders and projects, the companies gradually reconsidered the benefits of registration and gradually made the efforts to register under different corporate statutory laws and acts.

7. *Regulatory framework and state bureaucracy are no constraints to upgrading in themselves!* Complicated procedures and unclear regulatory specifications as suggested by the Doing Business Reports raise search and transactions costs (money and time) for upgraders (World Bank 2011). Yet, most upgraders managed to overcome these challenges. Rather than the sheer number of procedures and the compliance with the regulatory framework the major problem of entrepreneurs lies in predicting whether laws and rules will be applied adequately. In most cases entrepreneurs had to pay-off officials *no matter* whether they were complying with procedures or not. Thus, deficits in the rule of law frequently result in unethical practices and corruption for which entrepreneurs have to bear the costs.

8. *For MSEs initially access to markets is a more severe challenge to upgrading than lack of finance.* Lack of finance has been discussed as a major growth constraint for MSMEs. Having the necessary capital to start and run a company for the first initial months constitutes a bottleneck for many entrepreneurs and indeed upgraders had considerably better access to various private sources of finance as well as some bank loans to overcome initial start-up costs and times of capital squeezes. However, upgraders were shown to have strong market linkages and access to supportive clients and buyers *before* starting their business, indicating that access to markets might be more instrumental to initial enterprise growth than access to external finance. A major strategy of upgraders was to grow slowly and compensate for the lack of external finance by using in-kind credit and other forms of strategic partnerships with their initial market linkages. Hence, additional to private savings upgraders used clients as a source of finance, which not only provided the necessary capital to start the business, but more importantly lowered business risks by ensuring effective and secure demand for their products and services. Thus, initially access to markets seems to be more important to MSEs than access to large amounts of capital and bank loans, not only because clients constituted an alternative source of finance, but more importantly because this arrangement ensured a guaranteed sales market as a basis for further growth.

9. *Lack of access to bank finance becomes a more severe growth bottleneck at later stages of small enterprise development.* Evidence suggests that upgraders experienced lack of bank finance to be a more pronounced growth constraint at later stages of the company's development rather than in the beginning. Only after the establishment of reliable market linkages did entrepreneurs require larger amounts of capital for business expansion, research and development as well as to level out short-term capital squeezes. However, only very few upgraders were able to access a corporate loan. Rather entrepreneurs used private loans to fund their business as these were easier to obtain. In particular, entrepreneurs reported an array of deficits in the provision of adequate financing when aiming for corporate loans. The most salient prob-

lem is the perceived benefit and cost ratio. For most entrepreneurs handling the necessary procedures and documentation as well as the disclosure of sensitive financial information was not worthwhile in comparison to the perceived financial benefits. In particular, entrepreneurs criticized that bank officers show little understanding of sector and domain trends and thereby gave no room to adapt financial arrangements to market conditions (such as financial volume, credit lines and repayment modes, etc.).

10. *Inequality in opportunities:* The persistence of various constraints, e.g. lack of finance, lack of markets access, etc., results in the fact that only very few privileged entrepreneurs manage to upgrade while the huge majority of micro and small entrepreneurs are excluded. Upgraders have private or family savings, business connections, a good education, international experience, access to land, and relevant work exposure, etc. and are thereby able to circumvent upgrading constraints. As India lacks in many parts the provision of quality schooling, access to relevant market information and access to adequate finance, few micro and small entrepreneurs develop the skills or access the means to upgrade their business. However, even if you fix all structural constraints, this does not automatically translate into growth and upgrading of all MSEs. Not everyone has the motivation or learning capacity to become a successful entrepreneur.

Eventually, the study provides generalized as well as sector-specific policy recommendations aiming at facilitating policy lessons and interventions for entrepreneurship and enterprise development, business linkage promotion as well as adapting certain aspects in the business environment.

1 Introduction

In developing countries micro and small enterprises (MSEs) constitute a large part of the industrial fabric, which is why policymakers and scholars alike look at small-scale entrepreneurs as important development agents in society. By offering possibilities to gain income, training and work experience micro and small enterprises are said to provide livelihoods to millions of people worldwide (Altenburg / Eckhardt 2006). Moreover, donors and policymakers stylize small enterprises as drivers of private sector development.

However, the view of micro and small enterprises as being a seedbed for future enterprise growth and upgrading is open to doubt. Across developed and developing economies empirical observations suggest that most micro and small enterprises are stagnating (Mead 1994; Mead / Liedholm 1998; Cotter 1996; Fajnzylber / Maloney / Montes-Rojas 2006; Fajnzylber / Maloney / Montes-Rojas 2009). Only a minority of these firms manages to upgrade their businesses to the next level of productivity, assets and employment (Berner / Gomez / Knorringa 2008). Typically, few small enterprises pass the threshold of 20 employees. As a result, there is a "missing middle" between the poles of large and micro and small enterprises, respectively.

While the majority of micro and small enterprises (MSEs) stagnate there are some exceptional cases which actually manage progressing from micro and small into medium enterprises. This group of enterprises is termed "upgraders". At a conceptual level this process of upgrading has two constituting elements – one quantitative as enterprise growth and one qualitative as firm-level innovation: *First,* enterprise upgrading is understood as a step from a business with stagnating or declining income, productivity and employment to a business that significantly increases its income or number of paid workers. This understanding reflects enterprise growth. *Secondly,* enterprise upgrading includes qualitative improvements in products, processes and ways of organizing production mainly emphasizing the innovative capacity of firms (Schmitz / Knorringa 2000). Accordingly, this study combines both dominant understandings of firm development and defines MSME enterprise upgrading as *growth* through *firm-level innovation.*

While MSME development is of vital importance for economic progress we only know little about *what* factors support and constrain MSE upgrading and *how* these factors matter. This is because as upgrading is exceptional and there are only very few success cases which can be studied. Moreover

and most importantly, reliable panel data on (informal) micro enterprise development does not exist in a systematic and accessible fashion. This is why most of our knowledge so far relies on either qualitative in-depth case studies of clusters or industrial districts or on quantitative cross-sectional studies (mostly on already registered firms).

This study contributes to filling the gap in the empirical literature on MSE upgrading. The Indian MSME upgrading case study is part of a three-country research project aiming at studying MSME enterprise upgrading dynamics in Egypt, Philippines and India conducted by the German Development Institute (DIE). The aim of this research is to explain which factors affect enterprise upgrading and how those enterprises that graduated into higher size segments have managed to do so. Accordingly, this study is led by the following research questions:

1. *Why* do some micro and small enterprises *succeed* in making progress while others do not?
2. What are the *critical success factors* that facilitate the increase in employment, assets and production capabilities?
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In order to answer these questions this study adopts a qualitative research design by which the main objective is to identify a critical mass of successful "upgraders" and to systematically document and analyse their experiences in-depth compared to enterprises which have not upgraded ("non-upgraders"). The author is aware of the limitation of this research design as it provides only a very small sample of "upgraders" and the data allows only few snapshots on some causal relations in the process of MSE upgrading. However, the quality and depth of the data as well as the breath may be valid for the regions and sectors covered by the study.

The study comes up with 10 major messages:

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This report has six Chapters. Chapter 2 presents a conceptual framework of analysis and a short review on the theoretical and empirical literature on enterprise upgrading. It explains how we define the term 'upgrading' for our research and summarises what factors have been considered as relevant in literature for MSME upgrading. Chapter 3 gives a short overview on the definition and numbers of MSMEs in India. Chapter 4 describes our research methodology. Chapter 5 displays and interprets our research findings and thereby answers our research question. This Chapter analyses and compares upgraders and non-upgraders across sectors and at the sub-sector levels in Subchapters 5.2, 5.3 and 5.4. Finally the main messages are drawn together across sectors in 5.5. Chapter 6 concludes with policy recommendations.

2 MSME upgrading – a conceptual framework

Micro, small and medium enterprise (MSME) upgrading aims to analyse the performance and development of firms over time. The development of a firm can be conceptualised in different ways, but the most prominent research strands are focusing on enterprises growth, firm-level innovation and business formalization. In that view the following sections are firstly going to clarify the study's definition of upgrading as well as explaining the conceptual inter-linkages between innovation, growth and formalization.

Also, as a firm's performance is contingent on the interaction of a number of internal and external forces at different times of the business cycle, it makes it difficult to develop a universal trajectory of firm development. However, acknowledging the complexity and idiosyncrasy of the subject this study has synthesized some of the theoretical and empirical insights in this field to operate as an interdisciplinary theoretical base for our "onion model" used in empirical investigations. As a result, it follows in a second step a short overview of those factors that have been identified to be major determinants of the process of micro, small and medium enterprise upgrading.

2.1 MSME upgrading definition

Generally, the term upgrading has been used to indicate the need for a qualitative improvement in economic production and performance. The need to upgrade productive capabilities has been applied to different units of analysis, e.g. enterprise clusters, economic sectors, industries and latecomer economies in general. However, this paper will exclusively follow a disaggregated view on upgrading by single enterprises. Thus, the focus of attention is on the firm and its individual efforts to increase its return on investment and value added in production. Accordingly, we understand enterprise upgrading as *growth* of MSMEs through *firm-level innovation.*

The concept of enterprise upgrading has been first introduced by researchers analysing "up"- and "downward" movements of economic actors in global value chains (GVCs) and clusters (Humphrey / Schmitz 2000; Schmitz 1998; Morrison / Pietrobelli / Rabellotti 2008; Kaplinsky / Morris 2001). This strand of research mainly focused on 4 types of innovations: Product upgrading, process upgrading, functional upgrading and intersectoral upgrading (Humphrey / Schmitz 2000, 3). For this strand of research upgrading is defined as primarily qualitative improvement and thus bases its analytical strength on understanding processes of learning and innovation at the cluster and firm-level. In view of that, introducing novelty in production could be through improving products and processes as well as through upgrading into new chain functions or into new sectors (Schmitz / Knorringa 2000).

In the context of MSMEs in developing or emerging economies we understand *innovation* as a cumulative and gradual process that includes the invention, but also diffusion and adaptation of knowledge. Thus, innovation at the firm-level should not be depicted as spontaneous break-through or sudden event, but rather it should be understood as the practices of a firm which does business differently from its competitor and thereby reaps higher than average returns ("innovation rents") (Porter 1998). This relative notion of innovation allows us to study innovation with different degrees of novelty; whether it is new to the world, new to the local market or new to the firm. Accordingly, innovation in developing and emerging economies countries is defined as the process in which economic agents are required to diffuse or adapt new technological or procedural practices to a given local context (Bell / Albu 1999). This creative process implies technological learning and the capacity to adapt innovative solutions. Even

though innovative activities occur at very modest levels for small enterprises and do not reflect cutting-edge international technology, innovating at this level is inherently linked to their developmental process.

Building on the former *firm-level innovation* is defined as the major trigger for enterprise growth and development. We have adapted some of the original categorizations of upgrading and developed the following *types of innovation:*

– *Product Innovation:* Improvements within a product that have raised the average returns of an enterprise.

– *Technological Process Innovation:* Changes in the use of technologies that has led to a more efficient production or has improved the quality of a product or service.

– *Organisational Process Innovation:* Changes within the organisation of a firm which have led to a more efficient, controlled and productive business operations.

– *Marketing Innovation:* Improvements in the marketing of a product or a service. This includes the branding, packaging, placement as well as sale of product or service.

– *New Market Innovation:* Expanding the size and nature of the market through a wider geographical and/ or sectoral coverage.

Innovating does not necessarily mean upgrading. While innovating increases the likelihood of a firm's survival and development for the enterprise to upgrade the firm's innovative activities have to be translated into innovation rents; meaning de facto *above average returns* resulting from *firm-level innovation.* Thus while innovation is the trigger for upgrading it is actually the above average returns ("innovation rents") that make enterprises *grow* in profits, productivity, sales, or number of employees. Normally, innovation rents occur when enterprises perform relatively better compared to their competitors. However, there might be many cases where enterprises have innovated, yet, these were not able to reap (sufficient) innovation rents to cover initial investments, e.g. such in the case of weak property rights or very high and fierce levels of competition.

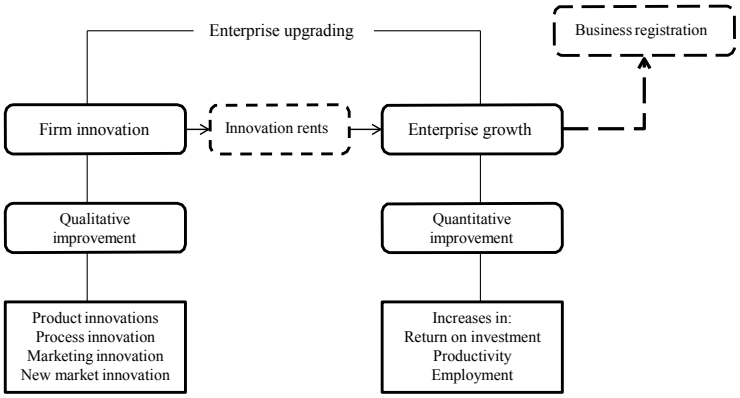
Similarly, there might be enterprises that have grown in profits or number of employees by simply expanding their economic activities in times of increasing market demand without simultaneously innovating. However, we assume that it is the qualitative improvement at the firm-level which eventually spurs long-term growth and firm-level competitiveness. Accordingly,

for enterprise growth in productivity, profits, turnover, assets or employment to happen over a longer period of time *innovation* is a condition *sine qua non.* Summing up, our definition of *upgrading* combines two central aspects of enterprises research (see Figure 2.1):

– *On the one hand,* enterprise upgrading is understood as a *quantitative* step from a business with stagnating or declining income, productivity and employment to a growing business that constantly increases its income, productivity or number of paid workers.

– *On the other hand,* enterprise upgrading also includes *qualitative* improvements in products, processes and ways of organizing production (Schmitz / Knorringa 2000). These qualitative changes allow the enterprise to reap innovation rents, increase the overall value added and become competitive in the long-term (Porter 1998).

Figure 2.1: Definition of enterprise upgrading



Source: own representation

This study does not include the *business' registration* or *formalization* as a constituting element of upgrading. Rather, formalization of a business is seen as an outcome of repeated efforts of innovation and enterprise growth. It is empirically established that firms that innovate and grow are more likely to be formalized; yet, there is little empirical knowledge on whether the sheer act of registration leads to firm-level innovation and enterprise growth.

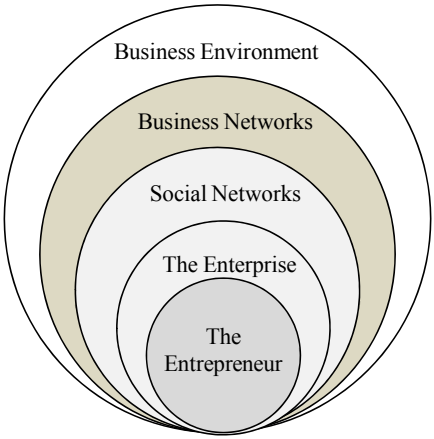
2.2 Determinants of MSME upgrading

The question why some MSMEs in developing countries innovate and grow and others do not has been subject of interdisciplinary discussions. Generally, factors as to *why* enterprises differ in their performance to innovate and grow can be divided between those that relate to the internal quality of the firm and those external to the firm.

According to this twofold categorization of factors Figure 2.2 shows the "onion model" further specifying the five sub-levels of upgrading determinants. In the one hand, factors that are linked to the internal quality of the firm are concerned with individual *entrepreneur characteristics (1)* or with *firm characteristics (2)*. On the other hand, factors linked to the quality of the external environment are focusing on the role *social (3)* and *business networks (4)* as well as factors related to the wider *business environment (5)*.

The following sub-sections will give a short overview on the analytical framework and factors affecting MSE upgrading according to whether they define a firm's internal characteristics or the firm's external environment.

Figure 2.2: Conceptual onion layers



Source: own representation

2.2.1 Internal factors

Internal factors affecting upgrading can be divided into entrepreneur and enterprise characteristics. First, as for the case of micro and small enterprises entrepreneurs maintain a very high level of control and oversight on the businesses' activities and performance (Mead 1994). This naturally implies that the characteristics of these individuals should have a major impact on enterprise upgrading. When looking at innovative entrepreneurs and their enterprises it is useful to look at their behavioural characteristics in order to identify processes that affect the entrepreneurial processes positively. Based on entrepreneurship theory there is a wide array of individual factors that should theoretically have a strong effect on enterprise upgrading. Probably, one of the most important factors will be whether an entrepreneur has the motivation to grow his or her business. Further, personal attitudes, risk taking and other psychological traits of entrepreneurs are important. Also, education, work experience and gender should also play a significant role in explaining firm upgrading. Second, characteristics at the

enterprise level such as the age, size and the founding process have been subjects of investigation in trying to explain an enterprise's growth process. Also, other factors such as informality, the education of employees, and professionalization of organisation as well as firm's absorptive capacity for knowledge have been acknowledged by several research communities to play a dominant role in enterprise development.

The role of internal factors has been highlighted most prominently by the capability approach, as represented in the literature on innovation systems, technological capabilities and absorptive capacity (Bell / Albu 1999; Giuliani / Bell 2005). This research community underlines the capacity and ability of the individual entrepreneur and his employees to access, absorb and produce external knowledge as drivers of enterprise innovation and long-term competitiveness (Afenyadu et al. 1999; Figueiredo 2002a; Figueiredo 2002b; Lorentzen 2005; Cohen / Levinthal 1990; Giuliani 2002; Camisón / Forés 2010). At the core of these approaches stand tacit knowledge and the cumulative process of economic learning. Economic learning understood as the process of imitation and adaptation of business models, ideas and technologies to local contexts is less than trivial (Hobbday 1995; Hobday / Perini 2009; Lall 1997; Romijn 1997). It requires human capital, strong motivations and reflective abilities of MSE owners and employees. With regard to these insights, behavioural research and the literature on entrepreneurship have studied the importance of an entrepreneur's motivation, creativity, risk perception and other cognitive and psychological measures in explaining enterprise development (Bates 1990; Nafziger / Terell 1996; Szirmai / Naude / Goedhuys 2011; Baumol 1990; Wiklund et al. 2011; Shane 2000; Baum / Locke 2004; de Mel / McKenzie / Woodruff 2008).

While several qualitative and quantitative studies on individual or a group of factors exist, sadly the results are mixed and provide only inconclusive evidence. With regard to particular factors the following empirical observations have been made:

Human capital, work experience and training: Being an entrepreneur is linked to the notion of a well-educated and trained professional with long years of work and industry relevant experience. Higher levels of education are expected to increase the ability of the entrepreneur to cope with problems and seize opportunities that are important to the growth and innovative output of the firm. Education is presumably related to the entrepre-

neurs' skills, motivation, self-confidence, problem-solving ability, commitment and discipline. Further, a person's search skills, foresight, imagination and communication skills are said to be enhanced by education. Practically, formal education may provide entrepreneurs with a greater capacity to learn about and absorb new information on production processes and product designs. Suggesting that entrepreneurs need to know how to upgrade this would propose a strong effect of formal education and training on enterprise upgrading.

Most empirical evidence in developing countries indicates that firms with better educated owners are more efficient, yet, the effect of formal education per se, on the propensity to upgrade is more muddled (Burki / Terrell 1998; Tan / Batra 1995; Tan 2000). Only a few studies have dealt with the relationship between human capital and economic performance at the enterprise level. While many studies in sub-Saharan Africa show that MSE owners that passed the secondary school do indeed grow more rapidly this effect is not observed for primary education (Mead / Liedholm 1998; McPherson 1991; Parker 1995). In Latin America an IDB study found that even secondary school attainment has no effect on firm growth (Kantis / Angelli / Koenig 2004). Yet, the IDB study also found that six out of every 10 Latin American entrepreneurs of high-growth firms are university graduates. Hence, it seems that the effect of formal education on enterprise performance is inconclusive.

While formal education might increase the capabilities and success of individuals it seems that knowledge and information that is needed to start and grow a business will very likely not be taught at school. De Mel et al. (2008) in their study on Sri Lanka find that compared to wage-workers parents of SME owners were having a higher schooling and also being more likely to have been self-employed themselves. This indicates that growing up in an environment in which at least one parent is self-employed may provide the incentive and access to relevant knowledge in order to start and grow a business. In this line of thought there is more qualitative evidence that in developing countries many successful entrepreneurs come from traditional trading or business communities which do have little formal education and training. Rather, these entrepreneurial communities rely on their social and business networks to spread information, knowledge and exchange business practices (Romijn 1997; Hobday / Perini 2009).

Another way to develop the more practical knowledge and skills to start and grow a business is by using work placements and other prior business experiences as informal learning environments. Also prior work experience is said to expand the entrepreneurs' social and inter-firm networks, which might constitute a source of various kinds of support. Finally, there is some discussion on whether the status of being employed in a specific industry gives also privileged access to potentially successful business ideas, which in turn increase the likelihood of new venture success. Given the complexity of establishing a new venture experienced entrepreneurs with some industry experience might be more likely to avoid costly mistakes than those with no prior entrepreneurial experience. In sum, theory implies that work experience, in particular industry experience, will increase the likelihood of firm success.

Parker (1995) found that entrepreneurs in Kenya that have worked at least 7 years prior to the small business start-up did indeed grow faster than those without prior work experience. Scholars such as Mincer (1962) have argued for a very long time that practical on the job training is nearly as important as formal education. In sub-Saharan Africa McPherson (1992; 1996a) and Parker (1995) found that entrepreneurs with vocational training and those who gained experience working in another business, owned firms that grew much faster than those owned by proprietors without previous work experience. In addition, work experience has been found to enhance professional and social networks, which are helpful in accessing financial resources, management advice and identifying business opportunities (Eifert / Gelb / Ramachandran 2005; Ramachandran / Ramnarayan 1993). Business contacts gained during past employment have been found to be a key benefit among Latin American and Asian high growth entrepreneurs (Kantis / Angelli / Koenig 2004). Finally, the literature on global value chains, clusters and technological capabilities has highlighted the role of local business networks and international linkages as providing the space for firm-level learning and innovation (Bell / Pavitt 1995; Dahlman / Ross-Larson / Westphal 1987; Lall 1987; 1992; 2001; Pack / Westphal 1986; Gereffi 1994 / 1999; Kaplinsky 2000; Humphrey / Schmitz 2002).

In sum, prior work experience matters, yet, research on particular industry-specific knowledge seems to be rather inconclusive. Further, a main challenge in interpreting the effects of prior work experience is to differentiate between three possible mechanisms. Is it the skills acquired, the networks

or the access to business ideas that makes entrepreneurs with work experience run their firms better? Although these questions are very much intertwined, they do have different implications. However, so far research on the effects of prior work experience on enterprise upgrading cannot make a clear statement regarding the mechanisms.

Motivation, risk and creativity: Most empirical research on entrepreneurs' attitudes and perceptions has been collected in industrialized economies. An entrepreneur's motivation to start and grow a business is contingent on his or her own capacities as well as capabilities to cope with a challenging environment. Accordingly, a low risk aversion has been theorized to be an essential characteristic of successful entrepreneurs. Given the absence of formal social security nets and a more instable political and economic environment one can infer that risks at the individual level in developing and emerging economies will be perceived as more severe making lessons learned in OECD countries less applicable.

Unfortunately, studies on motivation, risk behaviour, creativity and attitudes of small-scale entrepreneurs in latecomer-economies are scarce. The most prominent empirical work on this subject has be done by de Mel et al (2008) testing the relative risk aversion of SME owners, wage workers and the self-employed in Sri Lanka. Counter-intuitively, they find that successful SME owners are more risk averse than either of the two other groups. Yet, when asking more general questions about the willingness to take financial risks and risks in life, de Mel et al (2008) find SME owners to be the most willing and wage workers the least willing to take risks. Thus, the evidence on risk seems to be pretty ambiguous.

Apart from risk aversion, the literature has also proposed various other psychological measures affecting an entrepreneur's motivation to upgrade his or her business. Most prominent among the entrepreneurship literature are measures on work centrality (Mishra / Gosh / Kanungo 1990), tenacity (Baum / Locke 2004), and the need for achievement (McClelland 1985). While the first indicates the importance of work in life, tenacity shows the willingness of individuals to keep up their work under difficult conditions. Further, the need for achievement aims to capture the individual satisfaction that is obtained from doing well in a competitive environment. In developing countries de Mel et al. provide indicative evidence that need for achievement is an important determinant of firm size as SME owners tend to be more tenacious and work-motivated than own account workers and

wage workers (de Mel / McKenzie / Woodruff 2008). Further qualities quoted in the literature are the individual need to be in control over what other people should do (power motivation) and the willingness to put oneself in unknown situations (internal locus of control) (McClelland 1985). Other measures are the ability to multitask (polychronicity), organizational abilities, general optimism towards life and impulsiveness in decision-making and savings behaviour (Bluedorn et al. 1999). In de Mel et al. SME owners agree more to put themselves in new situations than own account and wage workers while the self-employed are more impulsive and less organized than SME owners (de Mel / McKenzie / Woodruff 2008). The latter also are more comfortable with multi-tasking and are more optimistic. Additionally, entrepreneurs might also be driven by not-for profit motivations such as the wish to be personally and financially independent or to have some sort of business of their own. In Kenya, Nelson and Mwaura (1997) find that personal as well as financial freedom and self-determined decision-making are valued high among opportunity-entrepreneurs and show a certain need for creativity and self-fulfilment at work.

In sum, these studies suggest that ability, motivation and a competitive attitude are the most significant factors in differentiating successful SME form microenterprise owners. However, this does not prove that particular personal attitudes or perceptions lead to enterprise upgrading. It is important to bear in mind that an entrepreneur's motivation and his attitudes develop over time. Thus, the above mentioned cross-sectional comparisons between SME owners, wage workers and own account workers cannot prove causality since outcomes may have influenced attitudes. Rather, in order to study the factors associated with employment growth one would need to measure attitudes prior to self-employment and firm expansion. In order to provide evidence on causal interferences between attitudes and enterprises upgrading longitudinal and process-oriented studies are required.

Age: Using Colombian data, Cortes et al. (1987) argued that older entrepreneurs are unable or unwilling to expand their businesses. This suggests that younger individuals may be more willing to assume risks and grow their business in contrast to matured firms that are consolidated. However, while younger individuals have more motivation to expand their business they also may have fewer financial resources and fewer networks. There is only limited empirical evidence in developed countries suggesting that the owner-manager's age tends to be negatively related to enterprise growth

(Boswell 1973; Davidsson 1991). This is also supported by a recent study in Sri Lanka where older business owners are found less likely to grow (de Mel / McKenzie / Woodruff 2008). On the other hand, McPherson (1996) tested data collected from five sub-Saharan African countries and found that the effect of age on enterprise upgrading was inconsistent.

Gender: Most studies find gender to be significantly associated with firm growth, evidence on a causal interference however is inconclusive. Much of the literature on female-led MSEs has contested that women have a limited business vision being either too risk averse or under-skilled in order to boost their businesses (Olomi / Nilsson / Jaensson 2001). They are seen as having fewer of the ingredients for success, such as "motivation", "abilities" and "ideas" (ILO 2004b). Part of the literature does contend that that female-led enterprises tend to grow slower than those run by males (Liedholm 2002; McPherson / Liedholm 1996; McPherson 1996b). Further, de Mel et al. 2008 also found that female enterprises in Sri Lanka are less likely to add employees. Although the developing country literature often construes women entrepreneurs as less likely than their male counterparts to seek firm growth, several researchers argue that this applies only to a subset of women-owned enterprises. In fact, in contrast to many simplifications there is a group of growth-oriented women-led enterprises. Categorizing MSEs only as female versus male-owned firms may create an impression of "false universalism" that disregards the heterogeneity of small firms (Marlow / Patton 2005).

Enterprise age, location and sector: Although many theoretical explanations have been forwarded to explain the relationship of firm age and business the evidence seems to be inconclusive. This is because enterprise growth and upgrading are a complex phenomenon and affected by so many other factors than age. There are a significant number of studies which have identified high growth among firms with a variety of age and size combinations. Several researchers have developed life-cycle approaches to understand enterprise development, yet, due to the heterogeneity of firms it seems rather challenging to model all the different factors, such as managerial skills, access to finance, or human resources, that become important at different stages in a firms' development (Davidsson / Wiklund 2000). The conclusion is that enterprises of different ages, sectors and locations are likely to experience growth at different stages of their life due to a variety of reasons. However, in developing countries age does not seem to be a

strong factor explaining enterprise growth and upgrading. In contrast, speaking of sectors and locations empirical observations so far have shown manufacturing and urban enterprises to be more likely to grow and innovate than enterprises being located in retail (e.g. vendors) or in rural areas.

Informality: There is overwhelming evidence that being in informality limits the growth perspectives of enterprises. Low skill levels, lack of market information and start-up capital restricts the economic opportunities of informal entrepreneurs to low return activities, such a street vending and simple manufacturing. Further, the vast amount of sub-scaled and sub-skilled businesses that produce substandard goods and services in this sector drives competition to a destructive level (La Porta / Shleifer 2011). Attempts to avoid the competition conundrum by investing in more capital or skill intensive economic activities are structurally hampered by the lack of property rights and tenure insecurities. Apart from these vulnerabilities many public and financial services are generally segmented along formal-informal lines. Informal enterprises do face even greater difficulties than their formal counterparts in accessing formal credit and assistance from law enforcement agencies and courts. Further, business opportunities with international buyers or government bodies cannot be pursued because informal firms lack the legal and/ or scale requirements in order to participate in formal contracts. Not only does informality in itself reduce the opportunities for growth, but also it is associated with several other characteristics that make growth difficult (Mead / Morrisson 1996). Even if access to credit and property rights is given, many informal entrepreneurs also lack education, technical knowledge and management experience that are necessary in order to grow. Although formality does not promote enterprise upgrading, empirical evidence suggests that registering MSEs will not unleash expected growth potentials. Although a strong correlation between formality and higher firm growth rates exist one should not infer that formalization causes higher growth rates (La Porta / Shleifer 2011). This points at the fact that being informal is not a binding constraint for enterprise upgrading; rather empirical observations support Tokman's view that informal firms structurally differ in far more aspects from formal firms than just in registratory status (Tokman 1978).

Education of employees, absorptive capacity and R&D: Knowledge-driven approaches such as analysing absorptive capacity of the entrepreneur and its employees highlight the role of technical and managerial know-how in

making enterprise upgrading happen. This requires firstly access to knowledge, but secondly also the ability to make use of that knowledge for firm operations. The latter seems to be essential for long-term growth and enterprise upgrading. Accordingly, an important part of researching absorptive capacity includes looking at organizational structures and individual capabilities that increase innovative activities at the firm level. In developing countries these capacities seem to be developed and strengthened within linkages to larger, very often foreign, firms. Yet, while knowing that a high level of absorptive capacity is important for firm performance there is only little known about how micro and small firms go about identifying and exploiting relevant external knowledge (Giuliani / Bell 2005).

2.2.2 External factors

Factors external to the firm include those associated with social and business networks as well as characteristics of the wider business environment (see Figure 2.2).

The role of social and business networks has been drawn attention to by scholarly fields such as economic sociology institutional and evolutionary economics. In particular, research on *inter-firm and social networks* has shown how relational aspects affect enterprise development (Powell 1990; Granovetter 1982). In contrast to formal modes of coordination, such as through markets or hierarchies, networks are considered to be informal modes of economic governance which drive enterprise upgrading through collective efficiency and collective learning (Meagher 2010). Further social and business networks are access points for information, knowledge, advice, finance and markets. This idea is most prominently reflected in the literature on global value chains, industrial clusters, innovations systems and social capital (Humphrey / Memedovic 2003; Humphrey / Schmitz 2000; Morrison / Pietrobelli / Rabellotti 2008; Nadvi 1995; Baumol 2001). However, while some promote inter-firm and social ties as gap-fillers for the lack of state action, others identify tight and exclusive networks as the problem rather than the solution for enterprise upgrading. In particular, research on the informal sector in Africa depicts social and communal ties as dysfunctional or even as fetters of economic development leading to economic decline, clientelism and fragmentation (Collier 2007; Castells 1996).

Recently, there has also been a strong research and policy focus on the role of the wider institutional and regulatory business environment in constraining or enabling enterprise growth and innovation (Eifert / Gelb / Ramachandran 2005; De Soto 1989). Advocates of this line of thinking argue that overburdening regulations, informality and the lack of finance are major constraints hampering small enterprise development (Klein / Hadjimichael 2003; Beck / Demirgüç-Kunt 2006; Safavian / Fleisig / Steinbuks 2006; Klapper 2006; Ayyagari / Demirgüç-Kunt / Maksimovic 2006; Beck 2007; World Bank 2007; World Bank 2008; Sharma 2009; World Bank 2011). According to their analysis, the deregulation and simplification of bureaucratic procedures, the protection of property rights, and efforts to formalize informal businesses will unleash enterprise growth. Moreover, another strand of research argues that improving MSE's access to finance would support and expand their economic activities (Beck / Demirgüç-Kunt / Maksimovic 2005; Beck 2007). This is reflected in popular micro-lending and savings initiatives administered such as through Grameen Bank or ProCredit. Further, research has drawn attention to the role of physical infrastructure, access to energy, markets and information as enabling conditions for enterprise growth and innovation (Singh 2002; Cawthorne 1995; Weijland 1999; Knorringa / Weijland 1993; Davis et al. 2001; Lall / Pietrobelli 2002).

Though not exhaustively, the following paragraphs will list some of the most salient external factors affecting enterprise upgrading:

Business networks: Individual firms are found to foster horizontal as well as vertical linkages with other firms. Horizontal linkages describe the relations between similar firms, while vertical linkages describe a firm's forward and backward linkages with buyers and suppliers. Both types of linkages are found to influence a small enterprise's propensity to upgrade. Much research on horizontal inter-firm linkages and their benefits for small firm manufacturing is related to the analysis of production clusters or industrial districts in developed and developing countries. A cluster is defined as a group of firms specialized by sector, located in close geographic proximity, and comprised of mostly micro, small and medium sized enterprises (MSMEs). This line of research asks how "collective efficiency", namely horizontal cooperation and competition, affect the innovate capacity and competitiveness of firms located in clusters (Schmitz 1995a). Further research has evolved around the issue of vertical integration of pro-

duction clusters and firms into global value chains. Value chains are vertical linkages that connect economic actors, buyers and suppliers, along a specific product chain from the input, manufacturing, branding, marketing to the final stage of consumption and disposal (Kaplinsky / Morris 2001, 4). Accordingly, global value chains are seen to be the major mechanism through which developing countries' producers engage in trade with developed countries (Gereffi 1994). Prominent themes in this strand of research have been the organisation of global economic production and distribution processes as well as the opportunities for growth and upgrading of suppliers in emerging and developing economies (Boomgard et al. 1992; Humphrey / Schmitz 2000; Porter 1998). While 'collective efficiency' perspectives have shown that horizontal linkages help to create tight local cooperative networks and competitive dynamics that overcome growth constraints und spur innovative capacities of small firms, global value chain analysis has highlighted the role of external linkages that integrate local firms into global markets and new power relations (Gereffi 2002; Humphrey / Schmitz 2004; Bair 2005).

Most studies indicate that horizontal and vertical inter-firm linkages contribute to long-term firm competitiveness through individual and collective learning processes (Altenburg / Eckhardt 2006; Humphrey / Schmitz 1996; Schmitz 1995b). Yet, for learning processes to thrive, a simple rule applies. The positive dynamics of horizontal networking strongly depends on the quality of these networks, meaning the level of knowledge and skills they entail. Taking this into consideration, one will clearly see that a network among equally poor micro-entrepreneurs is not delivering the above quoted benefits of horizontal linkages. While networking among already successful and competitive medium-sized to large firms will further enhance their competitiveness, horizontal linkages between bad performers, such as necessity entrepreneurs with little business knowledge and technological capabilities, will rarely pave the way to enterprise growth and upgrading. This is because exchanges may not entail the sort and quality of information and resource that are needed for learning processes and improvements to occur. There are simply only limited possibilities for MSEs to learn from each other. Accordingly, horizontal networking is not providing learning opportunities *per se.*

Research indicates that among firms that are still at an early stage of development vertical linkages with buyers are more likely to initiate growth

dynamics than do horizontal linkages. This is because linkages with buyers expand an enterprise's capabilities and learning possibilities, which in turn increases business and growth opportunities (Schmitz / Knorringa 2000). Especially larger and global operating buyers might offer training, technical information and other forms of assistance to suppliers making sure products are delivered in good quality and in a timely fashion (Berry / Rodriguez / Sandee 2002; Daniels 1999; Nadvi 1999; Tewari 1999). Yet, buyers may be reluctant to source from micro and smaller firms due to the missing quality standards and insecurities with regard to deadlines, flexibility and learning abilities. This is related to the missing intermediaries, the medium-sized enterprises that bridge the gap between supply-side capabilities of small producers and demand-side requirements of global buyers (Yumkella / Vinanchiarachi 2003). Indeed, for most MSEs in developing countries, the challenge is to establish linkages with medium-sized companies, never mind larger companies or global buyers. In fact, the inter-linkages of MSEs with modern medium-sized or large enterprises are weak. Since many MSEs do not specialize and are therefore unable to fill in left-over niches from large scale production, prospects for growth or upgrading through global value chains are either limited or non-existent. Accordingly, most MSEs, traditionally located in labour intense and low-value-added chain segments, are rarely exposed to the kind of networks that allow for knowledge spillovers and capability development (Cawthorne 1995).

Social networks: While the use of inter-firm linkages is common among medium and large enterprises, the majority of micro and small enterprises rely mostly on social or interpersonal networks to access financial resources and knowledge. In developing countries where market failures are most prevalent tight social networks constitute the major source of finance, advice and support for micro and small entrepreneurs. Especially when states are unable to provide basic services, social capital based on family relations and kinship provides a cushion against hard times. Further, if formal institutions, e.g. courts, regulatory bodies, are absent or weak, tight social relations can help to regulate business transactions. This can be facilitated through informal institutions and social capital, such as trust, which reduces transactions costs, or reputation, which ensures contract enforcement.

A major theme present in research on social networks is that of social capital defined as the norms and ties that enable people to act collectively

(Portes 1998). Social capital can be based on the firm owner's family and friends, but also result from shared experience, purposes or beliefs across communities and societal groups. Accessing social capital among similar or quite homogenous networks, such as family, is very often described as *bonding,* while *bridging* describes collective action that arises across heterogeneous groups in society (Putnam 1995). Research on the private sector in developing countries has shown that successful MSEs very often arise from particular ethnic groups or classes in society. In a cross-country study on entrepreneurship Leff (1978) finds that economic power is very often concentrated among ethnic groups. For example, Taeube (2004) analyses the societal composition of the information and technology centres in Bangalore, Hyderabad, and Chennai, and finds that the industry is largely controlled by Brahmins, traditionally the priestly and knowledgeable caste group. The common and hospitable attitude towards education and learning among the cast of the Brahmins is very likely to have had a positive effect on the development and infrastructure of the evolving software industry in this region (Taeube 2004).

Having a supportive network can be a valuable asset for individual entrepreneurs, however, the social and cultural embeddedness of entrepreneurship also holds various drawbacks for economic development (Hobday / Perini 2009). For example, studies in Kenya, Zimbabwe and Nigeria show how the embeddedness in strict social and political production networks can either limit or promote entrepreneurial innovation (Sverrisson 1993; Meagher 2010). Intra-household dynamics can pressure the entrepreneur to use his or her profits for consumption at the cost of maybe more productive investments, such as in new technologies or training. The requests of the entrepreneurs' family for profit distribution is often found to be a common growth barrier for small-scale business in Africa and Asia, especially among women entrepreneurs (Meagher 2010; Geertz 1978). Thus, social networks can produce a sub-optimal environment for inclusive economic development. This is the case when social capital is reproducing inequalities. Where business networks along social, ethnic or political lines exist these have been found to be very exclusive.

Macroeconomic and political stability: Unsteadiness in the economy as well as in the political environment has shown to affect private sector development. The attainment of a stable political and economic environment provides a fertile ground for a flourishing private sector; however, there is a

debate on which policy measures ensure macro-economic stability most effectively. Most researchers agree on the overall importance of a stable inflation rate, stable growth and healthy public and private balance sheets for economic development (Ocampo 2005). Researchers found that in a survey of 5000 micro and small entrepreneurs in Ghana the three most mentioned problems were inflation, high interest rates for credits and the depreciation of the local currency (Robson / Obeng 2008). The relative price volatility has also been reported to be an issue for MSE growth in several other sub-Saharan African and Latin American countries (Tybout 2000). It seems that MSEs are more affected by inflation and exchange rate volatility as they have worse access to financial markets than larger firms. This is also reflected in an IFC survey including 10,000 firms in 80 countries where these concerns were more prominent reported by smaller enterprises (Schiffer / Weder 2001). Accordingly, it seems obvious that enterprises tend to grow and upgrade more often in times of economic stability (Liedholm 2002).

Competition: In his influential work Porter (1990) showed that a domestic market based on competition prepares and enables domestic enterprises to compete in international markets. He found a strong association between inter-firm competition and industry competitiveness. Looking at transition economies Djankov and Murrel (2002) find that more competition in product markets incentivizes firms to lower their costs. Further, research in the UK has shown that competition encourages productivity growth (Nickell 1996). In developing countries Tybout (2000) analyses firm and job turnover in industrial plants and finds that competition successfully functions a selection mechanism to filter those plants that are least productive. Case studies in Korea, Indonesia and Tanzania provide indicative evidence for the positive impact of trade liberalization, competition and competition policies on industrial development (Kim 2000; Bartel / Harrison 2005; Kahyarara 2004).

However, there is also compelling historical evidence that economic development and firm upgrading have been maintained though protectionist policies such as those that have been employed in several countries in East Asia (Singh 2002; Aw / Chung / Roberts 2003). In fact, research by Aghion et al. (2005) suggests that the relationship between competition and innovation has, in fact, a U-shape. This indicates that both very high and very low levels of competition are being counter-productive for enterprise upgrading. As individual enterprise development in low- and middle-

income economies strongly depends on factor, imitation and technological catching-up these processes might only enfold with a medium degree of market competition, while in advanced and knowledge-based economies competitive pressures will push frontier innovation (Acemoglu / Aghion / Zilibotti 2003).

Infrastructure and access markets: Geographic isolation due to missing physical infrastructure as well as structural invisibilities due to missing institutional trading networks hampers access to markets for most MSMEs, in particular those in rural areas. Accordingly, in terms of physical infrastructure the availability of transport, information and communication technology as well as the provision of energy should have a strong impact on enterprise upgrading. Referring to the literature on economic agglomeration, there is abundant evidence that geographical isolation hampers the exchange of information as well as lowers the availability of external finance and institutional assistance.

Further, Weijland (1999) in her study on Indonesia shows that apart from physical isolation MSMEs are mostly restricted in their market outreach because of a limited or weak embeddedness in trading networks. Staying in an institutional isolated context restricts micro and small entrepreneurs to a particular type and quantity of a product or service. In fact, most MSMEs supply to local markets selling basic low-quality products or services. Others, more privileged entrepreneurs are able to circumvent certain market limitations by using middlemen and middle women to market their products. Traders can reduce the costs of transport, share information and knowledge to improve production as well as provide other technical and financial services. The literature on clusters, in particular, has highlighted the role of traders in expanding the reach of MSMEs by connecting them with markets that have increasing demand (Knorringa 1994). This pull of demand however is related to various developments starting with micro-level changes, such as a raise or fall in the average household incomes, up to macro policy changes, such as in the adoption of a new trading or industrial policy orientation, and it is the middlemen who are about to decide and react upon these changes leaving MSMEs strongly dependent. Yet, while traders have the potential to connect geographically or economically isolated MSMEs with markets with effective demand this does not imply that highly dependent units will get enough returns to upgrade. Rather, the quality as well as power distributions of and along a market channel will impact on whether a MSME upgraders or not (Knorringa 1994).

Regulatory framework and taxation: Recent work by the World Bank on private sector development has highlighted the role which economic institutions and regulatory policies play in affecting business outcomes (Djankov et al. 2002). The distinction of regulation in a lot of recent academic and policy-oriented work is driven by the rediscovery that institutions matter for economic growth (Rodrik 2005; North 1992; Acemoglu / Johnson / Robinson 2001; Acemoglu / Johnson / Robinson 2002). This is because economic institutions shape the incentives of key actors in society as they influence whether entrepreneurs register their businesses, whether they invest in physical or human capital or whether they adopt new technologies or new forms of firm organization.

It is now commonly acknowledged that the existence of mechanisms for property right protection, contract enforcement and dispute resolution are crucial to ensure a consistent *modus operandi* for businesses in order to know and assess risks. Further, it has been widely accepted that investments in education and health contribute to the overall quality of labour supply, but are also being important for development in general. Yet, there exists an old debate between neoclassical and structural approaches on whether extended public measures and regulatory policies will promote or hamper the private sector. While more traditional approaches have tended to highlight market failures, more recent perspectives highlight government failures as main impediments for private sector development.

Indeed, some institutions might be more efficient and effective than others in setting entrepreneurial incentives, however, while much research has shown that institutions matter there is little standardized knowledge on which institutions matter across all countries. To demonstrate there is no empirical evidence on the relation between the level of regulation and the micro/ macro-economic performance of a country (Eifert 2007, 42; Gørgens / Paldam / Würtz 2005, 16). Consequently, it is not proven that deregulation will automatically unleash entrepreneurial dynamics everywhere. Although excessive regulation is certainly problematic for businesses across all sizes and regions, no regulation at all neglects the fact that creating a business enabling environment involves more than the simplification of procedures or the lowering of corporate taxes (Altenburg / von Drachenfels 2006; te Velde 2006).

In order to understand why some countries do not have thriving economic sectors it is necessary to clarify why their institutions might be dysfunc-

tional in providing the conditions for economic growth and enterprise upgrading. For this to happen, we shouldn't only look at the costs of regulation but also at the perceived benefits of registration and formalization for firms in developing countries. Evidence suggests that in developing countries it is the perceived benefit that restrains informal enterprises from registering (Tokman 2007). Furthermore, looking into the informal sector most economic activities are undertaken by necessity entrepreneurs that act in low-quality, low-skilled and low-demand markets. Consequently, here the policy treatment would rather include the improvement of public service provision and targeted training for potential opportunity entrepreneurs to improve quality and create linkages with larger, productive enterprises. Informed policymakers should therefore keep in mind that while informality is a problem entrepreneurs in developing countries are confronted with a multitude of additional constraints to growth that hinder small firms from improving productivity. This could also mean that countries need more instead of less regulation depending on the kinds of growth constraints they face.

However, business constraints do change in relation to context and time. While private sector development in high income countries is driven by (frontier) innovation, businesses in relatively backward economies follow a developmental path of technology adoption and imitation to drive the private sector and economic growth. As a consequence requirements of these businesses and binding constraints change along the process of economic development. Institutions and regulatory frameworks need to adapt to these changing needs. Further, apart from specific private sector needs, appropriate measures will have to reflect the underlying political and socio-cultural conditions of economies.

Corruption: The theoretical literature suggests that corruption can have positive as well as negative impacts on firm growth. On the positive side, corruption can be an efficiency enhancing mechanism to reduce delays in obtaining licences or other public services (Huntington 1968). On the negative side, it can bias the allocation of private and public resources towards entrepreneurs who have the means to distort the provision of common goods and services (Shleifer / Vishny 1993). The latter especially would affect the upgrading efforts of smaller and poorer entrepreneurs; still, due to the rather difficult access to data on corruption, few empirical insights on the mechanisms and effects of corruption exist. Yet, Sequeira and Djankov (2009) in their experimental study on ports in Mozambique have provided

evidence that public officials and bureaucrats act as price discriminators in determining the access to ports. Further, they have found that these practices have significant economic consequences indicating that a firm's growth is substantially hampered. Similarity, though based on perception data, Svensson (2003) and Fisman and Svensson (2007) have provided empirical evidence that bribes reduce firm growth.

Access to finance and BDS: Access to formal finance can reduce financing constraints; it can help to grow businesses to their optimal size and provide the financial investments for product, process and organizational innovations. As a result, many scholars have asked the question *why* firms, especially small-scale enterprises do not access and use bank finance, particularly in developing countries. There are a variety of theoretical explanations which can be divided into supply and demand based arguments.

Considering the supply side many studies observe that most developing countries' financial markets are underdeveloped and do not provide enough "finance for all" (World Bank 2008). The high level of uncertainty usually associated within the group of micro, small and, to a lesser extent, medium enterprises means it is difficult for lenders to assess the risk of an investment. In general, due to problems of adverse selection and moral hazard, banks tend to exclude a large part of the population, especially the poor. The lack of collateral as well as the small scale of operations makes most investors reluctant to serve poorer and small-scale entrepreneurs. Many formal lending organizations and banks might miss to provide appropriate products and services adapted to the specific needs of poorer target groups. For instance, loan sizes may be too big, fees too high, repayment timelines too short and application procedures too complicated. For instance, in Georgia, Nepal, and Uganda, the minimum SME loan amount is 20 times GDP per capita and the processing of an SME loan application in Bangladesh, Pakistan, and the Philippines takes more than a month, while it takes only up to two days in Uruguay and Denmark (World Bank 2008, 49 f.). Thus, it seems that the needs of smaller businesses are not taken adequately into account. Another reason for low demand might be that micro and small entrepreneurs are reluctant to take out loans when personal assets are required as collateral. World Bank research indicates that this is a common practice for new venture finance. Across income groups younger firms are almost twice as likely as older firms to use the owner's personal assets as collateral (World Bank 2008). This practice might discourage taking out

formal loans as personal assets constitute a social security device that prevents poor households from slipping below a subjective poverty line. Regarding the probability of income shocks in developing countries to poorer households, it is therefore not surprising that a high risk perception will lower demand for formal finance. However, while forwarding supply-side factors when explaining the finance gap, such as geographical outreach, eligibility criteria, and affordability of loans (bank charges), is quite common in the policy arena research indicates that actually demand for formal finance might be overestimated.

Taking into account the volumes that have been written on access to finance, it is astonishing that relatively little empirical evidence exists that links access to finance to development outcomes, and enterprise upgrading in particular (World Bank 2008). Few empirical studies have explicitly tested the impact of access to finance on MSE upgrading, and therefore it is still unclear whether credit represents a binding constraint. So far, in terms of microfinance impact, research has shown that MSE being financed by external sources are more efficient, yet, no clear conclusion about the role of microfinance in explaining enterprise growth could be drawn (Hernández-Trillo / Pagán / Paxton 2005). This is due to a classical selectivity problem, in which creditors choose the most promising and capable entrepreneurs among a group of potential applicants. A study in Kenya based on a random sample of 225 micro and small enterprises argues that credit access is not a significant determinant of firm performance (Akoten / Sawada / Otsuka 2006). Showing that those factors associated with access to finance do not correspond to those associated with firm growth and profitability, the results indicate that enterprise growth might actually be driven by something else. Also Karlan and Zinman (2009) observe that the treatment effect on investment activities of Filipino firms was the strongest among male and high income borrowers, who are not the typical target group of microfinance institutions. Further, recent results based on a randomized field experiment in Ghana cast doubt on the view of credit constrained microenterprises that will grow immediately once finance is provided (McKenzie et al. 2011). Although the authors find a positive effect on profits for both females and males, they also find that for women with initial profits below the median, capital alone does not stimulate growth. These results imply that finance and capital are a primary constraint for some groups of micro-entrepreneurs, but not for all. Further, it also points at the way of how funding is provided has a crucial effect on whether firms increase business profits. These caveats

cast doubt about how much we actually know about the effects of finance on firm growth, and whether finance is really the most binding constraint for enterprise upgrading.

Further, small-scale entrepreneurs need tailored business advice and development services (BDS)[2] combined with financial measures to develop their full potential. However, so far research on the effectiveness of BDS in developed countries has only produced negative or mixed results, since much of the relation depends on the content and quality of BDS (Westhead / Birley 1995; Robson / Bennett 2000). Due to the heterogeneity in definitions and practices in BDS no general statements can be made.

2.3 Trajectories of upgrading

All told, while in a given context some factors will be more important than others, there is no such a thing as a 'recipe' for enterprise success or a 'theory' of firm development. This is not a new insight. Empirical research in many countries has shown that monocausal approaches fall short in explaining the very idiosyncratic and cumulative process of enterprise upgrading. The heterogeneity among micro and small enterprises across and within countries in terms of business environments, interconnectivity with networks, abilities and strategies implies that along the way different factors will play a role at different times.

Yet, while this causal complexity shall be acknowledged, research insights on enterprise development should not be claimed relative up to the point of irrelevance. Rather, collecting insights from different research fields might contribute to understanding the puzzle as to why some enterprises, and not others, manage to upgrade. This should include an investigation in the relative importance of factors, but also improve the theoretical foundations of how micro and small enterprise development takes place in developing and emerging economies. What are the roles that micro and small enterprises can play in a growing and modernizing economy, and are these roles changing in times of technological advances? Are there any points of leverage for

2 Classical BDS normally cover areas such as education, management, marketing skills, technical know-how, access to markets, and information, as well as physical infrastructure.

the development of traditional enterprises and what are the trajectories that enterprises can use for orientation?

Due to the idiosyncrasy of firm development there are only very few answers to these questions. However, economic theory tells us that micro, small and medium enterprises have certain intrinsic advantages. First of all, micro and small enterprises are theorized to have advantages in specialisation, scope economies, as well as in the control and supervision of internal activities by the owner. Further, the term "flexible specialisation" coined by Priore and Sabel portrayed a trend in industrialization that was driven by the rejection of Fordist production methods and foresaw the rise of MSMEs. In contrast to mass production, small companies are regarded to be quick and flexible in their decision-making as well as in their production of small batches for ever changing, unstable markets. The main idea was however that the flexibility and adaptability of small firms is generated by the interlocking coordinating mechanisms of enterprise networks. MSMEs would cooperate with other MSMEs while also interact in economic exchange with larger companies either as suppliers, subcontractors or buyers.

However, in developing countries few MSMEs actually specialize or follow post-Fordist production methods. In the small industry sector most enterprises produce a variety of goods that are meant for mass consumption rather than niche markets. In turn, many MSMEs find themselves in a situation of fierce competition and decreasing returns. In this setting, most own-account workers are merely a symptom of disguised unemployment rather than the symbol of entrepreneurial dynamism. Consequently, most units have no intention to grow and formalize as entrepreneurship is born out of necessity rather than opportunity. Therefore, the vast majority of smaller units stay in the informal economy in which they can access cheap labour and order low volumes of raw materials while avoiding incurring costs through the compliance to tax laws and other social and environmental regulations. Traditionally, MSMEs either offer non-tradable goods or services to a large pool of low income consumers or they cater to high-income consumers in a particular product range. During times of economic growth and expanding markets these units are likely to grow in size; however, few companies adapt internal business practices and invest capital in restructuring the enterprise. Thus, these traditional units can grow and expand for some time, yet, in the long run the long run these units will die due to price pressures and cut-throat competition.

According to historical observations, these traditional micro and small (mostly household) units are typically supposed to disappear in the course of industrialization. It is therefore of crucial importance to understand how different scenarios and upgrading trajectories of existing MSE units in developing countries could look like and whether we can develop typologies. While understanding the development of traditional and modern micro and small firms is the main objective of this study tries to learn from success cases of firms, in Morris et al. (2000) different stylized scenarios of how MSMEs could transform and upgrade into successful MSMEs enterprises with higher levels of productivity are presented (Morris et al. 2000, 50 f.). While these scenarios are not truly clean-cut and exhaustive types, they represent a rough classification of different developmental paths for enterprises in India. They suggest three successful scenarios for MSMEs to upgrade: (i) transforming traditional firms, (ii) growing trader manufacturers and (iii) firms at the beginning of the "high road":

(i) *Transforming traditional enterprises:* These firms adopt modern technology and source modern capital goods while simultaneously adapting labour processes in their efforts to upgrade. While some micro and smaller units might choose to scale up existing production volumes to reach economies of scale through technology adoption others might switch their product or service portfolio completely to continue business. Generally, these firms started operations as subcontractors or "job workers" to larger production or marketing units. Most likely in the case of manufacturing these sort of enterprises have taken over responsibilities in assembling or finishing while service firms commonly take over assignments in customer care and service delivery. By and large, transforming traditional enterprises have the potential to become independent producers if scaling up production volumes. Thus, in this kind of upgrading trajectory the modernization through technology is crucial though in some areas labour-intensive parts of production will either be kept integrated or outsourced further down the value chain. For example, certain industries have shown to undergo modernization such as the introduction of power looms and embroidery machines in textile and garment processing units. Similarly, many traditional units in the leather goods and tanning business have modernized with the advent of new chemicals and treating methods, yet, while adopting latest technologies leather goods and footwear produc-

ers are still running labour-intensive production phases. In the latter case, efforts to increase organisational efficiency by introducing higher degrees of product specialisation as well as labour division have paved the way for upgrading.

(ii) *Growing trader manufacturers:* These enterprises manufacture and trade at the same time, while most of these units have actually started out as traders for specific or more varied sorts of goods. Accordingly, trader manufacturers have adopted either vertical integration or subcontracting as strategies to upgrade. Trader manufacturers normally keep a core size of staff to cater a medium production volume, however, through their extensive network of subcontractors and job workers trader manufacturer can change production to variable degrees of scope and scale. This "chameleon approach" to economic production has proven to be particular viable in instable economic environments characterized through fast expanding and contracting markets. However, as an important precondition these types of upgraders strongly rely on local clusters and dense trading networks in which access to raw materials, intermediate goods and (informal) financial services are existent. Mostly, trader manufacturer can be found at various production stages in traditional industries such as textiles, garments, leather, foundry, pharmaceuticals, machine tools or food processing among others.

(iii) *Traditional and modern firms at the beginning of the "high road":* Pyke and Sengenberger (1992) introduced firms at the beginning of the high road as those that were developing competitive advantages by reorienting their production towards niche markets. Enterprises following this trajectory either make use of modern technology or focus on the preserving craftsmanship. Either way in the process of specialisation and customization the labour-output ratio does not change much due to the nature of economic activities in this sector requiring a high level of supervision and quality control. Enterprises aiming for the "high road" aim to gain a price premium based on the quality, marketing or branding. Accordingly, these firms offer services and products to high-end but also emerging middle-class market segments in domestic and foreign markets. In particular, middle and high-end markets have shown to grow rapidly in the case of India providing many MSMEs opportunities to transform their portfolios. However, it shall

be mentioned that a strategy towards craftsmanship or specialisation *per se* does not necessarily lead to growth in cases where firms are dependent on a merchant's capital and his or her marketing channels, and where no effective demand can be sustained in the long-term.

3 Micro, small and medium enterprises (MSMEs) in India

There exist many ways, definitions and threshold levels on how to categorize MSMEs. While the most common criterion for defining MSMEs is the level of employment in the Indian context, the level of cumulative investments in plant and machinery or equipment has been chosen as the defining elements (Ministry of MSMEs 2012). Under the MSME Act in 2006 enterprises have been defined by the present ceilings[3] on investment to be classified as micro, small or medium enterprises is defined as follows (see Table 3.1):

Table 3.1: Indian MSME definition according to MSME ACT 2006

	Manufacturing Enterprises	Service Enterprises
Micro	Up to Rs.25 lakh (US$ 50 thousand)	Up to Rs.10 lakh (US$ 20 thousand)
Small	Above Rs.25 lakh (US$ 50 thousand) & up to Rs.5 crore (US$ 1 million)	Above Rs.10 lakh (US$ 20 thousand) & up to Rs.2 crore (US$ 0.40 million)
Medium	Above Rs.5 crore (US$ 1 million) & up to Rs.10 crore (US$ 2 million)	Above Rs.2 crore (US$0.40 million) & up to Rs.5 crore (US$ 1 million)

Source: Ministry of MSMEs (2012)

3 Excluding land and building, based on the historical exchange rate of US$ 1 = Rs.50 (April 2009).

Due to the idiosyncrasy of firm development there are only very few an-Before the adoption of the MSME Act in 2006 the institutional set-up of the industry was organized according to the classification of tiny and small enterprises as Small Scale Industries (SSIs), which excluded enterprises with investments bigger than 1 crore for manufacturing and bigger than 10 lakh for service enterprises. Accordingly, ceilings were lifted upwards. While in 2005 the Small Scale Industry Sector counted about 12 million units, under the new classification of the MSME Act in 2006 this number had increased by more than 110 per cent to the value of 26 million MSME units (Ministry of MSMEs 2012, 23). The number of total units for the years 2010-11was estimated to be around 31 million providing employment to more than 60 million people (ibid.). According to the most recent 4th All-India Census of these 26 million MSMEs, only 1.5 million are in the registered segment, while the remaining 24.5 million (94 per cent) are in the unregistered segment.

As a result, the MSME sector in India is highly heterogeneous in terms of the size of the enterprises, in the formal nature of operation, in the variety of products and services produced, in the levels of technology employed as well as in the nature of employment relations. This heterogeneity as well as the unorganized nature of the Indian MSME landscape are important facts to be taken into consideration when studying enterprise innovation and growth.

4 Research methodology

The Indian MSME upgrading case study is part of a three-country research project aiming at studying MSME enterprise upgrading dynamics in Egypt, Philippines and India. The aim of this research is to explain which factors affect enterprise upgrading and how those enterprises that graduated into higher size segments have managed to do so. Accordingly, this study is led by the following research questions:

1. *Why* do some micro and small enterprises *succeed* in making progress while others do not?
2. What are the *critical success factors* that facilitate the increase in employment, assets and production capabilities?
3. *How* does the *process* of micro and small enterprise upgrading unfold?

While enterprise upgrading is of vital importance for economic development we only know little about what factors matter and how they matter in the process of upgrading. The major reason for this knowledge gap is threefold:

(i) *The incidence of the phenomenon:* Upgrading among MSMEs is exceptional and there are only very few success cases which can be studied.

(ii) *Availability of data and methodologies:* Enterprise upgrading is a phenomenon that happens over time and therefore should ideally be researched longitudinally. However, reliable panel data on (informal) micro enterprise development does not exist in a systematic and accessible fashion. This is why most of our knowledge so far relies on either qualitative in-depth case studies of clusters or industrial districts or on quantitative cross-sectional studies (mostly on already registered firms). While the former provides some insights into the mechanics of the dynamics of collective action there is only little that we know about upgrading processes of MSEs at the firm-level. In contrast, most quantitative and cross-sectional studies on enterprise development only observe associations and are therefore limited in their explanatory power. Moreover, researching informal MSEs many of the 'soft' variables and heterogeneity in aspects such as the internal quality of enterprises, e.g. capacity and skills, is rather challenging to incorporate in quantitative designs.

(iii) *Conceptual orientation:* Previous research on enterprise development made it clear that enterprise success is not a mono-causal story but one of different factors coming together allowing for development to take place. The literature differentiates between critical success factors internal and external to the firm. Recently approaches have forwarded explanations mainly focusing on the role of external factors, such as a favourable institutional and regulatory environment as well as access to credit, while internal factors, such as firm strategy, skill base and absorptive capacity for external knowledge have been taking a backseat. Yet, while most researchers agree that both types of factors matter the theoretical literature on these combinations is ambiguous. Thus, more research is needed, which tries to understand how firm characteristics match with external factors in explaining "combinations of success" in MSE upgrading.

This study will veer away from the aforementioned traditional methodology. The major assumption of this research is that learning from the individual as well as aggregated experiences of upgraders might inform theory and shed more light on the dynamics in which different internal and external determinants affect upgrading. As a result, the main objective of this study is to identify a critical mass of successful upgraders and to systematically document and analyse their experiences in-depth. In line with the former, we choose a qualitative and rather explorative design to allow subjects being studied to give 'richer' answers to questions put to them by the researcher, as well as to help capturing determinants which might easily be missed by other methods.

4.1 Research design

In order to answer the research questions we have conducted empirical research in India covering the National Capital Region (NCR), Jaipur (Rajasthan) and surrounding as well as northern parts of Tamil Nadu, including Chennai. This study covers the Information and Communication Technology (ICT), the Textiles and Garments (T&G) and the Leather and Footwear (L&F) sectors. The core element of our research mission was a survey with 93 entrepreneurs which consists of two samples: upgraders and non-upgraders. Both samples were purposively sampled based on the criteria explained in the following section 4.2. While this study covers three different sectors in three major regions, the comparison and effect of regional differences could not be optimally exploited and analysed due to geographical differences in the prevalence of sectoral activities.

We had the following three general objectives when interviewing upgraders and non-upgraders:

(1) to find out about the *main differences* between the characteristics of upgraders and non-upgraders in order to identify the main reasons why some MSMEs are able to upgrade while others are not, and

(2) to hear from MSMEs what they *perceive* as the *main determinants of upgrading* in India in their respective sectors and economic activities i.e. the most important constraints and success factor for their upgrading efforts,

(3) to hear from MSMEs how they underwent the process of upgrading of their businesses; whether successful or not.

MSME interviews: We used two methodological tools when interviewing entrepreneurs: (a) structured questionnaires and (b) open in-depth interviews:

(a) The structured questionnaires included closed and open-ended questions to the entrepreneurs' background and the characteristics of his enterprise. In this step interview partners were filtered according to the definitions of what we regarded as upgraders and non-upgraders (see Chapter 4.2). Further questions on the individual firms' upgrading experience were categorized into 5 groups of questions, reflecting the internal and external factors identified as relevant for upgrading in the 'Onion Model' (please see Chapter 2.2 and Figure 2.2). Accordingly, we asked entrepreneurs about their background, about characteristics of their enterprise, their social and business networks as well as about their embeddedness in and perception of the business environment. In this part of the questionnaire we used structured as well as open questions to allow for comparability as well as for specificity of cases.

(b) After answering closed and open-ended questions on all layers of the 'Onion Model' we used an additional methodological tool to understand the relative importance of factors from the perspective of the interviewed entrepreneur: *The Ranking* and an open *In-Depth Discussion.* These exercises were implemented in two steps. First, after finishing the closed interview section the interviewee would be going through the individual onion layers with the help of visuals to make sure entrepreneurs would understand what factors defined and belonged to which layer of the onion. Secondly, interviewers would ask entrepreneurs to *rank factors* from 1-5 (most important – least important) according to their impact on the enterprises' individual upgrading experience. Within this part we asked upgraders to differentiate between (a) factors that had a positive impact on the enterprise upgrading efforts and between (b) factors that were constraining their efforts to upgrade. The same exercise has been done with non-upgraders however, in these cases we asked entrepreneurs to first name (a) factors that have withheld or constrained upgrading and secondly (b) to name factors that they suggest would help them to upgrade their enterprises.

After this second quantitative ranking exercise, we introduced a qualitative discussion which was focused on finding why the entrepreneur chose particular factors over others. Furthermore, this interrogation opened a discussion on the question how factors mattered to upgrading. Thus, rather than getting a one-shot statement about the relative importance of individual factors, we discussed the impact of individual factors on the upgrading process meanwhile developing a sequencing of factors.

With this open discussion we aimed to gain different insights from our two particular groups:

(i) *Ranking and in-depth interviews with upgraders:* The objective of the ranking and in-depth discussions was to document and analyse the individual upgrading stories of successful enterprises which managed to graduate from the micro into the medium or large size segment in more detail. Since upgrading is rather rare, these exceptional cases were meant to inform about (1) the characteristics of the entrepreneur and their social and economic settings as well as (2) give entrepreneurs the possibility to reflect on their individual upgrading experience. The ranking exercise forced entrepreneurs to name the factors which along the whole process of upgrading made them successful while also mentioning factors which were constraining them. Further, in-depth interviews helped to relate these quantitative rankings and statements and asked entrepreneurs to explain the impact individual factors had on their firm's performance.

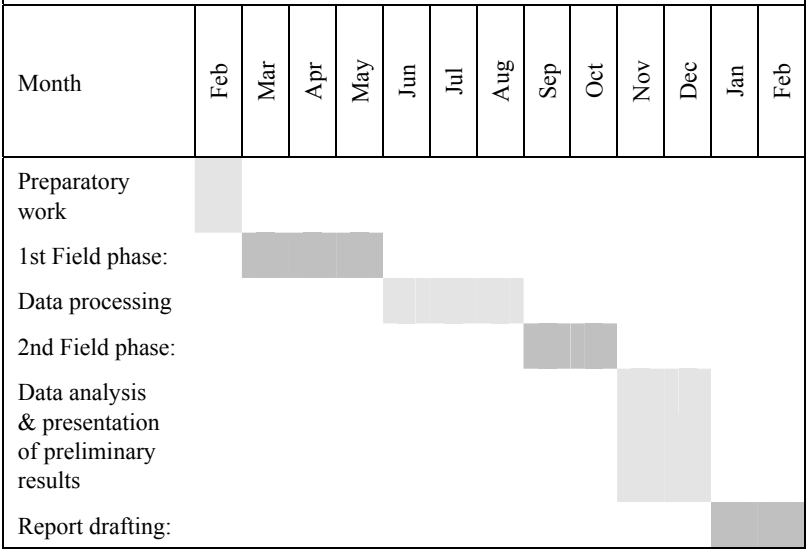
(ii) *Ranking and in-depth interviews with non-upgraders:* Interviews with non-upgraders were held after interviews with upgraders were completed. The objective of interviews with non-upgraders was to get a picture of the characteristics as well as problems of those enterprises which had yet not managed to grow out of the micro-segment. In order to be able to compare responses from upgraders with those of non-upgraders we aimed to find as many firms as possible matching with the characteristics of upgraders at the time when they had below 10 employees. However, obviously it is difficult to find a completely "matching" sample in which all characteristics could be held constant. Rather, the idea behind this approach was to relate some of the respondents and upgrading strategies of upgraders with those of non-upgraders and find themes which clearly separated both groups from each other. Accordingly, when asking non-upgraders about the rank-

ing of factors we started with those factors which had been the most constraining so far in their efforts to upgrade. After we discussed their actual constraints we went a step further and asked them which factors would be "success factors" for them; thus, with the second part of the ranking we gave not yet upgraded entrepreneurs the possibility to state which factors would help them to graduate successfully in future. After the ranking had been done by non-upgraders we asked non-upgraders why they had chosen these sectors while keeping in mind success factors and constraints that upgraders had most commonly chosen in this respective sector and/ or economic activity. The in-depth discussion with non-upgraders was aimed to give a deeper understanding of what prevents stagnating MSMEs from pursuing similar strategies as upgraders.

Sector selection: In order to gain a realistic picture on traditional and modern MSMEs we focused our research on sectors, which represented the most common MSE activities in manufacturing as well as service. In collaboration with our local partners as well as with our two partner studies in Egypt and the Philippines we chose three common sectors: the Information and Communication Technology (ICT) as modern and service oriented sectors, the Leather and Footwear (L&F) sector and the Textiles and Garment (T&G) sector as domains for traditional MSME activities in manufacturing.

Time and resource management: The Indian survey was conducted within the timeframe of 4 months divided into two interview phases with upgraders and non-upgraders in April/ May and September/ October 2012 (see Figure 4.1). The research mission was implemented by one head researcher and three interpreters. Preparatory work was held in February and March 2012, while interim data analysis of upgrader interviews was managed in the months of June to August. The final data coding and analysis was done in November while also an interim presentation on preliminary results was given in November. The writing of the report occurred from December 2012 to February 2013.

Table 4.1: Time-line of the research mission during 2012 –2013



4.2 Definition of MSMEs, sample selection and data analysis

The following paragraphs will elaborate on the operationalization of our definitions, our sampling strategy for our two samples as well as our data management and analysis approach.

Definition of MSMEs and upgrading: The Indian case study measured formal MSME by the number of regular employees. If identifying informal units the number of workers who worked permanently in the unit was considered as "regular" workforce. In order to harmonize with the other cases in Egypt and the Philippines the Indian case study was taking the number of regular and permanent workers as sampling criterion for MSMEs. The following thresholds have been set up:

– A medium enterprise is an enterprise that employs between 20 and 99 people,

– A small enterprise employs between 10 and 19 people

– A micro enterprise employs between 1-9 employees which includes the self-employed and units in the informal sector

Under the MSME Act in 2006 India has redefined its Small-Scale Industries (SSIs) (see Table 3.1). First, enterprises have been classified broadly into manufacturing and service enterprises. Secondly, both categories have been then further classified into micro, small and medium enterprises based on their values in investment in plant and machinery (for manufacturing enterprises) or on equipment (in case of services). While employment has been used in this study to determine an enterprises' size, data on the Indian MSME definition was recorded as well to give a picture on the investment levels of interviewed businesses. The present ceiling[4] on investment to be classified as micro, small or medium enterprises is defined as shown in Table 3.1 (see Chapter 3):

While the Indian definition has been integrated in the structured questionnaire, it was decided not to use it as a sampling criterion to make harmonization across country cases possible. In order to determine whether an enterprise could be classified as upgrader the following quantitative and qualitative criteria were used (see Table 4.2):

– *Quantitative criterion:* the compound annual growth rate (CAGR) of the enterprise must reach the minimum of 10 per cent within the time between their start-up and 2012. Further, the enterprise must have started with less than 10 employees (micro) and has grown in 2012 beyond the size of a minimum of 20 employees (medium);

– *Qualitative criterion:* the enterprise made significant and verifiable improvements in products, production processes (technology upgrading) or ways of organizing production (organizational and strategic changes).

4 Excluding land and building, based on the historical exchange rate of US$ 1 = Rs.50 (April 2009).

Table 4.2: Set of indicators for the verification of upgrading	
Criterion 1: **Quantitative dimension**	***Criterion 2:*** **Qualitative dimension**
(i) A compound annual growth rate (CAGR) of 10 per cent since business start (ii) Started enterprise with less than 10 permanent/ regular employees (iii) In 2012 has a minimum of 20 permanent/ regular employees	(i) Product innovation • Improvement in product(s) • Introduction of new product(s) (ii) Process and organisational innovation • Improvement in process(es) • Introduction of new process(es) • Introduction of new methods/ measure to organize production (iii) Marketing innovation • Application of new forms of marketing, labelling or packaging • Orientation towards new markets • Certification via standards (iv) New Market innovation • Accessing of new geographical or sectoral market • Move up/down the value chain and subsequent increase in reported returns via addition of new functions

Finding enterprises that would fit these stringent criteria was challenging, as there exists no comprehensive official record on MSMEs according to their employment figures in 2012 and at the time of their start-up. Accordingly, our research mission had to adopt several sampling strategies which we will explain further in the following paragraphs.

Sample selection: Our sampling strategy had to serve the purpose to find two different groups of companies:

– Identifying upgraders, we used a purposive sampling strategy identifying upgraders that are *now* middle-sized but have evolved out of the MSE segment. Further the companies must have grown by at least 10 per cent CAGR.

– For non-upgraders we adopted purposive sampling screening for current micro units that employ less than ten employees.

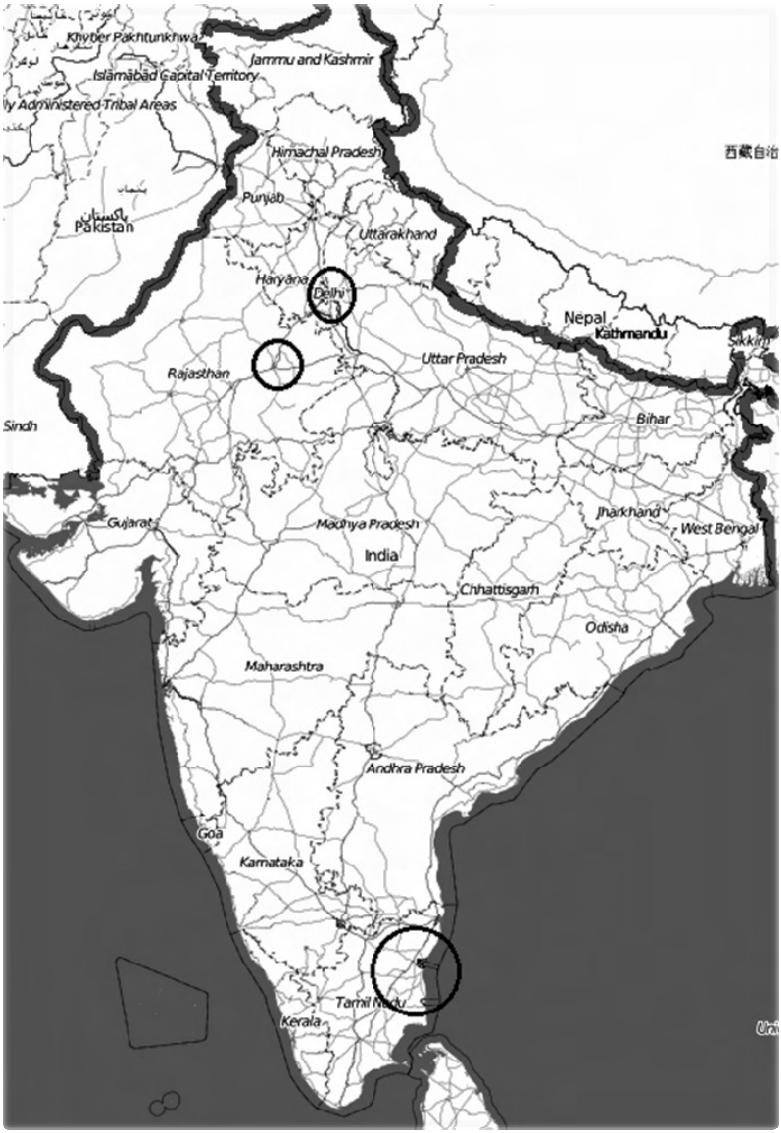
The survey area included the National Capital Region (NCR), Jaipur and surrounding as well as Chennai and the northern region of Tamil Nadu (see encircled areas in Figure 4.1). These geographical regions were chosen due to their high prevalence of MSMEs in the ICT, T&G and L&F sector. However, Tamil Nadu is the only state where we sampled leather and footwear MSMEs. ICT and T&G were due to their disperse distribution sampled in all mentioned regions.

Three sampling sources for identifying upgraders and non-upgraders were used:

(1) *Enterprise directories:* Via the yellow pages and internet registries we were able to produce a list of registered companies which would fit the sectoral and geographical specification. Further we accessed lists of MSMEs by our local partner, the Small Industries Development Bank of India (SIDBI), and other microfinance organizations. However, only 10 out of 93 enterprises were sampled based on these lists, first, because most of the contact details in the yellow pages internet registries and even lists for banks were outdated. Further, as we aimed to reduce the bias towards sampling, too many loan-takers we limited our sampling efforts based on bank lists.

(2) *Experts and associations:* A second strategy was to hold meetings with industry experts as well as with associations in order to get list, but also some personal recommendations to upgraders or industry lead firms which would source from smaller companies. About 1/3 of enterprises in the total sample, and most upgraders in particular were sampled through these channels.

Figure 4.1: Survey areas for Indian case study



Source: http://www.openstreetmap.org

(3) *Geographical screening* and *"walking-the-street":* While official contacts where very helpful to identify registered successful firms that upgraded we had to use different strategies to identify upgraders and non-upgraders that were in no association or not visible in their economic activities. Most of these enterprises are active in the informal sector which is why with the help of some informal guides and interpreters we walked through informal clusters and production streets to identify matching companies. This included discussions with local traders, salesmen, street-vendors, *chai-wallahs* and barbers. More than half of all interviews (49 out of 93) were sampled using this approach.

It is important to take into consideration that every sampling strategy has it biases which is why we tried to use several channels to get through to enterprises. However, for the purpose of our study it was necessary to veer away from representative or associational lists due to the highly informal character of the economic activities under of study. It should also be mentioned that only due to this approach we were able to gain a deeper understanding of graduation and the informal sector and produce insights which could not have been produced when working with a randomized sampling strategy exclusively including formalized enterprises.

Data management and analysis: After both field surveys were completed all quantitative data was encoded in MS Excel and later migrated into STATA for further analysis. The qualitative parts of the questionnaire were documented in MS Word and some of the qualitative elements were further categorized and encoded to allow for statistical analysis. Conclusions were drawn based on the comparisons of upgraders and non-upgraders with respect to the quantitative and qualitative data gathered. Further, inferences about causal implications were drawn based on the entrepreneurs' chosen ranking of factors as well as through open in-depth discussions.

4.3 Total sample composition

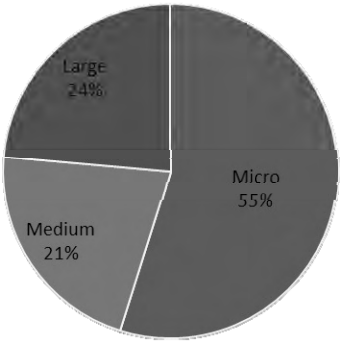
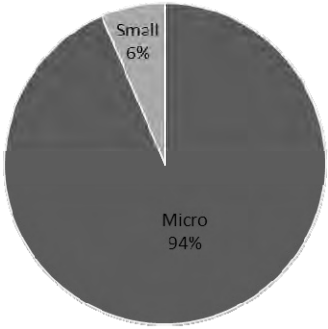
The following paragraphs provide an overview on the total sample composition according to its sectoral, geographical as well as demographic characteristics. As this research followed a purposive sampling strategy the sample is not meant to be representative for the MSME sector in India or for any of its chosen sectors, respectively. The sample consists of MSMEs that align with the selection criteria set out in the preceding Chapter. Accord-

ingly, the total sample of 93 enterprises is composed of two subsamples that we have termed "upgraders" and "non-upgraders". The upgrader sample consists of 42 and the non-upgrader sample of 51 enterprises.

Age of enterprise: Comparing enterprises in the upgrader sample with non-upgraders it appears that upgraders are with an average of 14 years roughly 3 years older than enterprises in the non-upgrader sample (see Table A2 in Annex).

Size of enterprises: Based on the research question the aim of our sampling strategy was to find large and medium sized enterprises which have started as micro and small enterprises and upgraded since their start of operations ("upgraders"). Furthermore, we sampled micro and small enterprises which have not been able to upgrade and pass the threshold of 20 employees. At the time of the interview these enterprises operated with or below 10 regular employees ("non-upgraders"). Following this twofold approach, Figure 4.2 shows that the total sample of enterprises at the time of business start consisted of mainly micro enterprises. Only very few enterprises (6 per cent) started in the segment of small units having slightly more than 10 employees. Since business start, 45 per cent of enterprises have graduated from the micro and small size segment enterprises into either medium (21 per cent) or large (24 per cent) enterprises in 2012. These 45 per cent are the successful cases of "upgraders" which have managed to operate at a minimum level of 20 employees or more at the time of the interview. All other enterprises that have stayed below the threshold of 10 employees in 2012 are termed "non-upgraders". This group makes up 55 per cent of the total sample in 2012.

Figure 4.2: Distribution of interviewed companies by MSME employment definition*

Size category in 2012	Size category upon business start-up
	

*Employment definitions have been made according to the following number of regular employees: Micro = 0-9 employees, Small = 10-19 employees, Medium = 20 – 99 employees, Large > 99 employees. N = 93

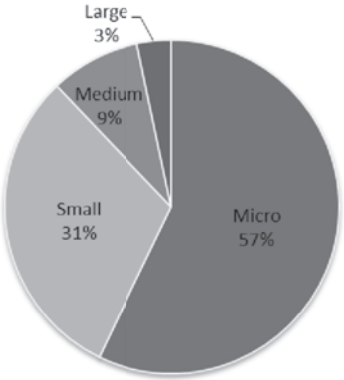
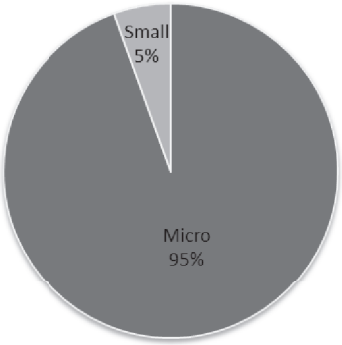
Source: own survey

Upgraders and non-upgraders started with similar numbers of regular employees. While upgraders started their business with an average of 5 employees, non-upgraders employed 3 employees when launching operations (see Table A2 in Annex). However, comparing the average employment in 2012, upgraders employ 299 regular employees compared to only 5 regular employees among non-upgraders (ibid.).

Using the thresholds of the Indian MSME definition, the upgrading patterns change downwards (Figure 4.3). The biggest chunk of interviewed enterprises in 2012 now falls under the category of small enterprises, rather than under the categories of medium and large enterprises. However, there is still a small group of enterprises to be found which have managed to fall into the medium and large size segment. Also, it can be noted that while the exact categorization differs, most upgraders have managed to upgrade in employment also have fallen into a higher size segment under the Indian MSME Definition based on historical values of investment in

plant and machinery or equipment. In sum, while fewer enterprises have moved up into the medium and large size segment relative graduation has happened among nearly half of the enterprises in the total sample.

Figure 4.3: Distribution of interviewed companies by size based on the Indian definition*

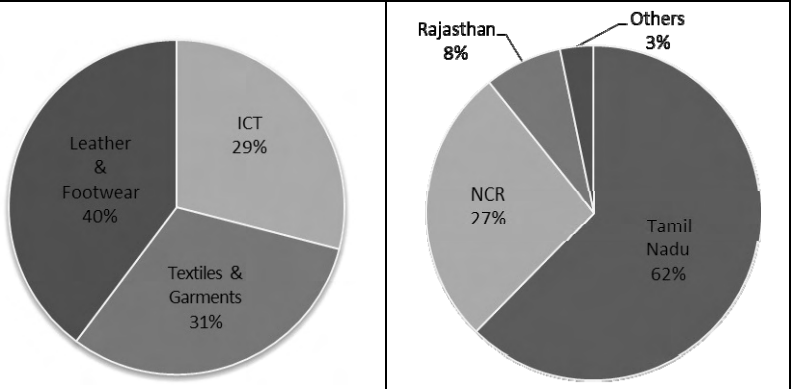
Size category in 2012	Size category upon business start-up
	

*Categorization has been applied according to the following exchanges rate 1 Rs = 55 US$; N=91, as two companies were not able to share information.

Source: own survey

Sector: The total sample's composition shows a quite balanced distribution of cases along the chosen sectors in India (see Figure 4.4). Out of the whole sample of 93 interviews 37 enterprises were active in the Leather and Footwear (L&F) sector, 29 companies were active in the Textiles and Garments (T&G) sector and 27 companies in the Information and Communication Technology (ICT) sector. It is worth mentioning, that interviews with leather and footwear enterprises were exclusively held in Tamil Nadu, while the other two sectors include interviews taken in all other regions too.

Figure 4.4: Distribution of interviewed companies by economic sector and region



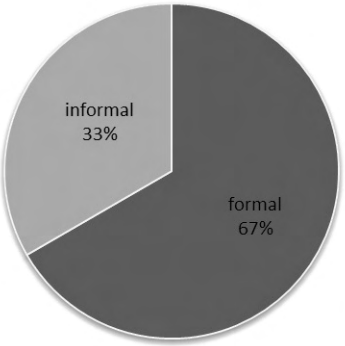
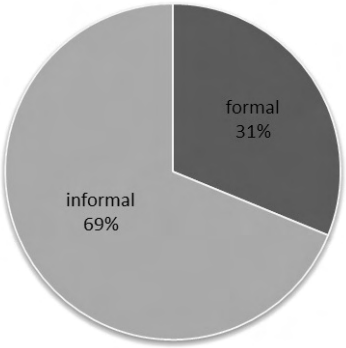
N=93

Source: own survey

Region and location: The total sample covers two main geographical areas in India, which are Tamil Nadu (58 interviews) and the National Capital Region, including (25 interviews). A minor part of the sample consists of interviews taken in Rajasthan while 3 interviews have been conducted via videoconference reaching out to Bangalore and Calcutta (Figure 4.4). While this study has focused on interviews with urban MSMEs (70 per cent) the effort was made to include rural (23 per cent) and semi-rural (7 per cent) enterprises in order to allow for variety in the sample.

Formality: In terms of registration status more than two-third of all enterprises have been informal when starting operations (Figure 4.5). This share is reversed in 2012 when only one third of all enterprises are informal. Disaggregating the total sample into upgraders and non-upgraders we can see in Figure 4.6 that compared to non-upgraders the group of successful enterprises was much more likely to have started their enterprise as already registered enterprises. Still, among the upgrader group 16 out of 42 started their business being informal (Figure 4.6).

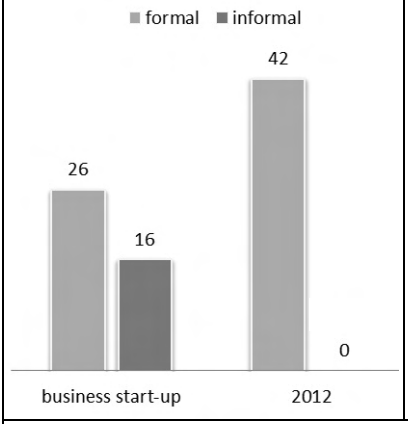
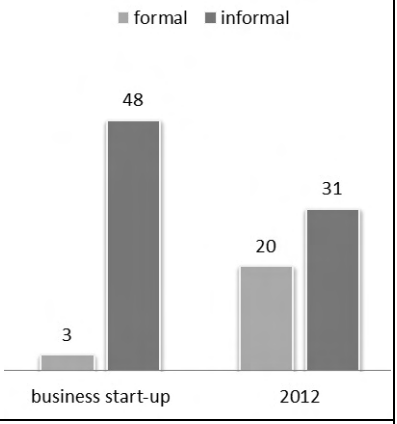
Figure 4.5: Status of enterprise registration (formality) of the total sample

Formality in 2012	Formality upon business start-up
	

N=93

Source: own survey

Figure 4.6: Status of enterprise registration in 2012 and upon business start-up (total sample)

Upgraders	Non-upgraders
	

N=93; Upgraders N=42; Non-upgraders N=51

Source: own survey

Thus, clearly there exist some significant differences between upgraders and non-upgraders at the time of business start-up which makes non-upgraders not a perfect "control" group. However, finding such a control group to allow for an absolute comparison along various factors is nearly impossible. This is why we have to follow the second-best option in accepting that non-upgraders do not match upgraders in every factor perfectly. However, as qualitative aspects and in-depth interviews are at the core of our research design, these allow for the validation and contextualization of the data gathered. The following section will present the findings of the study.

5 MSME upgrading in India – findings

India's economy stands to gain a lot from the catching-up of its MSME sector, yet, several studies have documented that there is only limited advance and graduation in this sector (ISED 2012; Morris et al. 2000). Many studies are speculating about the reasons of why this sector underperforms. This study aims to shed more light on this question informing about which factors matter for upgrading and how they matter for upgrading. The findings will be presented as follows:

(1) The section 5.1 will systematically compare upgraders and non-upgraders and showcase the crucial *differences* in order to make out relevant factors for MSME upgrading *across sectors.*

(2) Subsequently sections 5.2; 5.3 and 5.4 will go in depth and analyse upgraders and non-upgraders at the *sector level*. This includes the analysis of how upgrading constraints and success factors interrelate and thereby providing *combinations of success* in the ICT, T&G and L&F sectors.

(3) Finally, section 5.5 will sum up insights on cross-sectoral upgrading experiences by listing *major constraints* and *success factors.* This also entails the presentation of the study's *main messages.*

5.1 Upgraders and non-upgraders

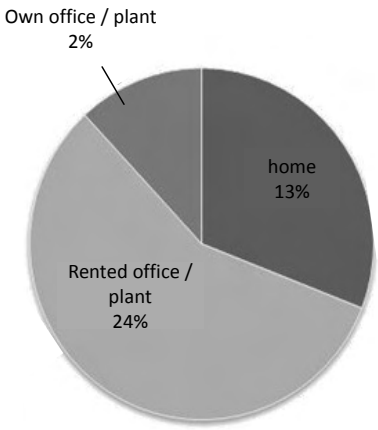
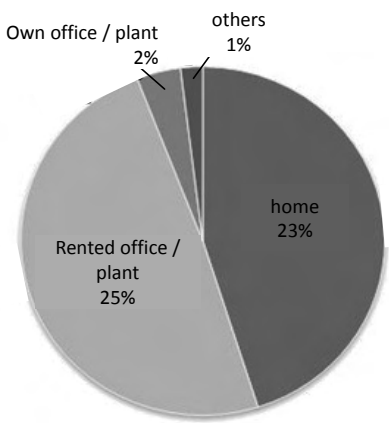
This section compares the characteristics of upgraders and non-upgraders in order to identify *differences* between the two samples *across sectors.* As a result, at this stage the aim is to make out bigger themes in the data which would get lost if only studied at the sub-sector level. The following sections provide more systematic insights of upgraders and non-upgraders along the 5 'onion layers' (see Figure 2.2).

5.1.1 Enterprises

Types of innovation: Upgraders are clearly more innovative than non-upgraders. This is not surprising as qualitative improvements have been a sampling criterion for the group of upgraders. Consequently, as seen in Table A1 (in the Annex) there exist significant differences across all types of innovation between upgraders and non-upgraders. While product and technological process innovations are the most common among upgraders and non-upgraders the strongest differences can be found in the entry of new markets. In the latter category 8 out of 10 upgraders have managed to enter a new market compared to only 2 out of 10 among non-upgraders. Innovations related to organisational processes and marketing/ sales seem to be the least common in both samples, however, even in these categories upgraders show higher values than non-upgraders.

Starting location: generally, across sectors upgraders and non-upgraders have started their business predominantly from home or in rented premises (see Figure 5.1). Upgraders are quite scattered in the distribution of possible start-up locations: 38 per cent have started from home, 36 per cent in rented premises and 21 per cent in their own or their families' property. The group of non-upgraders is divided between those that started their businesses either in rented premises (49 per cent) or from home (47 per cent).

Figure 5.1: Comparison of companies by operational location at business-start-up

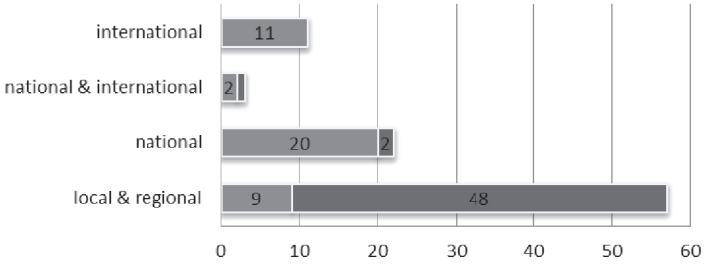
Upgrader	Non-upgrader
	

Total sample N = 93, upgrader n=42; non-upgrader n=51

Source: own survey

Market orientation: Enterprise owners were asked to indicate the markets they were supplying upon business start (Figure 5.2) as well as in 2012 (Figure 5.3). While the first three markets 'local & regional', 'national' and 'international' indicate that the entrepreneur is predominantly supplying to either one of these markets, the fourth category 'national & international markets' highlights the fact that some enterprises chose to operate in both national and international markets simultaneously. Especially the latter category indicates that enterprises are operating in multiple value chains as they connect to different markets and experience different market trends and patterns in chain governance.

Figure 5.2: Market orientation of enterprises at business-start-up



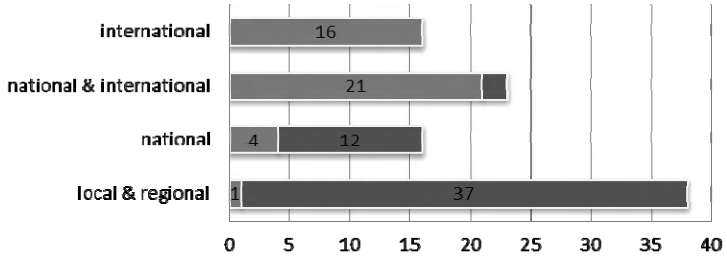
	local & regional	national	national & international	international
Upgrader	9	20	2	11
Non-Upgrader	48	2	1	0

Total sample N = 93, upgrader n = 42; non-upgrader n = 51

Source: own survey

Upgraders had wider market coverage to begin with. As shown in Figure 5.2 the vast majority of non-upgraders (94 per cent) started to supply local and regional markets while only a small group of upgraders (21 per cent) catered to this market category upon business start. In comparison, nearly half of the upgraders started their business with national market coverage and one fourth even supplied directly to international markets when starting operations. In both groups there were only some exceptional cases which already supplied to national and international markets simultaneously upon business start.

Figure 5.3: Market orientation of enterprises in 2012



	local & regional	national	national & international	international
Upgrader	1	4	21	16
Non-Upgrader	37	12	2	0

N = 93; upgrader n = 42; non-upgrader n = 51

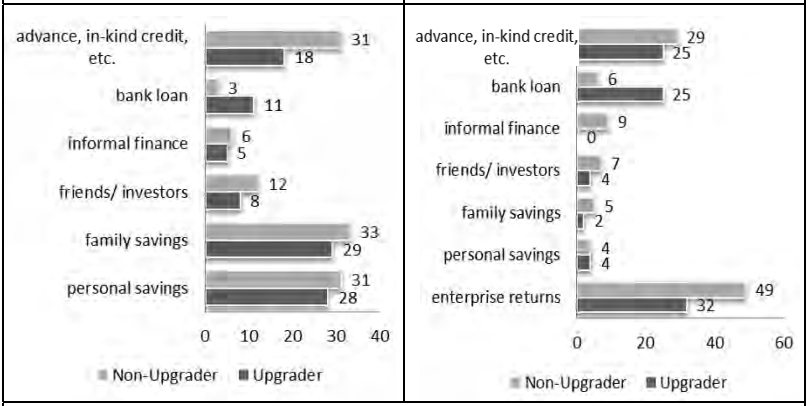
Source: own survey

In 2012, market segmentation between upgraders and non-upgraders is more severe (Figure 5.3). Except for one case local and regional markets are exclusively supplied by non-upgraders while the main market approach among upgraders is to supply national as well as international markets simultaneously. As a result, it appears that upgrading implies a strong move towards international markets, however this does not rule out the firms' presence in the domestic market. Rather, it can be seen that across sectors the majority of upgraders follow a strategy in which the operation of two market chains allow for learning and risk diversification. It should be also noted there is some movement in the market coverage of non-upgraders. While there seems to be no major change in the market orientation of non-upgraders there are a few enterprises which initially just supplied to local and regional markets but have now managed to extend their market coverage.

Enterprise Finance: Upon start-up, most entrepreneurs, no matter whether belonging to the group of upgraders or non-upgraders, used their personal and family savings to fund their business (Figure 5.4). With regard to bank loans Table A2 indicates that entrepreneurs in the upgrader sample used significantly more bank loans right from the start compared to non-upgraders. While roughly one quarter of upgraders took out a loan this option is exceptional for non-upgraders. As a another common source of finance entrepreneurs were mentioning several mechanisms of "bootstrapping" such as working with cash advance, in-kind credit and resource-sharing. However, while bootstrapping has been relatively common among both groups, statistically speaking non-upgraders have been using bootstrapping practices significantly more often (see Table A2). In particular, in-depth interviews also provided insights that particular bootstrapping strategies, such as working with cash advance and sharing resources (e.g. machinery; tools, space) with other units, were used more frequently among non-upgraders. In contrast, upgraders rather highlighted the role of in-kind credit from buyers and trade credit from suppliers. The latter appears not only to have been an important funding mechanism at business start, but also points towards a much stronger commitment and relationship between upgraders and their respective buyers and suppliers.

In 2012, the number of finance sources among both groups has consolidated (see Figure 5.4; Table A2 in Annex). Among upgraders, enterprise returns, bank loans and bootstrapping practices make up the most common funding sources while non-upgraders rely mostly on enterprise returns and bootstrapping practices. Generally, what is most striking is that for all companies' enterprise profits and their constant re-investment in the business poses the most common source of finance (working capital). What is clear is that the role of personal as well as family savings and the role of friends and other investors seem to have diminished with the growth of the company. Interestingly bootstrapping practices such as cash advance and in-kind credit still appear to play an important role, however there is no statistically significant difference between both samples in 2012. Among upgraders the role of bank loans has increased dramatically as now in 2012 more than 50 per cent of upgraders are also funding their business operations through bank finance.

Figure 5.4: Comparison of frequencies of mentioned sources of enterprise finance



Total sample N = 93, upgrader n = 42; non-upgrader n = 51

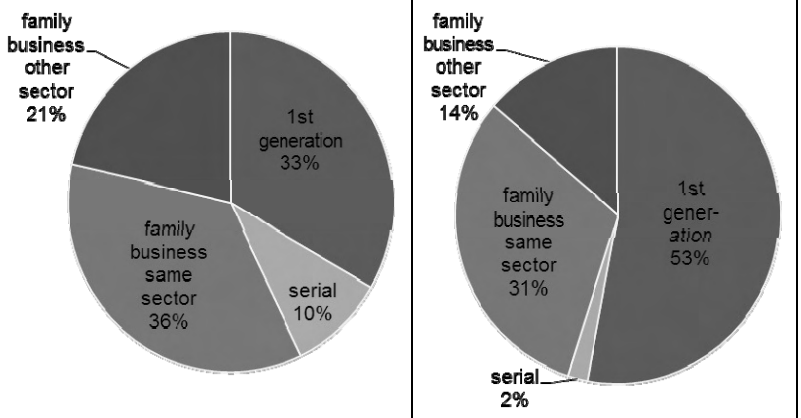
Source: own survey

Partnerships and entrepreneurship types: with a percentage of 57 per cent non-upgraders are more likely than upgraders to be single entrepreneurs at business start. In contrast, more than two thirds of upgraders reported to having started their companies with a partner, who is likely to be a family member (67 per cent). Though there are fewer partnerships among non-upgraders those are also likely to partner with a family member (64 per cent).

In 2012, little has changed for upgraders, however among non-upgraders more have become single entrepreneurs (76 per cent). Among those non-upgraders which continue to run the company as a partnership there is a positive tendency towards running the enterprise with a non-family partner. Now half of the partners among non-upgraders are not from family compared to only 36 per cent at the beginning of operations. Accordingly, there is a high rate of family run businesses in the upgrader sample and non-upgrader firms are more likely to be run by a single entrepreneurs or a non-family partnership.

This trend is supported by the investigation of entrepreneurship types. Here, interviewees were asked to indicate whether they were in business before and if this involvement was related to a family business of the same or another sector in which the current enterprise is operating. Figure 5.5 shows that non-upgraders are more likely to be 1st generation entrepreneurs while upgraders generally have a stronger family business background. Serial entrepreneurship indicates those individuals who have had a business before, yet, have not run a family business before. In both samples this group of entrepreneurs is the smallest in relative terms; however, the data suggests that there are more serial entrepreneurs among upgraders than non-upgraders.

Figure 5.5: Comparison of types of entrepreneurs across samples



N = 93

Source: own survey

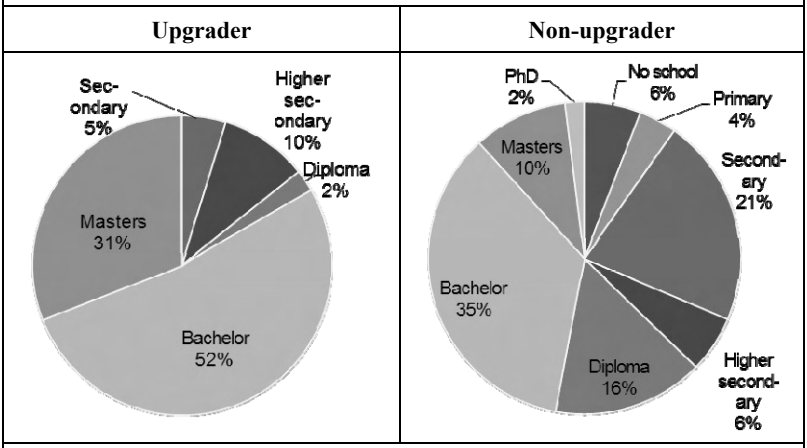
Almost nobody in the non-upgrader sample had an additional company running in the beginning. However, significantly more upgraders run another business during the start-up phase of their current enterprise (see Table A2). In 2012, these statistical differences have vanished.

5.1.2 Entrepreneurs

Gender of entrepreneur: In both samples women entrepreneurs are a rarity. Only four companies in the total sample are owned and run by women entrepreneurs. In particular, these operate in the textile and garment sector which showed to be a socially and culturally accessible sector for women in India. However, the bias in the sample suggests that there are generally entry barriers for women to enter entrepreneurship and to operate in certain sectors in particular, e.g. leather and footwear. Since there are a similar number of female entrepreneurs in each sub-sample no inferences on the relative performance of female upgraders versus non-upgraders can be made.

Age, education and training of entrepreneur: The average age among upgraders is 43 and among non-upgraders 39 years (see Table A3). While both samples suggest entrepreneurs to be in their forties the data suggests that with roughly 4 years difference entrepreneurs in the upgrader group are significantly older. Both samples vary significantly in the level of formal education of entrepreneurs at business start (see Figure 5.6). There are significantly more university graduates among upgraders than among non-upgraders (see Table A3). Although a bachelor degree is the most common attainment level for both sub-samples, in absolute terms non-upgraders show more numbers of entrepreneurs finishing secondary school or receiving a vocational degree (Diploma). Generally, it appears that the group of non-upgraders has a more heterogeneous educational background. Interestingly, among upgraders the Diploma category indicating a vocational degree is the least common among upgraders, while for non-upgraders it holds the third most frequent rank.

Figure 5.6: Cross-sectoral comparison of the entrepreneurs' formal education across groups

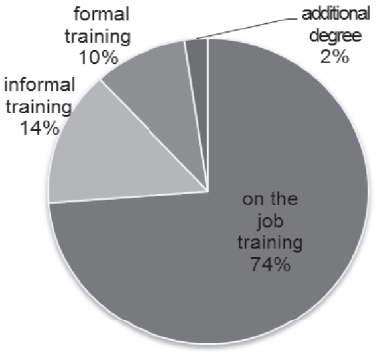
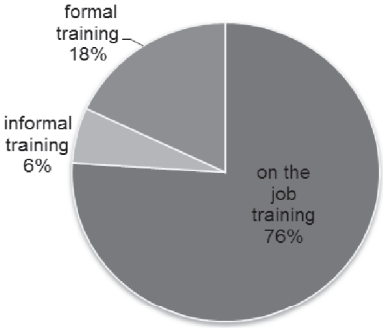


N = 93; Upgrader n = 42; Non-upgrader n = 51

Source: own survey

With regards to ongoing training measures we asked entrepreneurs to indicate whether they have undergone any additional training after they had finished their formal education (Figure 5.7). While training on the job indicates daily work experiences without any particular supervision informal training suggests some sort of apprenticeship or mentoring by a senior colleague or supervisor aiming at skill development. Formal training is that which include some sort of formal certification. Pursuing an additional degree after starting the business, e.g. an MBA, is another potential training measure; however, even among upgraders this was a rare option. Three quarter of the total sample reported to having trained themselves through their daily work experiences and challenges. Non-upgraders have attended more formal training compared to upgraders who have undergone more informal training and mentoring.

Figure 5.7: Cross-sectoral comparison of the entrepreneurs' training across groups

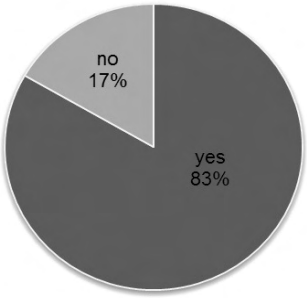
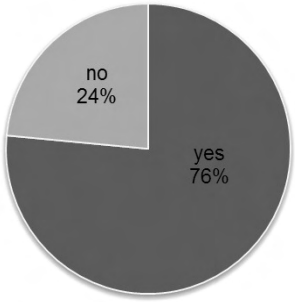
Upgrader	Non-upgrader
	

N = 93; Upgrader n = 42; Non-Upgrader n = 51

Source: own survey

Work experience: Overall, there is a strong trend showing that entrepreneurs in both groups have had wage work experience before they started their businesses (see Figure 5.8). Among upgraders more than 80 per cent and among non-upgraders 76 per cent of entrepreneurs showed to have work experience before becoming entrepreneurs. Upgraders have slightly more years of work experience than non-upgraders and this difference is statistically significant at the 10 per cent level (see Table A3).

Figure 5.8: Cross-sectoral comparison of the entrepreneurs' wage work experience

Upgrader	Non-upgrader
	

N = 93; Upgrader n = 42; Non-upgrader n = 51

Source: own survey

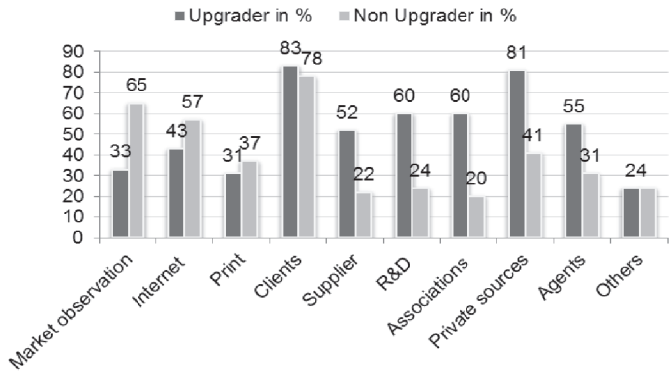
Exposure to other countries: More than half of the entrepreneurs in the upgrader group have been outside of India before starting the business compared to only 20 per cent in the non-upgrader group (see Table A3). This difference is significant at the 1 per cent level. Exposure to other (business) environments has considerable effects on individual perspectives and can influence how individuals assess business plans and develop product ideas. In particular, it can help to identify market gaps in the home market. Upgraders across sectors reported that the main purpose of these travels was work and business related. Travelling or visiting friends or family has been the second most important purpose while going abroad for education and training has been mentioned as the least frequent option. About 20 per cent of non-upgraders have been abroad, indicating work and business as sole purposes of the trip. As 90 per cent of these responses have been made by ICT entrepreneurs it appears that the work placement before entrepreneurship has been the main and only facilitator of such foreign exposure.

Investment behaviour and working hours: Upgraders are re-investing their profits more often than non-upgraders. This difference is significant at the 1 per cent level (see Table A3). Re-investments in business are defined as pro-

found capital investments in plant/ machinery/ equipment or staff (including training/ external hiring). As such re-investments in the company indicate the entrepreneurs' intention to upgrade the business. Similarly the number of working hours indicates the entrepreneur's personal commitment to a business. According to Table A3 in the Annex entrepreneurs in the upgrader group work significantly more than those in the non-upgrader sample.

Information sources: The heterogeneous use of different information sources hint at the market exposure and integration of entrepreneurs. It also suggests that some sources of information are more relevant for succeeding in business than others. As seen in Figure 5.9 upgraders generally seem to have a much broader exposure to differing information sources than non-upgraders. However, for both samples clients and buyers are the most important source of business-related information.

Figure 5.9: Cross-sectoral comparison of entrepreneurs' information sources



N = 93; upgrader n = 42; non-upgrader n = 51

Source: own survey

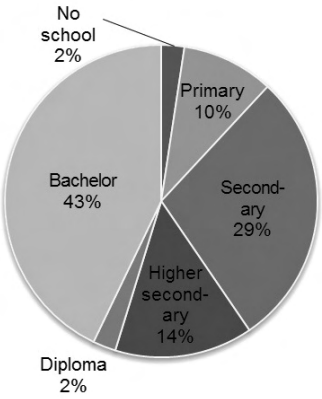
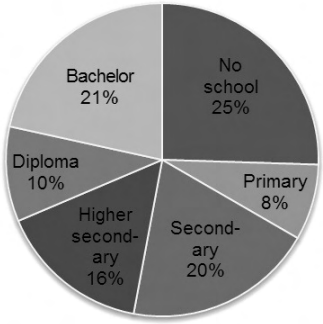
However, there is significant variation in the frequency of using local market observation, suppliers, formal associations as well as own research and development (R&D) as information sources. While upgraders make less use

of local market information and more of suppliers, associations and R&D it is surprising that they also show higher levels of information reliance on traditional agents/ middlemen as well as personal networks (incl. family and friends). Among upgraders clients, personal networks and R&D constitute the most frequently used sources of information. In contrast non-upgraders make use of local market observations, clients and the internet the most. Considering the orientation on informal and localised markets of non-upgraders, one would have expected a stronger orientation towards traditional and personal networks. While personal networks still seem to play a role for 40 per cent of non-upgraders sourcing information from agents and middlemen seems surprisingly to be less common with only 31 per cent making use of it (see Figure 5.9).

5.1.3 Social and business networks

Education of father and family business background: Fathers in the upgrader group are significantly more educated than those in the non-upgrader group (see Table A4), yet, there is heterogeneity within groups. While the relative majority of fathers in the group of upgraders hold a Bachelor's degree another 30 per cent have just finished the secondary level (please see Figure 5.10). In the group of non-upgraders the picture is less clear. The most frequently represented groups are those with a Bachelor's degree, those with secondary level degrees and those with no formal schooling at all. Also, all other categories are distributed quite evenly and there is no clear trend to be identified. Most likely a sub-sector approach will provide more insights.

Figure 5.10: Cross-sectoral comparison of the entrepreneurs' father's education

Upgrader	Non-upgrader
	

N = 93; Upgrader n = 42; Non-upgrader n = 51

Source: own survey

Nearly 60 per cent of upgraders have a business family background compared to 40 per cent of non-upgraders (see Table A4). This clearly hints at the importance of informal networks and linkages for business development and graduation which is supported by the importance of personal networks as information source among upgraders (see Figure 5.9). This suggests that the entrepreneur's social embeddedness plays a vital role in influencing business dynamics. The following paragraphs will take up this argument and compare both samples based on their 'enabling' and 'disabling' social as well as business networks.

Social networks: The idea that household dynamics affect entrepreneurial decisions is unquestioned, however; very often it is unclear whether social networks are mostly helpful or restrictive for entrepreneurs. In particular, we expect diverse groups within a social network to affect entrepreneurship differently. The state of literature suggests that the effects are mixed, including positive and negative dynamics (Granovetter 1982).

In order to measure the size of the network for which the entrepreneur has financial obligations we asked the entrepreneur to indicate the current number of direct dependents as well as at the time of starting the business. While entrepreneurs have been reported to take care of extended family, friends as well as employees in case of emergencies or for special occasions, such as weddings or funerals, these did not count as financial dependents as they did not receive regular financial support. With roughly two financial dependents at the time of the start-up there are no differences between entrepreneurs in both groups (see Table A4). Also, while entrepreneurs in the non-upgrader group report to have slightly more financial dependents in 2012 than upgraders this difference is not statistically significant. Qualitative interviews highlighted that the biggest investments in both groups were related to health care for elders and costs of education for their own children as well as other children within the family.

While entrepreneurs clearly indicated the obligation to share resources and to re-invest in human capital they also mentioned the vital role their families and extended social networks played in helping to build and grow the business. In view of that, it seems to be interesting to look into these social networks more in depth and ask in which *ways* a particular social network actually had been helpful in starting and growing the business. Accordingly, the respondent was asked to make precise statements towards different groups and define their contribution. For that reason social relations were categorized in strong ties, covering the entrepreneurs' parents, siblings, spouse and other close family members, while weak ties include relations to distant relatives, friends, neighbours and other acquaintances (see Table A4).

Strong ties: Nearly all entrepreneurs in both groups stated that their families have been helpful in running the business, however slightly more upgraders also stated that some members in their core family had opposed entrepreneurship initially (see Table A4). Generally, strong ties have been highlighted by both groups as playing the most prominent role in providing emotional support, finance as well as advice and knowledge. However, the effects and role of strong ties varies significantly between upgraders and non-upgraders in terms of using family networks to position and advertise products and services. Non-upgraders relied more on their core family to access (local) markets than non-upgraders.

Also, while the frequency in mentioning finance and advice as support channels is similar between groups, in-depth interviews revealed that in fact

the quality of financial support and advice by core family members is different across upgraders and non-upgraders. The data indicates that next to finance the entrepreneurs' parents and close relatives play the biggest role in passing on informal knowledge and a certain mindset. While it is difficult to give an exact record on the content of these informal knowledge transactions we might gain some insights by looking at the human capital of the entrepreneur's parents. In particular, since Indian families tend to be rather male-dominated, it is interesting to look at the fathers' educational attainments. As shown in preceding paragraphs there is a significant difference in the educational background of fathers across the two groups which suggests that the kind of advice and know-how in the non-upgrader group might be of less quality and foresight than in the upgrader group. Additional, the prevalence of business families in the upgrader group suggests that business advice is based on informal know-how and tested through best practices. Furthermore, financial support from business families is likely to be higher in terms of volumes and therefore more effective.

Weak ties: All upgraders reported to having used the help of extended social ties in running the business in contrast to only 70 per cent of non-upgraders. This difference is highly significant and points at the missing opportunities of non-upgraders to make use of these ties more effectively. A major reason for this may be the quality of these networks as well as disincentives to reach out for help. However, between upgraders and non-upgraders there are no significant differences in the ways they make use of weak ties. Distant relatives, friends and acquaintances have shown to mainly function as multipliers for active networking (see Table A4). Further, advice and knowledge as well as labour enquiries have been the most frequent mentioned support channels. Across both samples only very few faced opposition to entrepreneurship by weak ties.

Caste and/ or community membership: In India the social institution of caste had impacted all spheres of life including economic occupation and identity. The Indian Hindu societal strata suggested four main castes– namely, Brahmin, Kshatriya, Vaishya and Shudra – which would each specify the kinds of economic occupation open to a particular group. By this tradition, industry and trade were viewed as the occupation of only one mercantile and business caste, i.e. the Vaishyas, which would for example include groups such as Banias, Jains and Marwaris. In addition, there also have been traditional kinship-based business communities operating out-

side the caste system, for example Bhatia or Chettiras from South India or several Muslim business communities. As success in business requires knowledge of commercial practices, the ability to identify potential opportunities as well as financing strategies, business communities were instrumental to generate knowledge, wealth and trust over time. By providing credit, insurance and buyer-seller meets, community-based networks arranged an easier start for their entrepreneurs. In particular in times of crisis and during the risky initial start-up phase, business community members could rely on ongoing support. In conclusion, not only because of the rigid social stratification by caste but also because of structural disadvantages of having little support, occupational mobility and business success among non-business groups in India is seen as rather unlikely (Weber 1958; Munshi / Rosenzweig 2006).

Given the historical context and with prevailing processes of economic modernization and structural change, one would assume that today's entrepreneurship patterns are breaking free from traditional occupational identities and structures. In brief, caste and business community membership is expected to be less relevant for entrepreneurship and success in business. One could even go so far to imply that traditional networks might be constraining modernizing enterprises in accessing new kind of information, knowledge, markets and finance. Accordingly, it is worthwhile to present some data on the entrepreneurs' community membership. However, due to the stigma, social norms and self-ascription asking for caste or community identity in India faces problems of non-respondents as well as incidence of over- and underreporting. Thus, trying to avoid an overly personalized mode of interrogation the questionnaire first asked an open-ended question whether the interviewee's community membership has had an effect on their business.

In the survey significantly more non-upgraders have stated that belonging to a certain caste/ community had an effect on *their* business. Two third of non-upgraders mentioned that there is a "community"-effect while just 43 per cent of upgraders shared this view (see Table A5). Comparing these statements with the question of whether the entrepreneur comes from a business family background or not one can see that there are significantly less non-upgraders with business community membership than upgraders (please see Table A4). This implies that non-upgraders consider not being a business community member a personal disadvantage, while the majority of

upgraders tend to think that community identities are rather irrelevant for their business.

Both samples were asked whether they think that *generally* belonging to a business community would help in running a business and if yes in which *ways* (see Table A5). Nearly 60 per cent of non-upgraders stated that being a member of a business community has a positive effect on enterprise development and graduation compared to 45 per cent of upgraders. Non-upgraders highlighted finance, access to business networks as well as exposure to business advice and know-how as crucial advantages. In contrast, upgraders additionally emphasized reputation effects to play an important role. The opinions on what business communities provide tend to differ sharply and significantly around finance and entrepreneurial culture/ mind-set. While upgraders report cultural variables to be a major advantage in business, non-upgraders see finance as the most important mechanism by which business communities provide assistance.

Summing up, it appears that there still exist a dominant number of traditional business communities in the Indian entrepreneurial landscape; nevertheless, in our sample we also observed a considerable number of entrepreneurs coming from non-business families, particularly in the ICT sector and more modern L&F segments. It seems that processes of economic growth and modernization in India have been accompanied with a substantial entry of first-generation entrepreneurs; yet, the data also suggests that caste and business community variables still operate in subtle ways. While there are entrepreneurs from non-business family backgrounds there are less of them in the successful group of upgraders. Both sub-samples coincide in that the benefits of being part of a traditional business community evolve around the advantages of preferential access to networks as well as knowledge. Whether business community membership is a determining success factor cannot be discussed in depth at this stage, however, there is anecdotal evidence that upgraders come from better-off families with fewer problems to access financial support, strategic advice, guidance as well as a reputational track record.

Business networks: With a share of 57 per cent of entrepreneurs in the upgrader group and 39 per cent in the non-upgrader group having a business family background it is very likely that social and business networks in this sample overlap (see Table A4). However, entrepreneurs have been asked to respond to questions on their business network by different cate-

gories such as clients/ buyers/ customers, suppliers, competitors/ other enterprises as well as associational membership in their respective sectors. The following descriptive statistics are simply giving an overview about the relations within these broad categories. Inter-linkages between social and business networks will be discussed within the in-depth sub-sector analysis.

Buyers/ clients: Most of the global value chain literature suggests that buyers, especially international ones, are supporting product and process upgrading in order to increase the quality and/ or quantity of the product or service supplied (Humphrey / Schmitz 2000). However, if upgrading was related to core functions of buyers, such as marketing or branding, the findings have been mixed. Besides there is only limited knowledge on the role of domestic or "new" buyers, e.g. China, as the effects can vary with regards to the different quantity and quality requirements prevalent in the market supplied.

As mentioned in the sections above, the story of upgrading for all sectors has been one of internationalization, but also diversification in international and domestic markets (see Figures 5.2 and 5.3). It is commonly agreed that access to international markets provides the necessary exposure to best practices and standards that are crucial for continued competitiveness; however, what is less clear is what sort of mechanisms and dynamics facilitate upgrading and how local producers manage to access these kind of nurturing buyer networks.

First, in order to assess the quality of buyer networks we asked interviewees about the nature of their relations to buyers and clients (see Table A6). There is a highly significant difference between the experiences in the two samples. Every upgrader indicated that their buyers have played an active and positive role in growing their business, while only 30 per cent of upgraders also mentioned negative effects and thereby trade-offs in the interaction with buyers. In contrast, 80 per cent of non-upgraders stated to have experienced positive effects, and the same percentage mentioned negative effects, producing a much more nuanced and mixed picture.

Second, the feedback for buyers networks should be put into relation to the main markets the enterprise supplied to upon start and in 2012. For upgraders initially these have been domestic markets and only some supplied merely to local markets while in 2012 most upgraders accessed international markets, too. In contrast very few non-upgraders managed to widen

their market coverage from local to national or international markets (see Figures 5.2 and 5.3).

Third, across sub-sectors the stability of orders has been reported to play a prominent role in supporting the upgrading process. Accordingly, the entrepreneurs where also asked to indicate whether they had stable contracts from the point of starting their business. The stability of contracts was explained to the entrepreneurs as the strength of the buyers commitment to pay for a product or service even if there have been some complications, e.g. via a written agreement/statement, as well as the willingness of buyers to continue doing business with the company. In terms of the quality and reliability of orders upgrader show a significantly higher share of producers indicating they had very stable orders when starting or taking over the business (see Table A6). In contrast, only twenty per cent of firms made a similar statement.

Fourth, the share of national and international business among upgraders at the time of starting the business implies that these buyer networks allowed for much more than just stable orders and a secure planning horizon (see Table A6). In fact, the quality of buyer networks varies significantly in the ways and mechanisms by which they have facilitated upgrading. In the upgrader sample the most frequent reported mechanisms by which buyer networks have reported to be helpful in growing the business have been the feedback on the quality of the product or service, the commitment to stable orders of products or services as well as the access to markets which would have been difficult to enter otherwise. There are also significant differences in the provision of technology and joint action on problems by buyers between the two samples; however, the most significant support mechanism is the provision of access to market and networks which allow the accumulation of profits and know-how.

Thus, buyers do matter for upgrading and they do so mainly in providing a stable source of orders as well as giving access to markets and respective quality feedback. Yet, analysis at the sub-sector level as well as the stories of individual enterprises are necessary in order to provide the base for a deeper understanding along the issues of order stability, market orientation, firm-level learning and upgrading.

Suppliers: First, there are no significant differences between the samples in reporting whether suppliers have had a positive or negative impact on the

enterprise. In both samples roughly two third of respondents report suppliers were being helpful in growing the business, while roughly one quarter in the upgrader sample and one third in the non-upgrader sample also reported negative effects.

Second, at the same time there are highly significant differences in the ways in which suppliers were reported to be helpful to entrepreneurs and their businesses. The most significant difference between both respondent groups is the provision of technology and technical information through suppliers. In addition, upgraders differ from non-upgraders in the number of respondents indicating to get better quality products from suppliers as well as collaborating in case of joint problems, such as complying with standards, making deliveries on time and doing R&D. In contrast, non-upgraders seem to gain less technology exposure through their supplier network. What is more, they also seem to access less quality products and did not mention to collaborate with suppliers on joint problems and challenges. Surprisingly, collaboration among non-upgraders and their supplier networks is more likely in the provision of finance. More non-upgraders have reported to use supplied goods and services as credit compared to upgraders.

Summing up, the data suggests that upgraders do have better relations to their suppliers than non-upgraders. During in-depth interviews in particular manufacturing enterprises pointed out that timely delivery, good quality raw materials and fair and reliable pricing are not necessarily factors one could count on with any supplier. Upgraders have mentioned that they have undergone several rounds of selection to find strategic suppliers and partners, and this is not to imply that these relations will not change in future. In contrast, many non-upgraders reported to use their local supplier (some of them over generations) without experimenting too much with other supply networks. The established trust and rules of conduct have decreased transaction cost for both parties, yet this strong linkage might also limit an enterprises' potential to improve the quantity, quality and innovativeness of its output. However, the strong commitments of non-upgraders towards their suppliers might explain why many non-upgraders have mentioned to receive financial support from their supplier network.

Competition: There are significant differences in the nature of relations between enterprises and their competitors. Nearly half of upgraders acknowledged that their competition has been directly or indirectly helpful

to their business while only 15 per cent of non-upgraders made a similar statement (see Table A7). However, asking about the competition is a sensitive issue and there is doubt whether entrepreneurs are conscious or willing to report about the indirect ways in which other companies might have helped them, e.g. through the possibility to copy or adapt products, through the provision of common goods, or through local reputation effects by attracting a buyer into a region.

Generally, very few entrepreneurs in the non-upgrader group considered their competition to be running a "fair game" as 65 per cent stated that their competitor's actions had a direct negative effect on their business (see Table A7). Most of non-upgraders referred to aggressive pricing as well as "unethical practices" in getting business. Compared to non-upgraders, nearly all upgraders neglected that a competitor' actions might have directly impacted his or her business in a negative way. The data suggests that upgraders interact with their competitors in a more organized and regular fashion (see Table A7).

Associations and public institutions: Another quality measure of business networks is the level of an enterprises' integration into associations. Associations are meant to function as catalyst for what Schmitz (1998) has called "collective efficiency" between competing enterprises trying to improve the entrepreneurial eco-system. Just 27 per cent of non-upgraders are members in an association compared to 90 per cent of upgraders. Yet, being a member in one or many other associations does not necessarily translate into actually using these platforms for coordinated actions among similar enterprises. It is therefore important to look at the entrepreneurs' responses regarding the companies' use of these associational member-ships. In in-depth discussions non-upgraders reported having been in a local association in the past, which however stopped working due to the lack of effectiveness and missing contributions by members. Even those non-upgraders who are in fact associational members reported to benefit very little from their membership.

Among upgraders associations are generally seen as a source of information and as a platform for networking. A major use of associations is the possibility to coordinate joint actions among members. Among manufacturing enterprises in the upgrader-sample many entrepreneurs also mentioned the role of financial incentives and export licences that could be more easily or solely obtained via the membership in certain associations.

Especially incentives for new missionary and subsidized credits from State Banks and Government authorities could be accessed via associations. While some upgraders criticised the effectiveness of associations only exceptional cases questioned their role entirely. Thus, the incentives to make use of associations appear to be higher among upgraders than non-upgrader. It is very likely that this has to do with the access to resources and political voice some associations might have compared to others.

Irrespective of whether enterprises have received support via associations we asked them whether they received any support from public or governmental institutions in the form of financial incentives (duty drawbacks, subsidized credits, etc.), capital subsidisation, access to affordable land or any other form of official business development services (e.g. funded training, etc.). Half of all enterprises in the upgrader sample have received some form of assistance through official channels (see Table A7). In contrast, only 24 per cent of non-upgraders have mentioned to gained support from public institutions.

5.1.4 Business environment

Unethical practices/ corruption: Upgraders bribe officials significantly more often than non-upgraders. Nearly three-quarters of upgraders stated that they had to bribe an official to get things done for the business compared to 35 per cent of non-upgraders (see Table A8).

Infrastructure and access to land: Electricity has been mentioned by 71 per cent of upgraders and 47 per cent of non-upgraders to be a major bottleneck in terms of business infrastructure conditions (see Table A8). In particular, this issue has been raised by companies in Tamil Nadu. While upgraders and non-upgraders do not face too many problems with the cost of transportation and access to telecommunications and internet, non-upgraders appear to face significantly more problems with accessing affordable land and property. Problems in accessing land and real estate have been slightly more prominent in the National Capital Region (NCR) due to the Urban Land Ceiling Act, which constrains the affordable space for service and manufacturing companies alike.

Access to bank loans and business development services (BDS): There is a significant difference between samples in trying to access as well as actu-

ally obtaining bank finance. More than 70 per cent of upgraders have tried to get a bank loan while 60 per cent actually managed to get one; this reflects a success rate of 85 per cent. In contrast, only 35 per cent of non-upgraders made attempts to access a bank loan. However, only 12 per cent of upgraders reported to having actually been successful – this reflects a success rate of 34 per cent. Asking both samples about their impression as of whether they think bank finance is difficult to obtain interestingly there appears to be no significant differences between the samples, although the difference in the actual success rate is highly significant.

In-depth interviews made it clear that initially upgraders as well as non-upgraders were very unsure about the performance of the business and would therefore rather not take up formal bank loans but rely on private networks. The required collateral, the necessary documentation as well as the registration of the firm as Small-Scale Industry or MSME were reported to be the major reasons as of why entrepreneurs did not want or did not get any external funding from banks. Further high interest rates and small credit volumes were additional supply reasons which withhold entrepreneurs from taking out loans.

More than 50 per cent of non-upgraders and roughly 26 per cent of upgraders are not aware of enterprises or public institutions that provide business development services (BDS) understood as business consulting or business assistance. Generally, the level of interest of both samples in these kinds of services has been very low with 62 per cent of upgraders and 39 per cent of non-upgraders stating to have no interest in BDS. In fact, only 20 per cent of non-upgraders have actually taken up BDS in the past compared to 30 per cent of upgraders. During interviews it became very clear that those companies having experienced BDS consulting or training were mostly not happy with the quality of the assistance as well the practicability of advice. For example, through associational meetings most of the upgraders came in touch with BDS providers, yet, were reluctant to take on further expenses for a consulting service that most probably would not help in addressing crucial growth bottlenecks. Most non-upgraders reported entrepreneurship training to be helpful to some extent, yet these training did not entitle them to further support or access to resources such as bank finance or subsidies.

Laws and regulation: Conflicting and intransparent laws as well as the handling of bureaucracy are the most frequently mentioned problems entrepre-

neurs face among both samples (see Table A8). However there are significant differences in how both groups experience laws and regulations. Upgraders seem to be more likely in facing problems when trying to comply with social and environmental regulations. Due to the fact that all upgraders are by now registered units they face a higher level of regulatory scrutiny through inspectors and audits. Correspondingly, as many non-upgraders are unregistered units their major concerns are related to paying taxes. Interestingly, in in-depth interviews entrepreneurs in the non-upgrader group mentioned that it is less the cost of paying taxes, but rather the worry that once formalized tax payments are made enterprises will be overwhelmed with state regulations and bureaucracy.

5.2 The Information and Communication Technology (ICT) sector

The following Subchapters will *first* introduce a brief overview of the Indian IT sector and *secondly,* present data on the ICT sample as well as *thirdly* systematically compare the differences in characteristics between upgraders and non-upgraders. *Finally,* success factors and growth trajectories of upgraders are identified and set in relation to major upgrading constraints in order to define combinations of success in the ICT sector.

5.2.1 Sector overview

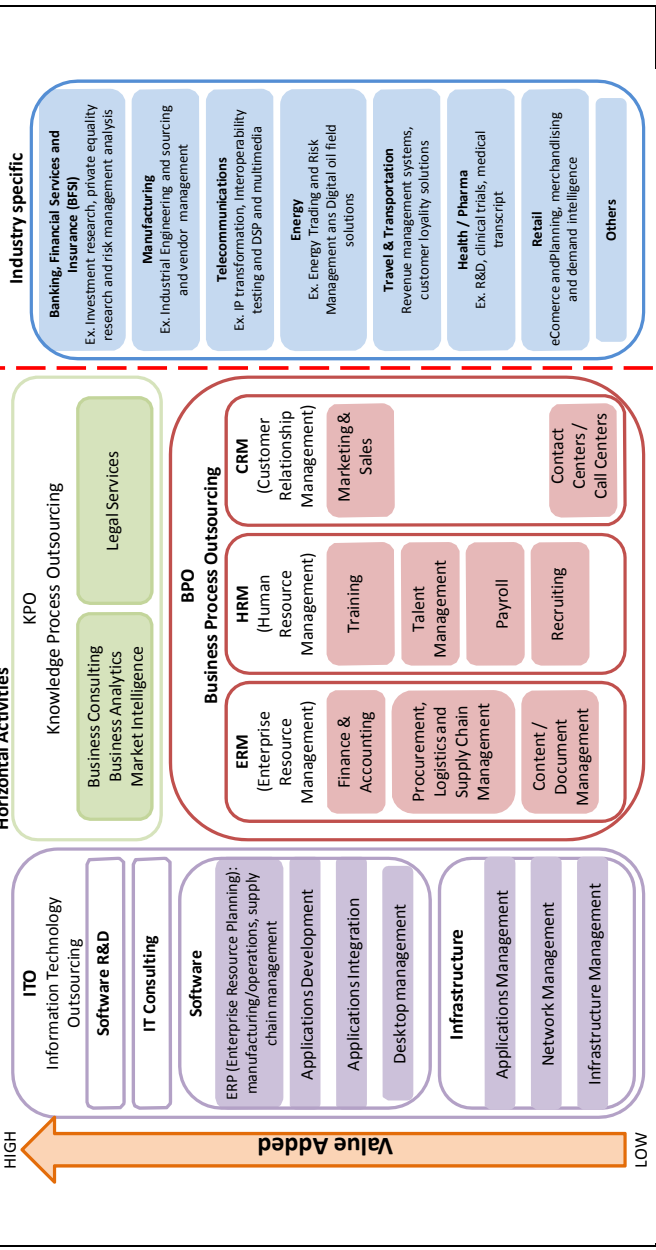
In the last three decades India has developed an internationally competitive Information and Communication Technology (ICT) sector. With the improvement of the IT and telecommunication infrastructure as well as the supply of educated manpower through the establishment of Indian Institutes of Technology (IIT) many foreign and multinational companies were attracted to offshore and outsource software services in several Indian cities, such as Mumbai and Bangalore. In particular, the practice of sending Indian ICT professionals to the USA to work on assigned projects (also called “body shopping”) within multinational subsidiaries lead to the development of an ICT diaspora which had gained substantial exposure in developing technical, industry as well as domain experience. Upon return, these professionals were among the first to start local companies. The most prominent cases are Tata Consulting Services, WIPRO and Infosys. Fur-

ther, the subsequent development of IT parks in the 1980s as well as the adoption of several industrial policy measures such as tax benefits and subsidized office incubators kick-started further expansion of the strongly outward-oriented Information Technology Outsourcing (ITO) and Business Process Outsourcing (BPO) industry (Athreye 2005).

The ICT industry has three major sub-components: ITO, BPO, and KPO (see Figure 5.11). In the beginning of the 2000s, Indian IT firms already had a solid stake in the global ITO and BPO segment, and a few companies were starting to move into higher value-added services such as software research & development (R&D) as well as Knowledge Process Outsourcing (KPO). In 2012, India has become an internationally acknowledged full spectrum supplier of services and products in the ITO, BPO, and KPO segments covering several vertical industries e.g. finance, transport, etc. (see Figure 5.11). In particular, not only have Indian firms developed the capabilities to deliver services and develop customized software that fulfil global quality standards, but in a few cases enterprises have already developed standardized and replicable software products. This movement into higher value-added market segments was triggered by the incremental development of domain knowledge among several vertical industries, e.g. finance, manufacturing or energy (as seen in Figure 5.11).

The ICT sector is contributing considerably in terms of exports, output-growth and employment creation, thereby giving India the image of an emerging technology and knowledge driven economy. According to the National Association of Software and Services Companies (NASSCOM) the aggregated revenue for the ITO and BPO industry in the year of 2012 alone is estimated to account to more than US$ 100 billion, of which US$ 69 billion are exports (mainly to the USA and Europe), meanwhile generating direct employment for 2.8 million. As a proportion of national GDP, the sector revenues have grown from 1.2 per cent 1998 to an estimated 7.5 per cent in 2012 (NASSCOM).

Figure 5.11: The IT offshore service value chain



Source: Gereffi / Fernandez-Stark (2010)

Above all, the growth of the ICT sector has leveraged several opportunities for MSME development. The service industry in the ICT sector has low initial investment costs and mostly relies on the entrepreneurs' human capital. These relatively low entry barriers provided opportunities for first-generation entrepreneurs in India that were working as former software professionals abroad or in local Indian firms. Especially for micro and small companies the ICT sector has shown to be a rather promising sector to grow compared to traditional manufacturing activities that require large capital investments. However, the ICT industry has also experienced several boom and busts in the last decades (Kumar 2000). Especially, at the turn of the millennium the "dot.com bubble" caused decreasing and stagnating business for most companies in the sector. More recently, the financial crisis has strained project volumes of US and European clients. Thus, while ICT has shown to be a sector in which entries of micro and small firms were likely, these enterprises had to develop particular survival strategies in order to overcome economic up and downs within the sector.

In order to understand which factors have provided firms with the necessary growth resilience and strategies the following sections will, firstly, give a descriptive analysis of firms that have upgraded and those who have not and, secondly, analyse upgrading trajectories of sampled success cases.

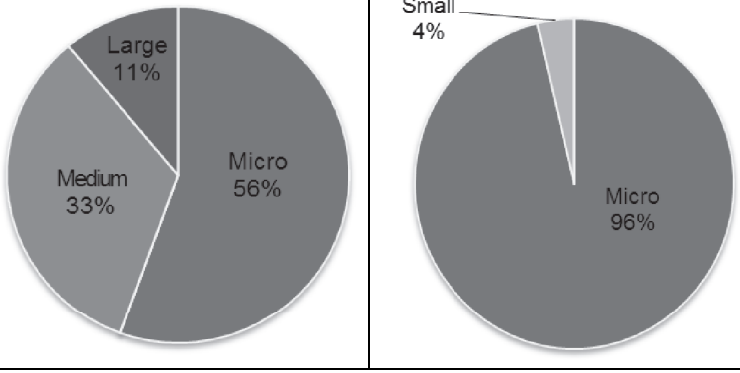
5.2.2 ICT sample composition

Size of enterprises and upgrading dynamics: The total sample of 27 ICT enterprises consists of 12 upgraders (44 per cent) and 15 non-upgraders (56 per cent). Figure 5.12 shows that more than 3/4 of upgraders have graduated into the medium size segment, and some even managed to grow into the large size segment. Initially however, it can be seen that at business start nearly all ICT enterprises started as micro units. Only one enterprise (4 per cent) started small having 10 employees. These were taken into consideration to have one case of small enterprise upgrading, while the vast majority represents micro enterprise upgrading. The average size of enterprises at business start among upgraders was 3 and among non-upgraders 2 regular employees. By now, upgraders are employing on average regular 107 employees in contrast to only 7 among non-upgraders (see Table A11). When categorizing the enterprises according to the

Indian definition[5] there is less upgrading into the medium and large categories (see Figure 5.13). In fact, there are only 11 per cent of ICT enterprises that manage to graduate into the medium category, but 41 per cent who graduate from micro to small.

Figure 5.12: Distribution of interviewed ICT companies by MSME employment definition*

Size category in 2012	Size category upon business start-up



* Employment definitions have been made according to the following number of regular employees: Micro = 0–9 employees, Small = 10–19 employees, Medium = 20–99 employees, Large > 99 employees; N = 27

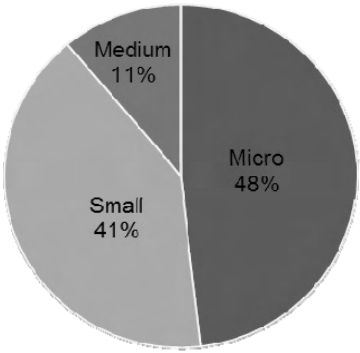
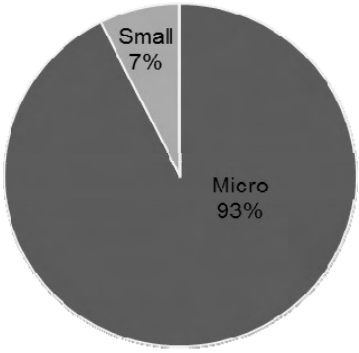
Source: own survey

In order to get a better picture of employment growth dynamics Figures 5.14 and 5.15 offer a disaggregated look at the growth dynamics of individual enterprises. On average, ICT upgraders have grown by 98 per cent annually and thereby added on average 10 regular employees per year (see Figure 5.14). Due to some very young companies in the sample it is advisable to also look at the median values. Accordingly, upgraders have grown by a median annual growth rate of 40 per cent.

5 For the Indian MSME definition please see Table 3.1.

In comparison, ICT non-upgraders have an average annual growth of 31 per cent and a median value of 22 per cent annually and thereby added only 1 employee per year. While this is a relatively good performance, these numbers have to be read with caution as seen in Figure 3.15 and 3.14 as non-upgraders are slightly younger. Thus, it is most likely that some upgraders have also found their most efficient and optimal size and are not intending to grow larger in terms of employment. The latter is especially true for software development, KPO and R&D engineering enterprises. Thus, it is important to take into account the qualitative criteria of innovative output (seen in Table A10).

Figure 5.13: Distribution of interviewed ICT companies by size based on the Indian definition*

Size category in 2012	Size category upon business start-up
	

* Categorization has been applied according to the following exchange rate
1 Rs = 55 US$; N = 27

Source: own survey

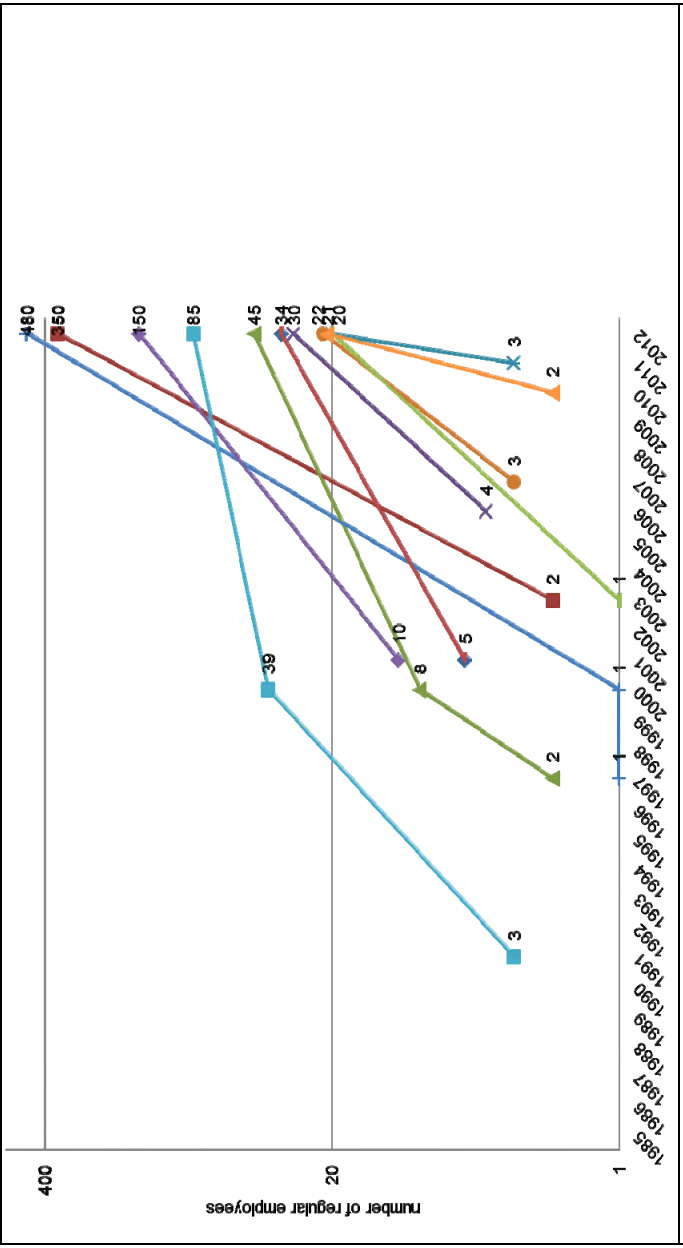
Having a closer look at Figure 5.14, one can detect two size clusters of enterprises in 2012: in the group of enterprises having between 20 and 50 employees, one mainly finds firms which develop software products and offer other higher value-added services. In contrast, in the group of firms having more than 80 employees, one exclusively finds software service

companies, which includes simple BPO activities, web-design and other web-based services. It is therefore important that even *within* the sub-sample of upgraders one does not judge upgrading dynamics solely by the annual growth rate, but also by the level of innovative activity and the value-added of the enterprises' output.

Generally, non-upgraders show positive growth dynamics as one would expect in a booming sector, however individual annual growth rates are less outstanding than those of upgraders. Also one cannot infer whether some of the enterprises in the non-upgrader group may become upgraders in the future process. Nonetheless, there are some cases of stagnation and negative growth in the sample.

Region and location: The enterprises have been mostly interviewed in the National Capital Region (48 per cent) and in Tamil Nadu (37 per cent). Few ICT enterprises were sampled in Rajasthan (8 per cent) and other states (7 per cent). Within these regions, all upgraders started in an urban setting compared to only 87 per cent of non-upgraders. Seven per cent of non-upgraders started their business in a semi-urban setting and a similar number (6 per cent) started in a rural area. As the rents in cities like Delhi and Chennai have become unaffordable for most small entrepreneurs, the exclusive prevalence of "urban" firms among ICT upgraders might explain why three quarters of this group have started their operations predominantly from home rather than in rented spaces (8 per cent). Nearly 20 per cent of upgraders have indicated that instead of working from home they have used other arrangements at start, such as working from internet cafés or friend's houses which had better connectivity. In contrast, initially only 60 per cent of non-upgraders started from home, but surprisingly 40 per cent of non-upgraders rented an office or premise. This is because most non-upgraders reported to not have had an internet connection, the space or the necessary peace at home to work, eventually forcing them to find other arrangements. Further, many enterprises in the non-upgrader group reported to sell IT equipment or offer repair services on the side to supplement higher value-added business activities for which they needed short term capital. Against this background, a small shop or office was instrumental to gain visibility in the local service economy.

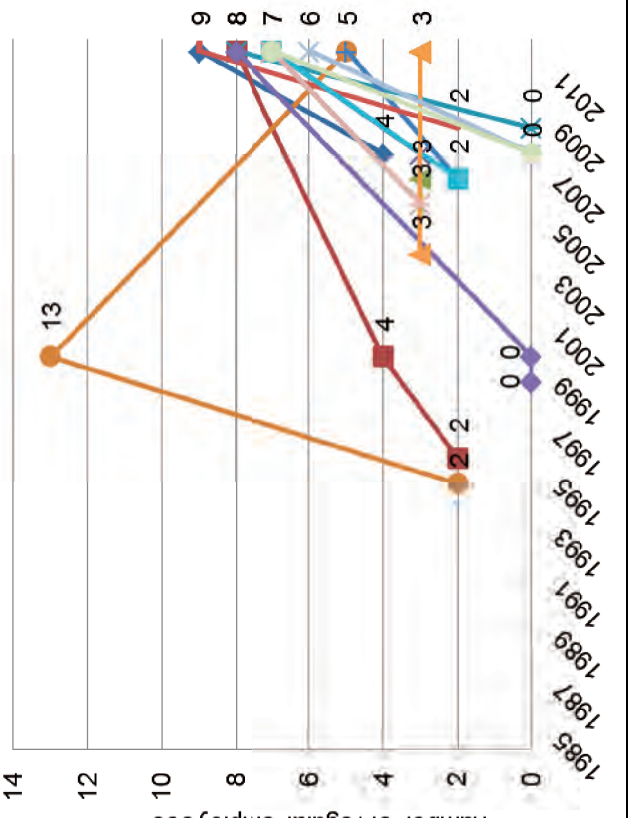
Figure 5.14: Employment growth in the ICT upgrader sample from 1991–2012



Total sample N = 12

Source: own survey

Figure 5.15: Employment growth in the ICT non-upgrader sample from 1991–2012

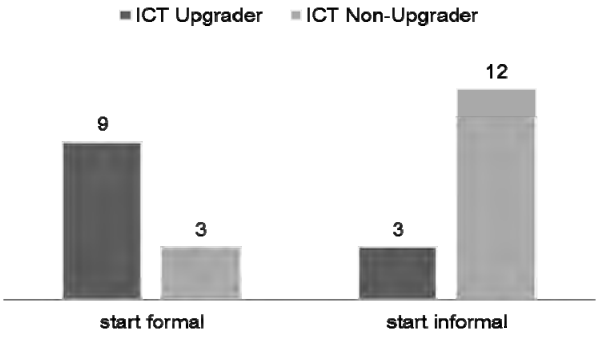


Total sample N = 15

Source: own survey

Formality: There are no significant differences in the registration status between upgraders and non-upgraders at the time of the interview in 2012 (see Table A11 in Annex). Nearly all enterprises are formal except for two cases in the non-upgrader group. Upgraders mostly started as a registered business compared to only 3 out of 15 ICT enterprises in the non-upgrader sample (see Figure 5.16).

Figure 5.16: Formality and informality among ICT enterprises at business start



Total sample N = 27, upgrader n =12; non-upgrader n =15

Source: own survey

Age of enterprises: Comparing growth dynamics among upgraders and non-upgraders between 1991 and 2012 one can detect that most enterprises started around or after 2000 (see Figure 5.14 and Figure 5.15). There are no significant differences between both samples. On average, ICT upgraders are 10 years old while non-upgraders are a bit younger with an average of 7 years (see Table A11 in Annex).

5.2.3 ICT upgraders vs. non-upgraders

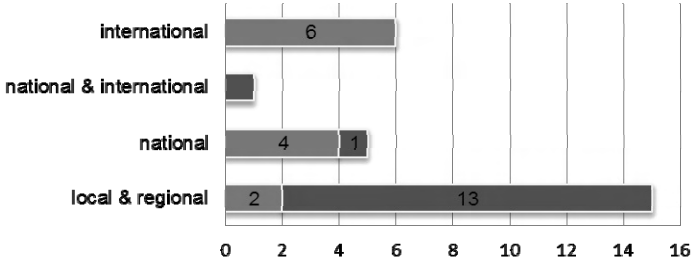
The following section systematically compares ICT upgraders and non-upgraders along the five "onion-layers" of our conceptual framework.

(i) Enterprises

Types of Innovation: There is a highly significant difference between ICT enterprises in producing product innovations as well as in entering new markets (see Table A10 in Annex). Further, upgraders seem to innovate significantly more on technological and organisational processes. Among upgraders, innovations in products (92 per cent) and markets (100 per cent) are the most dominant types. In contrast, the most frequent innovative efforts among non-upgraders are in developing new technology (40 per cent) and to enter new markets (40 per cent).

Market orientation: ICT enterprises differ strongly in their market orientation upon business start (see Figure 5.17). While ICT upgraders either had an international or national focus already at the beginning, non-upgraders were mainly servicing local and regional markets. Since 50 per cent of upgraders started with international business this suggests that entrepreneurs already had linked up with international clients before starting their company. In fact, most of the entrepreneurs who started their company in a classical offshore-service were working in an internationally known IT firm. Yet, while former work experience might open the access to international clients and ease start into business, the other half of upgraders started serving local, regional and national markets, which shows that upgrading within both markets is viable.

Figure 5.17: Market orientation of ICT enterprises at business start-up



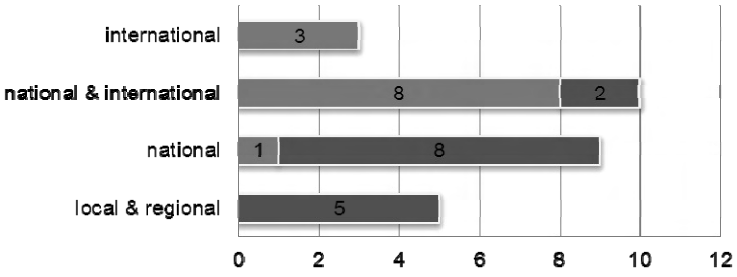
	local & regional	national	national & international	international
ICT Upgrader	2	4	0	6
ICT Non-Upgrader	13	1	1	0

Total sample N = 27, upgrader n =12; non-upgrader n =15

Source: own survey

As can be seen in Figure 5.18, in 2012 the majority of upgraders serve national and international markets simultaneously. Only very few have kept their focus on one single market; rather the dominant strategy is to internationalize while keeping a feet in the domestic market. Interestingly, upgraders who had exclusively served international markets at start reported that getting into the national market was far more difficult for them than initially assumed. A major theme among internationally oriented entrepreneurs was that Indian business networks and market demands are very different from those they experienced in international markets. In particular, entrepreneurs reported to face more pressures on price, fuzzy descriptions of project deliverables, difficulties with intellectual property rights as well as bottlenecks in accessing public clients when operating in the Indian market.

Figure 5.18: Market orientation of ICT enterprises in 2012



	local & regional	national	national & international	international
ICT Upgrader	0	1	8	3
ICT Non-Upgrader	5	8	2	0

Total sample N = 27, upgrader n = 12; non-upgrader n = 15

Source: own survey

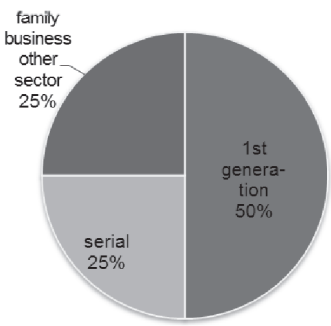
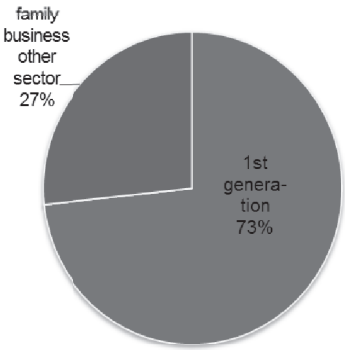
Enterprise finance: Banks generally classify micro and small ICT start-ups as belonging to the high risk category as most of these enterprises do not have any substantial collateral or other securities to offer upon start-up. Therefore, it is not surprising that all upgraders and 73 per cent of non-upgraders made use of their personal as well as family savings to start their business. Yet, there is a significant difference between upgraders and non-

upgraders at the 10 per cent level in the frequency of reporting personal savings as finance mechanism (see Table A11 in Annex). This implies that upgraders probably were more likely to have personal savings which could be used for starting a firm. This is supported by the fact that nearly 70 per cent of non-upgraders reported to having used other means of finance such as cash advance in selling services and products compared to only 17 per cent of upgraders (see Table A11). In fact, non-upgraders highlighted the need to sell equipment and offer repair services in order to increase their working capital for higher value-added services and product development.

In 2012, both subsamples finance their operations mainly through their own profits. Private savings have lost their importance; however there are significant differences among upgraders and non-upgraders in the use of secondary financial sources. Among upgraders, roughly 40 per cent have taken out a bank loan compared to only 13 per cent among non-upgraders. Those that have gone to banks have taken out a *private* loan and used their houses or other valuables as securities. Further, 30 per cent of upgraders mentioned that strategic alliances and partnerships with clients, consultants and suppliers have opened possibilities for gaining access to trade credit, free office rents or in-kind credit, e.g. as in the use of some free equipment and partly licensed software. In contrast, 67 per cent of non-upgraders still rely on cash advance.

Partnerships, entrepreneurship types and family business background: There are no significant differences in the owner structure between upgraders and non-upgraders at the time of business start. Half of entrepreneurs in both samples started the company alone and the other half started it as a partnership. Those who started with a partner were likely not to be a family member. In 2012, among upgraders the share of partnerships is higher and upgraders are now even more likely to partner up with a non-family member.

Figure 5.19: Comparison of types of entrepreneurs across samples

Upgrader	Non-upgrader
	

Total sample N = 27, upgrader n =12; non-upgrader n =15

Source: own survey

There are more 1st generation entrepreneurs among non-upgraders than among upgraders. Further, serial entrepreneurs seem to be represented exclusively in the latter group (see Figure 5.19). However, there are no differences in the share of entrepreneurs having a business family background. This indicates that although entrepreneurship in India has very often been discussed with traditional business communities in mind, ICT as a modern and thriving sector offers opportunities to a new generation of entrepreneurs. Across samples, entrepreneurs identified themselves as being part of a rising, educated Indian "middle class". The vast majority of entrepreneurs pointed out that they had chosen entrepreneurship not because of family or community identity, but because of their professional interests and work experiences.

(ii) Entrepreneurs

Gender, age, education and work experience of entrepreneur: There are no female entrepreneurs in the ICT sample, which suggests that there might be several entry barriers for woman entrepreneurs. Talking to sector and industry experts as well as to interviewed entrepreneurs revealed that while

woman entrepreneurs are a scarce case, the share of females working as employees in ICT firms is constantly rising. Reasons as of why women chose employment over entrepreneurship in the ICT sector are related to the double burden women face at work and at home.

With an average of 45 years, upgraders are 7 years older than non-upgraders (see Table A12 in Annex). Both groups of entrepreneurs are likely to have obtained university education, however among upgraders Master's degrees are more dominant than among non-upgraders (see Table A12). In contrast, non-upgraders show a high number of entrepreneurs with a Bachelor's degree. Upgraders and non-upgraders had gained as many years of work experience before entrepreneurship; however, when looking at the international exposure entrepreneurs had before starting the business, it appears that upgraders are significantly more likely to have been abroad within their work assignments. Among ICT entrepreneurs, nearly all upgraders reported to having been outside the country in a business or work function as employee.

Information sources: Among both ICT groups there were only little differ-ences in the pattern of information use (see Table A12). The most dominant sources of information were the internet, clients as well as own R&D activities. The only significant difference between the groups is related to the use of associations and formal networks in accessing information. Upgraders report more often to gain information via these networks than non-upgraders.

(iii) Social and business networks

Education of father and number of dependents: On average, fathers in the upgrader sample are slightly better educated, however the difference is significant only at the 10 per cent level (see Table A13). Also, there is no difference between the number of dependents at the time of business start as well as in 2012 between both groups. In combination with the information given in the preceding Chapters, this implies that all ICT entrepreneurs might come from a similar socio-economic class.

Caste and/ or community membership: There are no significant differences in the ways how ICT upgraders and non-upgraders perceive the subject of community membership or caste. One quarter of entrepreneurs in the ICT sample has a business family background and 30 per cent to 40 per cent of

entrepreneurs stated that their community identity has affected their business (see Table A14). Roughly 40 per cent of upgraders and non-upgraders agreed that business community membership impacts their business positively. However, while both groups coincide on the importance of business community membership for networks dynamics and the access to relevant advice in business matters, only non-upgraders see financial advantages. It should be noted that the majority of ICT entrepreneurs thinks that within the ICT sector business community membership has no major impact.

Helpfulness of social networks: Half of all ICT entrepreneurs reported that initially one or more members of their core family had opposed entrepreneurship as a career decision. This percentage is slightly (yet not significantly) higher among non-upgraders. As most ICT entrepreneurs in both samples have a middle class background, entrepreneurs' decision against a secure career as employees in the well paid offshore industry weighed strongly. In most cases, this decision was not well received by the entrepreneur's families who would have rather had the entrepreneur keep an employed position. Accordingly, entrepreneurs had to invest some energy and time in convincing their families to support the entrepreneurial endeavour. Thus, unsurprisingly, more than 85 per cent of ICT entrepreneurs highlighted emotional support and 50 per cent financial support from their core family members as most important social support channels in running their business (see Table A13). A significant difference among ICT entrepreneurs though can be detected in the use of core family members as an access point to markets. Among non-upgraders, 40 per cent reported to having extended their market coverage via a family member while none of the upgraders reported this practice.

Extended family ties or relations to friends have mainly been helpful among ICT entrepreneurs (see Table A13). Among upgraders, the most frequent ways of support are related to accessing markets, know-how as well as labour. A similar pattern can be observed with non-upgraders, yet, with the only difference that financial support from this social segment has played a slightly more important role than for upgraders. While there are no significant differences in the quantitative use of extended social networks among both groups, there exist strong qualitative differences in the kinds of extended social networks.

Upgraders mentioned two groups of extended social networks to be of importance: alumni networks originating from their well-known IT-focused

universities, and professional networks originating from the entrepreneurs' time in (international) ICT lead firms. Both groups were reported to offer a variety of valuable resources in terms of advice, knowledge, finance and networks. The quality of resources was stated to have strong business relevance. Accordingly, the impact of certain support channels varies immensely. While upgraders reported to having worked in managerial roles in well-known and well linked international lead firms, non-upgraders had this exposure to a lesser degree. While some had experienced working in a lead firm, they had worked in less responsible and reputable positions with little exposure to international clients. This lack of quality exposure provided fewer opportunities to weave "quality networks". In other cases, entrepreneurs in the non-upgrader group had not directly worked in lead firms, but rather serviced them. Consequently, due to the former educational as well as work-related network exposure there seem to have been fewer "quality transactions" among the social network of non-upgraders.

Helpfulness of business networks: Non-upgraders have a more mixed relationship with their clients than upgraders (see Table A15). Significantly more non-upgraders (87 per cent) compared to upgraders (33 per cent) have reported to having suffered negative implications in doing business with a client. This is supported by the fact that there is a highly significant difference in entrepreneurs stating whether they had stable projects upon business start. Roughly 75 per cent of upgraders mentioned to have had reliable and stable orders at business start compared to only 13 per cent in the non-upgrader group.

Both groups report to have received business support from their clients. While different market orientations among both groups imply the need to service different demands and quality requirements, it appears that this has a strong impact on the ways ICT enterprises have received assistance from clients. As shown in Table A15 there are significant differences in receiving feedback on quality as well as assistance in technology transfer. Every upgrader reported to having obtained useful feedback on the quality of their service or product and 60 per cent mentioned to have participated in efforts to transfer technology and know-how. In comparison, feedback quality and project stability were being mentioned as most supportive business channels by clients. While the majority of upgraders experienced quite a high level of project stability from the beginning this seemed to be something non-upgraders had to fight for over a longer period of time.

ICT equipment suppliers and other service contractors were not mentioned to be relevant in developing the business. Roughly 25 per cent of ICT enterprises mentioned that suppliers had some positive stake in the growth of the business and only in one case a non-upgrader had a negative experience.

Enterprises in the non-upgrader sample report significantly more often to be negatively affected by the level of market competition (see Table A16). In comparison, 50 per cent of upgraders stated to have gained directly or indirectly from their competition – mainly via joined knowledge exchanges and advice in the start-up community. The percentage of upgraders in associations is also significantly higher than among non-upgraders and supports the notion that upgraders are embedded in better "quality networks".

(iv) Business environment

Between upgraders and non-upgraders there exist no significant differences in the perception of the business environment (see Table A17). Generally, across enterprises the same issues have been raised, which suggests that while enterprises seem to face similar problems, they have developed different coping strategies.

Corruption, infrastructure and access to land: Half of ICT entrepreneurs had to bribe an official to get something done. Entrepreneurs mentioned complications when trying to obtain various sorts of licences, in particular for electricity lines or property. Additionally, when asking entrepreneurs about having problems with infrastructure 45 per cent mentioned that their problem to access (reliable) electricity affects their business negatively. However, at the time of the interview, entrepreneurs also mentioned that they were quite satisfied with the availability of telecommunications services and transport. The vast majority stated that public transport for their employees as well as the coverage of voice communication had improved a lot in the last decade. Yet, entrepreneurs also stated that while India has achieved immense success in voice communication, the penetration of internet and broadband has remained low due to a limited spread of wire line telephones and the affordability of mobile broadband technologies. What was a bigger concern across samples is access to property or affordable offices for rent. Nearly 50 per cent of non-upgraders and 25 per cent of upgraders stated that they face serious problems in finding affordable space for their business.

Access to bank loans and business development services: A similar share of upgraders and non-upgraders attempted to access a bank loan (58 per cent and 40 per cent respectively, see Table A17) and managed to get one. However these numbers have to be read with caution. It turned out that in those cases in which entrepreneurs reported to having taken out a bank loan for their business these were *private* bank loans issued on the entrepreneurs' name instead of in the name of the company. Most entrepreneurs were not even considering corporate loans as a potential finance option as they considered it nearly impossible to obtain a corporate loan due to the missing collateral and "corporate" securities. Accordingly, access to bank finance remains a major problem for ICT entrepreneurs.

Further, among ICT upgraders there is no interest in accessing BDS offered by either private or public organisations (see Table A17). Here we understand BDS as all those non-financial services that were offered to entrepreneurs at various stages of their business development. In qualitative discussions it seemed that while one third of ICT entrepreneurs had accessed BDS services, e.g. business consulting/ advice seminars for start-ups, entrepreneurship training, etc., these were not satisfied with the quality of seminars. In particular, they questioned the applicability of suggestions made by BDS instructors.

Laws and regulations: In 56 per cent of cases, ICT entrepreneurs pointed at problems in handling general bureaucracy and interface with the state (see Table A17). Similarly nearly 50 per cent of entrepreneurs mentioned to have issues paying taxes and understanding and predicting laws and regulations. These statements mostly refer to unclear taxing practices. Since software is sold both as a product and service, it is currently subject to multiple interpretations of tax laws, eventually leading to double taxation. According to industry players, service tax is applicable when a service is offered, while VAT is applicable when a product is sold. Yet, a typical software "product" transfer agreement is generally also subject to an additional service tax, as the nature of the transaction involves a "service".

(v) Ranking of success factors and constraints by ICT entrepreneurs

As shown in Figure 2.2 and Table A18, entrepreneurs were asked to rank *success factors* and *constraints* relative to their importance in affecting the upgrading or stagnation of their enterprise. Entrepreneurs were asked to (a) rank the 'onion layers' according to their importance and (b) explain why they had chosen this rank. The latter part involved an in-depth qualitative discussion about why the entrepreneur had chosen a factor in order to identify *causal links* between success factors and constraints. In calculating the frequencies of individual rankings and adding those up for upgraders and non-upgraders, we aimed to see whether both groups had different perceptions on supporting and constraining factors. The following aggregated ranking of the onion layers emerged (see Table 5.1):

Among ICT upgraders, the most frequently mentioned *success factors* are either related to the entrepreneur or the enterprise. In particular, upgraders commonly highlighted the role of their educational and professional experience *before* business start which enabled them to gather a critical amount of personal savings and identify potential employees. The entrepreneur's work exposure is connected to the third most important ranked factor: access to international clients and markets.

In terms of reported *constraints,* the most frequently mentioned factor has been access to finance. Secondly, a major challenge for most upgraders is to enter domestic markets as most were running offshore services and developing product for clients abroad. Bottlenecks like closed business networks, missing scale-ability of services as well as a higher level of corruption and lack of transparency have been reported to partly be the reason why entrepreneurs still prefer to serve international rather than domestic markets.

Table 5.1: Ranking of onion layers among ICT upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
1	**The Entrepreneur** – **Quality education and work experience in a lead firm (international work exposure)** – **Availability of personal savings** – Readiness to accept risk and little personal savings/ securities	**1**	**The Business Environment** – **Access to (medium-term) finance, venture capital** – Unresolved tax issues concerning software products ("double taxing") & flaws in intellectual property law for software product and regulation of quality standards – Financial crisis hit the export market
2	**The Enterprise** – Partners to carry financial risk as well as responsibility sharing – **"Handpicked" quality employees with their own acquisition network** – Less extensive planning and more execution - being among the first on the market	**2**	**The Business Network** – Timely payments – **Accessing the domestic market/ clients** (mostly public clients) is based on mouth-to-mouth reference which limits market expansion / business ethics – Finding strategic investors to scale-up service/ product/ also lack of mentoring
3	**The Business Network** – **Access to international clients/ markets** – Cash advance and credit from clients & various measures of bootstrapping – Access to know-how / information sharing with former colleagues and employers (via social networks)	**3**	**The Entrepreneur** – Developing a marketing strategy for a software products from India – **Start-up romanticism** – missing business intelligence, precaution and aggressiveness. Realizing when to cut an idea and develop something new. – Missing specialised skill-set

Table 5.1 (cont.): Ranking of onion layers among ICT upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
4	**The Social Network** – **Strong work-related friend circle** – Emotional support from family as well as family savings – Readiness of family to organize life around "the firm".	**4**	**The Enterprise** – Finding talent with a software product mentality rather than service mentality. – **Finding employees who work independently** – Hiring senior/ more experienced staff which can help sharing burdens of decision-making
5	**The Business Environment** – **Availability of large talent pool** – Booming ICT sector; most recently for higher value-added services and software	**5**	**The Social Network** – Financial family obligations – **Family resistance to entrepreneurship**
N = 12			
Source: own compilation			

Thirdly, while entrepreneurs see their personal efforts and work exposure as crucial marks for success, upgraders repeatedly highlighted their inexperience with entrepreneurship. Initial "start-up romanticism" was identified as third most important constraint in upgrading. The notion that not only technical performance and a viable business idea matter for upgrading, but also business tactics and business intelligence, have been a common theme among 1st generation entrepreneurs. Finding the right employees as well as convincing family members to support entrepreneurship have been mentioned often yet ranked among the less severe constraints.

Comparing this aggregated ranking with those of non-upgraders, very few differences can be detected in the relative importance of particular onion layers. Further, narratives of non-upgraders support many statements of

those in the upgrader group. As shown in Table 5.2, the aggregated ranking of success factors and constraints chosen by non-upgraders mirrors the ranking of upgraders. It underlines the importance of success factors related to the individual background of the entrepreneur as well as those related to the quality employees. Similarly, certain qualities of the business network, including the access to international clients, technology and market information, are ranked as the third most important factor by upgraders and non-upgraders alike. Upgraders, however, attribute a more important role to their social networks than non-upgraders.

ICT entrepreneurs seem to agree that the two most important constraints to upgrading are related to the lack and difficulties in accessing bank finance and new markets. Particularly, while upgraders are concerned about connecting with public organisations in the domestic market, non-upgraders seem to have a more general need to establish any stable market linkage. Compared to upgraders, non-upgraders seem to be less reflective on their own performance rating issues related to employees as more severe constraints than their own business and management skills. For both groups social dynamics and family obligations pose the least severe constraints in enterprise upgrading.

Table 5.2: Ranking of onion layers among ICT non-upgraders

Rank	Success Factors	Rank	Constraints
1	**The Entrepreneur** – **Availability of personal savings** – Quality education and management skills as well as lead firm experience	1	**The Business Environment** – **Access to finance** – Level of competition among micro units – Inflation in a fast growing economy – General level corruption
2	**The Enterprise** – **Reliability of workers** – Access to experienced personnel – Market value of service/ customization – Viable / feasible business model	2	**The Business Network** – **Access to clients** (international as well as domestic) – Missing business networks to access market information/ technology transfer

Table 5.2 (cont.): Ranking of onion layers among ICT non-upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
3	**The Business Network** – **"Good" customer base; reliable and long-term partnerships** – Access to technology and market information – Access to international clients	**3**	**The Enterprise** – Unable to compete on wages for highly skilled and experienced personnel – **High labour retention** – Missing sales to attract / compete for bigger projects – Not able to distinguish oneself from low-quality services, professional marketing
3	**The Business Environment** – External support for micro units in terms of tax breaks and support for affordable office space – **More opportunities for home-grown ICT firms in India**	**4**	**The Entrepreneur** – **Missing managerial know-how**
4	**The Social Network** – Emotional support from family as well as family savings	**5**	**The Social Network** – **Financial family obligations** – Family resistance to entrepreneurship
N=15			
Source: own compilation			

While the ranking of onion layers has been an exercise to capture the perception of entrepreneurs in understanding what drives enterprise performance, the following section will aim at pulling different strings of information together in explaining combinations of success.

5.2.4 ICT combinations of success

The following analytical section will *first* sum up the major factors that have contributed to the *success* of ICT entrepreneurs in upgrading their businesses. *Second,* based on the nature of the economic activities different enterprise upgrading trajectories will be identified. *Third,* major upgrading constraints and success factors will be set in relation to explain how entrepreneurs have used the latter to develop adequate coping strategies resulting in *combinations of success.*

Upgraders in the ICT sector belong to what Pyke and Sengenberger (1992) would have called modern firms on the "high road". All upgraders aimed at developing competitive advantages via specialisation and qualitative increases in value-added services. In comparing upgraders and non-upgraders there are some outstanding observations related to the role of *quality of education and work experiences, access to international clients and reputation effects and alumni and work-related networks:*

– *Quality of education:* The data hints at the decisive role of the entrepreneurs' human capital in determining the success of his firm. This is intuitive as there exist high knowledge entry barriers to gain a degree in any IT respective field and to develop a viable, value-adding and clear business model. While entrepreneurs in the ICT sample are generally highly educated, most of ICT upgraders show to be even better educated holding a Master degree from universities with a good reputation in India and abroad. Further, in-depth discussions revealed that some upgraders visited "technopreneur" conventions and entrepreneurship seminars offered by the industry association NASSCOM before even finishing their Master degrees. Most decided that a career as entrepreneur would be only a viable option after having gained professional experience in the offshore and outsourcing industry. The majority reported to have already been in contact with this industry as interns or on practical assignments at university. These discussions showed that additional to the normal curriculum of formal education entrepreneurs developed a good sense for and curiosity to work independently. Thus, while formal education seems to be a necessary condition to start a business in ICT it is also the exposure to a certain "business conscious" environment at the university to develop the intangible skills to lay out and execute a business model.

– *Quality of work experience:* While a certain "quality" education seems to be a prerequisite to enter work assignments in certain lead firms it was the experience, international exposure and positioning of the entrepreneurs in lead firms which constituted the last stepping stone for entrepreneurship. The professional experience of upgraders is significantly longer and of better quality than those of non-upgraders. While working for a longer period of time entrepreneurs in the upgrader group were also occupying higher ranks within the organizational hierarchy in India as well as abroad compared to non-upgraders, who seemed to be rather coming from more technical roles. In contrast, upgraders experienced technical as well as managerial (or at least specific lead roles in smaller groups) functions enabling them to strategize and negotiate new projects. Further, having experienced to make human resource decisions, most entrepreneurs were very clear about the talent they would need when starting their own company. This exposure and overview of the ICT landscape has also given entrepreneurs the opportunity to identify a clear service or product vision for their entrepreneurial endeavour while making strategically sure that they will follow onto a business path less taken by others. Thus, former work experience has provided upgraders with access to business intelligence, market information as well as a pool of potential employees. With hindsight, however, entrepreneurs were quite critical about their initial "start-up romanticism" suggesting that while having had a very good professional training they underestimated the time and resources needed to initiate enterprise growth and to realize their business idea. Indeed, it seemed that upgraders were more reflective and critical about their own actions than non-upgraders. Having this awareness as well as the managerial experience might have helped upgraders to be more insightful on how to compensate for specific "missing" know-how compared to non-upgraders that expressed a general lack of business and management skills with no clear vision on how to compensate for this deficiency.

– *Access to international clients and reputation effects:* Most upgraders knew their international clients before starting their enterprise, while non-upgraders started predominantly in domestic markets. Former work experience has provided most upgraders with the opportunity to identify clients abroad; however, half of upgraders started their business through domestic projects. Yet, the difference between both up-

graders and non-upgraders is that the former had a concrete client when starting their business while only some non-upgraders reported a client commitment at this stage. This observation goes along with the fact that domestic markets denote a strong segmentation between long-term, large-scale, public projects and smaller, occasional, private projects. Due to economies of scale, visibility and reputation effects, companies in the smaller size segment have nearly no chance to work for the former type of business. Rather; upgraders have shown to diversify their market coverage by first accessing international business and then moving into profitable national markets. Breaking into the more profitable domestic markets as a smaller "no-name" IT start-up without having a direct linkage seems therefore to be quite challenging. With the access to international *and* profitable domestic markets, upgraders reported to gain crucial learning experiences helping to mature as a firm.

– *Alumni and work-related networks:* While upgraders and non-upgraders reported to come from a similar middle-class family background, upgraders had developed qualitatively different extended social networks with their fellow students and colleagues before starting their enterprise. Through university education as well as through their professional development in lead firms, upgraders got to know individuals that were themselves exposed to good quality education, ambitious professional networks as well as acquainted with potential international and domestic clients. Accordingly, help from university friends and work-related acquaintances had a much bigger impact on the entrepreneur's efforts to hire employees for his firm, to access up-to-date market information as well as to market their service or product idea to interested clients. Indeed, in many cases upgraders reported to having hired former colleagues as well as some of them have become shareholders or partners within the newly established venture. Thus at a personal level most upgraders benefited from the presence of foreign and national lead firms through which they could establish their business relationships as well as a broad range of skills.

These factors have been instrumental in addressing the major reported challenges by entrepreneurs: *access to finance, access to markets* and *access to talent.* However, in order to explain how individual firms overcame upgrading constraints it is necessary to differentiate within activi-

ties in the ICT value chain as set out in Figure 5.11. In particular, two activities were salient in the upgrader sample: *ICT service oriented* and *ICT product oriented enterprises.*

– On the one hand there are firms with a strong *service focus,* covering classical service activities in the BPO, KPO and ITO segments. Multimedia/ animation, book keeping, business consultancy, call centres, data entry, marketing, web design and development, etc. are all services that could be put under the BPO category. The work of a KPO and ITO firm however has to employ advanced levels of research, analytical and technical skills which are of a higher order than those employed in BPO work. Yet, what is common among these service activities is that they are all characterized through a high degree of customization for the client. In terms of employment, ICT service companies have grown into bigger units, however they have not necessarily grown much faster than software product enterprises.

– On the other hand, there are firms which develop genuine and standalone *products.* These ICT product enterprises are generally found in software development, R&D and IT engineering. Firms in this segment have evolved by developing expertise in mostly one or two domains, such as finance, telecommunications, energy, etc. Based on their experiences, the entrepreneurs and employees have normally invested about 2-3 years in developing a product that could be attractive to a wide array of clients and provide the firms generally with higher returns. Yet, the initial growth of these firms has been slow and most IT product start-ups still belong to the smaller enterprises within the above 20 employees segment of medium-sized enterprises. Because of the high investment costs most IT product companies have started to provide IT services meanwhile developing genuine product knowledge, and even some are offering their software as a service (SaaS). The latter strategy has been adopted by most IT product companies in the sample in order to attract clients, to mature the product and most importantly to ensure continued revenue. ICT product companies tend to be younger than most ICT service companies, especially those which are active in the BPO segment.

Highlighting these two different activities is crucial to understand how individual firms have reacted to changes in the business environment.

Generally, the Indian offshore and outsourcing success was driven by certain favourable production conditions, such as the prevalence of low cost IT professionals which had strong technical and language skills as well as a heavily supported institutional ecosystem for offshore and outsourcing activities in centres such as Mumbai, Bangalore and Delhi. These conditions were available for most BPO start-ups in the 90s and KPO and ITO firms starting in the beginning of the 2000s, yet not all enterprises were successful in navigating the business environment to their advantage. So what kind of strategies have these two types of ICT firms adopted to upgrade and how have the above mentioned factors played out in explaining individual enterprise success? Based on the entrepreneurs' ranking as well as secondary literature the following major challenges to innovation and growth have been identified: those being *access to finance, access to markets, and access to human talent.*

Access to finance: All entrepreneurs reported to having problems financing their enterprise. The lack of access to bank finance as an option to lift financial pressure for the short- und medium term development of the company has been mentioned to pose a serious constraint when payments by clients are not made on time. But also the absence of venture capital and the lack of other long-term investors have urged companies to find alternative solutions to their financing issues. Among upgraders three main strategies were frequently mentioned: using *personal financial sources,* adopting several *bootstrapping* strategies as well as adapting *their product portfolio:*

– *Using personal financial sources:* Upgraders have started their companies at a later age than non-upgraders. A major reason for this was the intention to acquire a larger amount of personal savings. These personal savings constituted the main financial source for upgraders. Further family savings have shown to be a second way to cover expenses related to the individual needs of the entrepreneur. Non-upgraders had fewer personal savings and were dependent on cross-financing their main business through smaller ad-hoc activities such as repair or consulting services. At later stages upgraders also accessed bank finance via a personal loan and collateral on their houses or other capital goods. However, this was rather an exception then the rule. Thus former work experience has been a crucial success factor to enable middle-class 1st generation entrepreneurs to start their companies.

– A*dopting various bootstrapping strategies:* Upgraders initially started working from home to save money on rent. Yet, after moving into office spaces many reported to having shared offices with other start-ups. To reduce financial obligations within the firm some upgraders made strategic employees to shareholders. In turn these employees were more understanding when receiving low start salaries compared to their actual market value (sweat equity). Above all, the vast majority of entrepreneurs were using their own sweat equity for the first one to three years. Eventually, motivational skills as well as a convincing communication strategy of the entrepreneur towards their clients helped to negotiate advance payments for more complex projects. In order to adopt these creative bootstrapping strategies a good quality education as well as the managerial experience at former work placements has been crucial. Further the access to understanding international and domestic clients and the knowledge on their billing and project-planning cycles have made it easier for upgraders to prevent serious financial traps.

– *Adapting the service and product portfolio:* Many companies which aimed at adding value to their services have started to work on more complex services or products such as software. However, adding value required high investment costs with very low initial returns. Accordingly, upgraders adopted a strategy to sell their yet not completely developed software as a service (SaaS) to finance parts of the product maturing process. This strategy also enabled companies to showcase some of their upcoming products which hopefully later on would be bought by the very same client. The SaaS-strategy was lately becoming a viable survival strategy through the increased use of cloud computing as new technology. Upgraders were among the first to make this new technological development working for their portfolio and hence adopting it. In terms of the individual skillset of the entrepreneur and his employees all upgrading firms where quite fast in translating and executing their business idea in a viable product or service. Software enterprises developed a step-by-step approach in sales to generate revenue quickly even when this meant to offer more price sensitive but relatively immature versions of their service or products. In this regard, access to market information, a good quality education as well as an extended work-related and alumni network helped these entrepreneurs to outperform their competitors.

Access to clients/ markets: ICT upgraders seemed to have started mostly in international markets and have been slowly trying to get a standing in domestic markets. Most enterprises started initially with only 1-2 customers. Most enterprises got more customers through their initial deals. Some companies even entered strategic partnerships with their clients. In general, the Indian market is still too small to allow for MSMEs to get a reliable customer base. Most of the (public) organizations and larger companies buy reputed international products while smaller companies prefer low-cost providers.

However, the Indian economy has grown over the last decade and local companies and public bodies have become a new customer target for ambitious upgraders. In accessing these international and domestic markets the entrepreneurs' creative software as a service (SaaS) revenue model as well as the use of work-related social networks have been vital. With the development of a stronger reputation after the outsourcing and offshoring model upgraders reported also to have strongly invested in sales and marketing in order to become visible for market participants. Using their personal networks for marketing was reported to be the main channel to initiate as well as extending markets.

Yet, extending client and market networks was not random but selective and strategic, in particular for companies aiming at adding value to their services. Upgraders who had a software development focus were quite choosy about their clients as the coherence and strategy positioning of a product or service may stand in conflict with the short term need to customize certain activities which are requested by the buyer/ customer. It seems that successful companies have rejected business or single requests in order to save the genuine software product from falling into the customization trap instead of becoming a scalable, sellable and thereby profitable product. Following this approach software product companies aimed at establishing visibility in one or two domains (finance, energy). In contrast, ICT service oriented companies adopted strategies to scale-up business by entering as many domains possible.

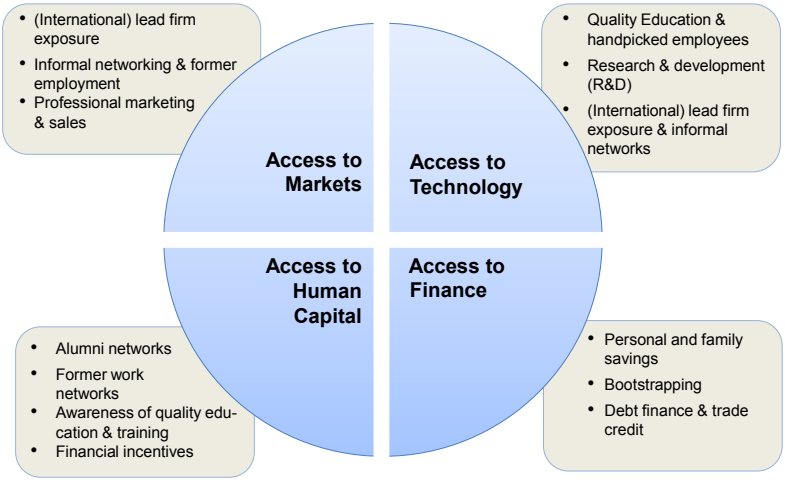
Access to human talent: With increasing presence of international and "home-grown" domestic competitors offering much higher wages than micro and small units can afford, hiring product developers and general personnel is a problematic task. A general lack of talented employees is a phenomenon experienced by upgraders and non-upgraders, but upgraders

in particular have found it most challenging to attract those employees that have the creative talents as well as necessary technical and managerial skills to take on responsibilities within the company. In order to address this issue, entrepreneurs in the upgrader sample have from early on investigated their alumni and work networks to identify potential partners as well as employees trying to incentivising them by offering senior position, personnel development, shares in the company as well as an exciting work atmosphere. Because of the kinds of networks upgraders were able to reach out to hiring was "handpicked" and some positions were created for certain talents ensuring resourceful but effective hiring. Non-upgraders in comparison did not have the opportunity to access these kinds of quality networks and mostly relied on ads at universities, smaller human resource agencies and their own smaller and less powerful private networks for hiring.

Summing up, the upgrading of entrepreneurs is a product of a *combination of quality education, high quality work exposure in lead firms as well as the use of alumni and work networks* to address several constraints. As shown in Figure 5.20 these factors have tackled several challenges simultaneously. As quality of education and lead firm exposure are lifting some of the constraints related to access to markets, this in turn has positive spill-overs on the access to technology as well as access to finance. Furthermore, this positive circle gets reinforced in easing the access to advice, human resources and other supportive factors within the ICT growth framework (see Figure 5.20).

What becomes abundantly clear is that an enterprise's success cannot be explained by a single factor. Rather, in the case of ICT upgraders much of their successful *coping strategies* depend on the combination of background characteristics of the entrepreneurs as well as on his embeddedness within an enabling social structure. Thus, what happens *before* starting a business strongly influences the kinds of economic opportunities entrepreneurs are able to identify and grasp. Thus quality of education, lead firm work exposure as well as the ability to establish effective work-related social networks constitute strong entry barriers for entrepreneurs in the ICT sector.

Figure 5.20: Inter-linkages of success factors and constraints in the ICT sector



Source: own representation

5.3 The Textiles and Garments (T&G) sector

This section explores insights from the textile and garment sector by *firstly* providing a short overview of the sector and, *secondly* introducing the T&G enterprise sample. In a *third step* differences and commonalities between upgraders and non-upgraders are highlighted. *Finally,* success factors and major upgrading constraints are identified and further used to explain upgrading trajectories as well as combinations of success in the T&G sector.

5.3.1 ICT Sector overview

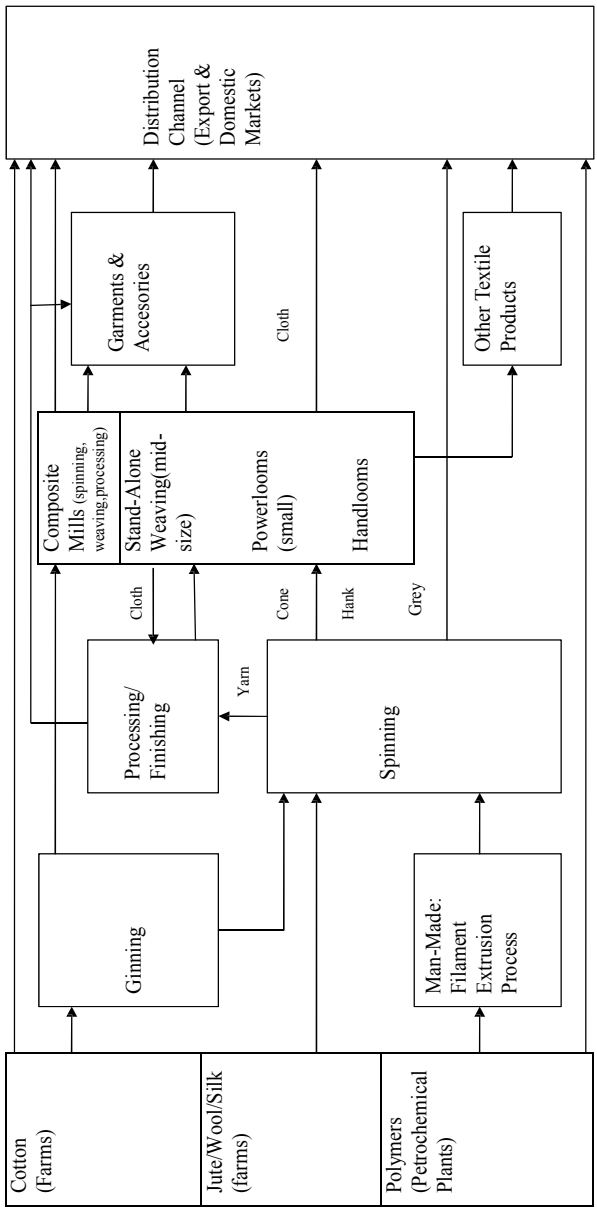
The textile and garment industry is not only one of the oldest economic sectors in India, but also currently the largest producer in Indian manufacturing. According to the annual report of the Ministry of Textiles, the sector accounts for 14 per cent of manufacturing value added, 4 per cent of

GDP and 17 per cent of total export earnings (Ministry of Textiles 2012). Above all, the textile and garments industry is the second largest employer in India, generating employment and income opportunities for more than 35 million people (Ministry of Textiles 2012, 3). Internationally, India is the second largest producer of textiles and garments after China.

The textiles and garments industry in India is diverse, covering a wide range of manufacturing activities. This spectrum of activities stems from the fact that India holds the entire chain of textile and garment production while also being able to supply nearly all production inputs, such as cotton, jute, yarn, wool, silk, and synthetic fibres. Further, it offers a large internal market and therefore larger demand. From the stage of the raw material production to the distribution channel, the industry can be roughly divided into the production segments of raw materials (cotton, silk, wool, etc.), textiles (using powerloom), hand-crafted textiles (using handloom), ready-made garments (e.g. stitching) and garments processing (e.g. embroidery) (see Figure 5.21). Additionally, textile and garment produce is distributed via several direct and indirect market channels, using big wholesalers, formal distributors and agencies as well as many small traders and retailers in reaching out to domestic and international consumers. Traditionally, exports were channelled via large export houses; however, the liberalization of the economy and the subsequent collapse of a stringent licensing regime in the early 90s gave rise to many new export channels.

In terms of productivity the Indian T&G industry is characterized by a strong segmentation in markets. On the one hand, the industry displays many informal MSMEs operating at low productivity levels with little or few investments in modern technology. These mostly produce artisanal, handmade or semi-mechanical goods for local markets. On the other hand, the sector exhibits a large-scale, organized, export-oriented enterprise segment using highly sophisticated and state-of-the-art technological equipment and machinery. Most of the micro and small units survive due to their access to the unorganized labour market and because of horizontal subcontracting arrangements with other MSME units. There are only few countries which show such a high level of diversity in their textile and garments sectors.

Figure 5.21: The Textile & Garments value chain



Source: Chandra (2006)

Textile and garment hubs are spread all over India. Historically, of the industry was clustered in Ludhiana, Jaipur, Calcutta, Mumbai, and Tirupur. Recently, new economic agglomerations have emerged in the National Capital Region (NCR) and other economic hubs such as those close to Bangalore, Surat and Chennai. The biggest chunk of economic activity lies in the weaving and knitting of cotton-based cloth and blends (see Figure 5.21). Further, the production and processing of garments makes up the second biggest group of economic activities (Devaraja 2011). Traditionally, the domestic market has been the major consumer of Indian textiles and garments, however, with liberalization in the 90s. The sector has become strongly outward-oriented and most international brands, particularly those from Europe, are nowadays sourcing from India.

The textile and garment business is what Gereffi (1994) classifies a buyer-driven chain in which increases in returns stem from design, branding and marketing activities. Accordingly, those companies holding the brand name and design capabilities determine the allocation and mode of production as well as the distribution of profits along the value chain. In the last decades, this buyer "governance" by international firms, national industrial policies as well as the Multi-Fibre Arrangement (MFA) strongly influenced the growth trajectories and opportunities for most outward and inward oriented Indian textile and garment enterprises. Moreover, reservationist policies as well as little labour market flexibility in India led to the development of a highly segmented and small-scale market for textiles and garments, thereby setting disincentives for many entrepreneurs to expand and achieving economies of scale.

Although India liberalized in the early 90s, little change occurred in the textile and garment sector. In fact, while the Indian government set in place several support and upgrading schemes for transforming the sector, it took nearly a decade to surge investment and general growth of the industry. Only after a decade, changes in the market landscape became visible. In particular, the introduction of Technological Upgradation Fund Schemes (TUFS), the setting up of textile parks and many other export incentives have been instrumental in improving manufacturers' competitiveness (Tewari 2005). Preparing the industry for change and improving its competitiveness became of vital importance in 2005 when the MFA and the subsequent WTO Agreement on Textiles and Clothing (ATC) quota system had been lifted. In all likelihood, the absence of quotas was expected to create

higher concentrations of textile and clothing production clusters in a small number of low-cost destinations. India among many other East and South Asian countries has emerged as one of the leading clothing exporters to take advantage of these changes in trade policy. Most studies agree that for the majority of matured textile and garment industries in this had led to aggregate growth increases (Tewari 2005; Ananthakrishnan / Jain-Chandra 2005).

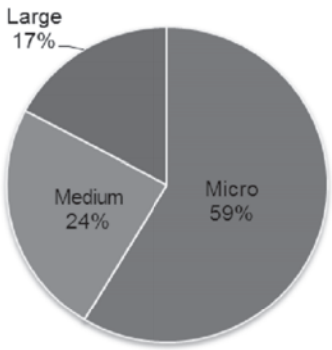
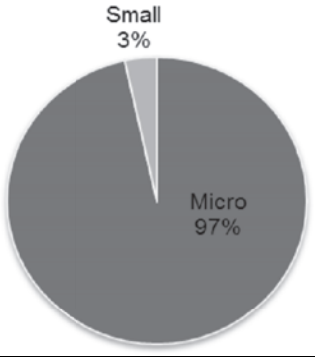
As the Indian economy has substantially improved, there is optimism among manufacturing industries (Devaraja 2011). Especially, the textile and garment industry has profited from an increase of internal demand. At the same time, liberalization, the lifting of quotas as well as the most recent financial crisis have caused a lot of churning at the firm-level. Insights into the growth patterns of individual enterprises will help to understand what qualities at the micro-level were necessary to sustain enterprise development. The following section is going to explore the characteristics and difference between upgraders and non-upgraders sampled in the textiles and garments sector.

5.3.2 T&G sample composition

Size of enterprises and upgrading dynamics: The total textiles and garments (T&G) sample consists of 12 upgraders (41 per cent) and 17 non-upgraders (59 per cent), which is reflected in the size distribution encountered at the time of the interview in 2012 (see Figure 5.22). Initially, nearly all enterprises had started as micro units except for one case in the non-upgrader group that was starting as a small unit. On average, upgraders started with 4 regular employees and have grown to an average size of 300 regular employees in 2012 (see Table A20).

In contrast, non-upgraders have also started out with 4 regular employees, but in 2012 this number has only increased to 6 regular/ permanent employees. Size distributions along the Indian definition show that there is fewer upgrading into the medium and large size category (see Figure 5.23). While the general trends points towards the graduation of micro into small units, it appears that 13 per cent of upgraders do not manage to enter the small size segment but stayed micro in size.

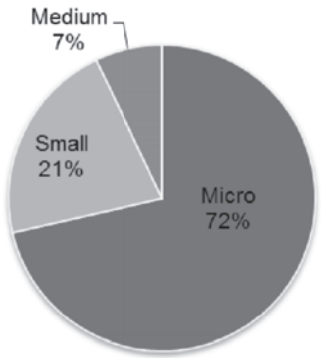
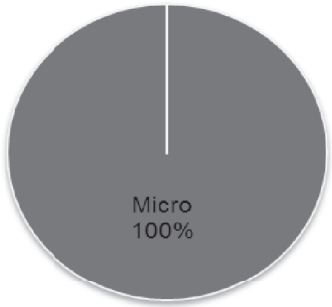
Figure 5.22: Distribution of interviewed T&G companies by MSME employment definition*

Size category in 2012	Size category upon business start-up
	

*Employment definitions have been made according to the following number of regular employees: Micro = 0–9 employees, Small = 10–19 employees, Medium = 20–99 employees, Large > 99 employees. N = 29

Source: own survey

Figure 5.23: Distribution of interviewed T&G companies by size based on the Indian MSME definition*

Size category in 2012	Size category upon business start-up
	

*Categorization has been applied according to the following exchanges rate 1 Rs = 55 US$; N = 29, as two companies were not able to share information.

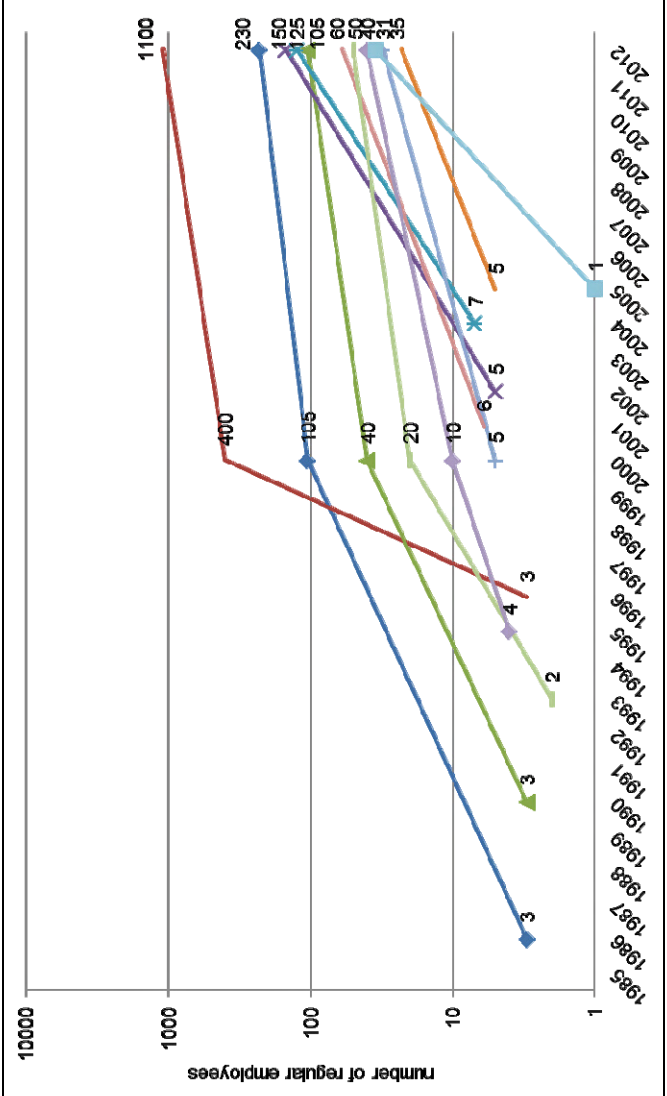
Source: own survey

Turning to employment growth, Figures 5.24 and 5.25 show individual growth experiences. On average, upgraders have grown at a compound annual growth rate of 31 per cent and added 54 employees per year. However, since there appears to be one outlier in the group of upgraders the median value of this group is more representative. Accordingly, the group has grown by a median value of 24 per cent per annum and thereby added 12 employees per year. In contrast, averaging the performance of non-upgraders the group shows a negative compound annual growth rate of -2 per cent (see Figure 5.25).

Having a closer look at Figure 5.24 one can detect vast size variations across upgraders in 2012: Enterprises having between 100 and 1000 employees represent large-scale garment exporters or textile producers, while those in the medium size spectrum between 30 and 60 employees are either specialised raw material suppliers with a strong technological orientation, specialised textile and garment processing units or design-oriented production units and/ or boutiques. It is worthwhile mentioning that in the majority of cases, even in the case of large enterprises, upgraders stated to have either started as job workers supplying bigger companies or as traders linking bigger companies with smaller production units. Among non-upgraders, no textile units could be found (see Figure 5.25). Rather, companies in this group mainly consist of garment, garment processing units (job workers) as well as some specialised raw material suppliers.

Region and location: The sampling of textiles and garments (T&G) enterprises mostly occurred in the NCR (41 per cent) and Tamil Nadu (38 per cent), while the remaining were sampled in Rajasthan (17 per cent) and Andra Pradesh (4 per cent). The majority of enterprises started their business in an urban or semi-urban setting while roughly one quarter of firms started in a rural area. Among textile and garment upgraders the most common option is to start their business from home (41 per cent), followed by renting a plant (33 per cent) and owning a plant (25 per cent). In contrast, the majority of non-upgraders used to rent a plant (53 per cent) or worked from home (41 per cent) upon business start. Only 6 per cent of non-upgraders initially had their own plant.

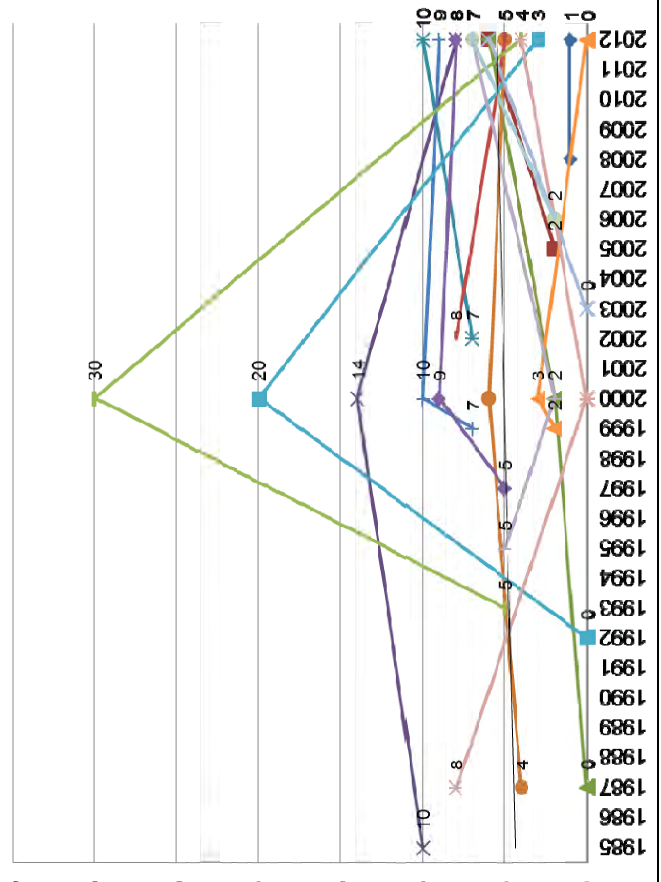
Figure 5.24: Employment growth in the T&G upgrader sample from 1991–2012



Total sample N = 12

Source: own survey

Figure 5.25: Employment growth in the T&G non-upgrader sample from 1991–2012

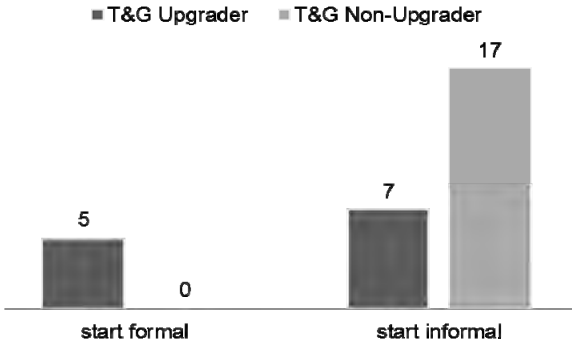


Total sample N = 17

Source: own survey

Formality: In 2012, the difference in informality among T&G enterprises is highly significant (see Table A20 in Annex). While every upgrader is formalized, only 12 per cent of non-upgraders are registered units by 2012. Nevertheless, as can be seen in Figure 5.26 at the time of business start, 58 per cent of upgraders were informal units. Among non-upgraders only 2 out of 17 have become formal.

Figure 5.26: Formality and Informality among ICT enterprises at business start



Total sample N = 27, upgrader n = 12; non-upgrader n = 17

Source: own survey

Age of enterprise: There are no significant age differences between both samples. On average, T&G upgraders already produce for 14 years, while non-upgraders have been in business for 15 years (see Table A20 in Annex).

5.3.3 T&G sample composition

Following our conceptual design this section systematically compares upgraders and non-upgraders in our Textiles and Garments (T&G) sample.

(i) The enterprises

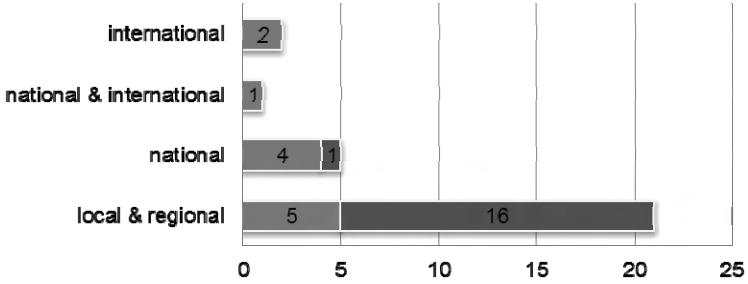
Between upgraders and non-upgraders there exist no significant differences in the perception of the business environment (see Table A17). Generally, across enterprises the same issues have been raised, which suggests that while enterprises seem to face similar problems, they have developed different coping strategies.

Types of innovation: Among T&G entrepreneurs there exist highly significant differences in innovating on products, introducing organisational changes as well as in entering new markets – across all these categories upgraders are much more active and creative (see Table A19 in Annex). Interestingly, while there are no significant differences in how upgraders and non-upgraders innovate on technology, they significantly differ in the ways they follow up on changes in marketing and selling their produce.

Market orientation: Initially the vast majority of upgraders as well as non-upgraders supplied to local, regional and national markets (see Figure 5.27). There exist three exceptional cases among upgraders that already accessed international markets at business start. In these three cases entrepreneurs had operated as export traders of garments and textiles before getting into the actual manufacturing business. Thus, when setting up their own manufacturing enterprises they had already established export-oriented market linkages. However, the vast majority of enterprises started either as local trader-manufacturers, suppliers or job workers rather than as direct exporters.

By 2012, a considerable number of upgraders have extended their market coverage to international markets while also keeping a focus on the Indian market (see Figure 5.28). Among non-upgraders there is only very little change. Only in one case an enterprise extended its market coverage.

Figure 5.27: Market orientation of ICT enterprises at business-start-up

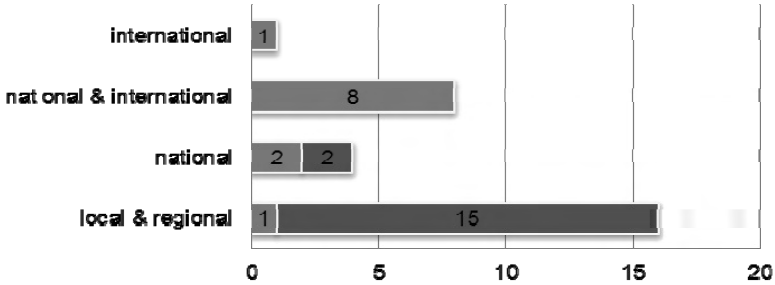


	local & regional	national	national & international	international
T&G Upgrader	5	4	1	2
T&G Non-Upgrader	16	1	0	0

Total sample N = 29, upgrader n = 12; non-upgrader n = 17

Source: own survey

Figure 5.28: Market orientation of ICT enterprises at business-start-up



	local & regional	national	national & international	international
T&G Upgrader	1	2	8	1
T&G Non-Upgrader	15	2	0	0

Total sample N = 29, upgrader n = 12; non-upgrader n = 17

Source: own survey

Enterprise finance: As seen in Table A20 the most prominent start-up funding sources are family and personal savings. Roughly 80 per cent of T&G entrepreneurs use family and 60 per cent personal savings to start their business. A third major source of finance is the common practice to work on in-kind credit, trade credit or cash advance from buyers or suppliers. Additionally non-upgraders show a significantly higher practice of taking financial assistance from friends (53 per cent) while among upgraders 42 per cent took out a bank loan when starting their business.

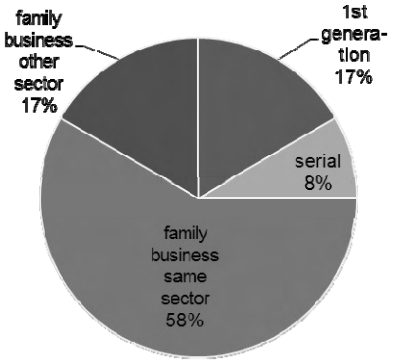
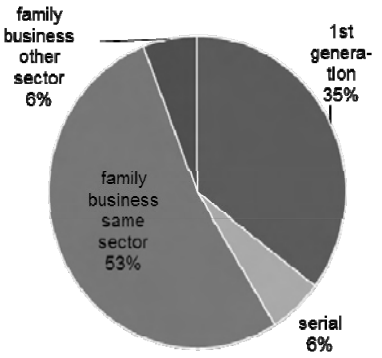
While by 2012 every enterprise in the non-upgrader sample states to use mostly their own returns to finance their business, in contrast, nearly 70 per cent of upgraders have added bank loans to their finance sources. Except for the use of additional in-kind credit and cash advance all other sources of funding have lost their importance for upgraders. Fifty per cent of non-upgraders still use cash advance and in-kind credit as financial sources. At the same time, the percentage of entrepreneurs taking out informal loans from local moneylenders has tripled from 6 per cent at time of business start to 18 per cent in 2012 among non-upgraders.

Partnerships, entrepreneurship type and family business background: Among upgraders, 50 per cent per cent started their business alone and still have been running their enterprises as single decision-makers in 2012 (see Table A20). In contrast, in 2012 roughly 80 per cent of non-upgraders were running their enterprise alone compared to only 35 per cent at the time when starting the business. Thus it seems that among non-upgraders many partnerships have either failed to work out or business partners agreed to split the business. Roughly eighty per cent of upgraders and non-upgraders started their business partnership with a family member. While non-family partnerships among upgraders have been reduced to zero in 2012, the percentage of family business partnerships among non-upgraders has also decreased from initially 82 per cent to 67 per cent in 2012.

Figure 5.29 shows the type of entrepreneurs predominantly found in both subsamples. What is striking is the number of 1st generation entrepreneurs in the group of non-upgraders on the one hand, and on the other, the number of entrepreneurs with a family business background. While entrepreneurs with business family background are the most dominant group across both subsamples, the number of traditional business caste members was considerably higher than among non-upgraders. Thus, there might be con-

siderable differences in the quality of these business backgrounds. While the forefathers of non-upgraders were owners of small tailoring shops or job work units, upgraders reported to originate from classical trader families.

Figure 5.29: Comparison of types of entrepreneurs across samples

Upgrader	Non-upgrader
	

Total sample N = 27, upgrader n = 12; non-upgrader n = 15

Source: own survey

(ii) The entrepreneurs

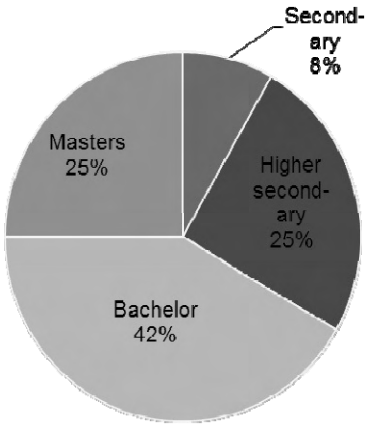
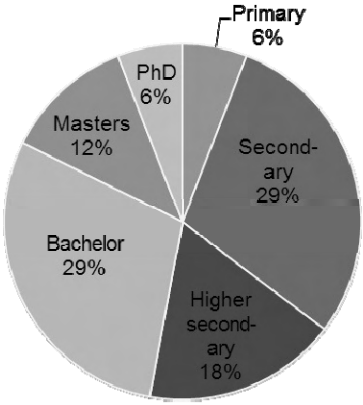
Gender: Four female entrepreneurs in the total sample were found in the T&G sector. Two female entrepreneurs were among the upgraders and two among the non-upgraders. Since there are only those few cases it is not possible to infer anything about the relative importance of women as entrepreneurs compared to men. First, one reason for why this study has found only a few female-led enterprises in the textile and garment sector might be that entrepreneurial activities of women take place, however, these might be taking place at home or other hidden production locations which are not easy to observe. Second, another reason might be that the lack of a considerable number of women entrepreneurs is due to certain gender-based entry barriers to execute positions of authority in a male dominated society, such as in India. For example, while the majority of shop floor workers in the T&G

sector are women only very few women workers can be found in the roles of master tailor, supervisor or management.

Age, education and work experience of entrepreneur: There are no significant differences between upgraders and non-upgraders in terms of age, education or wage work experience (see Table A21 in Annex). On average, T&G entrepreneurs are in their forties and have had five to seven years of work experience before becoming an entrepreneur. Approximately half of entrepreneurs have also already worked in the same sector before starting their business. In terms of education backgrounds, Figure 5.30 shows that the group is quite heterogeneous. While upgraders seem to be slightly more educated than non-upgraders, there are no significant differences between the sample averages (see Table A21). Having a Bachelor's degree or (higher) secondary school certificate are the most frequently found categories. Among those who passed a Bachelor degree, very few actually studied a degree related to apparel design or textile technology. Instead, subjects such as business administration, accounting or law have been common.

In theory having a degree helps coordinating the business' finances as well as meeting organisational and strategic challenges – yet, there are no major differences between T&G entrepreneurs. However, what upgraders frequently reported to having gained from their exposure to formal education is the insight into the need to integrate new-to-the-business managerial skills with traditional business practices. While India has witnessed market liberalization and modernization in the T&G sector, it is still one of the more traditional parts in the economy. Business transactions among MSMEs are subject to a hierarchical divide along caste and communal identities which impact the way how contracts are enforced, marketing channels are selected and business risks are diversified. According to entrepreneurs, it was not only economic textbook criteria learned in business studies courses that had to be taken into account when trying to apply new ideas and modernize modes of production, but also informal know-how on the logics and nature of business deals.

Figure 5.30: Comparison of education of T&G entrepreneurs

Upgrader	Non-upgrader
	

Total sample N = 29, upgrader n = 12; non-upgrader n = 17

Source: own survey

Exposure to other countries: An indicator for the degree to which entrepreneurs are able to reflect on traditional business practices is whether they have been abroad and seen other systems of production and business interaction (see Table A21). There is indeed a highly significant difference between upgraders and non-upgraders in the percentage of entrepreneurs who had been exposed to other countries. Among upgraders, 42 per cent had travelled outside India, compared to only 5 per cent of among non-upgraders.

Information sources: Looking at the use of information sources gives insights into whether entrepreneurs use predominantly modern or traditional media and/ or networks (see Table A21). Upgraders use the internet, formal networks as well as R&D more frequently than non-upgraders. However, the interaction with personal networks and middlemen is also significantly higher among upgraders than non-upgraders. This supports the viewpoint that managing a successful business in the T&G sector requires access and harmonisation of modern as well as traditional information.

(iii) Social and business networks

Education of father and number of dependents: There are no significant differences between both sub-samples in the number of dependents or the level of education attained by the entrepreneur's fathers (see Table A22). On average, T&G entrepreneurs have about 3 financial dependents when starting the enterprise. In 2012, entrepreneurs take on financial responsibilities for one to two additional people. As of the educational background, entrepreneurs have on average been likely to grow up in a household in which their father has graduated with a secondary or higher secondary degree.

Social networks: Upgraders faced significantly less opposition from their core family when starting their business compared to non-upgraders. Non-upgraders had disagreements with one or more core family member on the decision to either start a business or in the case of family business to take over an already existing family business. In fact while 1st generation entrepreneurs had to convince their families of entrepreneurship as viable alternative to wage employment, 2nd generation entrepreneurs were struggling to please their father's and forefathers visions and ideas of how to run a business. The latter theme was also a common narrative among upgraders taking over a traditional family business. However, once the company was running, every entrepreneur stated that their families helped them in several ways and were strongly integrated in entrepreneurial decision-making (see Table A22).

Generally, extended family and friends have played a significantly stronger role in supporting entrepreneurs in the upgrader than in the non-upgrader group. The provision of labour as well as active networking has been particularly important to upgraders. First generation entrepreneurs in the upgrader group frequently mentioned to have hired extended family as well as close friends as some of the very first managerial staff (e.g. accounting). Furthermore, in the case of garments producers these extended social networks also became the very first clients. Among upgraders, 2nd generation entrepreneurs additionally mentioned the use of extended networks to access various kinds of market channels to market their produce.

Caste and/ or community membership: Upgraders and non-upgraders have a similar perception on the role of community membership in affecting business performance (see Table A23 in Annex). About half of all entrepreneurs in the textile and garment sample think that their membership has had an effect on their business and that being from a business community helps in

business. Yet, while T&G entrepreneurs in both groups agree on the fact that coming from a business caste positively impacts one's business, they disagree on the mechanism of how this works. Upgraders stated that belonging to a business community brings about support in networks, but above all, they argue that an entrepreneur grows up with a particular business-conducive mindset and also inherits a reputational track record from his forefathers. In contrast non-upgraders see the advantages of belonging to a business caste in accessing business relevant networks and access to capital. Non-upgraders tend to disagree strongly with the notion that some entrepreneurs have "business in their blood", being a common expression among 2nd generation upgraders.

Helpfulness of business networks: There exist highly significant differences in the nature and quality of business relations between upgraders and non-upgraders (see Table A24 in Annex). Overall, buyers in the upgrader group seem to have been much more supportive than those among non-upgraders. Buyers in the upgrader sample were more likely to give feedback on the quality of the supplied product, providing new market access as well as showing the openness to consider joint problem solving. Among both subsamples, only one third of enterprises had stable business relations when starting their business. However, by 2012, more than 90 per cent of upgraders and 60 per cent of non-upgraders report to have stable forward linkages. Upgraders reported to be strongly interlinked with the buyers' or clients' strategic decision making and marketing processes. In contrast among many garment processing units in the non-upgrader group, producers reported to be dependent on indirect sales through middlemen or direct sales via local markets which gave fewer opportunities for product development and strategic technology upgrading.

Among T&G entrepreneurs and their supplier relations there are fewer differences. Yet, upgraders and non-upgraders differ in three ways: Firstly, while all entrepreneurs stated that their backward linkages have been supportive in sustaining their business; upgraders seem to have more quality-conscious suppliers than non-upgraders. Secondly, upgraders were more frequently interacting in transferring technology as well as solving supply chain problems with their backward linkages. Thirdly, though not having very interactive relations, non-upgraders still seem to have very stable relations with their suppliers as half of non-upgraders reported to having gained access to finance and in-kind credit. In contrast none of the enterprises in the upgrader group

mentioned this practice. One explanation is that upgraders did not had the need to ask for in-kind credit from their suppliers as they had the working capital to pay on time in a regular fashion, while non-upgraders reported to face the challenge of simultaneous capital shortages and irregular order cycles. In turn, this supports the notion that upgraders were integrated in very favourable forward business linkages which enabled them to work strategically with their suppliers.

Upgraders and non-upgraders barely interact with their competitors (see Table A25 in Annex). Very few enterprises stated that their competitors had been helpful and nearly none had collaborated with other enterprises on matters of common interest. However, upgraders are significantly more likely to be in a sector association than non-upgraders, yet, many upgraders denied to be an active member. The majority of upgraders considered sector associations as an information source rather than a forum for joint action. In both subsamples, about a quarter of enterprises reported to having got support from public authorities or non-governmental organisations. The most frequent reported support among upgraders was preferential access to finance through various MSME upgradation schemes or some benefits related to tax breaks.

(iv) The business environment

Corruption, infrastructure and access to land: Upgraders bribe significantly more often than non-upgraders (see Table A26 in Annex). Among all T&G enterprises entrepreneurs stated that with increasing size and visibility it is more likely to get involved with state officials who would attempt to extract bribes. However, upgraders did not deny that they themselves were willing to pay proactively to avoid future trouble.

While access to electricity is a common issue for all enterprises in the T&G sample, it is access to land and property that shows highly significant differences between upgraders and non-upgraders. Nearly 80 per cent of non-upgraders are struggling to either find an affordable production unit for rent or to buy a piece of land to set up their own property. Especially in the last decade, the NCR has witnessed an enormous real estate boom making accessible land and property scarce and forcing micro and small production units into areas where business and physical infrastructure are poor. This is particularly disadvantageous for units which aim for local markets and rely on traditional, spatially-bound seller and supplier networks. Among non-upgraders,

many have reported to consider closing down or changing their business models due to this reason.

Access to bank loans and business development services: There are significant differences in the access to finance among T&G entrepreneurs: 60 per cent of upgraders had accessed bank finance compared to only 35 per cent of non-upgraders. However, the interesting lessons on bank finance can be drawn from in-depth discussion with entrepreneurs. At first sight, the statements of non-upgraders on bank access seem to be somewhat contradictory. While nearly none of T&G non-upgraders reported to be using banks as a finance source for their business, as seen in Table A20 about 35 per cent claim to have had accessed a loan for their business in the past. Further, only 18 per cent of non-upgraders actually applied for the loan by themselves. So why do entrepreneurs first over report on having accessed a loan that is subsequently not used for this very purpose? And how come that only 18 per cent of 35 per cent have attempted to get these loans by themselves?

First, entrepreneurs in the T&G no-upgrader sample reported to having asked family members, in particular female family members, to apply for a bank loan. Rather than applying themselves, some entrepreneurs considered it easier for a female to access a small and most likely subsidized bank loan. Another reason for indirect loan access is the fact that many informal businessmen were scared of not being able to show a regular income or provide collateral which is why in some cases entrepreneurs asked family members or friends with collateral, a better job or another source of regular income to apply for them instead.

Second, the use of private channels through which non-upgraders have accessed these loans explains partly why the issue of fungibility of capital arises. Only very few non-upgraders actually managed to invest the aforementioned loans into their business. Gaining access to finance through social networks holds other transaction costs. It puts the entrepreneur under pressure to respond to family obligations and other outstanding debts. Entrepreneurs mentioned that accessing informal finance "via social ties" had some sort of psychological effect on their families and business networks that forced them to finally make the private investments and business repayments that they had "deferred" or postponed in order to make daily ends meet. Also, because of the small volumes of private loans, very few entrepreneurs were actually able to make long-term business investments such as in machinery or land/property acquisitions, etc. Finally, the low number of non-upgraders stating to be

able to re-invest regularly supports the notion that non-upgraders face a more urgent problem to keep private, family and business expenses apart (see Table A21 in Annex). The vast majority of entrepreneurs are either not aware of, or not interested in, BDS. Only 17 per cent of all T&G entrepreneurs reported to having attended classes or accessed consulting services related to BDS. Some of these attendees were asked to attend entrepreneurship training in order to qualify for subsidized loans or other services; however, in only one case did an entrepreneur actually get access to a small loan.

Laws and regulation: Interestingly, among upgraders and non-upgraders the only significant difference in the perception of laws and regulations is related to labour and social standards. Upgraders face considerable more problems in complying with prevalent labour laws than non-upgraders. Due to the size and visibility of enterprises in the upgrader group this is not surprising. In contrast, non-upgraders reported to be most afraid of paying taxes and handling authorities, which is understandable as the vast majority of T&G non-upgraders operate in the informal sector.

(v) Ranking of success factors and constraint by T&G entrepreneurs

Upgraders and non-upgraders were asked to rank success factors and constraints regarding their relative importance according to our conceptual outline seen in Figure 2.2 Further the most common and frequently mentioned upcoming issues were listed under the respective 'onion layers'.

Among T&G upgraders, the most frequently mentioned *success factors* have been associated with certain qualities of the social and business network (see Table 5.3). Social and business conditions are regarded as more important than factors associated with the entrepreneur's characteristics and skill-set. This shows that entrepreneurs do not necessarily attribute positive values to themselves and negative values to external conditions. Among the most salient success factors a certain business family support and background as well as the integration in loyal trading structures with agents and middlemen have been frequently identified. As most enterprises in the T&G sector rely on informal modes of network coordination via trust and reputation, long-standing business identities help to smooth economic transactions in times of crisis and fast market changes. Further, having a loyal and well-connected agent enables enterprises to extend their markets as well as acquire market information. Thus, agents and middle-men constitute crucial market gate-

keepers and knowledge-brokers in the T&G industry. Most of T&G upgraders already knew supportive agents when taking over the family business or they were using their extended business networks to be introduced to powerful and well-connected middlemen. Some upgraders also approached middlemen through their own market research and asked for business; however, most upgraders stated that it is quite difficult to get into these very tightly-webbed networks without having a personal connection.

The aggregated ranking by entrepreneurs has produced the somewhat challenging situation that factors associated with the business network and the enterprise are both ranked in the 2nd position. Entrepreneurs in the upgrader sample highlighted that an early strategic focus to specialize on a certain kind of product or mode of production (either to produce for niche markets or to scale up into mass production) helped to make the company visible for buyer networks and agents. Further, with identifying a clear product and market vision, entrepreneurs were instrumental in their hiring practices. This involved the internal establishment and development of a well-paid, committed and loyal core staff. Rather than hiring too many shop floor workers, initially, most upgraders started to outsource parts of the manufacturing process to reduce risks and to be able to quickly respond to market changes. However, in the long term upgraders integrated more and more workers and production stages. Personal qualities such as informal know-how and exposure to the working logic of this sector as well as the ability to develop a design orientation have been quoted to have had an impact on upgrading.

The major *constraints* upgraders face are associated with finding shop floor workers and balancing short-term financial squeezes as delay in payments by buyers, clients or agents are common. Delays in payments, though forbidden by formal statutory law in India, is a common informal practice in buyer-led value chains, such as in textiles and garments. Also, as many upgraders have invested into improving the quality of production, enterprises face challenges to find buyers that actually acknowledge these investments by paying a premium on certain product lines. Especially firms that are trying to develop design expertise and brands in the domestic market reported to be confronted with customers undervaluing their products. Thus, a missing quality consciousness among clients and a persistence preference for more and cheaper products in vast parts of India prevent many design-oriented businesses to reap the economic benefits of their efforts.

Table 5.3: Ranking of onion layers among T&G upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
1	**The Social Network** – **Business family networks** – Financial support from family as well as advice – Support/ advice from extended (industry-related) friend circle	**1**	**The Enterprise** – **High labour fluctuation and attrition** – High investment costs in training – Brand development
2	**The Business Network** – **Supportive agents/ middlemen/ match-maker** – Access to stable and reliable buyer networks – Acquisitions/ marketing and brand development in India – Integration in a textile & garment cluster	**2**	**The Business Environment** – **Delay in payments & access to (short-term) finance** – **Red-tape & general work ethics in public organisations** – Financial crisis & strong competition among MSME units – Access to electricity
2	**The Enterprise** – **Committed & loyal employees** – **Clear product & market vision** – Fast execution of orders & establishment of strong quality controls (audits)	**3**	**The Business Network** – **Finding buyers/ clients who appreciate own designs** – Adopting your supplier networks in responses to market changes – Delays in payments
3	**The Entrepreneur** – **Informal know-how on sector dynamics and industry contacts** – Design orientation	**4**	**The Entrepreneur** – **Delegation** – Missing information on foreign markets & professional management to access profitable domestic markets

Table 5.3 (cont.): Ranking of onion layers among T&G upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
4	**The Business Environment** – **Availability of craftsmanship and maturity of industry** – Growth of domestic market – Access to electricity	**5**	**The Social Network** – **Social sharing norms** – Bound to certain forward and backward linkages (family business)
N=12			
Source: own compilation			

The aggregated ranking of success factors identified by non-upgraders mainly differs from that of graduated enterprises in the attribution of the business environment as the most important source of success (see Table 5.4). Notably, the availability and access to a showroom as well as financial support were among the most shared success factors for non-upgraders.

With regard to the positioning of the 2nd, 3th and 4th ranks, upgraders and non-upgraders' opinions and impressions very much overlap. Non-upgraders agree that strategic business partnerships with agents and retailers can boost a companies' production as does the prevalence of loyal and skilled workers. At the level of the entrepreneur, necessary sector know-how constitutes a vital precondition for a quick market responsiveness and fast decision making. Lastly, non-upgraders agree that a well-connected social network can improve a business' access to resources. However, the existence of social networks, in particular family, is a given condition, which few entrepreneurs could influence proactively. Accordingly, it is not surprising that upgraders have ranked social networks as least important source of success.

Non-upgraders identified lack of finance as well as general inflation in the business environment as major constraints to their businesses' upgrading. With a booming economy, India has seen price hikes in wages, property prices, and energy and food products. This is seriously affecting the competitiveness of many micro and small entrepreneurs that have in turn problems to negotiate higher sales with their equally affected buyer and trader networks.

Table 5.4: Ranking of onion layers among T&G non-upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
1	**The Business Environment** – **Access to a showroom to increase visibility** – Accessible support programmes to lift financial pressures & transfer know-how	**1**	**The Business Environment** – **Access to finance** – **Inflation** – Access to electricity and affordable plants/ shops – Expectations of labour are increasing (MGNREGA)
2	**The Business Network** – **Strategic partnerships with retailers/ agents** – Stable and reliable buyer or agent paying fair prices – Access to high-end costumers/ markets	**2**	**The Business Network** – **No orders** – Delays in payments – Heavy price negotiations with agents
3	**The Enterprise** – **More loyal and skilled workers** – Creative employees who also work independently – Fast production cycles & quick revenue generation	**3**	**The Enterprise** – **High labour attrition and fluctuation** – No access to skilled employees – Relying on training "uneducated" migrant labour
4	**The Entrepreneur** – **Market responsiveness** – Know-how on design, branding and marketing – Creativity	**4**	**The Social Network** – **Financial obligations towards family**
5	**The Social Network** – **"Peaceful" home** – More effective personal contacts and matchmakers	**5**	**The Entrepreneur** – **Little knowledge on new technologies/ management** – Complexity of-time management in manufacturing – Woman: duties as a mother & wife
N=17			
Source: own compilation			

On the 2nd rank, the vast majority complains were about having no orders. This implies that there either might not be demand for products or non-upgraders miss market linkages to connect them to markets with effective demand. However, the latter is unlikely. Most non-upgraders shared the belief that with the availability of finance and better access to raw materials production could be continued without changing the saleability of their product. The fact that there might be no demand for a low-quality product was no "trigger" to rethink their product and market orientation. Thirdly, access to labour as well as financial obligations at home posed important challenges to entrepreneurs. Finally, and most interestingly, entrepreneurs ranked themselves to be the least of their problems, though stating clearly that they miss crucial know-how on how to modernize their enterprise. This suggests that non-upgraders may have a limited ability to reflect on their own agency and expect change to come from the "outside".

5.3.4 T&G combinations of success

This section will *first* sum up the major factors that have contributed to the success of T&G entrepreneurs in upgrading their businesses. *Second,* based on the nature of the economic activities different enterprise upgrading trajectories will be identified. *Third,* major upgrading constraints and success factors will be set in relation to explain *combinations of success.*

The complexity and variety of economic activities in the textiles and garments (T&G) sector suggests that there are several upgrading trajectories. Indeed, within the T&G sample paths such as those of transforming traditional enterprises, growing trader manufacturers as well as modern and traditional firms at the beginning of the "high road" can be identified (see Section 2.3). Corresponding to their enterprise conditions as well as strategic interests, entrepreneurs have pursued diverse strategies to upgrade. There are therefore several success factors that can be observed. The most salient and most common success factors are *basic formal education and quality of informal knowledge, business family background,* and *social embeddedness in business networks* as well as *simultaneous access to diverse markets.*

– *Basic formal education and quality of informal knowledge:* Upgraders and non-upgraders both have completed basic formal schooling or a Bachelor's degree, in particular those in business studies. There is nearly no entrepreneur having not finished secondary schooling. This suggests that basic formal education is an entry barrier to become a T&G entrepreneur and to develop a general understanding of business accounting and the strategic aspects of business development. However, what differentiates upgraders and non-upgraders is the *quality* of informal education and training entrepreneurs were exposed to in their family as well as their social circles. As the T&G sector is a traditional sector, informal know-how as well as the awareness of hierarchical and community divisions cutting across business identities and networks is vital. The latter describes informal rules on social interactions between economically and culturally heterogeneous groups. Yet, while upgraders highlighted the importance of informal know-how on traditional aspects they similarly supported the notion that staying within these traditional frameworks without modernizing and transforming business relations and networks will not open new business and revenue-generating opportunities. For example, introducing quality audits and delegating responsibility within a traditional enterprise required investments in training and awareness-building among traditional and mostly uneducated staff. When aiming for enterprise expansion, entrepreneurs needed to introduce new, modern business management practices, invest in new marketing channels (new trading/ agent networks) as well as apply professional schemes for workforce development while still maintaining the social capital and traditional value system that the enterprise was initially embedded in. Thus the *quality of informal knowledge* includes the incremental development of the entrepreneurs' *ability* of to juggle several network spheres and production logics. On the one hand, upgraders had to develop a clear market and product vision to modernize or set-up modern production structures that enabled the generation of higher profits due to efficiency gains. On the other hand, it was necessary to acknowledge and adopt informal modes of business management that have coordinated economic transactions in this sector for more than centuries. It is needless to say that the *motivation to transform* is the precondition for effectively merging modern, formalized and traditional, informal knowledge.

– *Business family background:* Nearly every upgrader has a business family background, meaning their father or forefathers have owned a business before which was most likely in the same sector. While this profile already suggests upgraders to be more exposed to a certain knowledge and network environment, it is, in fact, the quality of this business family background which explains the success of T&G upgraders. Among upgraders, fathers and forefathers were likely to come from known merchant castes (being traders or agents) while non-upgraders inherited tiny workshops or job-work units run by their family predecessors. As a result, upgraders inherited not only an extensive network of forward and backward linkages but also a critical amount of family savings and informal, tacit knowledge on how to market and sell a product in different settings. In contrast, non-upgraders developed core expertise in production yet were rarely well connected with extensive business linkages and had little expertise on marketing.

– *Social embeddedness in traditional and modern business networks:* A business family background arguably provided upgraders with easier access to established and trusted networks of buyers, agents and suppliers. As many upgraders came from merchant and agent castes, upgraders were already holding a quite powerful position in the textile and garments value chain. This social embeddedness and caste identity thus had a strong effect on the nature and quality of business relations. From business start or take-over, upgraders were accessing more stable, reliable and more knowledgeable business ties through which technology transfer, market information flows as well as in-kind credit flows enabled entrepreneurs to slowly modernize and upgrader their business. In particular, access to up-to-date market information enabled upgraders to develop a faster market responsiveness which is crucial in a sector where turnover times and production cycles have to be kept tight to be the first on the market. Though highly entrenched in traditional merchant and trader caste, the entrepreneurs' exposure to networks was not exclusively limited to traditional business ties. Rather, upgraders explored new business ties and incrementally managed their formalization and professionalization, thereby learning new tacit knowledge on client acquisitions, marketing as well as brand development. Indeed, when comparing innovative activities of T&G entrepreneurs, upgraders differ mostly from non-upgraders in the ways they market and sell their product through various channels.

– *Simultaneous access to diverse markets:* Upgraders followed a strategy in which an incremental market expansion was supported by a strong local and regional presence. Exporting was the outcome of a developmental process that started within local, regional and domestic markets. However, the exposure to international business linkages enabled entrepreneurs to learn about several tacit aspects, such as R&D activities, design, optimizing logistics as well as customizing marketing and branding. This exposure and learning enabled upgraders not necessarily to functionally upgrade within buyer-driven exporting networks, however, international exposure mattered in the development and expansion in domestic markets. Most upgraders started to develop their own designs, marketing strategies and even brands to reap a premium price for their products. Having a strong base in the domestic market helped to sustain growth and development during the financial crisis when many western export markets for small batch production were cutting orders or slowing down the reintroduction of quarterly collections. Also, upgraders realized that local tastes and styles would also be appreciated in neighbouring states. Through family visits and social ties in Pakistan, Malaysia, Singapore and the Middle East, upgraders were able to spot additional markets for direct export that offered low-hanging fruit business opportunities.

The above mentioned success factors had different impacts according to the growth strategy upgraders were taking up. Within the T&G upgrader sample, three major upgrading strategies have been identified: *(a) Focusing on specialisation, design and craftsmanship; (b) forward and/or backward integration;* and *(c) scaling up.* Depending on the enterprise strategy, value additions and increases in returns were achieved by developing capabilities at different stages of the value chain. According to Fernandez-Stark et al. (2011, 12) value-additions occur along the chain in (1) R&D activities, (2) design, (3) production, (4) logistics, (5) marketing and branding as well as (6) services. Clearly, the highest returns can be achieved in advances in R&D, design, marketing and branding as well as services.

The following sections will explore and disentangle enterprise strategies and their associated success factors by highlighting at which stages value-additions and returns have occurred.

(a) Specialisation, design and craftsmanship

The most dominant upgrading strategy was to develop stronger capabilities in design, R&D, marketing and branding for domestic niche markets. This strategy follows the high-road in which enterprises hope to gain a price premium on their products and services. As local and regional markets provided craftsmanship and strong internal demand, many former traders and agents as well as traditional family businesses bet on the upcoming trend of fusion fashion, the combination of traditional Indian with western cuts, for the upcoming middle classes in India.

Generally, there always has been a strong internal demand for textile and garment products in India; however, recently consumers segments have become more nuanced. While in the past there was a strong segmentation between a niche, high-end, high quality and a mass, low-quality market, in the last decade the patterns of consumption have become more nuanced providing new business opportunities. New textile and garment start-ups as well as existing businesses have used these opportunities showing fast market responsiveness in developing design and branding capabilities. Being embedded in a *business family* with an extensive social and business network enabled upgraders to access funding, find employees with design expertise as well as use various direct and indirect marketing channels. Having an own boutique or shop also increased the likelihood to become visible in local markets, yet, as property prices in the major urban Indian centres have risen, very few upgraders could rely on this option. An important strategy to circumvent "visibility"-issues was to build strategic partnerships with shop-owners by making them partners in their brand development. Once established in national markets, most of the upgraders took over also small batch exports for western as well as closer and neighbouring countries (such as to Sri Lanka, Malaysia and Dubai). However, entering export markets was a strategy that followed at later stages – thus initial learning and design-competencies were "home-grown" and based on local craftsmanship and tastes.

Summing up, within this strategy the *design orientation* and *modernization efforts* of the entrepreneur combined with a strong *social and business network embeddedness* created the market responsiveness that was necessary to develop niche and brand identities for domestic markets before entering exports.

(b) Forward and backward integration

Strategies of incremental forward and backward integration were mainly applied by upgraders, who were in a trading business before. Most of these upgraders faced high transactions costs as well as issues around quality. In order to increase their control over quality as well as to achieve higher economies of scale and a shorter turnover time entrepreneurs slowly incorporated former job-work units and home-workers selectively after having developed a clear product and market vision. The major value-additions occur in optimizing logistics, R&D activities, as well as marketing and branding and services.

Crucial to this incremental expansion strategy is the learning process in acquiring *informal knowledge* which happened before moving into manufacturing. Due to their activities as traders, entrepreneurs developed a good understanding of certain demand and supply dynamics in various sub-sectors. This knowledge helped to identify profitable business opportunities before making risky investments into manufacturing, including hiring permanent shop-floor workers. Above all the *embeddedness* of upgraders in already established and proven *business networks* as well as their *business caste identity* allowed trader manufacturers to pre-select on well-performing job units as well as on choosing profitable ties with downstream traders, distributors and shop-keepers. Generally, trader-manufacturers have started in domestic markets and diversified along the way, however, some have also been able to directly access export markets via already established business linkages as sole traders.

Trader-manufacturers follow a flexible patch-work approach in manufacturing by which some stages of production are outsourced in order to mix and match different incoming orders according to their specific requirements. A core managerial and shop-floor staff is kept to ensure a minimum production capacity. Against the background of instable markets as well as the significant importance of short turnaround time in garments this approach helped to diversify risks while developing core competencies in spotting market opportunities. Within the T&G sample, most upgraders operate in traditional products such as ethnic women's and men's wear, however a minor part also produces smaller batches of western garments for European markets.

(c) Scaling up

Reaching critical economies of scale allows for major value-additions in production, assembly as well as logistical processes. Similarly, advances in (technical) designs, marketing and branding and R&D are likely; however, whether enterprises incorporate any of these further stages depends on their market orientation and integration in global as well as national value chains. Those upgraders which were scaling up production volumes were more likely to serve mass export markets and were integrated in global value chains with US and European lead firms.

Yet, very few upgraders scaled up production volumes to serve domestic and export mass markets as this path is highly capital intensive as it needs major investments in technology, energy and logistical infrastructure as well as worker's training. Those that upgraded had access to bank finance as well as upgradation schemes by local and national programmes aimed at Small-Scale Industries. Getting access to these support mechanism is strongly associated with an already existent manufacturing track record through the entrepreneur's business family or caste background. Upgraders in this group have taken over a 2nd generation businesses that were solely supplying to national regional or national markets in the generation of their fathers. Those 2nd generation entrepreneurs that were inheriting a strong business record and underwent a hands-on, informal training in the business, reported to having had the motivation to become big. Interestingly, even these larger enterprises are not exclusively exporting but continue to serve domestic markets. Indeed, many upgraders intended to expand domestic business activities and developing a brand identity.

These three major growth strategies are not mutually exclusive, but rather some elements of one strategy can also be combined with others. However, they reflect very different developmental trends. While the above mentioned success factors have proven to be applicable in many situations, we need to understand how these success factors have helped entrepreneurs to overcome some of their *major constraints.*

Based on the perceptions of entrepreneurs as well as through secondary literature the following major constraints have been identified: *Access to human capital and delegation, entering profitable markets, delays in payments and access to finance* and *handling the business environment.*

Access to human capital and skilled manpower: Upgraders and non-upgraders stated that it was and still is quite challenging to find trained personnel in this field. Most workers are uneducated when starting to work and have to be trained within the business to become Master tailors or cutters. Small businesses are the major entry point for uneducated labour and MSEs therefore face high investment costs in training. This is particularly difficult as small business also suffer from a constant strain of labour as bigger and larger businesses compete for human capital with higher wages and other incentives. Also, recent studies on particular industries and their respective labour market requirements predict major skill gaps and problems in labour supply, particularly for the professions of middle to upper management as well as master tailors, cutters and even shop floor workers further deteriorating the situation for MSMEs (NSDC 2012a).

A major challenge for MSEs in their expansion process has been the recruiting of middle and lower management when expanding business. This also explains why upgraders face difficulties in delegating tasks. Those upgraders having a *business family background* either positioned educated or trained family members in adequate roles or they were identifying and hiring people through their trusted *social* and *business networks.* This preferential access to skilled personnel (whether management roles or tailors) enabled upgraders to mitigate some of the initial competitive pressures in wages as not only tangible factors hold employees to the company, but *relational ties* and *loyalty.* Especially employees and workers that have stayed with the enterprises are taken care of not only by paying more or less competitive wages, but by *assisting* in (financial) family matters as well as preserving "family"-like relationships in letting employees participate in social occasions or taking care of medical and school bills. Further, upgraders mentioned to aim for personal and professional development of their personal by adopting regular feedback sessions, establishment of personal recognition (e.g. awards/ incentives) as well as sending some of the managerial staff to exhibitions or training. These practices are common among upgraders which is not surprising as they have ranked committed and loyal employees as 2nd most important success factor in upgrading their business. In contrast, non-upgraders reported to be less able to pay competitive wages, but neither do they train in-house. Most of non-upgraders report to relying on migrant labour which comes from "other "communities providing fewer opportunities to

bon along ethnic, religious or relational lines. While family members have been reported to help out in the business few have the necessary skills or know-how of the industry to be of long-term help.

Entering profitable markets: The T&G industry in India is a highly challenging environment for MSMEs to grow due to the high level of competition. Yet, the domestic market is huge and in fact has been growing (Chandra 2006). While exporting always has been an option for India even during its phase of inward-orientation, most upgraders did not have the financial means or networks to directly access international markets, rather most of them had to first upgrade within local, regional and national markets. Though many MSEs serve the low-end of local and regional markets, upgraders aimed to improve the quality and design content of their products incrementally to enter more profitable, upcoming medium and upper-medium markets. While for most upgraders the long-term goals was to open design boutiques, e.g. for fusion fashion, upgraders kept on producing for stable markets where a constant and effective demand was given, even though returns were marginal. Similarly, trader-manufacturers and upgraders which scaled-up production volumes kept a strategy in which they would not focus or specialize on one single market segment, but incrementally expand and experiment with different market segments. In order to be able to follow this approach it was of crucial advantage to be embedded in a social network that would reach out to several distributors, traders or other businessmen. Thus, the combination of *simultaneous access* to diverse markets (stable and profitable) as well as *business family identity* and *networks* was vital to follow a "double-market" approach.

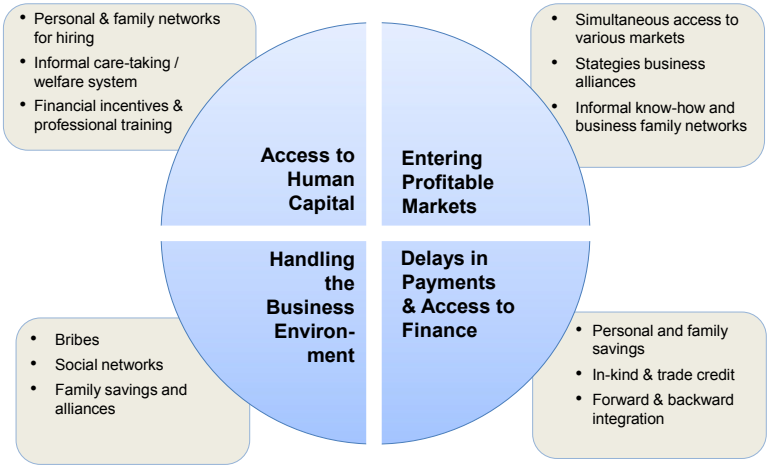
Delays in payments and access to finance: Upgraders have stated that continued delays in payments by clients and buyers have been and still are the 2nd most pronounced and revolving issue in upgrading. While delay of payments is something which upgraders reported to be expected, it is the unpredictability of these delays which creates fundamental problems in planning for long-term investments. Particularly, in the T&G industry in which short turnaround cycles force entrepreneurs to issue and settle business transactions quickly, short-term capital squeezes can lead to severe losses in business up to the possibility to be overtaken by the competition. While access to bank loans has been more likely among upgraders than non-upgraders, few of the former actually used bank

finance to compensate for short-term financial squeezes. Instead, loans were used to fund larger investments in capital goods, participation in exhibitions, or longer business travels (in the case of export expansion). In order to lift short-term financial pressures, upgraders used a combination of strategies that were available to them due to their *better-off business family background* as well as through their strong embeddedness in already *established supplier networks.* First of all, upgraders used family and personal savings to cover for wages of employees and secondly, business upgraders made use of in-kind credit from other traders, agents as well as from their most important suppliers.

Handling the business environment: Upgraders reported to having faced a number of hurdles when initiating upgrading. Power availability as well as access to affordable properties has been a problem for upgraders who wanted to scale up production as well as for those who wanted to own their own boutiques to market their branded designs. Also, the quality of institutional support was criticized when handling bureaucracy in cases of import and export clearance as well as in cases of labour disputes. Upgraders significantly more often than non-upgraders bribed officials to get things done, which suggests that those that have the funds are more likely to cope with these challenges. Thus, those with accumulated savings had faster access to bureaucratic services. Paying off private decision-makers and public officials seemed to be a common though not exclusive strategy for upgraders to overcome this problem. Further, upgraders use their identity- and community-based social and business relationships to process issues with public officials by leveraging power over individuals or certain groups within an organisation. However, the latter was a rarely admitted strategy and stated by only 3 out of 12 upgraders.

Figure 5.31 summarizes the most salient success factors and constraints by highlighting their inter-linkages.

Figure 5.31: Inter-linkages of success factors and constraints in the T&G sector



Source: own representation

5.4 The Leather and Footwear (L&F) sector

This Chapter will *firstly* draw out the rough features of the Indian leather and footwear industry, and *secondly* present the L&F enterprise sample composition. *Thirdly,* comparisons between upgraders and non-upgraders are drawn. *Finally,* upgrading trajectories, success factors as well as major constraints will be analysed to provide insights into combination of success in the L&F sector.

5.4.1 Sector overview

The leather and footwear industry belongs to one of the major employers as well as foreign exchange earners in the Indian economy. India has several competitive advantages in the global leather industry due to its historically

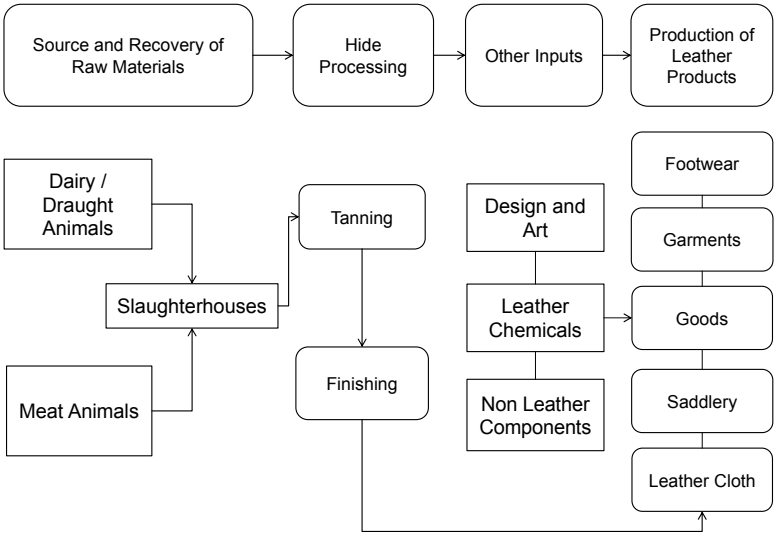
rooted expertise, the availability of the largest livestock population in the world as well as access to a large pool of skilled and unskilled labour at competitive rates. Total employment in the sector is estimated to be around 2.5 million people while export earnings constitute the 8th most important source of foreign exchange (NSDC 2012b, 17 f.; Ministry of Commerce and Industry 2012, 12 f.). According to the Indian definition of MSMEs the industry is dominated by micro and small units and only 5 per cent are of medium and large size. Further, in 2009, of roughly 48 thousand estimated units in total over half of the industry was registered with the National Accounts statistics. Accordingly, the unorganized sector is estimated to consist of roughly 21 thousand units (ibid.). The strong prevalence of small scale units stems from the fact that until 2002 the industrial structure was bound to reservationist policies.

There are several production locations for leather and leather products in India. Among the most prominent is the Pallar valley in Tamil Nadu in the South-east of the country. Tamil Nadu accounts for roughly 40 per cent of India's leather exports (NSDC 2012b). Other leather and footwear clusters are located in West Bengal, Uttar Pradesh and in the Punjab.

The sector can be divided into the following segments: tanning and finishing, footwear and footwear components, leather goods and leather garments, leather saddler and cloth (see Figure 5.32). The leather and footwear industry is linked with the several global industries, most notably the meat and chemical industry. Along the value chain there are three main stages. The first is related to the acquirement of raw materials sourcing hides and skins either from fallen animals or from the meat industry. The second stage is leather tanning, processing and finishing, which are highly capital and technology intensive as well as polluting. Generally, the better the quality of the hides and skins, chemicals and machines used the better the quality of the processed leather. Primarily, there are two ways to process leather either based on chrome or vegetable-based substances. The use of chrome and other chemical effluents in the tanning process requires several filtration stages while vegetable tanning exclusively relies on natural ingredients such as tree bark. The third stage makes up the production of leather goods, footwear, leather garments which is highly labour intensive. Within this stage firms are complementary sourcing design expertise, further chemicals for treatments as well as other non-leather inputs.

The Indian leather industry is strongly outward-oriented with 70 per cent of leather and leather goods being exported (NSDC 2012b, 5). Thus only 30 per cent account for domestic sales. The top ten destinations for exports are Italy, Germany, UK, USA, Hong Kong, France, Spain, China, Netherlands and Belgium.

Figure 5.32: The Leather & Footwear value chain



Source: NSDC (2012b, 13)

Within the last three decades, the Indian leather industry has undergone structural change. From a traditional industry mainly exporting semi-finished and finished leathers in the 1970s the industry has incrementally moved up into higher value-added products from the '90s on. While in the 1950s the exports of finished products constitute only 7 per cent of total leather exports this percentage has risen up to 80 per cent today (NSDC 2012b, 4). From the early 2000s the sector has been entirely delicensed and de-reserved. Starting in the 80s and 90s the Indian government has started

to promote industrial leather parks, funded several technological upgradation and modernization schemes as well as regional research and design centres for the training of skilled manpower. Further, for incentivizing exports as well as increasing value-added in manufacturing the government provided a duty-free scheme for the import of raw materials, specified machinery and other necessary inputs, e.g. footwear embellishments. These incentives have urged many traditional enterprises to start using modern state-of-the-art technologies and thereby preceded the development of functional upgrading of entire clusters. The most successful manufacturers managed to integrate the whole value chain from tanning till the production of their own footwear and leather goods.

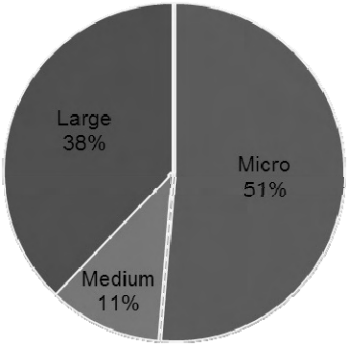
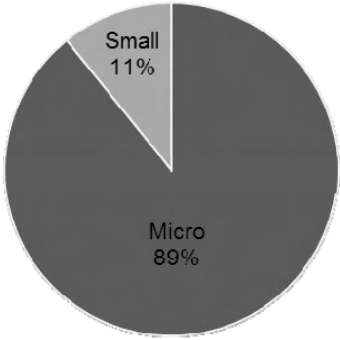
The following sections will analyse the leather and footwear sample and provide insights into which factors have been most instrumental to this upgrading process.

5.4.2 L&F sample composition

Size of enterprises and upgrading dynamics: Figure 5.33 shows that upon business start most enterprises started as micro units while 11 per cent of the total sample started small having more than 9 employees. On average, at business start upgraders hired 6 and non-upgraders 4 employees. In 2012, upgraders had moved into the medium (11 per cent) and large (38 per cent) size categories. While there is a lot of size variation among upgraders, on average, enterprises provide regular employment to 514 workers in 2012. In comparison, non-upgraders have stagnated in employment growth and are on average employing 4 regular workers in 2012. According to the Indian definition[6] only very few enterprises managed to graduate into the medium and large size segments; however, most enterprises moved into the small size category (see Figure 5.34).

6 For the Indian MSME Definition please see Table 3.1

Figure 5.33: Distribution of interviewed L&F companies by MSME employment definition*

Size category in 2012	Size category upon business start-up
	

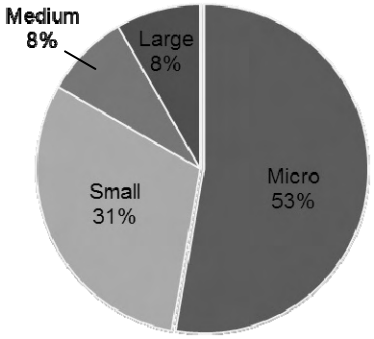
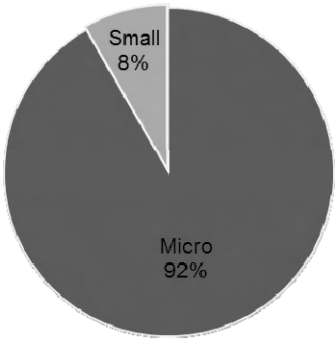
*Employment definitions have been made according to the following number of regular employees: Micro = 0–9 employees, Small = 10–19 employees, Medium = 20–99 employees, Large > 99 employees.

Total sample N = 37, upgrader n=18; non-upgrader n=19

Source: own survey

The growth dynamics of individual enterprises in the upgrader and non-upgrader group can be observed in Figures 5.35 and 5.36. Upgraders have grown on average by 28 per cent annually and thereby added 37 employees per year while non-upgraders show a negative growth rate of minus 8 per cent. The L&F sample consists of enterprises covering the whole variety of activities along the leather and garment value chain including tanneries, leather good and bag manufacturers, leather apparel and footwear producers as well as leather jobworkers.

Figure 5.34: Distribution of interviewed L&F companies by size based on the Indian MSME definition

Size category in 2012	Size category upon business start-up
	

Categorization has been applied according to the following exchanges rate 1Rs = $55 USD; Total sample N = 37, upgrader n=18; non-upgrader n=19

Source: own survey

A large proportion of enterprises in the upgrader sample are tanneries, leather goods and footwear producers which started as jobworkers for bigger companies or as smaller production units. It can be observed that by now many enterprises have reached large scale production and very few continue to employ below 100 employees (see Figure 5.35). In particular, those enterprises having less than 100 employees tend to be tanneries which have gone through several phases of automaziation and technological upgrading. Generally, upgrader units employing more than 100 employees tend to be leather goods, leather apparel and leather footewear producers. These enterprises cover business activties which are highly labour intensive and therefore face certain limits to the replacement of human labour with modern technology.

Most enterprises in the non-upgrader sample are active in leather goods and footwear manufacturaing. Some have developed into specialised manufacturing, some are working as jobworkers and another group of firms is covering repair and small order activities in the traditional, artisanal or low-end market segments. While these are the most common activities found in this

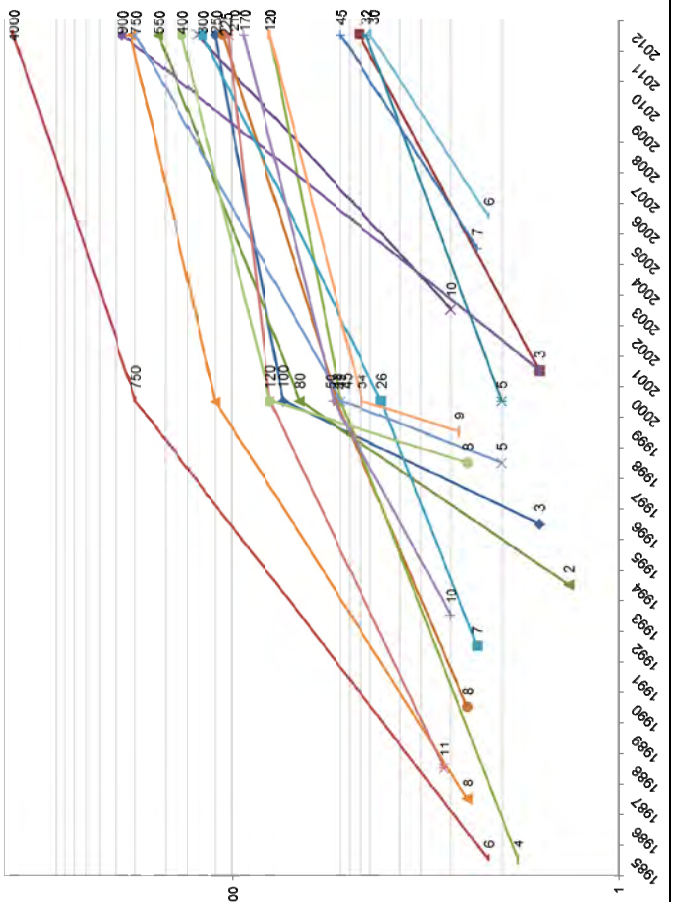
size segment entrepreneurs frequently mentioned that they get involved in a multitude of activities in order to keep the business running. Yet, it can be observed that there are no tanneries in the non-upgrader sample, which is likely to be due to high capital entry barriers as well as very strict environmetal regulations in Tamil Nadu making it difficult to run a tannery on a small scale or informally. As seen in Figure 5.36 the largest among micro enterpises have about 6-8 employees and happen to be leather apparel, goods and footwear jobworkers for domestic exporters. Those between 3-5 employees are specialised footwear companies in the health-oriented footwear , e.g. orthopaedic shoes, that supply to local and regional markets. Finally, enterprises with less than 3 regular workers are artisan shoemakers or own account workers that run small repair shops and get most of their business from local markets.

Region and location: The total of 37 enterprises in the leather and footwear sample were all sampled in Tamil Nadu, of which 18 are upgraders and 19 are non-upgraders. Among upgraders 45 per cent were sampled in rural areas, 33 per cent in urban and 22 per cent in semi-urban areas. In contrast, 68 per cent of non-upgraders were sampled in urban areas and 16 per cent each in rural and semi-urban areas. At the time enterprises started their business 56 per cent of upgraders used a rented plant, 33 per cent owned a plant and 11 per cent were working from home, while among non-upgraders 53 per cent rented a plant, 42 per cent were working from home and 5 per cent were using other facilities.

Formality: Upgraders and non-upgraders show highly significant differences in formality in 2012. Only 26 per cent of non-upgraders are formalized compared to 100 per cent of enterprises in the upgrader sample. As can be seen in Figure 5.37 initially, one third of upgraders had been informal while two third clearly stated to have started the business as a registered unit. At business start all non-upgraders were informal.

Age of enterprise: There is a significant difference at the 5 per cent level among L&F enterprises. While upgraders have on average been in business for a bit more than 16 years non-upgraders started operations on average 11 years ago (see in Table A29).

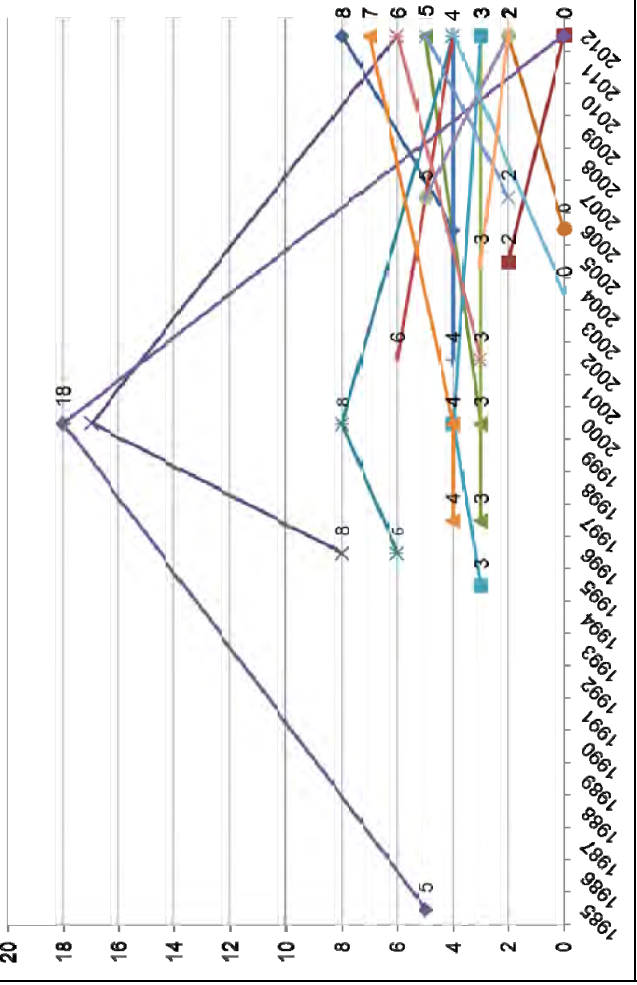
Figure 5.35: Employment growth in the L&F upgrader sample from 1991–2012



Total sample N = 18

Source: own survey

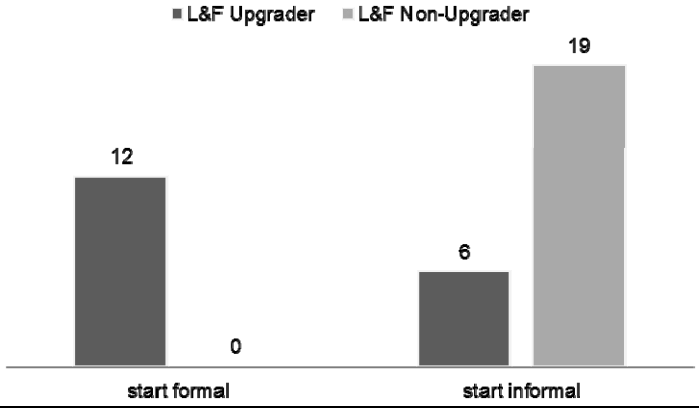
Figure 5.36: Employment growth in the L&F non-upgrader sample from 1991–2012



Total sample N = 19

Source: own survey

Figure 5.37: Formality and informality among L&F enterprises at business start



Total sample N = 37, upgrader n = 18; non-upgrader n = 19

Source: own survey

5.4.3 L&F upgraders vs. non-upgraders

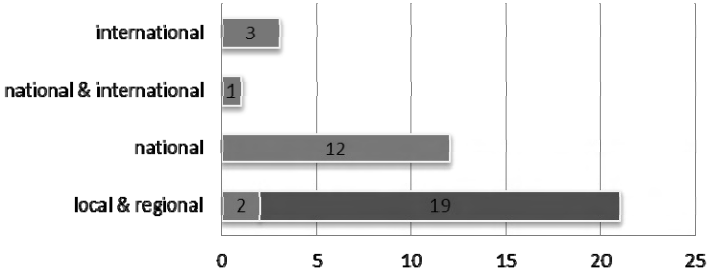
This section will systematically compare upgraders and non-upgraders following the five levels of our conceptual "onion"-framework.

(i) The enterprises

Types of Innovation: Table A28 indicates that there exist highly significant differences between upgraders and non-upgraders in their attempts to innovate. Upgraders show very innovative changes with regards to products and technological upgradation; however, nearly 70 per cent have also entered new markets. Accordingly for leather and footwear the biggest growth potential is related with extending and tapping into new geographical markets.

Market orientation: The vast majority of upgraders had already a national coverage supplying to various national exporters across India when starting their enterprises. Few upgraders were directly exporting at business start (see Figure 5.38). However, those entrepreneurs who were directly accessing international markets upon business start were 2nd generation entrepreneurs taking over a family business. In contrast, initially, enterprises in the non-upgrader group had exclusively supplied to local and regional markets.

Figure 5.38: Market orientation of L&F enterprises at business-start-up



	local & regional	national	national & international	international
L&F Upgrader	2	12	1	3
L&F Non-Upgrader	19	0	0	0

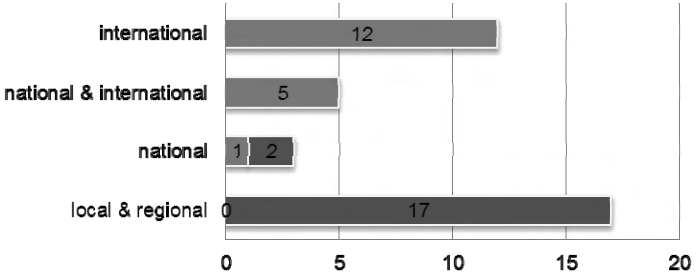
Total sample N = 37, upgrader n=18; non-upgrader n=19

Source: own survey

By 2012, almost every upgrader has direct access to international markets while only two out of 19 non-upgraders have extended their market access (see Figure 5.39). Only one upgrader is supplying exclusively to the Indian market. The reasons as of why so few non-upgraders extended their market coverage are related to their market channels and the nature of the product. Specialized footwear manufacturers had no intention to grow larger due to the strong customer focus and individualized production process that need a high level of quality control and a "social touch". Those enterprises that fell under the category of job workers reported to find less profitable business

for small volume-orders as economies of scale have become a required entry condition for many profitable deals. Also due to the import competition from China and because of increasing prices for raw materials, smaller units that are targeting local markets are reporting decreasing profit margins. This in turn deteriorates the capital base for necessary investments in scaling up or specializing production. Further, some entrepreneurs mentioned that they had no intention to grow as leather goods and footwear manufacturing would soon be gone in Tamil Nadu due to increasing labour costs.

Figure 5.39: Market orientation of L&F enterprises in 2012



	local & regional	national	national & international	international
L&F Upgrader	0	1	5	12
L&F Non-Upgrader	17	2	0	0

Total sample N = 37, upgrader n=18; non-upgrader n=19

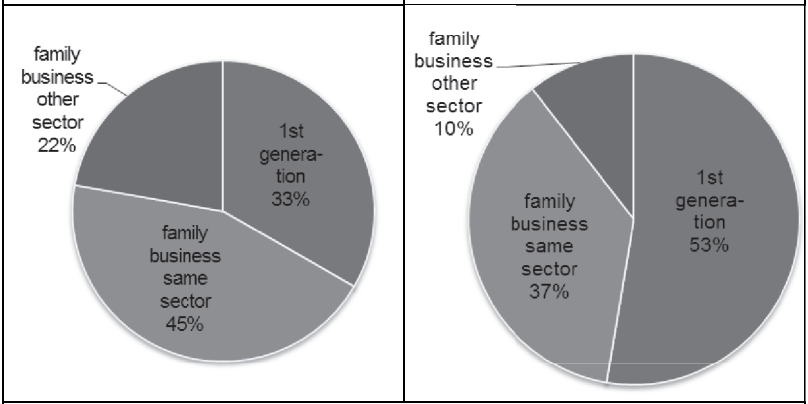
Source: own survey

Enterprise finance: Personal savings, family savings and in-kind credit are the most common financial sources among leather and footwear entrepreneurs at the time of business start or business take-over as in the case of 2nd generation entrepreneurs (see Table A29). Yet, already at start there is a significant difference between upgrader and non-upgraders in using investor or friends as financial supporters in their business development. Also, one third of upgraders have obtained a bank loan right from the start compared to none in the upgrader group. In 2012, bank loans, in-kind credit and enterprise returns have become the main financial sources of upgraders. In con-

trast, most non-upgraders are restricted to run their enterprises exclusively on their profits and on in-kind credit. While few have accessed bank loans, there are slightly more enterprises that use financial services from informal money-lenders.

Partnerships, entrepreneurship type and family business background: There are no differences in the partnership structure among L&F entrepreneurs (see Table A29). At start, about 80 per cent of upgraders and non-upgraders are the only owner of the company. Among those who had a partner roughly three quarters preferred a family member. Through the years this composition has not changed much, though there are a bit more partnerships among upgraders and more slightly more family involvement among non-upgraders.

Figure 5.40: Comparison of types of entrepreneurs across the L&F sample



Total sample N = 27, upgrader n=12; non-upgrader n=15

Source: own survey

As seen in Figure 5.40 among upgraders nearly half of entrepreneurs have taken over a family business in the leather and footwear sector. This implies that upgraders had a lot of intrinsic advantages compared to their peers in the group of 1st generation (33 per cent) entrepreneurs and other 2nd

generation (22 per cent) entrepreneurs that were new to this sector. Clearly, the leather and footwear sector is one where traditional business have developed over decades and followed strong hierarchical social rules in which businesses were run by mostly Muslim families. Yet, since two decades more and more Hindu entrepreneurs have started running L&F businesses as returns, in particular for tanneries, have increased with a growing worldwide demand for leather goods and footwear.

The non-upgrader sample is split between 1st and 2nd generation entrepreneurs quite evenly. However, relatively speaking the most common background of non-upgraders is to be 1st generation entrepreneur. While among upgraders we found several Muslim and Hindu run family businesses, non-upgraders were more homogenous in the characteristics of belonging to a lower-ranked community in the Hindu caste system. Most of 1st generation entrepreneurs were following the path of their elders which were being employed in the leather business most of their lives. While starting out as an employee, many entrepreneurs in the non-upgrader group eventually started their own job working unit.

(ii) The entrepreneurs

Gender: There were no female entrepreneurs found in the L&F sector. According to industry experts and interviews with entrepreneurs the leather and footwear sector "is no place for women". The sector is traditionally conceived as a "dirty" business where women have no role to play, in particular in tanneries. However, the majority of stitchers in firms exporting leather goods, leather apparel and leather footwear are women workers.

Age, education and work experience of entrepreneur: L&F upgraders are with 42 years on average 4 years older than non-upgraders (see Table A30). Upgraders are also significantly more educated than non-upgraders with the majority of upgraders holding a Bachelor's degree in fields such as leather technology, chemistry or business administration (see Table A30). In contrast, most non-upgraders have finished secondary and higher secondary school levels and only few exceptional cases reached a Diploma or Bachelor's degree.

Interestingly, non-upgraders have been wage-employees for a longer time than upgraders; yet, qualitative interviews showed that there were dramatic differences in the nature of occupation in former companies. While up-

graders were sooner or later taking over tasks as supervisors or managerial personnel, the majority of non-upgraders were employed as shop floor workers or technical personnel. The latter roles did not include further managerial responsibilities. This suggests that certain skills, managerial know-how as well as other intangibles attributes (such as esteem and power) might have lacked at the time when non-upgraders started their own business. Yet, some entrepreneurs in the non-upgrader group reported that they were forced to start their own business when their former employer closed down. Rather than being a successful spin-off of their former employer, non-upgraders are likely to be the outcome of their demise.

Exposure to other countries: Another factor indicating that non-upgraders come from a less privileged background can be seen in the fact that none of them has been outside of India before starting their enterprises (see Table A30). In contrast, one third of upgraders had been abroad before starting their business.

Information sources: There are highly significant differences in the use of information sources. L&F upgraders show a more extensive and intensive coverage of information sources. Buyers, suppliers, personal and formal networks seem to be the most frequently used sources of information. In contrast non-upgraders rely strongly on local market observations and their (local) buyers; however, while agents and other middlemen constitute an important source of information non-upgraders also browse the world wide net for new inspiration.

(iii) Social and business networks

Education of father and number of dependents: Fathers in the upgrader group are not better educated than those in the non-upgrader sample (see Table A31). At the time of business start as well as in 2012 the number of financial dependents does not show any significant differences; however the financial burdens of care-taking seem to be slightly higher among non-upgraders than upgraders.

Social networks: Generally, when entrepreneurs started out or took over the business no significant differences in the supportive attitudes by core family members between the subsamples could be found. It appears that in 90 per cent of cases families support entrepreneurship and only about 1/5 expressed worries or opposition towards a business take over or start-up.

Nevertheless, among upgraders a few 2nd generation entrepreneurs stated that they were having arguments with their fathers and/ or uncles about whether and how to modernize the family-owned business. These discussions were particularly related to questions of technology investments, environmental measures as well as concerning the scalability of production. While elder generations by and large supported the status quo, 2nd generation entrepreneurs saw it as in their responsibility to modernize the inherited business and apply those lessons they had learned in esteemed colleges. First generation entrepreneurs in the upgrader sample tend to come from middle-class families and have a Hindu background. According to the statements of this group very few core families were actually involved in the process of starting the business. However, this group of entrepreneurs were confronted with their families' worries to lose esteem and reputation if their son is active in the leather industry.

Among the families of 1st generation entrepreneurs in the non-upgrader group the rational for worry was rather related to choosing entrepreneurship over a position as employee. 2nd generation entrepreneurs in the non-upgrader group reported to having slightly fewer issues, as they had very "few disagreements" with their forefathers. This feedback implies that non-upgraders might have put fewer efforts into modernizing the business, but rather continued running it like their forefathers.

Bearing in mind these family backgrounds, Table A31 shows that there is only one significant difference in the frequency of family support channels taken up by the entrepreneur – financial support. Surely, non-upgraders had accumulated fewer private savings than upgraders, which is why family finance might have played a bigger role. But also, as entrepreneurs from the non-upgrader sample come from less privileged social communities the decision to invest in an own business had become a livelihood strategy for the whole family. It is maybe because of that strategy that families in the non-upgrader sample felt obliged to contribute as much to the entrepreneur's success in providing more finance than compared to families in the upgrader group. Also, since some 2nd generation entrepreneurs in the upgrader group struggled to convince their families of their modernization plans they were relying on other financial sources. Not only have entrepreneurs in the upgrader group needed new financial mechanism but they had also to invest in new business networks and advisors if their plans to modernize scale up and export were to be implemented.

The support structure of the extended social network among upgraders significantly differs from that of non-upgraders. Non-upgraders mainly use their extended social networks to find employees, while upgraders have fallen back to extended family and friends as advisors, network access points as well as investors. Upgraders reported to having many other entrepreneurs or managers as friends that advice on how to go about certain business strategies. Most frequently mentioned were alumni networks among leather technologist and chemists that keep each other up to date on the recent market trends and technologies. Few non-upgraders had other entrepreneurial friends or extended family members that were doing better in business then themselves. Thus, the quality of social networks separates both sub-samples.

Caste and/ or community membership: A topic that appears continually is the role of community membership and caste in the leather industry. Traditionally the industry has been run by Muslim families which employed Muslim and/or Hindu workers from lower and more marginalised castes in the Hindu social stratification system. Working in tanneries and footwear factories was and is still partially seen as an "unclean" business; however, with economic liberalization and the rise of new profitable business opportunities many new entrepreneurs with various religious and community backgrounds streamed into this sector.

Enterprises in the upgrader sample were dominated by educated entrepreneurs showing very heterogeneous religious backgrounds (incl. Muslims, Hindus, Jains). In comparison, the majority of non-upgraders seemed to have a Hindu background, but, coming from lower castes. Accordingly, it is of interest whether from the entrepreneur's perception the membership to a particular community still plays a role in business (see Table A32). There are highly significant differences in the opinions of upgraders and non-upgraders. Only about 40 per cent of upgraders stated that their membership played a role in their business compared to nearly 90 per cent in the non-upgrader group. Those entrepreneurs in the sub-samples stating that business community membership affects business positively identified finance as the main support mechanism. Additionally access to networks, as well as access to advice and reputation is seen as additional advantage.

Helpfulness of business networks: Non-upgraders had significantly more trouble with their buyers than upgraders (see Table A33). While half of enterprises in the upgrader sample mentioned that they had relatively stable busi-

ness from the beginning only 16 per cent of non-upgraders made the same statement. Non-upgraders mentioned that roughly after a year or two the reliability of incoming orders improved, yet, cases of unfair pricing, last-minute order changes as well as delays in payments had affected the business' performance. Buyers in the upgrader group provide a more consistent level of order stability. They also provide their suppliers with the opportunity to access new markets significantly more often than buyers and clients in the non-upgrader group. This happens mainly by providing assistance in exports as well as functioning as reference point for other market participants.

Between upgraders and non-upgraders exist significant differences in supplier relations (see Table A33). With an increasing demand for raw hides and skins the bargaining power of raw material suppliers and processors has increased in the last decade. Also, with stricter and better enforced environmental regulations in India the leather industry had to change the quality of chemicals used in the tanning process as well as cope with resulting effluents. In order to face these challenges many enterprises needed to have a good relationship with their suppliers. Entrepreneurs in the non-upgrader group are struggling significantly more with their suppliers than upgraders. Further, non-upgraders access significantly less technology via their suppliers; they get a worse quality product; and there is very few strategic collaboration and market networking among non-upgraders and their suppliers compared to upgraders. The two things non-upgraders and upgraders share is the reliability and punctuality of their suppliers as well as their readiness to give some trade credit in case bills cannot get paid immediately.

The data suggests that upgraders have a significantly better relation to their competitors than non-upgraders (see Table A34). Every upgrader is a member of an association and nearly 60 per cent of upgraders mentioned to have been actively involved in collaborations with their competitors as well as other stakeholders in efforts to improve the business environment. In particular these efforts were aimed at finding solutions for the environmental degradation caused by the local leather industry. In addition, because of their membership 83 per cent of upgraders stated that they had received support from governmental authorities in accessing subsidized loans, participating in technology upgradation programs as well as receiving various types of export incentives.

In contrast, non-upgraders find themselves struggling with their competition on a daily basis. This competition includes other similar micro units,

but also large-scale Indian producers and Chinese import competition. One third of non-upgraders is a member of an association, yet mostly passive. Yet, from the narratives of interviews these associational membership appear to be rather organized self-help groups of particular communities and own-account workers, rather than professional memberships. Only 16 per cent of non-upgraders reported to having received business support from the government. In these exceptional cases interviewees were attending subsidized training or were using publicly funded workshops in which shoemakers could rent out tools as well as machinery on a regular basis.

(iv) The business environment

Unethical practices / corruption: Each and every upgrader stated that they needed to bribe officials at some point to get something for the business done (see Table A35). For most entrepreneurs in the upgrader group paying extra-money for a service at a licensing department or an import clearance office, this seemed to be a routine job that they calculated into their accounting. In comparison to upgraders, entrepreneurs in the non-upgrader group are significantly less often forced to make extra-payments, though those who stated to bribe were formalized and visible orthopaedic shoe producers and shop owners. Accordingly, it seems that the bigger and more visible an enterprise becomes the higher the expected "fee" extracted by officials. However, what it shows is that paying bribes interrupts business, yet, it does not stop it.

Infrastructure and access to land: Energy access and energy infrastructure is among upgraders and non-upgraders the most frequently mentioned constraint. Yet, the difference in the frequency of responses between upgraders and non-upgraders is still highly significant. While all upgraders see energy access as one of their major constraints, only about half of non-upgraders made this similar statement. This is because firstly, non-upgraders choose activities that require little energy access and are not polluting and secondly, due to the small-scale of operations most non-upgraders are running their business in urban spaces where energy availability is better than in industrial districts or clusters. However, non-upgraders report significantly more problems being able to access affordable transport and property. With Chennai and the surrounding region becoming another booming hub for several industries real estate prices in nearly every neighbourhood have gone up and are now threatening the existence of small workshops and households

alike. Furthermore, as official street regulations do not allow commercial products to be transported by vehicles solely licensed for passenger transport entrepreneurs need to pay extra fees to use alternative modes of travel or they have to bribe auto-rickshaw drivers to categorize the transport as "private".

Access to bank loans and business development services (BDS): 80 per cent of upgraders compared to 47 per cent of non-upgraders tried to get a bank loan for their business, while about 70 per cent of upgraders succeeded only 16 per cent of non-upgraders did. These differences are highly significant. Considering the success rate of upgraders in obtaining a bank loan one is not surprised that only 11 per cent of upgraders stated that accessing bank finance is difficult compared to 60 per cent of non-upgraders. Upgraders seem to be significantly more experienced in taking up Business Development Services (BDS) than non-upgraders. About 40 per cent of upgraders stated that they participated in training and took up some other business development services through public organisations and associations. However, entrepreneurs were not satisfied with the training because of their impracticability and lack of case-sensitivity. This may be one of several reasons why about 70 per cent of upgraders stated no interest in further BDS. In contrast, only about 10 per cent of non-upgraders have accessed BDS and about three quarters of the non-upgrader sample was aware of any such services and assistance in their local business environment.

Laws and regulation: Complying with social as well as environmental regulations have been the main challenges for upgraders in the past while the issue of handling bureaucracy is mainly related to resulting complications of obtaining environmental licenses, paying social contributions and applying labour laws. It appears that standards and rules that were demanded by international buyers from Europe and the USA were those that incentivised entrepreneurs most to comply. However, entrepreneurs in the upgrader group reported that initially not all standards could be met due to the limited knowledge of the entrepreneur as well as the socio-political and economic context of the firm. The latter was and still is characterized by gender discrimination as well as low educational attainment among workers. Accordingly, building up capabilities in understanding and implementing international standards has been an ongoing process from the time upgraders had started exporting until today. In particular, upgraders mentioned that not only buyers contributed know-how and time, but also insti-

tutional actors in the leather industry were strongly advocating training and seminars on international standards. Yet, most entrepreneurs mentioned that the commitment of buyers to a longer ordering period made it the most attractive incentive to invest in the necessary learning processes.

As environmental and technical regulations are easier to verify and test upgraders mentioned that complying was a challenge though easy once the necessary technical measures and quality controls had been set up. In contrast upgraders mentioned that they are still struggling to understand, implement and predict labour laws and social standards. According to upgraders many entrepreneurs in the upgrader group stated that the official social labour laws left too much room for misinterpretation, e.g. on the subject of lay-offs among other things, which would then lead to unsettled conflicts with employees, labour unions as well as local courts.

In comparison, as most non-upgraders are informal their main concern is related to handling bureaucracy and getting in touch with the state. Many entrepreneurs stated to feel humiliated when asking for clarification or help at tax or licensing offices. As some non-upgraders have formalized over the time they have started to pay taxes, yet, many feel that tax rates are too high and leave no room for acceptable profit margins. However, generally non-upgraders try to reduce the interface with state officials or any other governmental institutions.

(v) Ranking of success factors and constraint by L&F entrepreneurs

Upgraders ranked *success factors* associated with themselves as well as those related to the structure of their enterprise as the most and 2nd most important factors determining upgrading (see Table A36). First, while many upgraders had a business family background, they also highlighted their degrees and work exposure in a field related to leather technology. Due to this experience, they could catch up on new trends and technical developments that enabled them to start or reform a competitive business. Secondly, access to human capital in combination with the operation of job-work units was identified as 2nd most important success factor. While 2nd generation entrepreneurs were likely to already have accessed an experienced pool of labour and expertise when taking over the family business, 1st generation entrepreneurs and 2nd generation entrepreneurs coming from a different business background started out with already existing job-work units. Thus,

most upgraders already started out with a minimum of about 6-7 employees (see Table A29 in Annex). This way 1st generation entrepreneurs and those without sector experience could incorporate expertise in the form of external human capital very quickly as well ensure a minimum entry scale for production. Through the integration of more and more job-workers enterprises were growing slowly thereby diversifying risks and slowly increasing the level of complexity in supply chain and order management. This allowed a slow learning and experimentation phase for 1st generation and 2nd generation entrepreneurs making enterprise growth less risky and more sustainable.

Further, at the 3rd and 4th rank upgraders mentioned several aspects related to their business as well as social network embeddedness. Exposure to lead firms, stable support from buyers, a strong supplier network as well as coordinated and collective action among clustered L&F enterprises were the most frequently mentioned success factors in the business network layer. Fourth, upgraders stated that many factors associated with the business network were easier to obtain by having a business family background as well as established private networks that similarly reach out to the industry (alumni and former work networks).

Finally, there is a strong awareness among L&F upgraders that the outsourcing boom in the leather industry starting in the 1990s until the beginning of the 2000s has provided them with the necessary windows of opportunity to grow their businesses. Furthermore, simultaneous institutional support as well as financial incentives to technologically upgrade tanneries as well as footwear and leather good workshops has been acknowledged to have contributed to the thriving of several clusters in Tamil Nadu.

Among L&F upgraders the biggest *constraints* are lined up in the business environment layer (see Table 5.5). The phasing in of several environmental and social standards by international clients as well as the state legislation in Tamil Nadu forced enterprises to make the collective effort in setting up treatment plants for chemical effluents as well as to develop a strategy to incorporate social standards. Related to these factors, entrepreneurs reported corruption and unfair treatment as a major challenge when interacting with the state. Also, more recently enterprises face serious problems in accessing electricity as well as competing with large Chinese business conglomerates. Especially against the background of the most recent financial crisis in Europe and the USA a majority of upgraders stated to face

stagnating or shrinking markets in the west forcing them to search for new clients.

Among the 2nd rank, challenges originating either from the business or enterprise network layer are the most salient among upgraders. Entering export markets and settling with a strategic partner to allow efforts for upscaling production have been reported to be major challenges. Further, in the efforts to scale-up production entrepreneurs faced the problem of adequate labour recruitment. On the 3rd rank, entrepreneurs in the upgrader group highlighted their missing knowledge on export requirements. Since most upgraders were not directly exporting when starting or taking over the company, few had the necessary knowledge on how to cope with international orders as well as how to handle production and logistical requirements. Fourth, combining work life and family matters has shown to be a constant struggle for entrepreneurs.

Table 5.5: Ranking of onion layers among L&F upgraders

Rank	Success Factors	Rank	Constraints
1	**The Entrepreneur** – **Quality education & work experience** – **Access to personal or family savings** – Informal know-how & networking – Motivation to modernise	1	**The Business Environment** – **Environmental & social standards** – **Access to electricity** – **Corruption** – Labour law – Financial crisis in Europe – Chinese competition
2	**The Enterprise** – **Starting with job work and incremental growth** – **Access to experienced employees** – Quality control systems and R&D	2	**The Business Network** – **Entering profitable (export) markets** – **Finding strategic partners for scaling-up** – Improving leather quality – Delays in payments

Table 5.5 (cont.): Ranking of onion layers among L&F upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
3	**The Business Network** – **Lead firm exposure & stable buyer support** – **Strong supplier network** – **Collective action among firms** – Embeddedness in cluster & strong sector association	**2**	**The Enterprise** – **Lack of qualified & motivated labour** – High labour fluctuation & attrition
4	**The Social Network** – **Business family background** – Work related friend & alumni network	**3**	**The Entrepreneur** – **Missing knowledge on export market requirements** – Delegation & growth fatigue – English language proficiency
5	**The Business Environment** – **Outsourcing boom in the 90s** – **Local institutional support & government incentives** – Access to a qualified pool of expertise	**4**	**The Social Network** – **Time constraints for family** – Social sharing norms
N=18			
Source: own compilation			

The aggregated ranking of *success factors* and *constraints* identified by non-upgraders differs mostly from upgraders in the positioning and importance of internal and external factors (see Table 5.5 and Table 5.6).

While upgraders see themselves as most important drivers of success, non-upgraders speculate that external factors such as access to finance as well as institutional support would help them in achieving their goals. In contrast, the entrepreneurs' capabilities and skills are considered to be the least important constraint for upgrading. As major constraints non-upgraders identify the level of competition as well access to funding. It is, however, highly unlikely that, their businesses will grow if provided with loans as most entrepreneurs reported to similarly face the problem of having no or only very irregular incoming orders.

Table 5.6: Ranking of onion layers among L&F non-upgraders

Rank	Success Factors	Rank	Constraints
1	**The Business Environment** – **Access to finance** – Institutional support & advice – Access to a shop or property	1	**The Business Environment** – **Level of competition** – **Access to finance** – Access to electricity
2	**The Business Network** – **Access to markets / clients** – Reliable raw material supplier / tannery – Supportive buyers/ clients – stable ordering	2	**The Business Network** – **Irregularity of orders** – **No outreach to other markets** – Delay in payments & no negotiating power
3	**The Enterprise** – **Need to have scales to succeed** – Skilled workers – Taking care of workers financially, medically and providing education	3	**The Enterprise** – **High labour turnover and attrition** – No quality leather / inputs

Table 5.6 (cont.): Ranking of onion layers among L&F non-upgraders			
Rank	**Success Factors**	**Rank**	**Constraints**
3	**The Social Network** – **Business family background** – Knowing someone who has been abroad	**4**	**The Entrepreneur** – **No management / business expertise** – Financial literacy – No motivation to grow big & being risk averse
4	**The Entrepreneur** – **Quality education** – Personal savings	**5**	**The Social Network** – **Financial obligations** – Next generation will not take over business
N=19			
Source: own compilation			

5.4.4 L&F combinations of success

The following analytical section will *first* sum up the major factors that have contributed to the success of L&F entrepreneurs. *Second,* different enterprise upgrading trajectories will be identified. *Third,* major upgrading constraints and success factors will be set in relation to form combinations of success.

Within the leather and footwear sample upgrading strategies vary between the technological modernization and transformation of traditional firms and as well as the incremental integration of further production stages along the value chain. Some enterprises have developed a specialisation for a certain kind of quality leather choosing the "high road", however, the majority of enterprises has grown in employment size as well as in production volumes (please see Figure 5.35). Along the process of upgrading the following success factors have shown to have a vital impact on firm development. The most significant factors for upgrading are *quality education, business family background* and/or *industry exposure,* a *clear product and market vision,* strong *strategic alliances with clients and suppliers, collective efficiency and local institutional support.*

– *Quality education, business family background* and *industry exposure:* Upgraders are significantly better educated as non-upgraders. Most upgraders have graduated in a leather technology; engineering or chemistry related degree and built alumni networks with their former fellow students, teachers, and professors. The fact that most entrepreneurs show a strong educational record suggests that while informal knowledge is important in one of Tamil Nadu's most traditional economic sectors it has evolved into a highly export orientated, technology-driven and capital-intensive industry in which English proficiency, technological and chemical know-how as well as financial literacy are significant entry barriers for individuals wanting to run a successful enterprise. Furthermore, the acquisition of tacit and informal knowledge about the industry practices and features was acquired through either the exposure in a business family or through internships and work experiences in the leather, footwear and/ or chemical industry. 2nd generation entrepreneurs in the upgrader group reported to be sent to university by their fathers or uncles in order to modernize the family business in leather, leather goods or footwear. Several 2nd generation entrepreneurs also reported to having worked in larger or foreign leather and footwear companies before taking over the family business. In contrast, 1st generation entrepreneurs stated to have worked in the leather or chemical industry during their studies as well as after the completion of their degrees before starting their own companies. Accordingly, while having a business family background helps in starting and running the business it might not be enough to compensate for a quality education as well as some sort of other quality industry exposure.

– *Clear product and market vision:* It might seem obvious that when running a company strategic decisions on the enterprise's orientation have to be made. This includes decisions on which quality leather to rely on, what kind of product to sell as well as what market to serve. While this choice heavily relies on external conditions and the possibilities entrepreneurs face, very few non-upgraders generally seemed to have reflected on these questions. Rather, decisions were made ad-hoc and very few non-upgraders reported to having thought about the profitability and future prospects of their business model. In contrast, upgraders had the awareness as well as opportunity to develop a viable business model and vision. Furthermore, via their industry exposure they were able to discuss their business model as well as receive informal advice

from family and industry contacts. As a result, upgraders systematically decided whether they would either rely on regular cow or bull leather or specialize in imported fancy leathers, such as goat, sheep or calf. Secondly, entrepreneurs decided to focus their business either on large-scale or small batch production and further specified the primary market orientation (e.g. domestic and/ or exports). According to these strategic product and market specifications entrepreneurs were able to make long-term investments not only in capital goods and human capital, but also into the necessary social capital that would facilitate incremental upgrading. Having a clearer idea of their business venture upgraders were better able to communicate their business and product vision at exhibitions, adapt and modify their supply chains, hire skilled manpower as well as receive access to certain institutional incentives.

– *Strategic alliances with clients and suppliers:* The stability of business relations as well as strategic partnerships with foreign firms had a major impact on the long-term development of upgraders. Nearly half of upgraders stated to have stable relations with their buyers and clients compared to only 16 per cent of non-upgraders. Stable orders allow for larger investments in the development of a highly skilled labour force, the optimization of supply chains as well as the development and maturity of own products and capabilities. The exposure to national and international lead firms provided opportunities for the transfer of technical as well as managerial know-how. Further, in-kind credit by lead firms allowed upgraders to purchase expensive machinery and to modernize production. With the slow expansion of the leather industry in Tamil Nadu the cluster and upgraders in particular also developed a higher quality consciousness regarding environmental as well as social standards. Thus, strong forward linkages have proven to be an essential facilitator for internal upgrading processes. However, similarly strong relations to suppliers, in particular raw material suppliers and tanneries have shown to be crucial for leather good and footwear manufacturers to stay competitive. Rather than paying regular market prices, upgraders often seem to rely on one or several preferential raw material supplier or tannery which produce exclusively or predominantly for their partnering enterprise. These strategic "loyalties" between enterprises have proven to stabilize production during times of working capital shortages and fluctuating raw material prices.

– *Collective efficiency and access to local institutional support:* The embeddedness in a historically rooted cluster enabled upgraders to access the passive benefits of intermediate goods in economic agglomerations. This included the availability of local expertise, the prevalence of a large material base as well as local institutional support. In particular, local governmental bodies have supported the development and upgrading of units since the beginning of the 1990s by providing financial incentives as well as other training and modernization measures. Furthermore, being in a cluster has facilitated collective action among local leather and footwear enterprises. This phenomenon termed "collective efficiency" describes the efforts of individual enterprises to engage in informal and formal associations in order to solve issues of general importance for the cluster (Schmitz 1995a). The presence of these associations has facilitated local action in times of crisis. In particular in the case of the "pollution" crisis in 1995 when a court order planned to close several tanneries which had not meet environmental standards associations forced a collective solution. The membership in these leading associations became a crucial success factor for upgrading as most enterprises would have possibly not have had the expertise as well as the financial resources to set up their own treatment plants. Furthermore, the support of the local UNIDO programme was frequently stated to have enabled upgraders to manage the pollution crisis successfully.

These success factors have gained importance in two major upgrading strategies of tanneries and footwear companies. Within our leather and footwear sample enterprises were found to either scale up production volumes or to specialise production based on fine, fashion conscious or eco-friendly leathers and leather products. The latter strategy is one which was only adopted by very few. The majority of enterprises had to vertically integrate along the leather and footwear value chain to secure vital value-additions as well as to reach certain economies of scale. Accordingly, tanneries were observed to slowly integrate footwear and leather goods units, while established footwear and leather goods companies were backward integrating tanneries, sometimes even including raw material producers, to allow for higher profit margins. The following sections will describe *vertical integration* and *specialisation* strategies in more detail.

(a) Vertical integration

Generally, the tanning and finishing segment as well as manufacturers in India benefits from its large domestic raw material base; however most of the domestic skins and hides produce only low quality leather. At the same time raw material prices on world markets have witnessed constant increases in the last decades as the demand for leather has spurred asymmetrically compared to the supply. Accordingly, the price of raw hide and skin imports has increasingly become unaffordable for smaller units facing capital shortages. Furthermore, facing strong competitive pressures in standard products from China, most tanners as well as manufacturing units had to reach economies of scales to stay profitable.

As a result, in order to scale-up production volumes and increase value-added many tanneries and manufacturing units had to *integrate backwards* and invest into the optimization of supply chains, including efforts to increase the quality of the leather as well as to allow for a leaner and faster production process. As backward integration is a costly and long-term investment some traditional tanneries in the sample as well as footwear producers were setting up strategic and preferential relations with suppliers that would predominantly supply to them. Thus, backward integration has been an incremental process of strategic partnership between tanners and leather manufacturers. While some of the tanneries and footwear producers in the sample have either directly incorporated other units in the same company, others have set up separate units which are, however, run under the same family or group of firms.

Also among upgraders we found tanneries pursuing strategies of *forward integration* by setting up their own footwear and leather goods units. These tanneries generally feed their finished leather to their own leather goods or footwear units, while some of them also take up additional business for other tanneries or manufacturers to achieve efficient levels of production. This job work based on piece rate normally increases in times of crisis when business is low and raw material supply is scarce or costly. Furthermore, taking up job work from leather traders has contributed to diversify risks as well as to ensure a constant flow of incoming orders.

Similarly it has been observed that footwear and leather goods upgraders have built strategic *backwards partnerships* with their suppliers of finished leather. Some of them even initiated the incorporation under the same roof and fed traditional tanneries with new capital for modernization. Interestingly, those footwear and leather goods companies that integrated tanneries were also more likely to be partnering with foreign firms to ensure better market access. However, this strategic "forward integration" was stated to have occurred rather recently in the last 5-7 years. Similarly, these efforts of integration were aimed at reaching higher levels of quality and quantity in production as well as securing stable and affordable access to raw materials. Enterprises in this segment are exporting most of their products though some have also started to develop local brands for the domestic market in recent years in response to a growing demand and purchasing power of the emerging middle and upper-middle class in India.

(b) Specialisation

Some upgraders did not take up the path of vertical integration and scaling-up. Rather, a small group among upgraders specialized in niche market segments. In the case of tanneries some focused on the processing and finishing of specific and mostly imported high-quality skins such as those from sheep, goat, snake, crocodile or calf. Further, some tanneries managed to brand their leather "eco-friendly" by using exclusively vegetable-based tanning and thereby regaining some of the investments costs associated with environmental friendly production. Footwear and leather goods manufacturers were specializing in the use of fancy leathers for high-end or design-fashion brands such as Gucci, Versace, Hugo Boss, etc. What is common among all of these above mentioned niche-strategies is that they required a *clear market and product vision* as well as a highly *educated and knowledgeable* entrepreneur to identify the technical as well as strategic steps to be taken. In fact, before paving the way for specialization entrepreneurs reported to having set up *strong forward linkages* with buyers. Most upgraders contacted or even visited potential buyers and clients in Italy, Germany and France *before* making the calculated decision to mainly serve niche export markets. Entrepreneurs in this segment either had some industry exposure working as agents in the leather goods and footwear

industry or were taking over smaller traditional tanneries from their forefathers with the intention to modernize it without becoming too big or unmanageable by the family.

Upgraders in the Pallar valley faced several *constraints* in their efforts to upgrade. Among upgraders the following growth constraints have been identified: *pollution crisis and environmental standards, access to working capital/ finance* and *human capital and labour shortages.*

Environmental standards and lack of reliable electricity: Leather production is considered to be polluting at the stages of tanning and finishing. As a result of increasing environmental awareness in importing countries stricter international standards have affected the entry and the costs of market access for leather and footwear producers in the Pallar valley. After a petition was submitted by a local voluntary association in the Pallar valley criticizing the pollution of local water basins, the Supreme Court of India ordered the closure of several polluting tanneries in 1995. Administered by the Tamil Nadu pollution control board it followed a ban of various chemicals and the inauguration of regulations leading to more stringent product specifications and controls for individual tanneries and manufacturing units. According to secondary literature a former pollution crisis already led to the formulation of environmental regulations, which, however, were not enforced effectively leading to a slow progress in the establishment of treatment plants.

However, the market changes within the industry in 1995 as well as effective threats by the state government to close down all tanning and finishing units within a year forced entrepreneurs to find either an individual or collective solution to the problem. For many smaller enterprises there was no other option than joining a common run effluent treatment plant as few would have the financial liquidity as well as the technological know-how to keep the plant running. Due to technical reasons this common solution could only be accessed by enterprises which were spatially clustered and could be linked to a complex pipe-system.

Among upgraders only two companies set up own effluent treatment plants as it allowed them to better control the emission of effluents as well as giving them a larger autonomy in the use of different technologies. These two upgraders reported to having had *supportive forward linkages* with European clients supporting a “quick” solution to the problem. In these two spe-

cial cases buyers and clients provided the funds and even send technicians from Germany and Italy to support the instalment of treatments plants. As these clients were the major buyers for the vertically integrated footwear companies setting up own treatment plants would make sure that deliveries and orders could be made on time. These upgraders reported to having paid back the instalment costs and technological expertise by in-kind via order deliveries and other arrangements.

However, the other tanneries *collectively joined* the establishment of a common effluent "zero-discharge" treatment plant supported by *local state authorities* as well as a *UNIDO programme.* Especially, the latter programme was vital in enabling technology and knowledge transfer from Italian and other European companies and specialists. For those upgraders that did not receive direct support from their forward linkages in coping with the environmental challenge the UNIDO programme promoted and facilitated foreign direct investment as well as mutual credit guarantee schemes to lower the initial investment costs for infrastructural measures that were necessary to developed a linked pipe system in the cluster. Upgraders without their own financial means heavily benefitted from these efforts and 1/3 of L&F upgraders reported to having been actively involved in associational meetings to implement and market environmental changes in their respective cluster.

Access to working capital/ finance: While upgraders have successfully coped with the pollution crisis, most were still struggling to cover the increases in the costs they incurred. In particular, running a tannery needs a lot of free disposable capital to purchase raw materials and to sustain operations over a longer period of time before payments are made. In fact, most upgraders experienced severe delays in payments from their forward linkages. At the same time fluctuating leather prices exposed manufacturers to significant risk and as leather is a biological product there were only few technological opportunities to increase returns other than through economies of scale or through the entry in high-end markets for premium leather. In order to pursue any of these two strategies large investments had to be made and upgraders reported to having used *strategic partnerships, personal* and *family savings, job-work* as well as *loans* from local banks to fund a strategic expansion.

One third of upgraders accessed bank finance right from the start; however, these entrepreneurs were likely to use family or personal collateral to

secure loans. Many upgraders said that it was easy for them to obtain small bank loans if they could communicate a clear product and market vision, yet, many reported that after taking out a loan it was not worth the administrative paper work and being exposed to external authorities. Rather, entrepreneurs favour in-kind credit agreements with their backward and forward linkages to survive a financially difficult time. Another strategy to survive in times of financial squeeze upgraders reported to take up additional *job-work* for other bigger tanneries or from leather traders. This way job work externalized the costs of leather purchase while keeping production flows running.

Human capital and labour shortages: Since several years there have been skill shortages in the industry resulting in high worker fluctuation and wage increases affecting MSMEs in particular. Upgraders reported to face shortages in nearly every category, however there are two-level of skill requirements (NSDC 2012):

– Level of supervisors, technicians and production manager: While local training institutes and universities educate skilled technicians and engineers in the field of leather technology or leather manufacturing related degrees many are moving into the IT, chemical, retail or other industries for more attractive and better paid sale and desk jobs. Upgraders have adopted several strategies to access and hire skilled employees. The major strategy is to use *family labour* for strategic positions. Yet, many family businesses not only rely on informal training but send family members to university or other relevant training courses to mobilize professional expertise in the long-run.

  Hiring through social networks entrepreneurs also adopt strategies to attract already experienced personnel from other companies or job-work units which give less financial incentives or employment security. The entrepreneur's *industry exposure* also helped to keep up-to-date with hard financial and soft social incentives, such as work environment, flexibility in working hours and measure of social esteem awards, e.g. employee of the month. However, these measures have their limits in effectiveness, which is why entrepreneurs are constantly on the outlook for new personnel. Accordingly, instead of delegating too many responsibilities to one particular person they spread tasks among several people in the production management.

– Operators, stitchers, assistants and helpers: The largest group of people, especially women, is employed at the shop-floor level in the footwear and leather goods segments. At this level there exists a lack of training institutes or training models to supply the industry with enough qualified personnel.

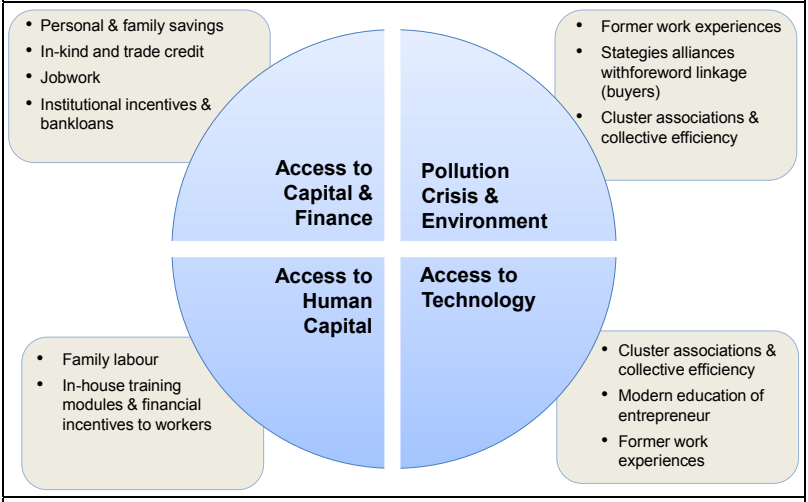
  Hence, most of the training of the workers is undertaken by enterprises in-house. But once workers are trained many leave the company for larger units where they get higher wages. Thus smaller enterprises incur high costs of training without reaping the long-term benefits. In order to deal with this upgraders have set-up various financial and "soft" incentives to keep personnel, such as incremental raises in wage payments, free meals and transport for workers and even payment of school fees for children of stitchers. In one case, a company even set up a small nursery for female shop-floor workers in which regular hot meals to children would be served. In this nursery children were taken care of especially in cases when urgent order deadlines had to be met and shop-floor workers had to work overtime.

  Moreover, among upgraders it is common that women workers receive pay rises when they continue to work after marriage, however, most upgraders reported that these financial incentives generally could not meet expectations of the husband's family which wants newly wedded brides to stay at home. Another strategy was to level out labour fluctuation by introducing an informal, fast-track training module. Upgraders assigned a loyal production supervisor with the establishment of an informal training unit in which senior shop-floor workers would teach a group of 3-4 fresh recruits on the job. Those senior-stitchers would in turn receive either financial incentives or 1 additional day off per month.

  However, the latter strategies were adopted among the most advanced upgraders that had several years of *industry exposure* and knew that without a fast training system and several non-wage incentives labour attrition would cause serious delays in production and long-term upgrading.

Figure 5.41 exemplifies how various success factors and constraints play out and reinforce development.

Figure 5.41: Inter-linkages of success factors and constraints in the L&F sector



Source: own representation

5.5 Main Messages

The main aim of this study is to identify *success factors* and *constraint*s of micro and small enterprise upgrading in India. Accordingly, main research questions have been what *factors* explain *success* and what have been the most salient upgrading *constraints* to micro and small enterprise upgraders. In particular, a key premise of this study is to identify "combinations of success" that explain *how* several success factors combined have played out in overcoming upgrading constraints and *what kind* of upgrading trajectories enabled entrepreneurs to succeed. In order to identify these *combinations of success* this explorative, qualitative study has used the description and analysis of individual success cases of medium and large sized enterprises in three economic sectors in India – the Information and Communication Technology (ICT) sector, the Textiles and

Garments (T&G) sector and the Leather & Footwear (L&F) sector. Learning from individual experiences we compare successful cases (upgraders) with current micro entrepreneurs (non-upgraders) in the same sectors.

The study used stringent quantitative and qualitative criteria to identify upgraders and non-upgraders. Based on the analytical "onion"- framework a survey with 93 enterprises was constructed and perception data based on *five aspects* was gathered: specifically, data on the characteristics of the entrepreneur (1) and the enterprise (2) as well as on the entrepreneur's perception about his social (3) and business (4) networks and the business environment (5) was collected.

Success factors and *constraints* were analysed across sectors as well as at the sector level. The following paragraphs are going to present the main messages of this study according to (i) insights into *constraints* to upgrading and (ii) insights into *success factors* that differentiate upgraders and non-upgraders. Finally, the last section is going to present the main messages (iii) of this research. In doing so, the next paragraphs will relate to the *five onion layers* starting with the entrepreneur (1) to the business environment (5).

(i) *Major **constraints** to enterprise upgrading can be divided between those that are common among upgraders and non-upgraders and those that are specific to either one group:*

(1) At the level of the *entrepreneur* both upgraders and non-upgraders face problems in developing a professional *marketing strategy* in extending their buyer/ client networks. Further, initially, both have had problems acquiring the necessary *market information* to attract and settle business. Also, among upgraders a major constraint to upgrading was their own unwillingness and *incapability to delegate* responsibilities in order to be able to leave production and market products or services instead.

(2) At the level of the *enterprise* both groups face challenges in accessing human capital and workers. There exists a high degree of fluctuation among highly skilled employees as well as among shop-floor workers.

(3) In terms of *social networks* both group of entrepreneurs report to have *financial family obligations,* however, these seem to be less se-

vere among upgraders. Upgraders report time constraints and social sharing norms to play a role rather after the business has kick-started development. Non-upgraders report initial resistance to entrepreneurship from their family as upgrading constraint.

(4) For Upgraders and non-upgraders *delays in payments* within their *business networks* constraint their ability to plan business and to invest in tangible and intangible assets. Further, both groups faced severe constraints in accessing profitable markets when starting operations. Thus, one of the most dominant constraints in upgrading is the *access to markets* with effective demand that allow producers or service suppliers to gain profits as well as exposure to knowledge, technologies and market information.

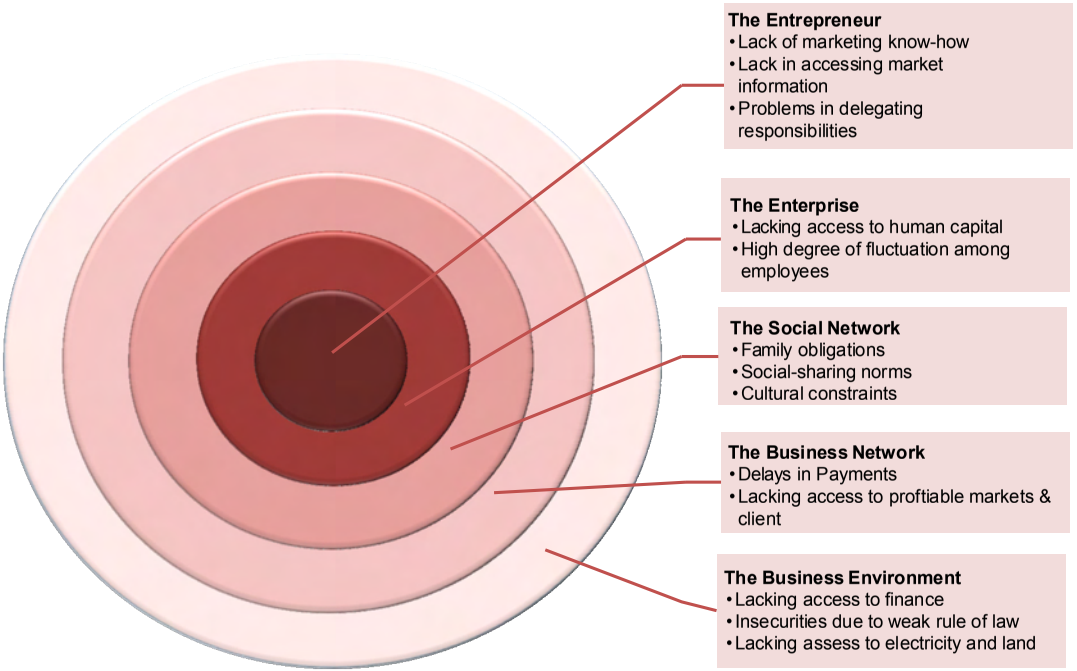
(5) There are several challenges with regard to the *business environment.* Difficulties to access finance, the insecurities regarding the rule of the law and access to electricity are constraints that are equally affecting upgraders and non-upgraders. Upgraders are more exposed to corruption and struggle due to their market exposure more intensively with the compliance to environmental and social standards while non-upgraders face difficulties in accessing affordable land and competing with cheap imports in their product segments.

(ii) Major success factors explain the difference between the performance of upgraders and non-upgraders in upgrading their enterprises:

(1) At the level of the *entrepreneur* (1) there are four key factors that matter most:

First, all upgraders showed the *motivation* to invest tangible and intangible resources in expanding and constantly transforming their enterprise. Accordingly, all upgraders reported to having spotted a business opportunity and actively decided against a career as employee. In the case of ICT upgraders most entrepreneurs even rejected senior positions and attractive wages at their former employer. Similarly, entrepreneurs that had no business family background deliberately decided to become entrepreneurs rather than that they were forced to become "necessity entrepreneurs" due to missing employment alternatives.

Figure 5.42: Key constraints to upgrading based on onion layers (see Figure 2.2)



Source: author's representation

Second, it is the blend of *quality education* and *quality work experience* that combined builds the necessary knowledge, skills as well as social capital that enable the entrepreneur to absorb market information, develop business strategies and act on them. Upgraders seem to have at least passed higher-secondary education as well as undergone some informal sector-sensitive on the job training before having started their businesses. However, the specificity of informal know-how and required levels of formal education to become successful vary slightly across sectors. While in ICT the entrepreneurs' formal degrees, participation in reputable and certified university courses (e.g. at Indian Institutes of Technology) as well as formal (international) lead firm exposure have a strong influence on the future performance of an ICT start-up, in the T&G and L&F industries it is the entrepreneur's ability to combine and successfully integrate traditional and modern manufacturing and marketing practices. This includes taking into account informal economic arrangements within the logic of traditional family businesses as well as adopting modern technology and new revenue models via the entrepreneur's simultaneous exposure to formal education at business colleges and specialised universities.

Third, the availability of *personal savings* or *tangible assets* plays a significant role in funding initial operations as well as in accessing further external funding for which personal collateral as a security is mostly obligatory.

Fourth, upgraders had a very *clear product and market vision* before starting or taking over the company from their forefathers. In order to define this strategy most had some exposure in their respective industry or were actively searching for necessary market information. Thus, while a degree of experimentation was part of setting up a new business, the product idea as well as the strategies to implement it were not the result of continued operations but had crystallized before entrepreneurs started their enterprise. This included calculated decisions about the profitability and long-term viability of a business idea.

(2) At the level of the *enterprise*, two major success factors matter:

First, upgraders have developed several ways to ensure the existence of basic formal and informal incentives aiming at their *employees'*

welfare, including a competitive wage and other non-wage benefits such as child care, social security, a fair treatment of workers as well as training modules allowing for skill development. In the ICT segment entrepreneurs even consider making strategically important employees shareholders to increase motivation and ownership, while upgraders in the more traditional industries, such as T&G and L&F, hire family and adopted formal and informal incentives to keep in particular their female shop-floor workers with the company (see Section 5.3.4 and 5.4.4).

Second, the set-up of internal structures to continuously screen markets for new opportunities and coping strategies constitutes a crucial factor for the enterprises' upgrading. This *market research* for new trends and market requirements does not necessarily involves sophisticated levels of research and development (R&D), however entrepreneurs and their strategic employees were in constant exchange about new developments, trends and threats in *their* respective industries. This involved regular informal meetings among core staff in the case of ICT software companies, but also quality audits and screening among T&G and L&F to match changes in the industry and client demands, e.g. changes in environmental standards or designs.

(3) *Social networks* have emerged as one of the major facilitators of success. Two types of social ties have been instrumental for enterprise upgrading:

Family: Whether 1st or 2nd generation entrepreneurs, upgraders have gained considerable support from their families in starting and running their enterprise. Nonetheless having a *business family background* has shown to be advantageous in accessing finance, labour, tacit know-how and most importantly business networks. Especially in T&G and L&F sectors upgraders with business family background have had better access to markets and different sources of market information. Especially the *social embeddedness* in already established business networks provided upgraders not only with an informal learning experience during their formal education, it also provided a low-risk and stable planning horizon within trusted and *strategic business linkages* to continuously make tangible and intangible investments in the upgrading of the business. Further, in terms of access to human capital employees and shop-floor workers 2nd generation entrepre-

neurs could build on loyal core staff reducing worker attrition, stabilizing production cycles and thereby reliably meet order deadlines.

Alumni and work networks: While strong family ties have been of importance in providing emotional support for 1st generation entrepreneurs, compared to traditional business families, these were less helpful in providing financial and strategic support. This is particularly the case in the ICT sector were most of upgraders come from lower to upper middle class families in which entrepreneurs are among the first to start a company. It is in this context in which upgraders are compensating access to family savings via their own work experience and funds. Further, the establishment of social and business linkages at university and work is another way to compensate for what 2nd generation entrepreneurs might have inherited as traditional networks from their forefathers. However, this shall not mean that 2nd generation entrepreneurs did not need to establish useful alumni and work networks. In fact, among L&F upgraders the exposure to formal and professional alumni and work networks was an intentional strategy to extend and modernize social linkages within the transforming industry in Tamil Nadu. Alumni and former work networks have shown to be a potential source of finance as well as a pool for business partners and human capital.

(4) At the level of *business networks* two major success factors have come forth to influence enterprise upgrading positively:

Simultaneous access to diverse national and international markets: The simultaneous access to various markets has allowed upgraders to diversify risk, to gain higher profit margins as well as use this additional exposure to incrementally learn and reflect about new product categories and demand structures. Initially, the majority of upgraders focused their energy on one single geographical market. Upgraders expanded only after they reached a certain level of savings and felt they had reached a secure market position. Entering new markets is associated with high search and transaction costs related to acquiring new market information, developing new product strategies and finding reliable business partners. Although upgraders reported short-term losses the decision to diversify into other geographical markets was reported to be a major facilitator of growth and stability in the long run. A major motivation was to evade local competitive pressures in

saturated markets as well as making use of some business opportunities that emerged via their already existing business network. It is rather difficult to generalize which market expansion strategy and sequencing is conducive to enterprise upgrading across sectors as this strongly depends on the product category. While the majority of ICT upgraders had started with a focus on international markets (mainly USA and the UK) they later added various domestic projects to their portfolio. In contrast, most T&G upgraders started in national markets and slowly expanded and diversified into serving international markets, too. L&F upgraders also started nationally as suppliers of exporting houses; however after liberalization nearly every enterprise added international markets to their portfolio. By now the majority of upgraders exclusively shifted to exports serving USA, European and Asian markets. However, this suggests that in the process of upgrading relying on one single market is a dangerous strategy for companies that aim to persist and upgrade over longer periods of time. Accordingly, simultaneous integration into domestic and international value chains has come forth as a successful coping strategy for upgraders to level out market shocks and grow continuously.

Strategic forward and backward linkages: Strategic partnerships with particular clients and suppliers (vertical linkages) have provided upgraders with the security to regularly invest in product development, technological upgrading and marketing. These strategic partnerships partly evolved out of inherited business family networks or were actively pursued and developed by the entrepreneur through his or her work and/ or university exposure. While the upgraders' drive was vital to address challenges he or she were relying on the respective upgrading efforts of their suppliers as well as dependent on the interest of their major buyers and clients to support or allow for learning. It is therefore crucial to understand that improving qualitative aspects of a product or service as well as increasing the quantities and volumes in production is not solely relying on the efforts of an individual company, but builds on the harmonization and coordination of interests and efforts of closely linked actors within one value chain. A perfect example is the case of L&F upgraders which were facing challenges in adopting environmental standards and had to mobilise several interdependent companies to adopt coping and upgrading strategies.

(5) At the level of the *business environment* there have been three main factors which have impacted enterprise upgrading positively:

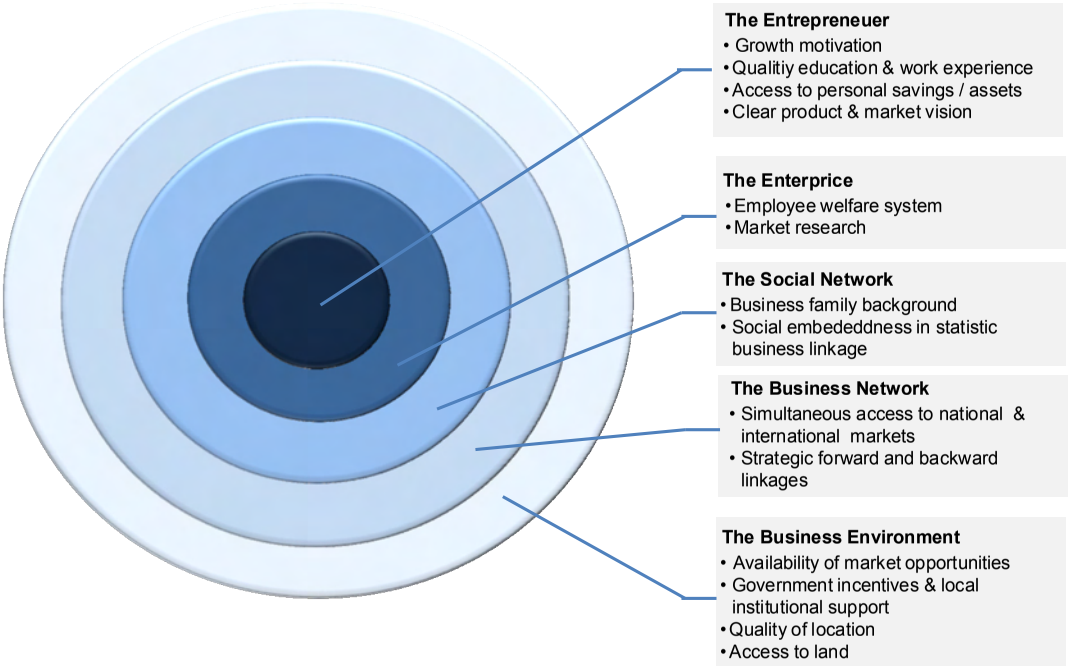
Availability of market opportunities: It seems needless to say that enterprise upgrading is only likely to happen if there exist enough market opportunities to be taken up by individual entrepreneurs. Whether these market opportunities arise depends on trends within a sector and product category. For example, enterprise upgrading in India might be easier within the ICT sector than T&G sector, as the latter is a more established and traditional sector in India with higher levels of competition and market saturation. Accordingly, whether an enterprise manages to start-up with a viable business model and upgrade is strongly related to certain booms and busts in particular economic sectors. Upgraders took advantage of certain booms that allowed them to realize some of their upgrading efforts at the right time and place. In the case of the ICT sector the outsourcing boom of BPO services opened a window of opportunity as well as the recent more value-added outsourcing of ITO and KPO services. Similarly, L&F upgraders reported to having benefited strongly from the outsourcing boom of footwear and leather good activities in Europe in the early 1990s and early 2000s. Furthermore, garment producers with a stronger design- and brand-orientation mentioned that recent changes in the consumption patterns of domestic middle class consumers stimulated experimentation with new designs, cuts and fabrics thereby allowing for innovative products to emerge.

Government incentives and local institutional support: Assistance and improvements in the provision of common intermediate goods such as electricity, roads and some basic institutional infrastructure is commonly agreed to have supported upgrading efforts. Further, upgraders frequently mentioned the availability of local training centres and tool rooms as important local institutional spaces mostly funded by state authorities. Indeed, there are various schemes supporting the technological upgradation and business expansion of MSMEs via subsidized loans, training initiatives and other support schemes, such as the Technology Upgradation Fund Scheme (TUFS) or the CGTMSE (Credit Guarantee Fund Trust for Micro and Small Enterprises). However, whether these government incentives and support programmes assist in enterprise upgrading is a question that cannot be

answered on generalized grounds. Among upgraders government incentives played a crucial role in the upgrading of the L&F sector, yet had no outreach or impact in the ICT and T&G sectors. Rather, in the ICT sector the role of professional sector associations, e.g. NASSCOM, and other informal horizontal business linkages helped individual enterprise in accessing market information and attract further business. On the other hand, though the majority of upgraders in the T&G sector reported to be members of a professional sector association none reported to having a lot of interface with these organisations. Also, only very few T&G upgraders were taking up government incentives, such as subsidized loans. T&G upgraders tend to be rather export-oriented and producing large volumes. In contrast, none of the smaller upgraders reported to having had any interface with schemes such as TUFS. Summing up, the provision of basic services and goods by the state or sector associations has been acknowledged by all upgraders as instrumental to their success; however, the positive impact of targeted state incentives and measures on enterprise upgrading across sectors is mixed, and can only be supported in the case of the L&F sector.

Quality of location and access to land: Starting a business in a cluster positively impacts enterprise upgrading. The location and spatial milieu of a start-up in an already matured and dynamic business cluster strongly increases its visibility and exposure to profitable markets. This notion is supported by the urge of nearly all non-upgraders to access affordable property for an office or a plant in a "better" setting. No upgrader could prosper in a remote and disintegrated area which lacked the physical infrastructure as well as business linkages to allow for tacit learning and market interface. Across sectors upgraders sooner or later had access to land, a plant or a shop. While in the traditional manufacturing sectors a majority of upgraders either inherited premises from their forefathers or accessed funds to afford higher rents for strategically located plants, ICT upgraders deliberately chose locations which were close to established IT service and product clusters.

Figure 5.43: Key success factors for upgrading based on onion layers (see Figure 2.2)



Source: author's representation

(iii) This research has shown that entrepreneurs across three sectors face various constraints when aiming to upgrade their enterprise. Upgraders have used diverse coping strategies to overcome these constraints by combining the above mentioned success factors. While these combinations of success are difficult to generalize across sectors the following insights can be derived. There are ***10 main messages:***

(1) *Micro and small enterprise (MSE) upgrading takes place!* Upgraders are indeed an exception, however, there are a considerable number of entrepreneurs who manage to innovate and grow their businesses incrementally. Depending on the sector this process might take more than a few years, in fact, upgrading of traditional manufacturing businesses was being initiated and carried forward by one or two generations, involving processes of market and product reorientation and fundamental technological transformation. Also, as enterprise upgrading is an incremental process, many achievements by MSEs in innovating in products and services are constantly threatened by market shocks and therefore growth in employment is difficult to sustain steadily. Accordingly, there exists variation in upgrading trajectories.

(2) *Sectors and regions matter:* When explaining micro and small enterprise upgrading the country, sectoral as well as regional context has to be taken into account. India is a complex political union of 28 states and 7 union territories which all vary greatly in their socio-cultural and economic conditions. Enterprises are embedded in different regional settings providing them with different opportunities that define the boundaries of what is possible for an individual company. Further, depending on booms and busts in certain sectors there exist more or less viable market opportunities for MSE to start a company or a new product line. Thus policy recommendations have to be tailored not only specific to a certain country and region, but should further build on trends in certain product and service categories which requires sector know-how. The latter differentiation is of vital importance as the nature of the enterprises' economic activities strongly determines available coping strategies and upgrading trajectories.

(3) *Micro and small enterprise (MSE) upgrading requires a combination of success factors:* This explorative research aimed to show that while public debates very often highlight simplified mono-causal explanations in explaining enterprise development, such as access to finance,

the embeddedness in a cluster or its informal status, enterprise upgrading is a phenomenon that depends on certain *combinations* of success factors. Enterprises find themselves confronted with several challenges and upgrading constraints for which they need a variety of coping strategies and success factors. However, how these particular combinations of success factors materialize strongly relates to the country and sector context, which is why it is dangerous to formulate a generalized "winning" strategy for MSEs. Rather in its sector-specific Subchapters on the ICT, T&G and L&F sectors this study has shown that the factor ingredients of these combinations can vary strongly. A major take-away though is that enterprise success is strongly relying on the interaction of a well-informed, educated and socially embedded entrepreneur using his personal networks to compensate for various deficits in the business environment, such as lack of finance. This implies that while entrepreneurs can compensate to a large degree for deficits in the business environment rates of MSE success will be higher where entrepreneurial drive and the provision of soft and hard infrastructure go hand in hand.

(4) *Entry barriers for woman entrepreneurs exist:* While there have been several policy efforts to support and increase entrepreneurship among women in India, e.g. microfinance schemes with relaxed interest rates, there seem to still exist huge entry barriers for women. The sample consists of 93 interviews of which only 4 were with women entrepreneurs. Accordingly, no inferences of the relative performance of women compared to men can be made; however, this sampling outcome implies that there are strong entry barriers for women in becoming an entrepreneur. Those women who were taking up entrepreneurship were all owning a business in the textiles and garments sector, they were highly educated and reported to having a very supportive and understanding family and social network assisting them in their business. The reasons for this outcome are manifold. Interviews with woman entrepreneurs indicated that family obligations and social norms influence individual preferences and decisions of potentially equipped business women. While there are exceptions, it appears that entry barriers are historically and culturally rooted and therefore will change only slowly.

(5) *The entrepreneur's capabilities and social exposure matter a lot:* Most of the identified success factors across all three sectors are strongly associated with the entrepreneur's human capital as well as his embeddedness in particular quality networks. While recent literature has highlighted external variables such as registration procedures, access to finance and informality, the qualities of the entrepreneur as well as those of his social milieu seem to be underestimated. Yet, the case of upgraders shows that these "soft" variables are much more important than recent literature says. Most success factors depend in the end on entrepreneur and network characteristics such as quality of education, quality work experience, motivation, family background and quality networks. The entrepreneurs' coping strategies to overcome challenges such as access to finance, access to markets and access to workers largely relied on their own capabilities to makes use of their own or their social and business networks knowledge and capital resources. In accordance, this study can support notions of a strong identity and network-led economy in the studied sub-sectors (Meagher 2010).

(6) *Informality is not a constraint to upgrading in itself!* Formalization is the outcome rather than the driver of upgrading. Many entrepreneurs upgraded their business out of the informal sector and formalized after they had sustained growth for a longer period of time. For many enterprises it was a deliberate decision to remain informal due the perceived advantages and disadvantages of registration. Once enterprise had stable orders and projects the companies gradually reconsidered the benefits of registration and gradually made the efforts to register under different corporate statutory laws and acts.

(7) *Regulatory framework and state bureaucracy are no constraints to upgrading in themselves!* Complicated procedures and unclear regulatory specifications as suggested by the Doing Business Reports raise search and transactions costs (money and time) for upgraders (World Bank 2011). Yet, most upgraders managed to overcome these challenges. Rather than the sheer number of procedures and the compliance with the regulatory framework, the major problem of entrepreneurs lies in predicting whether laws and rules will be applied adequately. In most cases entrepreneurs had to pay-off officials *no matter* whether they were complying to procedures or not. Thus, deficits

in the rule of law frequently result in unethical practices and corruption for which entrepreneurs have to bear the costs.

(8) *For MSEs initially access to markets is a more severe challenge to upgrading than lack of finance.* Lack of finance has been discussed as a major growth constraint for MSMEs. Having the necessary capital to start and run a company for the first initial months constitutes a bottleneck for many entrepreneurs and indeed upgraders had considerably better access to various private sources of finance as well as some bank loans to overcome initial start-up costs and times of capital squeezes. However, upgraders showed that they too have strong market linkages and access to supportive clients and buyers *before* starting their business, indicating that access to markets might be more instrumental to initial enterprise growth than access to external finance. A major strategy of upgraders was to grow slowly and compensate the lack of external finance by using in-kind credit and other forms of strategic partnerships with their initial market linkages. Hence, additional to private savings upgraders used clients as a source of finance which not only provided the necessary capital to start the business, but more importantly lowered business risks by ensuring effective and secure demand for their products and services. Thus, initially access to markets seems to be more important to MSEs than access to large amounts of capital and bank loans not only because clients constituted an alternative source of finance, but more importantly because this arrangement ensured a guaranteed sales market as a basis for further growth.

(9) *Lack of access to bank finance becomes a more severe growth bottleneck at later stages of small enterprise development.* Evidence suggests that upgraders experienced a lack of bank finance to be a more pronounced growth constraint at later stages of the company's development rather than in the beginning. Only after the establishment of reliable market linkages did entrepreneurs require larger amounts of capital for business expansion, research and development as well as to level out short-term capital squeezes. However, only very few upgraders were able to access a corporate loan. Rather entrepreneurs used private loans to fund their business as these were easier to obtain. In particular, entrepreneurs reported an array of deficits in the provision of adequate financing when aiming for corporate loans. The most

salient problem is the perceived benefit and cost ratio. For most entrepreneurs handling the necessary procedures and documentation as well as the disclosure of sensitive financial information was not worthwhile in comparison to the perceived financial benefits. In particular, entrepreneurs criticized that bank officers show little understanding of sector and domain trends and thereby gave no room to adapt financial arrangements to market conditions (such as financial volume, credit lines and repayment modes, etc.).

(10) *Inequality in opportunities:* The persistence of various constraints, e.g. lack of finance, lack of markets access, etc., results in the fact that only very few privileged entrepreneurs manage to upgrade while the huge majority of micro and small entrepreneurs are excluded. Upgraders have private or family savings, business connections, a good education, international experience, access to land, and relevant work exposure, etc., and are thereby able to circumvent upgrading constraints. As India lacks in many parts the provision of quality schooling, access to relevant market information and access to adequate finance few micro and small entrepreneurs develop the skills or access the means to upgrade their business. However, even if you fix all structural constraints, this does not automatically translate into growth and upgrading of all MSEs. Not everyone has the motivation or learning capacity to become a successful entrepreneur.

6 Policy implications

This research provided insights into development trajectories of medium and large enterprises that have graduated out of the micro and small enterprise size segment. The sampling of this study was purposive aiming to document this rare phenomenon. Accordingly, observations made and lessons drawn focus on exceptional individual experiences at the micro level. While exceptions allegedly inform about the rule the following policy recommendations should therefore be read with caution. The following paragraphs are divided into (i) general and (ii) sector-specific policy recommendations. The general policy recommendations identify themes that apply to all sectors and highlight the most salient measures. Sector-specific recommendations add to general policy recommendations based on the most significant challenges faced by MSEs in upgrading.

(i) General policy recommendations

Some general policy prescriptions based on this research include:

1. *Integrate national MSME policies with regional and sector-specific industrial policies:* In India, most MSME policies are defined by the Ministry for MSMEs while know-how on industrial developments very often lies with state-level organisations. As a result, MSME policies appear to be disintegrated with regional and sectoral industrial policy objectives. State-level or regional organisations, however, collaborate with sectoral associations and local experts which are most probably better equipped in anticipating and tackling local MSE-specific challenges as well as in identifying measures that could effectively complement industrial strategies. As this research has shown, successful micro and small enterprise upgrading requires a combination of factors and coping strategies that are highly region-, sector- and industry-specific. Thus, in order to provide MSEs with effective growth assistance MSME policies need to be better integrated into the long-term formulation of regional and sector a specific industrial policy which requires policy space at the state and regional level. Thus the competitiveness of single MSMEs much relies on their embeddedness and fit within a competitive industrial sector and regional clusters.

2. *Make use of sectoral growth dynamics to support MSE upgrading:* Sectoral growth dynamics play an important role in determining upgrading opportunities for MSEs. In an ever changing economic environment certain sub-sectors will experience faster growth than others and thereby open windows of opportunity for existing MSEs as well as new entries. These sector-specific time windows can create a growth momentum that allows for substantial upgrading as seen in the cases of footwear or BPO MSEs in the outsourcing booms of the 1990s. Continuous unfocused resource-intensive support for MSE development that does not distinguish between stagnating and growing sub-sectors might not be the most effective and efficient approach in achieving graduation. In fact, continuous support in stagnating sub-sectors might provide perverse incentives for small entrepreneurs to invest in dying sectors, thereby increasing competition levels and lowering upgrading potentials of MSEs. Rather, when aiming to boost MSE graduation national MSME agencies, development banks as well as industrial boards should prioritize assistance in those sub-sectors for which a clear

growth momentum can be identified as objectively as possible. As this research has shown, in the ICT sample MSEs recently upgraded in the segment of higher value-added software products for mobile applications. Further, in the garment sub-sector upgraders that were focusing on design and branding leveraged growth opportunities by taking advantage of the increasing internal demand for individualized clothes from middle-class consumers. Nevertheless, it should be emphasized that a major duty of publicly owned development banks and MSE agencies is to also ensure financial and social inclusion, in particular, for purposes of poverty reduction. Against this background non-upgraders might not be motors of growth and employment creation, yet, they serve a crucial social security function by providing a basic livelihood for particular poorer segments of society.

3. *Acknowledge that informality does not indicate "necessity" entrepreneurship:* Our research has shown that most MSE do not have the motivation to upgrade into higher size segments. It is therefore vital to investigate the motives and business ideas of entrepreneurs. To understand the motives of entrepreneurs, the research community differentiates between "necessity" entrepreneurs, who are pushed into entrepreneurship because options for employment are missing or inadequate, and "opportunity" entrepreneurs, who aim at taking advantage of a particular business opportunity (see Denfeld 2012). However, motivations are quite challenging to observe. As a result, most informal entrepreneurs are commonly categorized as "necessity" entrepreneurs. Yet, depicting enterprises in the informal economy as being run by "necessity" entrepreneurs does injustice to many engaged "opportunity" entrepreneurs. Research in West Africa and Sri Lanka suggests that that there exists entrepreneurial potential in the informal economy (Grimm et al. 2012; de Mel et al. 2008). These entrepreneurs are referred in the literature as "constrained gazelles". Similarly, as seen in our samples many upgraders started in the informal sector. Hence, initial informality does not automatically indicate "necessity" entrepreneurship. Rather, the thorough investigation of the business idea, the growth motive as well as the entrepreneur's knowledge exposure are more useful indicators for determining a "necessity" or "opportunity" entrepreneur. The following paragraphs suggest some methods on how to differentiate between these two types of entrepreneurship (see Point 5).

4. *Improve access to finance:* In particular this can be achieved by incentivizing bankers to develop targeted financial products for "opportunity" and "necessity" entrepreneurs. The policy community on private sector development and micro-finance has acknowledged that micro and small entrepreneurs are severely constrained by lack of adequate access to credit and finance. Those who promote microfinance highlight two functions: First, access to micro-finance will help MSEs to grow and create employment (the productivity function). Second, by providing inclusive financial services to disadvantaged segments of society these can be lifted out of poverty – (the consumption function). Yet, it seems that many micro finance schemes miss out to serve "opportunity" entrepreneurs and thereby fulfilling the productivity function. In our sample we found that initially the vast majority of upgraders made use of personal or family savings to fund upgrading efforts rather than accessing micro finance or commercial corporate loans. Among those upgraders that accessed bank finance the majority took out private loans with their private assets, e.g. their house, car or jewellery, as collateral. As of the reasons why microfinance did not seem as a viable option upgraders reported microfinance schemes not to be adequately designed for upgrading purposes as financial volumes could not be scaled up. Above all, microfinance interest rates tend to be far too high to make long-term investments in productive assets. On the other hand, most entrepreneurs missed the necessary financial documentation, performance record and necessary collateral to apply for larger and more mid-term corporate loans. Accordingly, while micro finance programmes seem to serve the lower end of the entrepreneurial spectrum these programmes are not catering to those opportunity entrepreneurs which most probably allow for better returns. Internal incentives within banks should therefore encourage clearer distinctions between these two types of clients and develop adequate financial products allowing in particularly growth-oriented "opportunity" entrepreneurs to incrementally expand financial volumes and repayment times if the initial behavioural track record has been satisfactory. In order to ensure a better targeting by bankers institutional and individual capacity building may be enhanced by establishing an internal registry or exchange platform showcasing clients that neither matched the characteristics and needs of either micro finance clients or traditional collateral-based lending for larger credit volumes. Learning from special cases and providing an

internal discussion forum for grey areas might help to incrementally formulate a more standardized procedure on how to ensure financial access to constrained "opportunity" entrepreneurs while keeping lending risks for this asset class manageable.

5. *Link local financial institutions and sector associations in order to share market information on MSMEs:* An additional reason for the limited outreach to "opportunity" entrepreneurs is incomplete market information on particular sub-sectoral trends and business opportunities within local banks in order to adequately access the feasibility and viability of a business idea. In order to improve the quality of financial services it is necessary to improve the local information and knowledge infrastructure of banks assisting MSMEs. Industry associations might play an important role in facilitating general know-how on trends and business opportunities to financial institutions. Additionally, initiatives such as the virtual website *smallb.in* launched by the Small Industries Development Bank of India (SIDBI) help to disperse information and provide insights into how to rate business ideas as well as to actually finance them. While the outreach of online sites is limited to IT conscious entrepreneurs, another possible suggestion is the creation of local finance parks in which banks and potential clients share common facilities to enable the collection of market information at a single point (ISED 2012, 469 f.). This would include a support centre for a centralized loan application, a credit advisory as well as access to legal services. Obviously these structures can only be set up where industrial clusters and a critical mass of underserved MSEs are prevalent and catering banks, BDS providers and state authorities agree on joint efforts.

6. *Promote basic primary schooling as fundamental entrepreneurship policy.* Without basic primary education individuals will face strong entry barriers to start and run an enterprise. Indifferent whether belonging to the group of upgraders or non-upgraders, every entrepreneur had undergone basic formal education. Being able to apply mathematical principles, being able to read and write in a local language as well as some basic English skills are therefore fundamental skills that should precede any other more specific form of entrepreneurship training. Further, introducing the application of these basic skills in practical exercises will increase the problem-solving ability as well as the creativity of individuals in their future undertakings. These can be particularly directed

towards entrepreneurial challenges such as defining a business idea and market. For this to work effectively students require participatory teaching rather than frontal teaching methods that allow an active involvement in formulating and solving day-to-day problems. For example, setting up a children's savings plan at a local bank could be a school project where entrepreneurial, organizational and mathematical skills can be trained.

7. *Support micro and small entrepreneurs with former industry exposure:* Upgraders and non-upgraders in our sample differ strongly in the quality of their education and their industry exposure out of which they start or take over a business. Upgraders show higher degrees, attended more reputed educational institutes and had qualitatively better and more intensive industry exposure than non-upgraders. Differences in the performance of upgrading are therefore more likely to be explained by the combination of human capital and "tailored" industry exposure. The quality of education and industry exposure naturally varies with the subsector requirements and its particular entry barriers. For example, the formal degrees attained before for setting up an ICT firm are higher than those in the T&G sector. Accordingly, the nature of knowledge and industry exposure required to upgrade varies. Yet, former education and industry exposure mainly fulfils three functions.

   – *First,* without having been educated and having worked in the same or quite similar sector in which they started their venture they would not have been able to identify profitable market opportunities.

   – *Second,* being embedded in informal and formal industry networks has exposed upgraders to market know-how and knowledge which in turn enabled them to set up future market linkages and networks.

   – *Third,* their industry exposure enabled upgraders to access a pool of skilled and unskilled labour. Accordingly, the prior educational and professional experience of individual entrepreneurs is a major indicator as well as determinant for MSE upgrading.

This implies that *prior* to starting or taking over a business entrepreneurs need industry exposure. Programmes which expose exceptional university graduates and high-performance employees to entrepreneurship training can therefore tap into a very fruitful source of entrepreneurship. Also, in loan

applications former industry credentials can play a crucial role in supporting the business case.

8. *Ensure access to affordable offices and land:* Difficulties in accessing property for shops and plants hinders micro and small entrepreneurs to effectively access markets. Upgraders had easier access to shops or office spaces when starting their enterprises. This is predominantly true for manufacturing enterprises. Service-oriented start-ups in the ICT sector managed to either start working from home or worked directly in the offices of their clients. However, in the long-term, access to office spaces in an urban setting was instrumental for upgraders to market their services as well as in attracting and keeping human capital employees. Also, ICT enterprises reported not to be able to register as MSME units when operating from home, which therefore constrained them in their entitlement to MSME specific support measures or schemes.

9. *Improve access to energy:* Upgraders and non-upgraders reported access to energy to be a major constraint for running their daily operations. In particular, upgraders who made the effort to increase the use of technology by investing in automation and new machinery have to rely on generators which are costly and polluting. Consulting on how to make energy use more efficient as well as how to remove inefficiencies in the power sector might be short- and long-term strategies alleviating the situation. However, it is most likely that inefficiencies in the power sector can only be overcome by investments in the grid and re-organization of the decentralized institutional infrastructure of State Electricity Boards.

10. *Assist MSEs in linking up with clients and suppliers by creating visibility:* Our research has shown that a major success factor for MSE upgrading lies in linking entrepreneurs to markets with effective demand (forward linkages) as well as to reliable and dynamic suppliers (backward linkages) . Yet, not the existence of linkages *per se* but rather their quality impacts the probability of MSEs to upgrade. Clients and suppliers that allow MSEs to access stable and reliable markets as well as offer access to knowledge, technology and alternative forms of finance, e.g. trade credit, are generally conducive to upgrading. Yet, with regards to what kinds of knowledge, technology and finance is most conducive to developmental outcomes for MSEs is highly specific to the sector and the particular requirements of different value

chains. Enabling MSMEs to participate in established fairs or market their services in local and national media will tackle the lack of visibility most of micro and small entrepreneurs are suffering from.

11. *Registering informal MSEs can only spur upgrading if access to formalization benefits is ensured:* The mere registration of informal MSEs will not support upgrading efforts if formalization occurs without introducing some major benefits such as improved access to markets and financial support. As shown in our research many upgraders evolved out of the informal sector and the mere act of registering the business was not among the major constraints to upgrading. Rather, upgraders reported access to finance as well as clients as a major constraint to further investments into product development, market research and hiring.

(ii) Sector-specific policy recommendations

This section presents some sector-specific policy recommendations that are based on the experiences of individual upgrading stories in the respective sub-samples.

(a) Information and Communication Technology (ICT)

12. *Support "home-grown" software firms by developing an industry brand "made in India":* Emerging with the outsourcing boom and the offshore IT industry in India many upgraders grew with a strong outward orientation. However, competition in the international market for ICT has become stiff. Further, there exist high entry and upgrading barriers for Indian software and engineering MSEs such as brand equity and marketing costs when competing in higher value-added activities in international markets. Accordingly, in being able to compete with international products industry associations as well as public technology initiatives could initiate awareness campaigns highlighting the value and quality of software products "Made in India". ICT enterprises have slowly matured in higher value-added activities; yet, the industry is still associated as outsourcing location for simpler business processes and application developments. Thus, joint industry efforts for branding and marketing could leverage more market opportunities for MSEs.

13. *Link domestic ICT enterprises with enterprises in other domains to leverage growth opportunities in the domestic market:* There is quality

technical knowledge in Indian IT companies, but most of them are way behind when it comes to develop higher value-added products (software). The domestic market could therefore be a training platform where Indian ICT enterprises strategically cooperate with Indian pharmaceutical or financial firms to develop mutually fruitful business linkages. As shown in this research *strategic* partnership with forward linkages have been vital in the upgradation process of MSEs. ICT Upgraders have developed by specialising in one domain, for example tourism, financial services or mobile applications, and were thereby able to develop domain know-how as well as market visibility. As India leads in ICT affordability, providing affordable ICT solutions to various target groups (e.g. information and mobile phone services to farmers in rural areas), partnerships between ICT MSEs and other domain MSEs could leverage mutual growth benefits. Although internet penetration is still limited among the population at large, businesses tend to adopt technologies faster than households. The increasing IT adoption of ICT in India will help in the long-term to create a sizeable, domestic product market. Accordingly, building exchange platforms, supporting exhibitions as well as providing access to public tenders will provide ICT MSEs with sizeable business opportunities to upgrade.

14. *Strengthen intellectual property rights and clarify the tax regime for software firms:* Software firms face high-upfront costs in developing higher value-added goods. Accordingly, micro and small entrepreneurs are much more concerned about their intellectual property rights and software piracy when interacting with clients. So far the support for software enterprises seemed to have lagged behind, in particular when it comes to the reliability of intellectual property rights and the speed in which cases are settled. Regulatory authorities as well as state courts will need to adopt a simpler, more adequate and faster legal framework that allows for more intense horizontal and vertical business linkages. Further, the current simultaneous application of service Tax, VAT and other taxes decreases profits, hampers further investments and threatens the survival of many MSMEs. Tax exemptions as well as a clarification of the application of service and product taxes should improve the situation for ICT MSEs substantially.

15. *Assist ICT enterprises in accessing risk finance:* Accessing bank credit is a major issue for ICT enterprises and other service sector firms as

they rarely have collateral. Especially, development banks are traditionally oriented towards supporting manufacturing and have a bias against service-based business as they fall under the category of risk finance. Accordingly, ICT upgraders have mainly used personal savings to fund operations. Incentivizing bankers to allocate part of their portfolio on service-sector firms might help to reach out to a larger group of promising and technology driven ICT entrepreneurs. For this, bankers will need more sector-specific know-how which could be supplied by either external industry consultants or provided in collaboration with industry associations, such as NASSCOM.

16. *Strengthen the linkages between the ICT offshore industries and create a national entrepreneurship mission in collaboration with national stakeholders:* As seen in the case of ICT upgraders most had graduated from universities with a Bachelor's degree; or even Master's degree. Additionally, most entrepreneurs had gained work experience in a lead firm of the local offshore and outsourcing industry. As a result, before starting the business upgraders had a concrete product and a strategic client. This was especially the case of software development firms which incur high up-front costs in development. Accordingly, employees in lead firms constitute a highly promising source of entrepreneurs that should be supported not only because they are more likely to provide a good business case but also because they are more likely to have established strategic linkages with potential customers and clients from their former field of work. Using these linkages between clients and former employees to establish an "entrepreneurship mission" in collaboration with national stakeholders can motivate some of these "high potentials" to start their own ventures. In collaboration with sector associations and development banks attractive schemes and competitions could incentivize future entrepreneurs by providing financial support schemes, legal as well as marketing advice.

17. *Strengthen the linkages between universities and MSMEs to tackle human capital and skill shortages:* The country must reinforce its ICT related education system and strengthen the interaction and communication channels between education institutions and the ICT-related MSME sector. Upgraders reported constraints in finding and retaining skilled labour. Generally, the industry is vibrant and employees are constantly looking for better paid employment opportunities. Many graduates start to work in MSMEs before some of them move on to larger and

more reputed firms. While this attrition among MSMEs cannot be prevented there might be potential to reduce the intensity of internal churning of workers within MSMEs by linking these better to local universities. By connecting MSMEs with local universities search costs for manpower could be reduced and lead to an improved labour market transparency for all parties involved. This is particularly useful in determining skill shortages in the sector. In their efforts to increase the value-added of activities, upgraders reported to face problems in finding employees with a software development mindset rather than with a service-oriented one. If India is to evolve to higher value-added activities and other areas such as engineering services, the offshore and ICT services industry will need more qualified staff with superior technical and management skills. MSMEs can provide attractive opportunities to develop technical and managerial skills as hierarchies are often flat and employees get assigned responsibilities faster than in larger corporations. With an effective communication strategy and stronger linkages to local universities MSEs could stabilize their pool of talent as well as market their contribution to the overall sector development.

(b) Textiles and Garments (T&G)

18. *Assist existing MSMEs in scaling up of production volumes and consolidating value chains:* Since the dismantling of the quota system and the abolishment of reservation policies continuing into the early 2000s textiles and garments (T&G) enterprises have considerably scaled up production volumes by consolidating horizontal and vertical linkages. Those upgraders, serving mass markets in the national economy or exports, faced strong pressures from China and other international competitors (Bangladesh, Vietnam) to decrease unit costs. This resulted in strategies to capture the whole value chain and thereby reducing transactions costs. While exporters have responded with strategies to improve backward integration, those upgraders reaching out to domestic markets have also increased forward integration. In particular, trader manufacturers have increased their presence in Indian retail. Consolidation among trader manufacturer has also happened, yet, on a more informal and lose basis between clustered firms taking up bigger orders in a joint bidding. However, these recent integration trends leave little space for MSEs to sustain in mass markets on their own. Accordingly, MSME schemes should encourage formal and informal consolidation by pro-

viding further funds for scaling up, modernization and technology investments. Furthermore, in the case of formal consolidation legal and financial advice in the merger of several smaller units might be needed.

19. *Assist with management training to reform traditional MSES:* The Technology Upgradation Fund Scheme (TUFS) of the government is being used to stimulate investment in the modernization of firms and their adoption of new technological processes. Upgraders that aimed at scaling up partly made use of this fund. It seems that though technology upgradation efforts have taken place in products and processes these have not been accompanied by a change in management. Yet, to modernize organizational structures is a necessary step for increasing productivity, optimizing sales and improving marketing. Management training and mentoring services should be made available for uptakers of TUF and others MSME schemes to facilitate all facets of modernization.

20. *Improve access to retail property for urban MSMEs:* As purchasing power in the Indian market has increased, due to India's increasing GDP and demographic dividend, there has been a rapid rise of domestic brands. While all major domestic textile and garment players have introduced their domestic brands and are aggressively positioning themselves within this segment there is considerable growth potential for specialized, design-oriented MSMEs. However, a major issue for quality and niche apparel makers is their access to affordable space to sell and market their products. Improving their access to small design- or craftsmanship centres or clusters will improve their market visibility. Furthermore, setting up design-clusters would help initiate a joint marketing and branding strategy and expose garment manufacturers to new business linkages for partnering on certain product lines or design ideas.

21. *Strengthen linkages between T&G MSMEs, training centres and other domain industries to improve technical and non-technical knowledge diffusion:* In order to enter upscale high-fashion and customized markets MSEs will need exposure to several other domain industries to gain the technical know-how on high-quality and defect-free textiles and garments. Recently, experimentation on new technologies and new materials is happening in the machinery and chemical industry, rather than among textile and garment manufacturers. Accordingly, governments

should encourage the diffusion and transfer of knowledge in the form of partnerships and collaborations among industry representatives, training institutes as well as design-oriented clusters of T&G MSMEs. Similarly, these partnerships should strengthen knowledge on non-technical aspects of production. This includes knowledge diffusion on the development of brand names as well as on the certification and labelling of products according to ecological and social standards. Thus, not only do MSMEs need exposure to expertise on issues related to production, but also a great emphasis should be place on gaining experience in quality certification and branding.

22. *Modernize existing polytechnic institutes, set up training institutes for shop-floor workers and develop an industry-wide curriculum:* Skilled manpower is one of the major requirements for textile and garment enterprises to make inroads into higher value-added and design-oriented products. Whether textile and garment MSMEs aim to scale-up production volumes or enter niche markets they will need access to quality personnel. However, this research has shown that T&G upgraders as well as non-upgraders face difficulties in attracting manpower at several levels. Accordingly, significant improvements are necessary in order to ensure the availability of a sufficient number of trained workers. Existing polytechnic institutes and training centres will need to adapt and modernize some of their curriculum to match the changing industry requirements and investments in new technologies and processes. Further, upgraders have reported a serious lack of shop-floor workers. While skilled handloom workers could be re-skilled and integrated into enterprises aiming at modern high-quality and design-oriented markets, the industry needs to develop a strategy of how to fulfil training needs for the large bulk of unskilled available workers. The high turnover of workers recently experienced by the industry as a whole highlights the need to find an institutionalized solution to this challenge. Suggestions to introduce fast-track training courses in existing institutions as well as the setting-up of decentralized training centres are a promising way forward.

(c) Leather and Footwear (L&F)

23. *Assist MSMEs in complying with environmental standards:* Global environmental standards and the subsequent increase in costs have challenged MSEs in their growth trajectory. However, few upgraders in the

leather and footwear sector had the means to comply with these standards and set up effluent treatment plans on their own. Rather, the majority was dependent on the coordination of associations, government incentives and knowledge diffusion via a UNIDO programme. Without coordinated collective efficiency among firms and local institutional support many MSEs would have not been able to meet new production norms. Especially tanneries needed assistance in installing new technologies and to market their investments effectively towards export markets. In this regard it is important that in times of drastic market changes individual firm efforts to upgrade are accompanied with coordinated policy efforts to diffuse technology and knowledge. Further, to improve their environmental performance, firms need to make costly investments which under prevalent loan conditions are unattractive. Therefore, financial incentives, such as in-kind credit or low interest rates are vital for MSEs to manage the transformations towards cleaner production.

24. *Ensure proper enforcement of environmental regulations:* Environmental regulation can become more effective if officers who are responsible for controlling enterprises are also more actively involved in teaching on how to achieve the standards in the case they do not yet comply with them. While associations and the UNIDO officers have been instrumental in diffusing knowledge, upgraders reported to having a biased relationship with officers enforcing environmental regulations as they are not teaching them how to deal with environmental challenges. In some cases, officers were reported to use incidences of non-compliance to extract bribes. All upgraders reported to having bribed officers to gain licenses. In two cases, entrepreneurs even mentioned that they were asked to pay a non-compliance "fee" although they actually met the requirements for the inspection. While there is no way we could validate the entrepreneurs' statements, this research indicates that the actual enforcement of environmental regulations is endangered due to the prevalence of disinterest as well as unethical practice among officers and entrepreneurs alike. Accordingly, not the regulation itself but their enforcement has to be improved by developing awareness and on the ground know-how among officers and regulating institutions on how to install more effective mechanisms of controls. In addition to state prohibitions, market-based incentives are necessary to ensure environmental compliance. These are discussed in the following paragraph.

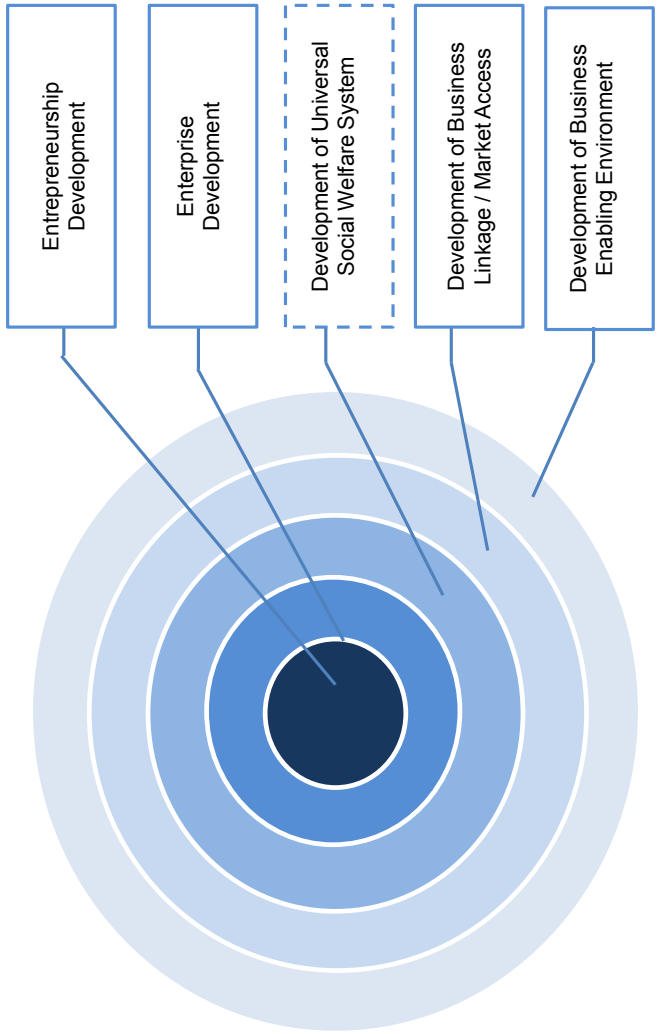
25. *Build environmental awareness among L&F manufacturers and get producers out of price-based competition:* By increasing the knowledge about cleaner production as well a setting up stringent regulations, associations and state-organizations can change the attitudes and awareness of leather and footwear manufacturers in the long-term. However, market incentives will be more effective in motivating enterprises to adopt environmental friendly production. Firms will need to enter higher-quality and environmentally conscious markets that reward "greener" production processes that waste fewer resources and create less pollution. Associational exchange-programmes as well as state-sponsored exhibitions can help firms to get in touch with these markets.

26. *Encourage the development of subcontracting and strategic exchanges between lead firms and L&F clusters:* Eventually, this research has shown that only by the combination of effective market demand and strategic forward and backward linkages have L&F upgraders been enabled to improve their environmental performance. However, there are obstacles to joining eco-labelling schemes and to switch to production of more fancy fashion-oriented leather and footwear. These obstacles are mainly related to accessing clients and business networks. Accordingly, building partnerships with Indian and foreign trade associations of same sectors to develop long-term strategic exchanges between lead firms abroad and local clusters are crucial. This can take place in the form of fairs and exhibitions where products are showcased and information on local producers is given to visiting international lead firms. Assistance in the development of subcontracting agreements and pre-appraisals for environmental production will be necessary to upgrade into quality-conscious market segments. This could include business delegations by associations aiming to market their members as potential suppliers. Further, visiting delegations might be able to attract firms aiming to outsource parts of their production and enter technology partnerships. Partnering efforts by SIDBI, KfW and GIZ to fund and further leverage the development of environmentally conscious markets as well as capacity building initiatives among BDS providers, such as under the MSME Financing and Development Project (FDP), are steps in the right direction.

27. *Augment vocational training and modernize training curricula:* In order to keep the industry competitive and increase each enterprises' potential to upgrade, investments into the skill development of manpower is vital, especially if the industry as a whole is to move into more design and technology conscious production. For example, upgraders have managed modernization efforts by sending family member to university to gain degrees in the field of leather & footwear technology or the chemical industry. However, at the level of operators and shop-floor workers skills do not match the requirements of a more design- and technology-oriented production. This raises questions of employability and survival of smaller enterprises that face high rates of attrition. For upgraders, it has been a costly exercise to train unskilled staff by themselves and see most of the trained staff move on into other industries or to other, larger firms. In the growth process losing skilled staff was one of the major challenges faced by upgraders. Accordingly, first, there should be more efforts to train and supply shop floor level workers and machine operators who constitute the majority of workers in the manufacturing units. However, so far there are hardly any specialized short-term courses for this labour segment. The development of such short training courses could ease the entry for low-skilled workers in the employment market as well as lift some pressures on MSMEs to train and hire workers. Furthermore, it is essential that producers are aware of different standards and requirements in the global market to ensure that rejection rates due to non-compliance are low. To be sure those standards are implemented properly supervisors, operators as well as shop-floor workers need to be trained regularly. Therefore, short-term training programmes could enable the industry to foresee and adapt to changing trends and technology in a more systematic way by including the constant capacity development of shop-floor workers.

In sum, there are five levels in which policies intervene to support MSE upgrading (see Figure 6.1):

Figure 6.1: Targeted levels of policy intervention for SME upgrading



Source: own representation

In accordance with the five layers above the following table lists and sums up general as well as sector-specific policy recommendations (see Table 6.1). Though a combined and coherent policy intervention is critical for successful MSE upgrading some policy measures are rather universalistic in nature than specially aimed at the development of MSEs. In particular, while policies aiming at developing an universal and inclusive social welfare system are instrumental to ensure social cohesion and allow for more social mobility across society, their impact is very indirect and will therefore not be further listed.

Table 6.1: Overview of policy recommendations

Sectors	Policy recommendations
Entrepreneurship development	
Across sectors	– Promote basic primary schooling as fundamental entrepreneurship policy – Support micro and small entrepreneurs with former industry exposure
Enterprise development	
Across sectors	– Make use of sectoral growth dynamics to support MSE upgrading – Acknowledge that informality does not indicate "necessity" entrepreneurship
ICT	– Support "home-grown" software firms by developing an industry brand "made in India"
T&G	– Assist existing MSMEs in scaling up of production volumes and consolidating value chains – Assist with management training to reform traditional MSES
L&F	– Assist MSMEs in complying with environmental standards – Build environmental awareness among L&F manufacturers and get producers out of price-based competition

Table 6.1 (cont.): Overview of policy recommendations	
Sectors	**Policy recommendations**
Business linkage development / market access	
Across sectors	– Support the integration and embeddedness of MSEs in strategic forward and backward linkages (soft infrastructure) – Link local financial institutions and sector associations in order to share market information on MSMEs and develop opportunities in accessing finance
ICT	– Strengthen the linkages between the ICT offshore industry and a national entrepreneurship mission – Strengthen the linkages between universities and MSMEs to clarify human capital and skill shortages – Link domestic enterprises with ICT enterprises to leverage growth opportunities in the domestic market
Business linkage development / market access (cont.)	
T&G	– Strengthen linkages between T&G MSMEs, training centres and other domain industries to improve technical and non-technical knowledge diffusion
L&F	– Encourage the development of subcontracting and strategic exchanges between lead firms and L&F clusters
Enabling business environment	
Across sectors	– Integrate national MSME policies with regional and sector-specific industrial policies – Registering informal MSEs can only spur upgrading if access to formalization benefits is ensured – Ensure access to affordable offices and land – Improve access to finance
ICT	– Improve intellectual property rights and clarify the tax regime for software firms – Assist ICT enterprises in accessing risk finance

Table 6.1 (cont.): Overview of policy recommendations	
Sectors	**Policy recommendations**
T&G	– Improve access to retail property for urban MSMEs – Modernize existing polytechnic institutes, set up training institutes for shop-floor workers and develop an industry-wide curriculum
L&F	– Ensure proper enforcement of environmental regulations – Augment vocational training and modernize training curricula
Source: own compilation	

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Annexes

Table A1: Cross-sectoral differences between types of innovation								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Types of innovation								
Product	**0.90*****	0.30	0	1	**0.25*****	0.44	0	1
Technological process	**0.86*****	0.35	0	1	**0.35*****	0.48	0	1
Organisational process	0.55***	0.50	0	1	0.12***	0.33	0	1
Marketing/ sales	0.43**	0.50	0	1	0.18**	0.39	0	1
New market	**0.83*****	0.38	0	1	**0.17*****	0.39	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 93								

Table A2: Cross-sectoral differences between enterprises								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Enterprise characteristics								
Formality now (1=Yes; 0=No)	1***	0	1	1	0.39***	0.49	0	1
Age of Enterprise (in yrs.)	13.9**	6.82	1	27	11.27**	7.40	3	35
Number of employees								
- at start	4.71	3.02	1	11	3.43	3.03	0	16
- at time of interview	298.59***	641.28	20	4000	5.16***	2.60	0	10
Business finance at start-up								
- Personal savings	0.66	0.48	0	1	0.61	0.49	0	1
- Family savings	0.69	0.47	0	1	0.65	0.48	0	1
- Friends/ investors	0.19	0.40	0	1	0.24	0.43	0	1
- Informal money-lending	0.12	0.33	0	1	0.11	0.33	0	1
- Bank loan	0.26**	0.45	0	1	0.06**	0.24	0	1
- Others (cash advance, in-kind/ trade credit)	0.43*	0.50	0	1	0.61*	0.50	0	1
Business finance in 2012								
- Enterprise returns	0.76**	0.43	0	1	0.96**	0.20	0	1
- Personal savings	0.10	0.30	0	1	0.08	0.27	0	1
- Family savings	0.05	0.22	0	1	0.10	0.30	0	1
- Friends/ investors	0.10	0.30	0	1	0.14	0.35	0	1
- Informal money-lending	0**	0	0	0	0.18**	0.39	0	1

Table A2 cont.: Cross-sectoral differences between enterprises								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Bank loan	0.60***	0.50	0	1	0.12***	0.33	0	1
- Others (cash advance, in-kind/ trade credit)	0.60	0.50	0	1	0.57	0.50	0	1
Other business (1=Yes; 0=No)								
- at start	0.21**	0.42	0	1	0.06**	0.24	0	1
- at time of interview	0.23	0.43	0	1	0.18	0.39	0	1
Being the only decision maker in the business (1=Yes; 0=No)								
- at start	0.36**	0.48	0	1	0.57**	0.50	0	1
- at time of interview	0.33***	0.48	0	1	0.76***	0.43	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively								

Table A3: Cross-sectoral differences between entrepreneurs

	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Entrepreneur Characteristics								
Age	43.29**	10.31	24	64	38.84**	8.48	27	60
University education +	0.83***	0.38	0	1	0.47***	0.50	0	1
Wage-work experience (in yrs.)	8.17*	9.10	0	35	7.20*	6.69	0	20
Same sector? (1=Yes; 0=No)	0.69*	0.47	0	1	0.71*	0.46	0	1
Has been abroad (1=Yes; 0=No)	0.52***	0.51	0	1	0.20***	0.40	0	1
Average reported daily working hours	11.64**	1.74	8	16	10.33**	2.62	5	20
Manages to reinvest in business regularly (1=Yes; 0=No)	0.98***	0.15	0	1	0.45***	0.50	0	1
Use of information sources								
- Local market observation	0.33***	0.48	0	1	0.65***	0.48	0	1
- Print	0.31	0.47	0	1	0.37	0.49	0	1
- Internet	0.43	0.50	0	1	0.47	0.50	0	1
- Clients/ Buyers	0.83	0.38	0	1	0.78	0.42	0	1
- Service providers/ suppliers	0.52**	0.51	0	1	0.22**	0.42	0	1
- Associations/ formal networks	0.60***	0.50	0	1	0.20***	0.40	0	1
- Personal networks/ family	0.81***	0.40	0	1	0.41***	0.50	0	1
- Agents/ middlemen	0.55**	0.50	0	1	0.31**	0.47	0	1
- Own R&D	0.60***	0.50	0	1	0.24***	0.43	0	1
- Others	0.24	0.43	0	1	0.24	0.43	0	1

+ 0 = no university degree; 1 = university degree (or equivalent); ++ “re-investments” in business are defined as profound capital investments in plant/ machinery/ equipment or staff (including training/ hiring).
*,**,*** indicate 10%, 5% and 1% significance level respectively

Table A4: **Cross-sectoral comparison between family and social networks**								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Family and social networks								
Has family been in business before? (1=Yes; 0=No)	0.57**	0.50	0	1	0.39**	0.49	0	1
Father's university education +	0.43**	0.50	0	1	0.20**	0.40	0	1
Number of dependents								
- At start	2.10	2.22	0	8	2.20	2.20	0	8
- At time of interview	3.21	2.15	0	11	3.88	2.08	0	9
At start-up, has your family opposed entrepreneur-ship? (1=yes; 0=No)	0.29	0.46	0	1	0.41	0.50	0	1
Overall, has your core family been helpful in running the business? (1=Yes; 0=No)	0.95	0.22	0	1	0.94	0.24	0	1
What have been ways in which your core family has helped you?								
- Finance	0.57	0.50	0	1	0.73	0.45	0	1
- Labour	0.45	0.50	0	1	0.47	0.50	0	1
- Emotional support	0.71	0.46	0	1	0.80	0.40	0	1
- Advice/ know-how	0.48	0.51	0	1	0.59	0.50	0	1
- Networks/ access to markets	0.19**	0.40	0	1	0.41**	0.50	0	1
- Others	0.05**	0.22	0	1	0.16**	0.37	0	1
At start-up, have your extended family/ friends opposed entrepreneurship? (1=yes; 0=No)	0.10	0.30	0	1	0.14	0.35	0	1

Table A4 cont.: Cross-sectoral comparison between family and social networks

	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Overall, have your extended family and friends been helpful in running the business? (weak ties) +++	1***	0	0	1	0.73***	0.45	0	1
What have been ways in which your extended family/ friends have helped you?								
- Finance	0.24	0.43	0	1	0.33	0.48	0	1
- Labour	0.38	0.49	0	1	0.37	0.49	0	1
- Emotional support	0.10	0.30	0	1	0.20	0.40	0	1
- Advice/ know-how	0.48	0.51	0	1	0.47	0.50	0	1
- Networks/ access to markets	0.71	0.45	0	1	0.57	0.50	0	1
- Others	0.02	0.15	0	1	0.06	0.24	0	1

+ 0 = no university degree; 1 = university degree (or equivalent)
*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 93

Table A5: Cross-sectoral comparison of identity and community networks								
	Upgrader p n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Identity and community networks								
Does your membership to a particular community affect your business? (1=Yes; 0=No)	0.43**	0.50	0	1	0.63**	0.49	0	1
Overall, do you think being a member of a business community affects business positively? (1=Yes; 0=No)	0.45	0.50	0	1	0.59	0.50	0	1
What do you think are ways in which business community ties can help in business?								
- finance	0.19***	0.40	0	1	0.51***	0.50	0	1
- labour	0.12**	0.33	0	1	0.02**	0.14	0	1
- emotional support	0.10	0.30	0	1	0.06	0.24	0	1
- advice/ know-how	0.33	0.48	0	1	0.31	0.47	0	1
- networks	0.38	0.49	0	1	0.45	0.50	0	1
- reputation/ status	0.38	0.49	0	1	0.24	0.43	0	1
- culture/ mindset	0.31***	0.47	0	1	0.05***	0.24	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 93								

Table A6: Cross-sectoral comparison of forward and backward linkages								
	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Forward and backward linkages								
Overall, has your client / buyer been helpful in growing the business?	1***	0	0	1	0.80***	0.40	0	1
Does or did your client's / buyer's actions affect your business negatively?	0.31***	0.47	0	1	0.80***	0.40	0	1
What have been ways in which your client / buyer has helped you?								
- Technology	0.33*	0.48	0	1	0.18*	0.38	0	1
- Feedback on quality / product	0.86**	0.35	0	1	0.61**	0.49	0	1
- Provision of credit / cash advance	0.33	0.48	0	1	0.31	0.47	0	1
- Access to markets / networks	0.57***	0.50	0	1	0.16***	0.37	0	1
- Joint action on problems	0.21**	0.42	0	1	0.04**	0.20	0	1
- Stable/ reliable orders	0.76	0.43	0	1	0.63	0.49	0	1
- Others	0.17**	0.38	0	1	0.04	0.20	0	1
Did you have stable orders when starting / taking over the business?	0.55***	0.50	0	1	0.20***	0.40	0	1
Overall, has your provider / supplier been helpful in growing your business?	0.74	0.45	0	1	0.65	0.48	0	1
Does or did your provider's / supplier's actions affect your business negatively?	0.24	0.43	0	1	0.33	0.48	0	1

Table A6 cont.: Cross-sectoral comparison of forward and backward linkages								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
What have been ways in which your provider/ supplier has helped you?								
- Technology	0.62***	0.49	0	1	0.27***	0.45	0	1
- Quality product/ commitment	0.43**	0.50	0	1	0.20**	0.40	0	1
- Provision of finance/ credit	0.12**	0.33	0	1	0.33**	0.48	0	1
- Access to markets/ networks	0.09	0.30	0	1	0.10	0.30	0	1
- Joint action on problems	0.40**	0.50	0	1	0.22**	0.42	0	1
- Stable/ reliable supply	0.52	0.50	0	1	0.53	0.50	0	1
- Others	0.14	0.35	0	1	0.08	0.27	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 93								

Table A7: Cross-sectoral comparison of competition and local institutional support

	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Competition, associations and public institutions								
At any time, has your competition been helpful in growing your business? (1=yes; 0=No)	0.45***	0.50	0	1	0.16***	0.37	0	1
At any time, does or did your competitor‘s actions affect your business negatively? (1=yes; 0=No)	0.07***	0.26	0	1	0.65***	0.48	0	1
Any joint action with the competition? (1=Yes; 0=No)	0.31**	0.47	0	1	0.14**	0.35	0	1
Member in association? (1=Yes; 0=No)	0.86***	0.35	0	1	0.27***	0.45	0	1
Received support from Gov./ NGO (1=Yes; 0=No)	0.48**	0.50	0	1	0.24**	0.43	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 93

Table A8: Cross-sectoral comparison in the perception of the business environment								
	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Perception of the business environment								
Did you ever have to bribe a government official to get things done?	0.74***	0.45	0	1	0.35***	0.48	0	1
Do you have problems with infrastructure that are affecting your business? (1=yes, 0=no)								
- Access to electricity	0.71**	0.45	0	1	0.47**	0.50	0	1
- Cost of transportation	0.10	0.30	0	1	0.22	0.42	0	1
- Access to telecommunications/ internet	0	0	0	1	0.02	0.14	0	1
- Access to land/ property	0.10***	0.30	0	1	0.51***	0.50	0	1
Have you tried to obtain a bank loan in the past?	0.71***	0.46	0	1	0.35***	0.48	0	1
Did you manage to obtain a bank loan for your business?	0.60***	0.50	0	1	0.12***	0.33	0	1
Do you think bank finance is difficult to obtain?	0.38	0.50	0	1	0.47	0.50	0	1
Experience regarding Business Development Services (BDS) by any private or public organizations?								
- Have accessed BDS	0.31	0.47	0	1	0.20	0.40	0	1
- Not interested in BDS	0.62**	0.50	0	1	0.39**	0.49	0	1
- Not aware of BDS	0.26**	0.45	0	1	0.51**	0.50	0	1
In the past did you face any problems with:								
- Complying with environmental regulations	0.26**	0.45	0	1	0.04**	0.20	0	1
- Complying with labour law and social standards	0.35**	0.48	0	1	0.10**	0.30	0	1
- Handling customs	0.19	0.40	0	1	0.10	0.30	0	1

Table A8 cont.: Cross-sectoral comparison in the perception of the business environment								
	Upgrader n=42				Non-upgrader n=51			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Paying taxes	0.19***	0.40	0	1	0.51***	0.50	0	1
- Handling bureaucracy	0.55	0.50	0	1	0.49	0.50	0	1
- Understanding and predicting laws/ regulations	0.48	0.51	0	1	0.33	0.48	0	1
- Protecting intellectual property	0.19	0.40	0	1	0.14	0.35	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 93								

Table A9: Cross-sectoral ranking of constraints and success factors								
	Upgrader n=42				**Non-upgrader n=51**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Ranking of Success Factors								
The Entrepreneur	**2.14****	1.20	1	5	3.21**	1.51	1	5
The Enterprise	2.55	1.04	1	5	2.90	1.24	1	5
The Social Network	3.24**	1.80	1	5	4.16**	1.17	1	5
The Business Network	2.64	1.21	1	5	**2.43**	1.06	1	5
The Business Environment	**4.48*****	0.77	2	5	**2.29*****	1.27	1	5
Ranking of Constraints								
The Entrepreneur	3.29**	1.35	1	5	3.84**	1.16	1	5
The Enterprise	**2.48**	1.09	1	5	2.65	1.18	1	5
The Social Network	4.38	0.99	1	5	4.24	1.07	1	5
The Business Network	2.64**	1.22	1	5	**2.22****	1.03	1	5
The Business Environment	**2.21**	1.30	1	5	**2.06**	1.16	1	5

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 93

Table A10: Types of innovation among ICT enterprises

	ICT sample n=27				ICT upgrader n=12				ICT non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Types of innovation												
Product	0.59	0.50	0	1	0.92***	0.29	0	1	0.33***	0.49	0	1
Technological process	0.59	0.50	0	1	0.83**	0.39	0	1	0.40**	0.51	0	1
Organisational process	0.44	0.51	0	1	0.67**	0.50	0	1	0.27**	0.46	0	1
Marketing / sales	0.40	0.50	0	1	0.50	0.52	0	1	0.33	0.49	0	1
New market	0.67	0.48	0	1	1***	0	1	1	0.40***	0.50	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 27

Table A11: ICT enterprise characteristics												
	ICT Sample n=27				ICT upgrader n=12				ICT non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Enterprise characteristics												
Formality now (1=Yes; 0=No)	0.93	0.27	0	1	1	0	1	1	0.87	0.35	0	1
Age of Enterprise (in yrs.)	8.41	5.72	1	21	10.42	6.46	1	21	6.8	4.68	3	17
Number of employees												
- at start	2.4	1.20	0	10	3.08	2.50	1	10	1.93	1.33	0	4
- at time of interview	51.10	110.81	3	480	106.67**	151.48	20	480	6.6**	1.89	3	9
Business finance at start-up												
- Personal savings	0.85	0.36	0	1	1*	0	1	1	0.73*	0.46	0	1
- Family savings	0.48	0.51	0	1	0.58	0.51	0	1	0.4	0.51	0	1
- Friends/ investors	0.22	0.42	0	1	0.25	0.45	0	1	0.2	0.41	0	1
- Informal money-lending	0.07	0.27	0	1	0	0	0	0	0.13	0.35	0	1
- Bank loan	0.07	0.27	0	1	0	0	0	0	0.13	0.35	0	1
- Others (cash advance, in-kind credit)	0.44	0.51	0	1	0.17**	0.39	0	1	0.67**	0.49	0	1

Table A11 cont.: ICT enterprise characteristics												
	ICT Sample n=27				ICT upgrader n=12				ICT non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Business finance in 2012												
- Enterprise returns	1	0	1	1	1	0	1	1	1	0	1	1
- Personal savings	0.07	0.27	0	1	0.17	0.39	0	1	0	0	0	0
- Family savings	0	0	0	0	0	0	0	0	0	0	0	0
- Friends/ investors	0.26	0.45	0	1	0.17	0.39	0	1	0.33	0.49	0	1
- Informal money-lending	0.07	0.27	0	1	0	0	0	0	0.13	0.35	0	1
- Bank loan	0.26	0.45	0	1	0.42*	0.51	0	1	0.13*	0.35	0	1
- Others (cash advance, in-kind credit)	0.52	0.51	0	1	0.33*	0.49	0	1	0.67*	0.49	0	1
Other business (1=Yes; 0=No)												
- at start	0.19	0.40	0	1	0.33*	0.49	0	1	0.07*	0.26	0	1
- at time of interview	0.19	0.40	0	1	0.17	0.40	0	1	0.20	0.41	0	1
Being the only decision maker in the business (1=Yes; 0=No)												
- at start	0.52	0.51	0	1	0.50	0.52	0	1	0.53	0.52	0	1
- at time of interview	0.44	0.51	0	1	0.33	0.49	0	1	0.52	0.52	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively												

Table A12: ICT entrepreneur characteristics												
	ICT Sample n= 27				ICT upgrader n=12				ICT non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Entrepreneur characteristics												
Age	40.96	9.50	24	59	45**	10.8	24	59	37.73**	7.11	27	51
University education +	0.89	0.32	0	1	1	0	0	1	0.8	0.41	0	1
Wage-work experience (in yrs.)	10.96	8.64	0	28	13.33	10.25	1	28	9.07	6.90	0	20
Same sector? (1=Yes; 0=No)	0.89	0.32	0	1	0.92	0.29	0	1	0.87	0.35	0	1
Has been abroad (1=Yes; 0=No)	0.74	0.45	0	1	0.92*	0.29	0	1	0.60*	0.51	0	1
Average reported daily working hours	11.9	2.70	7	20	12.33	1.82	10	16	11.6	3.27	7	20
Manages to reinvest in business regularly (1=Yes; 0=No)	0.81	0.40	0	1	1**	0	1	1	0.67**	0.49	0	1
Use of information sources												
- Local market observation	0.22	0.42	0	1	0.08	0.29	0	1	0.33	0.49	0	1
- Print	0.19	0.40	0	1	0.08	0.29	0	1	0.27	0.46	0	1
- Internet	0.81	0.40	0	1	0.83	0.40	0	1	0.8	0.41	0	1
- Clients/ buyers	0.88	0.32	0	1	0.83	0.30	0	1	0.93	0.26	0	1
- Service Providers/ Suppliers	0.18	0.40	0	1	0.17	0.40	0	1	0.20	0.41	0	1

Table A12 cont.: ICT entrepreneur characteristics

	ICT Sample n= 27				ICT upgrader n=12				ICT non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Associations/ formal networks	0.56	0.51	0	1	0.75*	0.45	0	1	0.4*	0.51	0	1
- Personal Networks/ Family	0.85	0.36	0	1	0.92	0.29	0	1	0.8	0.41	0	1
- Agents/ middlemen	0	0	0	0	0	0	0	0	0	0	0	0
- Own R&D	0.81	0.40	0	1	0.92	0.29	0	1	0.73	0.46	0	1
- Others	0.37	0.50	0	1	0.17*	0.39	0	1	0.53*	0.52	0	1

+ 0 = no university degree; 1 = university degree (or equivalent);
++ "re-investments" in business are defined as profound capital investments in plant/ machinery/ equipment or staff (including training/ hiring).
*,**,*** indicate 10%, 5% and 1% significance level respectively

Table A13: Family and social networks among ICT enterprises												
	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Family and social networks												
Has family been in business before? (1=Yes; 0=No)	0.25	0.45	0	1	0.25	0.45	0	1	0.27	0.46	0	1
Father's university education +	0.56	0.51	0	1	0.75*	0.45*	0	1	0.40*	0.51*	0	1
Number of dependents												
- At start	1.67	1.90	0	6	2.08	2.15	0	1	1.33	1.67	0	4
- At time of interview	2.60	1.55	0	6	2.33	1.61	0	1	2.8	1.52	0	5
At start-up, has your family opposed entrepreneurship? (1=yes; 0=No)	0.59	0.50	0	1	0.50	0.52	0	1	0.67	0.49	0	1
Overall, has your core family been helpful in running the business? (1=Yes; 0=No)	0.96	0.19	0	1	1	0	1	1	0.93	0.26	0	1
What have been ways in which your core family has helped you?												
- Finance	0.48	0.51	0	1	0.50	0.52	0	1	0.47	0.52	0	1
- Labour	0.26	0.45	0	1	0.25	0.45	0	1	0.27	0.46	0	1
- Emotional support	0.85	0.36	0	1	0.92	0.29	0	1	0.8	0.41	0	1
- Advice/ know-how	0.37	0.49	0	1	0.33	0.49	0	1	0.4	0.51	0	1
- Networks/ access to markets	0.22	0.42	0	1	0	0**	0	1	0.4**	0.51	0	1

Table A13 cont.: Family and social networks among ICT enterprises

	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Others	0.11	0.32	0	1	0	0	0	1	0.2	0.41	0	1
At start-up, have your extended family/ friends opposed entrepreneurship? (1=yes; 0=No)	0.04	0.19	0	1	0.08	0.29	0	1	0	0	0	0
Overall, have your extended family and friends been helpful in running the business? (weak ties)	0.96	0.19	0	1	1	0	1	1	0.93	0.26	0	1
What have been ways in which your extended family/ friends have helped you?												
- Finance	0.41	0.50	0	1	0.25	0.45	0	1	0.53	0.52	0	1
- Labour	0.48	0.51	0	1	0.58	0.51	0	1	0.4	0.51	0	1
- Emotional support	0.33	0.48	0	1	0.25	0.45	0	1	0.4	0.51	0	1
- Advice/ know-how	0.67	0.48	0	1	0.5	0.52	0	1	0.8	0.41	0	1
- Networks/ access to markets	0.85	0.36	0	1	0.75	0.45	0	1	0.93	0.26	0	1
- Others	0.07	0.27	0	1	0	0	0	0	0.13	0.35	0	1

+ 0=no university degree; 1= university degree (or equivalent);
*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 27

Table A14: Community/ Caste networks among ICT entrepreneurs												
	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Community/ Caste networks												
Does your membership to a particular community affect your business? (1=Yes; 0=No)	0.37	0.49	0	1	0.33	0.49	0	1	0.4	0.51	0	1
Overall, do you think being a member of a business community affects business positively? (1=Yes; 0=No)	0.41	0.50	0	1	0.42	0.51	0	1	0.4	0.51	0	1
What do you think are ways in which business community ties can help in business?												
- finance	0.22	0.42	0	1	0.17	0.39	0	1	0.27	0.46	0	1
- labour	0.04	0.19	0	1	0.08	0.29	0	1	0	0	0	1
- emotional support	0.04	0.19	0	1	0.08	0.29	0	1	0	0	0	1
- advice/ know-how	0.33	0.48	0	1	0.42	0.51	0	1	0.27	0.46	0	1
- networks	0.37	0.49	0	1	0.42	0.51	0	1	0.33	0.49	0	1
- reputation/ status	0.22	0.42	0	1	0.33	0.49	0	1	0.13	0.35	0	1
- culture/ mindset	0.15	0.36	0	1	0.25	0.45	0	1	0.07	0.26	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 27												

Table A15: Forward and backward linkages among ICT enterprises

	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Forward and backward linkages												
Overall, has your client/ buyer been helpful in growing the business?	0.93	0.27	0	1	1	0	1	1	0.87	0.35	0	1
Does or did your client's/ buyer's actions affect your business negatively?	0.63	0.50	0	1	0.33**	0.49	0	1	0.87**	0.35	0	1
What have been ways in which your client/buyer has helped you?												
- Technology transfer	0.33	0.48	0	1	0.58**	0.51	0	1	0.13**	0.35	0	1
- Feedback on quality/ product	0.85	0.36	0	1	1**	0	1	1	0.73**	0.46	0	1
- Provision of credit/ cash advance	0.33	0.48	0	1	0.33	0.49	0	1	0.33	0.49	0	1
- Access to markets/ networks	0.48	0.50	0	1	0.58	0.51	0	1	0.4	0.51	0	1
- Joint action on problems	0.15	0.36	0	1	0.25	0.45	0	1	0.07	0.26	0	1
- Stable/ reliable orders	0.56	0.51	0	1	0.58	0.51	0	1	0.53	0.52	0	1
- Others	0.07	0.27	0	1	0.08	0.29	0	1	0.07	0.26	0	1
Did you have stable orders when starting/ taking over the business?	0.41	0.50	0	1	0.75***	0.45	0	1	0.13***	0.35	0	1

Table A15 cont.: Forward and backward linkages among ICT enterprises												
	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Overall, has your provider/ supplier been helpful in growing your business?	0.26	0.45	0	1	0.25	0.45	0	1	0.27	0.46	0	1
Does or did your provider's/ supplier's actions affect your business negatively?	0.04	0.20	0	1	0	0	0	0	0.07	0.26	0	1
What have been ways in which your provider/ supplier has helped you?												
- Technology transfer	0.22	0.42	0	1	0.17	0.39	0	1	0.27	0.46	0	1
- Quality product / commitment	0.07	0.26	0	1	0.08	0.29	0	1	0.07	0.26	0	1
- Provision of Finance / credit	0	0	0	0	0	0	0	1	0	0	0	0
- Access to Markets / networks	0	0	0	0	0	0	0	1	0	0	0	0
- Joint action on problems	0.11	0.32	0	1	0.08	0.29	0	1	0.13	0.35	0	1
- Stable / reliable supply	0.22	0.42	0	1	0.25	0.45	0	1	0.2	0.41	0	1
- Others	0	0	0	0	0	0	0	0	0	0	0	0
*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 27												

Table A16: Competition and local institutional support among ICT enterprises

	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Competition, associations and public institutions												
At any time, has your competition been helpful in growing your business? (1=yes; 0=No)	0.33	0.48	0	1	0.50	0.52	0	1	0.20	0.41	0	1
At any time, does or did your competitor's actions affect your business negatively? (1=yes; 0=No)	0.41	0.50	0	1	0.17**	0.39	0	1	0.60**	0.51	0	1
Any joint action with the competition? (1=Yes; 0=No)	0.22	0.42	0	1	0.25	0.45	0	1	0.20	0.41	0	1
Member in Association? (1=Yes; 0=No)	0.52	0.51	0	1	0.83**	0.39	0	1	0.27**	0.46	0	1
Received Support from Gov./ NGO (1=Yes; 0=No)	0.26	0.45	0	1	0.17	0.39	0	1	0.33	0.49	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 27

Note: + e.g. providing business ideas, joined product development, technology sharing

Table A17: The perception of the business environment among ICT entrepreneurs												
	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Perception of the business environment												
Did you ever have to bribe a government official to get things done?	0.52	0.51	0	1	0.5	0.52	0	1	0.53	0.51	0	1
Do you have problems with infrastructure that is affecting your business? (1=yes, 0=no)												
- Access to electricity	0.44	0.51	0	1	0.42	0.51	0	1	0.47	0.51	0	1
- Cost of transport	0.11	0.31	0	1	0.17	0.39	0	1	0.06	0.26	0	1
- Access to telecommunica-tions/ Internet	0.04	0.20	0	1	0	0	0	0	0.06	0.26	0	1
- Access to land/ property	0.37	0.50	0	1	0.25	0.45	0	1	0.46	0.51	0	1
Have you tried to obtain a bank loan in the past?	0.48	0.51	0	1	0.58	0.51	0	1	0.4	0.51	0	1
Did you manage to obtain a bank loan for your business?	0.26	0.45	0	1	0.58	0.51	0	1	0.47	0.52	0	1
Do you think bank finance is difficult to obtain?	0.52	0.51	0	1	0.41	0.51	0	1	0.13	0.35	0	1

Table A17 cont.: The perception of the business environment among ICT entrepreneurs

	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Experience regarding Business Development Services (BDS) by any private or public organizations?												
- Have accessed BDS	0.33	0.48	0	1	0.33	0.49	0	1	0.33	0.49	0	1
- Not interested in BDS	0.63	0.49	0	1	0.58	0.51	0	1	0.67	0.49	0	1
- Not aware of BDS	0.22	0.42	0	1	0.33	0.49	0	1	0.13	0.35	0	1
In the past did you face any problems with:												
- Complying with environmental regulations	0	0	0	0	0	0	0	0	0	0	0	0
- Complying with labour law and social standards	0	0	0	0	0	0	0	0	0	0	0	0
- Handling customs	0.11	0.32	0	1	0	0	0	0	0.2	0.41	0	1
- Paying taxes	0.48	0.50	0	1	0.33	0.49	0	1	0.6	0.51	0	1
- Handling bureaucracy	0.56	0.50	0	1	0.58	0.51	0	1	0.53	0.52	0	1
- Understanding and predicting laws/ regulations	0.48	0.51	0	1	0.42	0.51	0	1	0.53	0.51	0	1
- Protecting intellectual property	0.33	0.48	0	1	0.33	0.49	0	1	0.33	0.49	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 27

Table A18: Ranking of constraints and success factors among ICT enterprises												
	ICT Sample n=27				ICT upgrader n=12				ICT Non-upgrader n=15			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Ranking of success factors												
The Entrepreneur	2.15	1.32	1	5	2.25	1.14	1	5	2.10	1.49	1	5
The Enterprise	2.48	1.08	1	5	2.3	0.89	1	5	2.6	1.24	1	5
The Social Network	4	1.47	1	5	3.25	1.76**	1	5	4.6	0.83**	1	5
The Business Network	2.56	1.01	1	4	2.5	1	1	5	2.6	1.06	1	5
The Business Environment	3.81	1.14	2	5	4.67	0.49***	2	5	3.13	1.06***	1	5
Ranking of constraints												
The Entrepreneur	3.15	1.32	1	5	2.9	1.31	1	5	3.33	1.35	1	5
The Enterprise	2.89	1.15	1	5	3	1.04	1	5	2.8	1.26	1	5
The Social Network	4.33	1	2	5	4.5	0.90	1	5	4.2	1.08	1	5
The Business Network	2.60	1.19	1	5	2.83	1.03	1	5	2.4	1.30	1	5
The Business Environment	1.04	1.37	1	5	1.75	1.42	1	5	2.27	1.33	1	5
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 27												

Table A19: Types of innovation among T&G entrepreneurs

	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Types of innovation												
Product	0.41	0.50	0	1	0.83***	0.39	0	1	0.12***	0.33	0	1
Technological process	0.66	0.48	0	1	0.83	0.39	0	1	0.53	0.52	0	1
Organisational process	0.28	0.46	0	1	0.67***	0.49	0	1	0***	0	0	1
Marketing / sales	0.21	0.41	0	1	0.42**	0.51	0	1	0.06**	0.24	0	1
New market	0.45	0.50	0	1	0.92***	0.28	0	1	0.12***	0.33	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 29

Table A20: T&G enterprise characteristics												
	Textile & Garment sample n=29				**Textile & Garment upgrader group n=12**				**Textile & Garment Non-upgrader group n=17**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Enterprise Characteristics												
Formality now (1=Yes; 0=No)	0.48	0.51	0	1	1***	0	1	1	0.12***	0.33	0	1
Age of Enterprise (in yrs.)	14.66	7.75	4	35	13.67	6.27	7	26	15.35	8.76	4	35
Number of employees												
- at start	3.93	2.69	0	10	3.83	1.80	1	7	4	3.18	0	10
- at time of interview	72.41	204.77	0	1100	167**	300.12	23	1100	5.65**	2.67	0	10
Business finance at start-up												
- Personal savings	0.59	0.50	0	1	0.58	0.51	0	1	0.59	0.51	0	1
- Family savings	0.79	0.41	0	1	0.83	0.39	0	1	0.76	0.44	0	1
- Friends/ investors	0.38	0.49	0	1	0.17**	0.39	0	1	0.53**	0.51	0	1
- Informal money-lending	0.07	0.26	0	1	0.08	0.29	0	1	0.06	0.24	0	1
- Bank loan	0.21	0.41	0	1	0.42**	0.51	0	1	0.06**	0.24	0	1
- Others (cash advance, in-kind credit)	0.55	0.51	0	1	0.42	0.51	0	1	0.65	0.49	0	1

Table A20 cont.: T&G enterprise characteristics

	Textile & Garment sample n=29				Textile & Garment upgrader group n=12				Textile & Garment Non-upgrader group n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Business Finance in 2012												
- Enterprise returns	0.93	0.26	0	1	0.83*	0.39	0	1	1*	0	1	1
- Personal savings	0.07	0.26	0	1	0.08	0.29	0	1	0.06	0.24	0	1
- Family savings	0.07	0.26	0	1	0	0	0	0	0.12	0.33	0	1
- Friends/ investors	0	0	0	0	0	0	0	0	0	0	0	0
- Informal money-lending	0.10	0.31	0	1	0	0	0	0	0.18	0.39	0	1
- Bank loan	0.31	0.47	0	1	0.67***	0.49	0	1	0.06***	0.24	0	1
- Others (cash advance, in-kind credit)	0.57	0.50	0	1	0.67	0.49	0	1	0.53	0.51	0	1
Other business (1=Yes; 0=No)												
- at start	0.14	0.35	0	1	0.33**	0.49	0	1	0**	0	0	0
- at time of interview	0.31	0.47	0	1	0.42	0.51	0	1	0.24	0.44	0	1
Being the only decision maker in the business (1=Yes; 0=No)												
- at start	0.41	0.50	0	1	0.5	0.52	0	1	0.35	0.49	0	1
- at time of interview	0.69	0.47	0	1	0.5*	0.52	0	1	0.82*	0.39	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 29

Table A21: T&G entrepreneur characteristics												
	Textile & Garment sample n= 29				**Textile & Garment upgrader n=12**				**Textile & Garment non-upgrader n=17**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Entrepreneur characteristics												
Age	41.79	11.68	28	64	42.92	13.36	28	64	41	10.77	28	60
University education +	0.56	0.51	0	1	0.67	0.49	0	1	0.47	0.51	0	1
Wage-work experience (in yrs.)	5.41	7.89	0	35	6.67	10.76	0	35	4.5	5.24	0	15
Same sector? (1=Yes; 0=No)	0.59	0.50	0	1	0.5	0.52	0	1	0.65	0.49	0	1
Has been abroad (1=Yes; 0=No)	0.21	0.41	0	1	0.42**	0.51	0	1	0.05**	0.24	0	1
Average reported daily working hours	10.17	2.31	5	14	11.58**	1.44	10	14	9.17**	2.32	5	14
Manages to reinvest in business regularly (1=Yes; 0=No)	0.69	0.47	0	1	0.92**	0.29	0	1	0.53**	0.51	0	1
Use of information sources												
- Local market observation	0.72	0.45	0	1	0.67	0.49	0	1	0.76	0.44	0	1
- Print	0.55	0.50	0	1	0.58	0.51	0	1	0.53	0.51	0	1
- Internet	0.38	0.49	0	1	0.58*	0.51	0	1	0.24*	0.44	0	1
- Clients/ buyers	0.76	0.44	0	1	0.75	0.45	0	1	0.76	0.44	0	1

Table A21 cont.: T&G entrepreneur characteristics

	Textile & Garment sample n= 29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Service providers/ suppliers	0.45	0.51	0	1	0.58	0.51	0	1	0.35	0.49	0	1
- Associations/ formal networks	0.24	0.43	0	1	0.42*	0.51	0	1	0.12*	0.33	0	1
- Personal Net-works/ family	0.52	0.51	0	1	0.75**	0.45	0	1	0.35**	0.49	0	1
- Agents/ middle-men	0.66	0.48	0	1	0.92**	0.29	0	1	0.47**	0.51	0	1
- Own R&D	0.34	0.48	0	1	0.75***	0.45	0	1	0.06***	0.24	0	1
- Others	0.03	0.19	0	1	0	0	0	0	0.06	0.24	0	1

+ 0 = no university degree; 1 = university degree (or equivalent);
++ "re-investments" in business are defined as profound capital investments in plant/ machinery/ equipment or staff (including training/ hiring).
*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 29

Table A22: Family and social networks characteristics among T&G entrepreneurs												
	Textile & Garment sample n=29				**Textile & Garment upgrader n=12**				**Textile & Garment non-upgrader group n=17**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Family and social networks												
Has family been in business before? (1=Yes; 0=No)	0.62	0.49	0	1	0.75	0.45	0	1	0.53	0.51	0	1
Father's university education +	0.10	0.31	0	1	0.25	0.45	0	1	0	0	0	0
Number of dependents												
- At start	2.86	1.92	0	7	3	2	0	7	2.76	1.9	0	5
- At time of interview	4.07	2.28	0	9	3.5	1.68	1	7	4.47	2.6	0	6
At start-up, has your family opposed entrepreneurship? (1=yes; 0=No)	0.34	0.48	0	1	0.17*	0.39	0	1	0.47*	0.51	0	1
Overall, has your core family been helpful in running the business? (1=Yes; 0=No)	1	0	1	1	1	0	1	1	1	0	1	1
What have been ways in which your core family has helped you?												
- Finance	0.83	0.38	0	1	0.75	0.45	0	1	0.88	0.33	0	1
- Labour	0.72	0.45	0	1	0.83	0.39	0	1	0.65	0.49	0	1
- Emotional support	0.83	0.38	0	1	0.75	0.45	0	1	0.88	0.33	0	1
- Advice/ know-how	0.76	0.44	0	1	0.75	0.45	0	1	0.76	0.44	0	1

Table A22 cont.: Family and social networks characteristics among T&G entrepreneurs

	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader group n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- networks/ access to markets	0.45	0.51	0	1	0.42	0.51	0	1	0.47	0.51	0	1
- Others	0.21	0.41	0	1	0.08	0.29	0	1	0.29	0.47	0	1
At start-up, have your extended family/ friends opposed entrepreneurship? (1=yes; 0=No)	0.17	0.38	0	1	0.17	0.39	0	1	0.18	0.39	0	1
Overall, have your extended family and friends been helpful in running the business? (weak ties) +++	0.76	0.44	0	1	1**	0	1	1	0.59**	0.51	0	1
What have been ways in which your extended family/ friends have helped you?												
- Finance	0.24	0.44	0	1	0.17	0.39	0	1	0.29	0.47	0	1
- Labour	0.38	0.49	0	1	0.58*	0.51	0	1	0.24*	0.44	0	1
- Emotional support	0.03	0.19	0	1	0	0	0	0	0.06	0.24	0	1
- Advice/ know-how	0.34	0.48	0	1	0.42	0.51	0	1	0.29	0.47	0	1
- networks/ access to markets	0.62	0.49	0	1	0.83**	0.39	0	0	0.47**	0.51	0	1
- Others	0	0	0	0	0	0	0	0	0	0	0	1

+ 0 = no university degree; 1 = university degree (or equivalent); *,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 29

Table A23: Community characteristics among T&G entrepreneurs												
	Textile & Garment sample n=29				**Textile & Garment upgrader group n=12**				**Textile & Garment non-upgrader group n=17**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Community/ Caste networks												
Does your membership to a particular community affect your business? (1=Yes; 0=No)	0.55	0.51	0	1	0.58	0.51	0	1	0.53	0.51	0	1
Overall, do you think being a member of a business community affects business positively? (1=Yes; 0=No)	0.52	0.51	0	1	0.58	0.51	0	1	0.47	0.51	0	1
What do you think are ways in which business community ties can help in business?												
- finance	0.17	0.38	0	1	0**	0	0	0	0.29**	0.47	0	1
- labour	0.10	0.31	0	1	0.17	0.39	0	1	0.06	0.24	0	1
- emotional support	0.07	0.26	0	1	0.08	0.29	0	1	0.06	0.24	0	1
- advice/ know-how	0.31	0.47	0	1	0.33	0.49	0	1	0.29	0.47	0	1
- networks	0.48	0.51	0	1	0.50	0.52	0	1	0.47	0.51	0	1
- reputation/ status	0.41	0.50	0	1	0.58	0.51	0	1	0.29	0.47	0	1
- culture/ mindset	0.27	0.45	0	1	0.58***	0.51	0	1	0.06***	0.24	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 29												

Table A24: Forward and backward linkages among T&G enterprises												
	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Forward and backward linkages												
Overall, has your client/buyer been helpful in growing the business?	0.79	0.41	0	1	1**	0	1	1	0.65**	0.49	0	1
Does or did your client's/ buyer's actions affect your business negatively?	0.52	0.51	0	1	0.25**	0.45	0	1	0.71**	0.47	0	1
What have been ways in which your client/buyer has helped you?												
- Technology transfer	0.24	0.44	0	1	0.33	0.49	0	1	0.18	0.39	0	1
- Feedback on quality/ product	0.62	0.49	0	1	0.83**	0.39	0	1	0.47**	0.51	0	1
- Provision of credit/ cash advance	0.31	0.47	0	1	0.25	0.45	0	1	0.35	0.49	0	1
- Access to markets/ networks	0.24	0.44	0	1	0.42*	0.51	0	1	0.12*	0.33	0	1
- Joint action on problems	0.17	0.38	0	1	0.33*	0.49	0	1	0.06*	0.24	0	1
- Stable/ reliable orders	0.72	0.45	0	1	0.92	0.29	0	1	0.59	0.51	0	1
- Others	0.17	0.38	0	1	0.33	0.49	0	1	0.06	0.24	0	1

Table A24 cont.: Forward and backward linkages among T&G enterprises												
	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Did you have stable orders when starting/ taking over the business?	0.34	0.48	0	1	0.42	0.51	0	1	0.29	0.47	0	1
Overall, has your provider/ supplier been helpful in growing your business?	0.86	0.35	0	1	0.92	0.29	0	1	0.82	0.39	0	1
Does or did your provider's/ supplier's actions affect your business negatively?	0.28	0.45	0	1	0.33	0.49	0	1	0.24	0.44	0	1
What have been ways in which your provider/supplier has helped you?												
- Technology transfer	0.52	0.51	0	1	0.67	0.49	0	1	0.41	0.51	0	1
- Quality product/ commitment	0.59	0.50	0	1	0.83**	0.39	0	1	0.41**	0.51	0	1
- Provision of finance/ credit	0.28	0.45	0	1	0**	0	0	0	0.47**	0.51	0	1
- access to markets/networks	0.21	0.41	0	1	0.08	0.29	0	1	0.29	0.47	0	1
- Joint action on problems	0.52	0.51	0	1	0.67	0.49	0	1	0.41	0.51	0	1
- Stable/ reliable supply	0.65	0.48	0	1	0.67	0.49	0	1	0.65	0.49	0	1
- Others	0.21	0.41	0	1	0.25	0.45	0	1	0.18	0.39	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 29												

Table A25: Competition and local institutional support among T&G entrepreneurs

	Textile & Garment Sample n=29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Competition and local institutions												
At any time, has your competition been helpful in growing your business? (1=yes; 0=No)	0.10	0.31	0	1	0.16	0.39	0	1	0.06	0.24	0	1
At any time, does or did your competitor's actions affect your business negatively? (1=yes; 0=No)	0.45	0.51	0	1	0.08***	0.29	0	1	0.71***	0.47	0	1
Any joint action with the competition? (1=Yes; 0=No)	0.03	0.19	0	1	0	0	0	0	0.06	0.24	0	1
Member in association? (1=Yes; 0=No)	0.41	0.50	0	1	0.67**	0.49	0	1	0.24**	0.44	0	1
Received support from Gov./ NGO (1=Yes; 0=No)	0.24	0.44	0	1	0.25	0.45	0	1	0.24	0.44	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 29

Table A26: Perception of the business environment among T&G entrepreneurs												
	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non-upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Perception of the business environment												
Did you ever have to bribe a government official to get things done?	0.38	0.49	0	1	0.58*	0.51	0	1	0.24*	0.44	0	1
Do you have problems with infrastructure that is affecting your business? (1=yes, 0=no)												
- Access to electricity	0.52	0.51	0	1	0.58	0.51	0	1	0.47	0.51	0	1
- Cost of transport	0.21	0.41	0	1	0.16	0.39	0	1	0.23	0.44	0	1
- Access to telecommunications/ Internet	0	0	0	0	0	0	0	0	0	0	0	0
- Access to land/ property	0.48	0.51	0	1	0.08***	0.29	0	1	0.76***	0.44	0	1
Have you tried to obtain a bank loan in the past?	0.38	0.49	0	1	0.67**	0.49	0	1	0.18**	0.39	0	1
Did you manage to obtain a bank loan for your business?	0.45	0.51	0	1	0.58	0.51	0	1	0.35	0.49	0	1
Do you think bank finance is difficult to obtain?	0.31	0.47	0	1	0.67***	0.49	0	1	0.05***	0.24	0	1
Experience regarding Business Development Services (BDS) by any private or public organizations?												

Table A26 cont.: Perception of the business environment among T&G entrepreneurs

	Textile & Garment sample n=29				Textile & Garment upgrader n=12				Textile & Garment non- upgrader n=17			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Have accessed BDS	0.17	0.38	0	1	0.17	0.39	0	1	0.18	0.39	0	1
- Not interested in BDS	0.41	0.51	0	1	0.58	0.51	0	1	0.29	0.47	0	1
- Not aware of BDS	0.52	0.51	0	1	0.42	0.51	0	1	0.59	0.51	0	1
In the past did you face any problems with:												
- Complying with environmental regulations	0.07	0.26	0	1	0	0	0	1	0.12	0.33	0	1
- Complying with labour law and social standards	0.24	0.44	0	1	0.42*	0.51	0	1	0.12*	0.33	0	1
- Handling customs	0.14	0.35	0	1	0.25	0.45	0	1	0.06	0.24	0	1
- Paying taxes	0.31	0.47	0	1	0.25	0.45	0	1	0.35	0.49	0	1
- Handling bureaucracy	0.28	0.45	0	1	0.25	0.45	0	1	0.29	0.47	0	1
- Understanding and predicting laws/ regulations	0.31	0.47	0	1	0.33	0.49	0	1	0.29	0.47	0	1
- Protecting intellectual property	0.31	0.47	0	1	0.08	0.28	0	1	0.12	0.33	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 29

Table A27: Ranking of success factors and constraints among T&G entrepreneurs												
	Textile & Garment sample n=29				**Textile & Garment upgrader group n=12**				**Textile & Garment non-upgrader n=17**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Ranking of success factors												
The Entrepreneur	3.03	1.45	1	5	2.67	1.44	1	5	3.29	1.48	1	5
The Enterprise	2.90	1.23	1	5	2.67	1.07	1	5	3.06	1.34	1	5
The Social Network	3.48	1.27	1	5	2.33***	0.89	1	5	4.29***	0.77	3	5
The Business Network	2.37	1.15	1	5	2.42	1.31	1	5	2.35	1.06	1	5
The Business Environment	3.21	1.76	1	5	4.92***	0.29	2	5	2***	1.27	1	5
Ranking of constraints												
The Entrepreneur	3.9	1.13	1	5	3.42**	1.44	1	5	4.29**	0.69	3	5
The Enterprise	2.24	1.15	1	5	2	1.21	1	5	2.41	1.12	1	5
The Social Network	4.28	1.00	1	5	4.42	0.79	1	5	4.18	1.13	1	5
The Business Network	2.41	0.98	1	5	2.75	1.22	1	5	2.18	0.73	1	3
The Business Environment	2.14	1.22	1	5	2.42	1.16	1	5	1.94	1.25	1	5

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 29

Table A28: Types of innovation among L&F enterprises

	Leather & Footwear sample n=37				Leather & Footwear upgrader group n=18				Leather & Footwear non-upgrader group n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Types of innovation												
Product	0.62	0.49	0	1	0.94***	0.23	0	1	0.32***	0.48	0	1
Technological Process	0.51	0.51	0	1	0.89***	0.32	0	1	0.16***	0.37	0	1
Organisational process	0.24	0.43	0	1	0.39**	0.50	0	1	0.11**	0.31	0	1
Marketing/ sales	0.19	0.40	0	1	0.39***	0.50	0	1	0***	0	0	0
New market	0.35	0.48	0	1	0.67***	0.49	0	1	0.05***	0.23	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 37

Table A29: L&F enterprise characteristics												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Enterprise characteristics												
Formality now (1=Yes; 0=No)	0.62	0.49	0	1	1***	0	1	1	0.26***	0.45	0	1
Age of Enterprise (in yrs.)	13.70	6.74	5	28	16.39**	6.70	6	27	11.16**	5.86	5	28
Number of employees												
- at start	5.22	3.33	0	16	6.38*	2.78	2	11	4.11*	3.53	0	16
- at time of interview	252.03	677.78	0	4000	514.28*	911.59	30	4000	3.58*	2.24	0	8
Business finance at start-up												
- Personal savings	0.51	0.51	0	1	0.50	0.51	0	1	0.53	0.51	0	1
- Family savings	0.70	0.46	0	1	0.67	0.49	0	1	0.74	0.45	0	1
- Friends/ investors	0.08	0.28	0	1	0.17*	0.38	0	1	0*	0	0	1
- Informal money-lending	0.19	0.40	0	1	0.22	0.43	0	1	0.16	0.37	0	1
- Bank loan	0.16	0.37	0	1	0.33	0.49	0	1	0	0	0	1
- Others (cash advance, in-kind credit)	0.57	0.50	0	1	0.61	0.50	0	1	0.53	0.51	0	1

Table A29 cont.: L&F enterprise characteristics

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Mean	Std. Dev	Min	Mean	Std. Dev	Min	Mean	Std. Dev	
Business Finance in 2012												
- Enterprise returns	0.73	0.45	0	1	0.56**	0.51	0	1	0.89**	0.32	0	1
- Personal savings	0.11	0.31	0	1	0.06	0.51	0	1	0.16	0.37	0	1
- Family savings	0.14	0.35	0	1	0.11	0.32	0	1	0.16	0.37	0	1
- Friends/ investors	0.11	0.31	0	1	0.11	0.32	0	1	0.11	0.32	0	1
- Informal money-lending	0.11	0.31	0	1	0**	0	0	0	0.21**	0.42	0	1
- Bank loan	0.41	0.50	0	1	0.67***	0.49	0	1	0.16***	0.37	0	1
- Others (cash advance, in-kind credit)	0.62	0.49	0	1	0.72	0.46	0	1	0.53	0.51	0	1
Other business												
- at start	0.08	0.28	0	1	0.06	0.24	0	1	0.11	0.32	0	1
- at time of interview	0.14	0.35	0	1	0.17	0.38	0	1	0.11	0.32	0	1
Being the only decision maker in the business (1=Yes; 0=No)												
- at start	0.49	0.51	0	1	0.83	0.38	0	1	0.79	0.42	0	1
- at time of interview	0.57	0.50	0	1	0.78	0.43	0	1	0.89	0.32	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 29

Table A30: L&F entrepreneur characteristics												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Entrepreneur characteristics												
Age	40.03	7.82	30	59	42.39*	8.01	30	59	37.78*	7.12	30	55
University education +	0.51	0.51	0	1	0.83***	0.38	0	1	0.21***	0.42	0	1
wage-work experience (in yrs.)	6.95	6.47	0	20	5.72	5.49	0	18	8.11	7.23	0	20
Same sector? (1=Yes; 0=No)	0.65	0.48	0	1	0.67	0.49	0	1	0.63	0.50	0	1
Has been abroad (1=Yes; 0=No)	0.16	0.37	0	1	0.33**	0.49	0	1	0**	0	0	0
Average reported daily working hours	10.78	1.84	8	16	11.22	1.80	8	16	10.37	1.83	8	15
Manages to reinvest in business regularly (1=Yes; 0=No)	0.59	0.50	0	1	1***	0	1	1	0.21***	0.42	0	1
Use of information sources												
- Local market observation	0.54	0.51	0	1	0.28***	0.46	0	1	0.78***	0.42	0	1
- Print	0.30	0.46	0	1	0.28	0.24	0	1	0.32	0.48	0	1
- Internet	0.24	0.43	0	1	0.06**	0.46	0	1	0.42**	0.51	0	1

Table A30 cont.: L&F entrepreneur characteristics

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Clients/ buyers	0.78	0.42	0	1	0.89	0.32	0	1	0.68	0.48	0	1
- Service providers/ suppliers	0.41	0.50	0	1	0.72***	0.46	0	1	0.11***	0.32	0	1
- Associations/ formal networks	0.35	0.48	0	1	0.61***	0.50	0	1	0.11***	0.32	0	1
- Personal networks/ family	0.46	0.51	0	1	0.78***	0.43	0	1	0.16***	0.37	0	1
- Agents/ middlemen	0.54	0.51	0	1	0.67	0.49	0	1	0.42	0.51	0	1
- Own R&D	0.14	0.35	0	1	0.28**	0.46	0	1	0**	0	0	0
- Others	0.30	0.46	0	1	0.44*	0.51	0	1	0.16*	0.37	0	1

+ 0=no university degree; 1= university degree (or equivalent);
++ "re-investments" in business are defined as profound capital investments in plant/ machinery/ equipment or staff (including training/ hiring).
*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 37

Table A31: Family and social network characteristics among L&F entrepreneurs												
	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Family & social networks												
Has family been in business before? (1=Yes; 0=No)	0.51	0.51	0	1	0.67*	0.49	0	1	0.47*	0.50	0	1
Father's university education +	0.27	0.45	0	1	0.33	0.50	0	1	0.21	0.42	0	1
Number of dependents												
- At start	1.95	2.50	0	8	1.5	2.31	0	1	2.37	2.63	0	1
- At time of interview	3.92	2.18	0	11	3.61	2.61	0	1	4.21	1.69	0	1
At start-up, has your family opposed entrepreneurship? (1=yes; 0=No)	0.19	0.40	0	1	0.22	0.43	0	1	0.16	0.37	0	1
Overall, has your core family been helpful in running the business? (1=Yes; 0=No)	0.89	0.31	0	1	0.89	0.32	0	1	0.89	0.32	0	1
What have been ways in which your core family has helped you?												
- Finance	0.65	0.48	0	1	0.5*	0.51	0	1	0.79*	0.42	0	1
- Labour	0.41	0.50	0	1	0.33	0.49	0	1	0.47	0.51	0	1
- Emotional support	0.65	0.48	0	1	0.56	0.51	0	1	0.74	0.45	0	1
- Advice/ know-how	0.49	0.51	0	1	0.39	0.50	0	1	0.58	0.51	0	1

Table A31 cont.: Family and social network characteristics among L&F entrepreneurs

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Networks/ access to markets	0.27	0.45	0	1	0.17	0.38	0	1	0.37	0.50	0	1
- Others	0.03	0.16	0	1	0.06	0.24	0	1	0	0	0	0
At start-up, have your extended family/ friends opposed entre-preneurship? (1=yes; 0=No)	0.13	0.35	0	1	0.06	0.24	0	1	0.21	0.42	0	1
Overall, have your extended family and friends been helpful in running the business? (weak ties)	0.84	0.37	0	1	1**	0	1	1	0.68**	0.48	0	1
What have been ways in which your extended family/ friends have helped you?												
- Finance	0.24	0.43	0	1	0.28	0.46	0	1	0.21	0.42	0	1
- Labour	0.30	0.46	0	1	0.11**	0.32	0	1	0.47**	0.51	0	1
- Emotional support	0.11	0.31	0	1	0.05	0.24	0	1	0.15	0.37	0	1
- Advice/ know-how	0.43	0.50	0	1	0.5	0.51	0	1	0.37	0.50	0	1
- Networks/access to markets	0.49	0.51	0	1	0.61	0.50	0	1	0.37	0.50	0	1
- Others	0.05	0.23	0	1	0.06	0.24	0	1	0.05	0.23	0	1

+ 0=no university degree; 1= university degree (or equivalent);
*,**,*** indicate 10%, 5% and 1% significance level respectively; Total sample N = 37

Table A32: Community characteristics among L&F entrepreneurs												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Community/ Caste networks												
Does your membership to a particular community affect your business? (1=Yes; 0=No)	0.65	0.48	0	1	0.39***	0.50	0	1	0.89***	0.31	0	1
Overall, do you think being a member of a business community affects business positively? (1=Yes; 0=No)	0.62	0.49	0	1	0.39***	0.50	0	1	0.84***	0.37	0	1
What do you think are ways in which business community ties can help in business?												
- Finance	0.62	0.49	0	1	0.33***	0.49	0	1	0.89***	0.32	0	1
- Labour	0.05	0.23	0	1	0.11	0.32	0	1	0	0	0	1
- emotional support	0.11	0.31	0	1	0.11	0.32	0	1	0.11	0.32	0	1
- advice/ know-how	0.32	0.47	0	1	0.28	0.46	0	1	0.37	0.50	0	1
- networks	0.41	0.50	0	1	0.28	0.46	0	1	0.53	0.51	0	1
- reputation/status	0.27	0.45	0	1	0.28	0.46	0	1	0.26	0.45	0	1
- culture/ mindset	0.11	0.31	0	1	0.17	0.38	0	1	0.05	0.23	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 37												

Table A33: Forward and backward linkages among L&F enterprises

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Forward and backward linkages												
Overall, has your client/buyer been helpful in growing the business?	0.95	0.23	0	1	1	0	1	1	0.89	0.32	0	1
Does or did your client's/ buyer's actions affect your business negatively?	0.59	0.50	0	1	0.33***	0.49	0	1	0.84***	0.37	0	1
What have been ways in which your client/buyer has helped you?												
- Technology transfer	0.19	0.40	0	1	0.16	0.38	0	1	0.21	0.42	0	1
- Feedback on quality/ product	0.70	0.46	0	1	0.78	0.43	0	1	0.63	0.50	0	1
- Provision of credit/ cash advance	0.32	0.47	0	1	0.39	0.50	0	1	0.26	0.45	0	1
- Access to markets/ networks	0.32	0.47	0	1	0.67***	0.49	0	1	0***	0	0	1
- Joint action on problems	0.05	0.23	0	1	0.11	0.32	0	1	0	0	0	1
- Stable/ reliable orders	0.76	0.43	0	1	0.78	0.43	0	1	0.74	0.45	0	1
- Others	0.05	0.23	0	1	0.11	0.32	0	1	0	0	0	0
Did you have stable orders when starting/taking over the business?	0.32	0.47	0	1	0.5**	0.51	0	1	0.16**	0.37	0	1

Table A33 cont.: Forward and backward linkages among L&F enterprises												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Overall, has your provid-er/supplier been helpful in growing your business?	0.86	0.35	0	1	0.94	0.24	0	1	0.79	0.42	0	1
Does or did your provider's/ supplier's actions affect your business negatively?	0.49	0.51	0	1	0.33*	0.49	0	1	0.63*	0.50	0	1
What have been ways in which your provider/supplier has helped you?												
- Technology transfer	0.51	0.51	0	1	0.89***	0.32	0	1	0.16***	0.37	0	1
- Quality product/ commitment	0.24	0.43	0	1	0.39**	0.50	0	1	0.11**	0.32	0	1
- Provision of finance/ credit	0.38	0.49	0	1	0.28	0.46	0	1	0.47	0.51	0	1
- Access to markets/ networks	0.08	0.28	0	1	0.17*	0.38	0	1	0*	0	0	1
- Joint action on problems	0.27	0.45	0	1	0.44**	0.51	0	1	0.11**	0.32	0	1
- Stable/ reliable supply	0.65	0.48	0	1	0.61	0.50	0	1	0.68	0.48	0	1
- Others	0.11	0.31	0	1	0.17	0.38	0	1	0.05	0.23	0	1
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 37												

Table A34: Competition and local institutional support among L&F enterprises

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Competition and local institutions												
At any time, has your competition been helpful in growing your business? (1=yes; 0=No)	0.41	0.50	0	1	0.61**	0.50	0	1	0.21**	0.42	0	1
At any time, does or did your competitor's actions affect your business negatively? (1=yes; 0=No)	0.32	0.47	0	1	0**	0	0	0	0.63**	0.50	0	1
Any joint action with the competition? (1=Yes; 0=No)	0.35	0.48	0	1	0.56**	0.51	0	1	0.16**	0.37	0	1
Member in association? (1=Yes; 0=No)	0.65	0.48	0	1	1***	0	1	1	0.32***	0.48	0	1
Received support from Gov./ NGO (1=Yes; 0=No)	0.49	0.51	0	1	0.83***	0.38	0	1	0.16***	0.37	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 37

Table A35: Perception of the business environment among L&F enterprises												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Perception of the business environment												
Did you ever have to bribe a government official to get things done?	0.65	0.48	0	1	1***	0	1	1	0.32***	0.48	0	1
Do you have problems with infrastructure that is affecting your business? (1=yes, 0=no)												
- Access to electricity	0.73	0.45	0	1	1***	0	1	1	0.47***	0.51	0	1
- Cost of transport	0.16	0.37	0	1	0**	0	0	0	0.32**	0.48	0	1
- Access to telecommunications/ Internet	0	0	0	0	0	0	0	0	0	0	0	0
- Access to land/ property	0.16	0.37	0	1	0	0	0	0	0.32**	0.48	0	1
Have you tried to obtain a bank loan in the past?	0.65	0.48	0	1	0.83**	0.38	0	1	0.47**	0.51	0	1
Did you manage to obtain a bank loan for your business?	0.35	0.48	0	1	0.67***	0.49	0	1	0.16***	0.37	0	1
Do you think bank finance is difficult to obtain?	0.41	0.50	0	1	0.11**	0.32	0	1	0.58**	0.51	0	1
Experience regarding business development services (BDS) by any private or public organizations?												

Table A35 cont.: Perception of the business environment among L&F enterprises

	Leather & Footwear sample n=37				Leather & Footwear upgrader n=18				Leather & Footwear non-upgrader n=19			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
- Have accessed BDS	0.24	0.43	0	1	0.39**	0.50	0	1	0.11**	0.32	0	1
- Not interested in BDS	0.46	0.51	0	1	0.67**	0.49	0	1	0.26**	0.45	0	1
- Not aware of BDS	0.43	0.50	0	1	0.11***	0.32	0	1	0.74***	0.45	0	1
In the past did you face any problems with:												
- Complying with environmental regulations	0.30	0.46	0	1	0.61***	0.50	0	1	0***	0	0	0
- Complying with labour laws and social standards	0.35	0.48	0	1	0.56**	0.51	0	1	0.16**	0.37	0	1
- Handling customs	0.16	0.37	0	1	0.28*	0.46	0	1	0.05*	0.23	0	1
- Paying taxes	0.32	0.47	0	1	0.06***	0.24	0	1	0.58***	0.51	0	1
- Handling bureaucracy	0.68	0.47	0	1	0.72	0.46	0	1	0.63	0.50	0	1
- Understanding and predicting laws/ regulations	0.41	0.50	0	1	0.61**	0.50	0	1	0.21**	0.42	0	1
- Protecting intellectual property	0.08	0.28	0	1	0.17*	0.38	0	1	0*	0	0	1

*,**,*** indicate 10%, 5% and 1% significance level respectively
Total sample N = 37

Table A36: Ranking of success factors and constraints among L&F enterprises												
	Leather & Footwear sample n=37				**Leather & Footwear upgrader n=18**				**Leather & Footwear non-upgrader n=19**			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Ranking of success factors												
The Entrepreneur	2.91	1.51	1	5	1.72***	0.96	1	4	4.05***	0.97	1	5
The Enterprise	2.81	1.15	1	5	2.61	1.14	1	5	3	1.15	1	5
The Social Network	3.75	1.42	1	5	3.83	1.34	1	5	3.68	1.53	1	5
The Business Network	2.62	1.21	1	5	2.89	1.28	1	5	2.37	1.12	1	5
The Business Environment	2.95	1.51	1	5	4.06***	0.94	2	5	1.90***	1.15	1	5
Ranking of constraints												
The Entrepreneur	3.65	1.27	1	5	3.44	1.34	1	5	3.84	1.21	1	5
The Enterprise	2.59	1.07	1	5	2.44	0.92	1	4	2.74	1.19	1	5
The Social Network	4.30	1.10	1	5	4.28	1.17	1	5	4.32	1.06	1	5
The Business Network	2.30	1.22	1	5	2.44	1.38	1	5	2.11	1.05	1	5
The Business Environment	2.19	1.13	1	5	2.39	1.29	1	5	2	0.94	1	5
*,**,*** indicate 10%, 5% and 1% significance level respectively Total sample N = 37												

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