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Which Factors Determine the Upgrading of Micro, Small and Medium-Sized Enterprises?

Evidence from Egypt, India and the Philippines

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Abstract

Many low- and middle-income countries suffer from a lack of medium-sized companies, which tend to be the main creators of higher-income employment as well as the motors of innovation and economic diversification. The chief reason is that few micro and small enterprises are able to upgrade, that is, grow and become medium-sized through innovation. There is extensive literature offering manifold explanations, but no conclusion has been offered yet as to what the most important factors are: entrepreneur or firm characteristics; personal or business networks; or the business environment. This article contributes towards filling this gap on the basis of three extensive empirical case studies on Egypt, India and the Philippines. It argues that the entrepreneur matters much more than recent literature would lead us to believe. Due to chronic imperfections in the business environment, entrepreneurs in all three countries face similar upgrading constraints: lack of finance, skilled workers, market information, technology and security. Some are able to upgrade despite the constraints, but they have to struggle to sustain their success. The few that succeed in both regards have taken it upon themselves to develop effective coping strategies. In all three countries, they use similar strategies, in which they tend to benefit from: above-average financial, social and human capital; motivation; risk-readiness; and a willingness to invest in human resources, market research as well as research and development. As a result, standard reforms for the improvement of the business environment are certainly important but unlikely to translate into the upgrading of a much larger number of MSEs. Inequality of opportunity is going to prevail unless governments are willing to create a level playing field through the provision of quality education and training, human resource development, access to markets and finance, and rule of law for all.

JEL Classification: D20; L10; L20; L66; L67; L86; M10; M20; M50

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Bonn, November 2013 Aimée Hampel, Markus Loewe and Caroline Reeg

Contents

Abbreviations

BDS	Business Development Services
CAPMAS	Central Agency for Public Mobilization and Statistics
EICS	Egypt Investment Climate Survey
GVC	Global Value Chain
HRD	Human Resource Development
ICT	Information and Communication Technology
MSE	Micro and Small Enterprise
NGO	Non-governmental Organisation
R&D	Research and Development

1 Introduction

Most low- and middle-income countries are characterised by a phenomenon that is often called the "missing middle": they have many micro and small enterprises (MSEs) but only few medium-sized ones, and hardly any of the small ones are linked to larger companies. In particular, firms in the medium-sized segment are rare, which is at least partly due to difficulties that small enterprises face in growing and transforming into medium-sized enterprises (Schmitz 1999). Above all, this phenomenon constitutes a problem because medium-sized companies create the bulk of higher-quality, higher-wage jobs in many countries. Medium-sized companies tend to be the main motors of innovation and economic diversification and are the firms that may become able, over time, to export their products directly.

A large strand of – mainly theoretical – literature discusses why only very few MSEs manage to upgrade, that is, to innovate and grow. Many factors are suggested: *entrepreneur characteristics* (such as the education and family backgrounds of owners), *firm characteristics* (such as the formality status of the firms and the level of training of workers), *inter-firm linkages* (i.e. the firm's integration into value chains or clusters) as well as *elements of the business environment* (such as regulation, trade policy, the provision of finance, the availability of business development services (BDSs) and infrastructure).

But the literature does not provide much evidence on the relative importance of these factors. This deficit is partly due to the fact that it is difficult to answer the question using econometric analysis. Even panel data do not trace the path of many MSEs, because most of these are not registered and frequently change their identity. Qualitative case studies are a more adequate instrument of research, but their results are not generalisable unless they are based on at least medium-sized samples and rigorous techniques of data generation and interpretation. This article is therefore based on a hybrid method that combines the strengths of qualitative and quantitative methods using medium-sized samples in three very distinct countries.

The article contributes towards filling the gap in the literature. Based on empirical research conducted in Egypt, India and the Philippines in 2012, it provides answers to two questions:

– Which constraints are responsible for the fact that upgrading seems to be difficult for MSEs in many low- and middle-income countries?

– Which "success factors" explain the fact that some MSEs manage to upgrade (unlike others) despite the general difficulties?

Using empirical evidence[1] from three countries, we argue that the entrepreneur matters substantially in enterprise upgrading. Factors such as the education, experience, social capital, ambition and risk-readiness of MSE owners are much more decisive for their upgrading potential than the bulk of recent literature would lead us to believe.

1 Detailed findings of these three country studies have been published in the following research reports: Hampel-Milagrosa (2014); Loewe (2013); Loewe et al. (2013) and Reeg (2013b).

Governments should thus pay much more attention than they have in the past to creating a level playing field for all entrepreneurs.

This paper proceeds as follows: the Conceptual Framework in Section 2 presents the "Onion Model", which we developed in order to depict that there are four layers of factors influencing enterprise upgrading. Section 3 specifies the objectives of the three-country project and explains our methodological considerations towards a cohesive empirical research approach. Section 4 presents our findings with regards to the main constraints and success factors of enterprise upgrading for entrepreneurs in Egypt, India and the Philippines. Section 5 illustrates these findings with showcases of typical upgrading strategies of information and communication technology (ICT) companies in India; food processors in the Philippines; and textiles and garments producers in Egypt. Section 6 concludes and offers suggestions for policy recommendations.

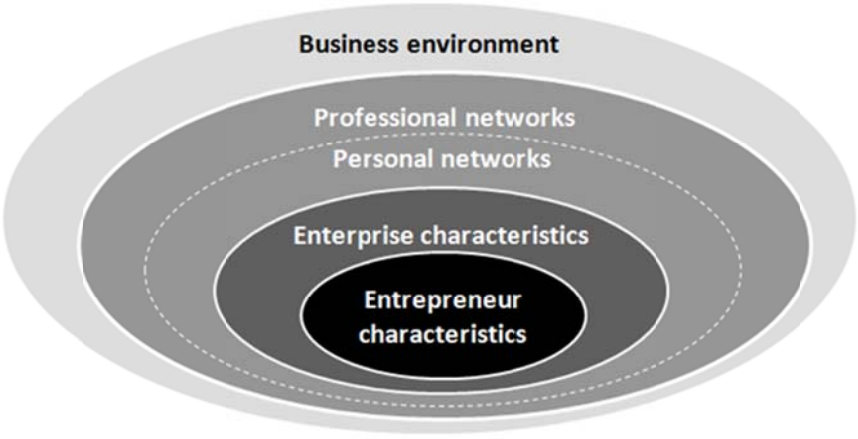
2 Conceptual framework

In the simplest terms, we define enterprise upgrading as "growth through innovation" – that is, innovation that induces an increase in any target variable of entrepreneurs, such as the company's returns, sales, assets or number of employees. The term contains thus both a *qualitative aspect* (innovation) and a *quantitative aspect* (firm growth). We chose the term "upgrading" (normally used only for the qualitative aspect) rather than "graduation" (normally used for the quantitative aspect) because there are many reasons why firms may be able to grow (market expansion, rapid increase in demand, significant change in price, etc.), but we wanted to focus on growth through innovation, which is the only growth strategy that entrepreneurs can directly control (i.e. all others depend to some degree on external factors).

A firm can innovate through a variety of ways: the launch of a new or enhanced product (*product innovation*); an improvement in the production process (*process innovation*); the introduction of a new packaging, labelling or marketing method (*marketing innovation*); the engagement of the enterprise in new stages in the value chain (*functional innovation*); or its move to a new sector (*sectoral innovation*). Innovation in itself, however, does not necessarily translate into firm growth. The condition is that the innovation brings something new to the relevant market – and not only to the innovating firm – and thereby generates an innovation rent. Different strands of literature allude to different factors determining whether an enterprise can upgrade (micro-perspective) and whether it is generally easy for enterprises in one country or region to upgrade (macro-perspective). These factors fall into four broad categories: entrepreneur characteristics, enterprise characteristics, networks (both personal and professional) and the business environment (see the Onion Model in Figure 1).

At the core of the Onion Model are *entrepreneur characteristics.* Some authors refer to human capital (including work experience and training) (Mead / Liedholm 1998; Eifert / Gelb / Ramachandran 2005), entrepreneur age (Cortes / Berry / Ishaq 1987), gender (McPherson / Liedholm 1996) as well as motivation (de Mel / McKenzie / Woodruff 2008) and risk-taking ability (Szirmai / Naudé / Goedhuys 2011) as important factors for enterprise upgrading.

Figure 1: Factors underlying MSE upgrading – the Onion Model



Source: Reeg (2013a)

At the second level of the onion lie *enterprise characteristics*. This refers to the strands of literature highlighting the critical role of firm-level attributes such as firm age (Banerjee / Duflo 2000), size (Schumpeter 1934), sector (Mead / Liedholm 1998), location (Pyke / Becattini / Sengenberger 1990), informality (La Porta / Shleifer 2011) and absorptive capacity (Cohen / Levinthal 1990) in enterprise upgrading.

The third level of the onion refers to *personal and professional networks*. This level is supported by a wealth of literature that suggests that inter-firm and interpersonal networking play an important role in the process of enterprise creation and growth (Altenburg / Meyer-Stamer 1999; Granovetter 1982; Humphrey / Schmitz 2000; Johannisson / Nilsson 1989; Stamm 2004).

The outer shell of the onion consists of elements at the *business environment* level. Many studies following this argument claim that the overall quality of the business environment is the key determinant of the average likelihood of MSEs in a country to upgrade (Djankov et al. 2002; Acemoglu / Johnson / Robinson 2002; Acemoglu / Johnson / Robinson 2005).[2]

3 Research methodology

However, the literature does not provide much evidence on the relative importance of the four layers of factors underlying MSE upgrading – nor how they are interrelated. Our case studies on Egypt, India and the Philippines were therefore meant to provide an answer to the question: Which factors are the main determinants (constraints and success factors) of MSE upgrading?

For this purpose, we conducted a survey of about 100 MSE owners with two sub-samples respectively in each of the three countries: one sub-sample consisted of successful upgraders, whereas the other consisted of comparable non-upgraders. In addition to the

2 For an extensive review of the different strands of conceptual literature on the factors of MSE upgrading, see Reeg (2013a).

survey, we included the results of focus group discussions and expert interviews in our analysis. We tried to use econometric techniques to support our qualitative findings wherever possible and to the degree that our own, or other, data allowed us. Fully representative panel data, however, were only available for Egypt from two rounds of the Egypt Investment Climate Survey (EICS) conducted in 2004 and 2008, which we used for logit estimates.

The main objective of the research was to learn from the experience of successful "upgraders" and to compare them with "non-upgraders", that is, stagnating MSEs. For this purpose, we

– compared upgraders and non-upgraders with regard to key characteristics that could explain differences in the propensity to upgrade;
– asked MSE owners about their perceptions of the main determinants of upgrading: constraints and success factors; and
– interviewed MSE owners also on their development in order to trace back their upgrading efforts – whether successful or not.

In all three countries, the definition of MSEs was based on the number of employees. We used this indicator for firm size – and also for firm growth – for pragmatic reasons: it turned out to be the only variable for which entrepreneurs provided reliable reports.

Particular thresholds were defined based on respective country contexts. To be classified as upgraders, the enterprises had to meet the following criteria:

– *Quantitative criteria* (for company growth): (i) Enterprises must have grown by at least 10 per cent per year on average during the last 5–10 years. (ii) They must have started from below a country-specific threshold in terms of the number of regular employees 5–10 years ago (they must have been a micro or small enterprise at that time) and grown beyond that same threshold in the meantime until they were interviewed in 2012.
– *Qualitative criterion* (for innovation): (i) Enterprises must have documented efforts in innovation (improvements in products, production processes (technology upgrading) or ways of organising production). (ii) And they must have grown substantially faster than their respective competitors (again measured in number of employees) in order to make sure that their growth was not merely due to external effects, such as growth in demand, but to innovation, that is, the introduction of something that was new to the market and has therefore created an innovation rent.

In order to identify a sufficient number of enterprises that would fit these criteria, we adopted purposive sampling techniques. However, we had to combine different ones because each such technique produces a selection bias, and we wanted to reduce the effect of these biases on our total samples. Therefore, we selected a quarter of our interview partners, on average, randomly from official enterprise registries or near-to-representative lists (such as telephone books or yellow pages), roughly the same number based on recommendations of experts and lead firms, and the remainder by walking the streets within and outside of geographical production clusters and requesting interviews on site with professionals working in MSEs.

With regard to the sector selection, we made sure that chosen economic sectors showed a high proportion of MSEs and also contributed considerably to the gross domestic product of the respective country. Further, we made sure that there would be an overlap of at least two sectors between the chosen country cases, resulting in easier comparability across countries. On the basis of these criteria, we selected the ICT sector in Egypt and India; the leather and footwear sector in India and the Philippines; the food processing sector in Egypt and the Philippines; and the textiles and garments sector in all three countries (Table 1).

Table 1: Cross-country sample composition

	Egypt	India	Philippines
Total	**80**	**93**	**112**
Upgraders	40	42	21
Non-upgraders	40	51	91
Textiles and garments	43	29	31
Leather and footwear	–	37	32
Food processing	26	–	49
ICTs	11	27	–
Formal at start	59	28	30
Informal at start	21	65	82
Female owner	15	4	58
Male owner	65	89	54

Source: Hampel-Milagrosa (2014), Loewe et al. (2013) and Reeg (2013b)

4 Findings

Despite apparent differences between the framework conditions of MSEs in Egypt, India and the Philippines, our findings manifest a high degree of consistency.

The *first finding* is that MSEs in Egypt, India and the Philippines perceive very similar *constraints* to upgrading: (i) their owners' deficits in education and experience, (ii) the lack of – or the high turnover of – trained workers, (iii) difficulties in accessing finance, (iv) the lack of market information and (v) deficits in the rule of law. These factors were mentioned most frequently when MSE owners were asked about their five key challenges for innovation and growth. In Egypt, for example, 63 per cent of all interviewed MSE owners complained about deficits in law enforcement in their country, while 58 considered the lack of – or the high turnover of – well-trained and motivated workers as being one of their five major obstacles, whereas 33 per cent pointed to access to finance, 27 per cent to the lack of marketing support, 18 per cent to high taxes and only 14 per cent to their own levels of education and work experience (Loewe 2013; Loewe et al. 2013, Annex Tables A11a–A12).

It may not be surprising that these factors influence MSE upgrading. Also, it is not astonishing that many entrepreneurs attribute their difficulties more to external factors (especially the business environment) than to their own (lack of) qualities. However, note that only very few respondents pointed to factors that were highlighted as barriers to upgrading in earlier studies – such as, for example, enterprise size, age or location; informality; the owner's gender; or trade and monetary policies.

The business climate was mentioned as a constraint to MSE development in many interviews – especially interactions between state and businesses such as licensing, taxation, inspections and governmental efforts to safeguard fair competition. However, most of the serious constraints MSE owners were referring to were due to deficits in law enforcement rather than over-regulation, red tape and the costs of procedures (such as licensing and customs) in terms of time and money. These costs matter for entrepreneurs, but their main problem is that they cannot assess these costs in advance, and they do not know what the outcome of the procedure will be. Across the three countries, public officials have significant discretionary leeway in the interpretation of laws and guidelines for MSEs. As a result, MSEs often invest a lot of time, money and effort without knowing whether this will suffice or whether the applications, requests and registrations will ever be approved. MSEs are particularly vulnerable to such weaknesses in the law because they lack the financial reserves and the connections to influential politicians, as compared to larger firms.[3]

Deficits in access to finance were also mentioned as a main constraint to upgrading, but they are not always (only) due to supply-side factors. In Egypt, India and the Philippines, deficits do appear to prevail in the provision of adequate MSE finance; however, for many MSEs, access to finance is mainly constrained by demand-side factors: (i) lack of financial literacy (knowledge on repayment conditions and lending costs), (ii) lack of awareness and market information, (iii) inability to design and formulate a business plan, (iv) unclear business ideas and/or (v) unclear / exaggerated expectations.

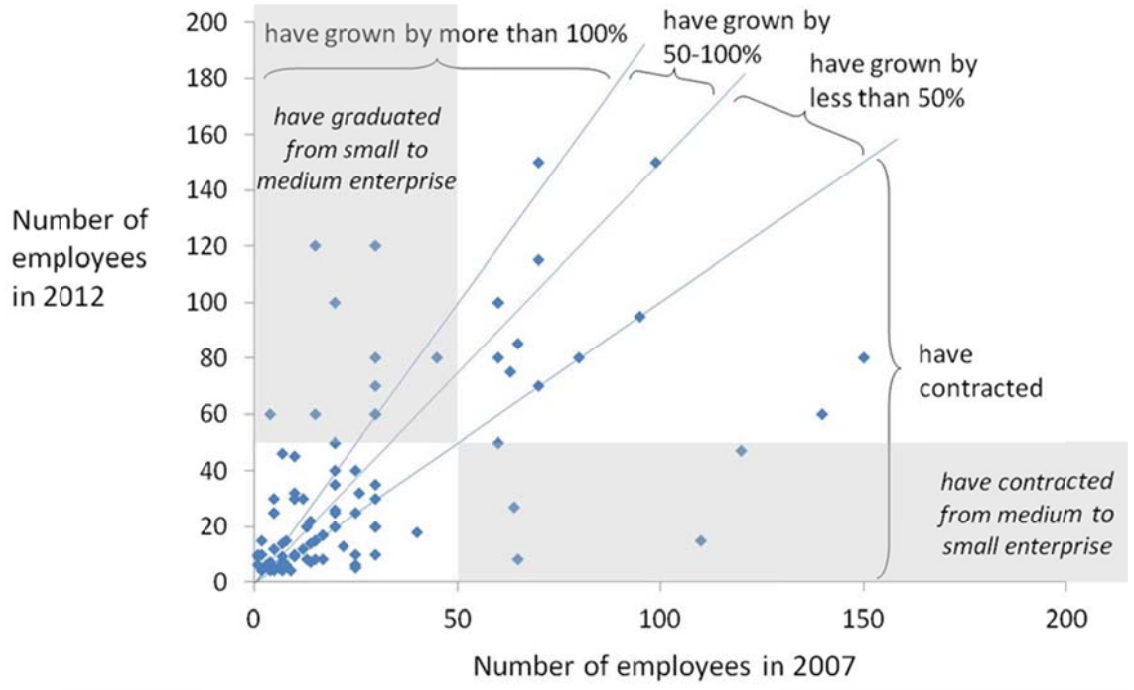
A *second finding* of our research is that *upgrading is possible* – at least for some MSEs – despite all the constraints: we identified more upgraders than we had initially expected, even when we were not explicitly looking for them. In Egypt, for example, a total of 59 firms were selected by random sampling methods (i.e. from the registries, from telephone books or the like, or by walking the streets) and 29 of them turned out, in fact, to be upgraders. All in all, in terms of the number of employees, half of all the companies in our Egyptian sample grew by at least 50 per cent between 2007 and 2012 (see Figure 2).

However, we also identified a large number of companies that had been considerably larger in the past but that had recently contracted in size.[4] The number of firms that grew between 2007 and 2012 was almost equal to the number of firms that contracted – in all sectors and size brackets (see Figure 2). This phenomenon (whereby many enterprises are moving up while many others are moving down) is well-known and commonly referred to as "churning". It also includes the birth of many new companies and the death of many older ones, and it therefore impacts the resulting number of medium-sized companies in an economy. However, as long as the number of firms growing exceeds the number of firms contracting, the group of medium-sized companies can expand. Churning may have occurred in Egypt between 2002 and 2007, since quite a number of the companies we interviewed had grown significantly during those years, and only a few had contracted. Admittedly, the evidence is weak because a similarly large number of companies might have contracted during that same period but are no longer around to tell us what happened. In any case, the shortage of medium-sized enterprises across samples from the three countries is not only due to the difficulties that small firms have with upgrading, but it could also be attributed to the difficulties that upgraded firms face in sustaining their growth over longer periods of time.

3 Cf. Loewe (2013).

4 All contracting companies were classified, just like stagnating companies, as non-upgraders.

Figure 2: Growth and contraction of companies in the Egyptian sample



Source: Loewe et al. (2013, 91)

The *third finding* is that a break-through upgrading depends critically on only a few specific (individual) "success factors". Differences in these factors explain why some MSEs are more likely to upgrade than others (respectively why some MSEs are able to upgrade at all – despite the many obstacles). In all three countries under research, upgraders tend to: (i) be better endowed with human capital (high-quality education, relevant work experience[5] and international exposure[6]); (ii) be more motivated and more willing to take risks; (iii) invest more in human resource development (HRD), that is, training of, incentives for and participation in strategic company decisions by workers[7]; (iv) spend more on research and development (R&D) and market research; (v) have personal wealth or easy access to finance in the core family; and (vi) be integrated into (global) value chains (GVCs).[8]

Clearly, these five factors help MSEs overcome the structural constraints to upgrading mentioned above. They are, for example, less vulnerable to deficits in the access to credit

5 Relevant work experience would be that entrepreneurs have worked in the same sector (preferably in a lead firm) before starting their own businesses.

6 International exposure includes both, having been abroad for studies – for professional or private purposes – as well as having been in intensive contact with foreigners within the country, such as, for example, during studies at international schools or universities.

7 HRD includes most types of investment in workers that improve their skills, their motivation to work, their ownership of the quality of their products and their well-being, thereby reducing the turnover of workers. This can be on-the-job training, more generous wages, non-wage benefits such as child care and social security, good treatment of workers, participation in important decisions on the orientation of the enterprise and a nice work atmosphere.

8 GVCs help MSEs to acquire feedback on the quality of their products, market information, stable sales and access to global markets.

if they have personal wealth. And they can function despite deficits in the rule of law if they are ready to accept high risks. Likewise, on-the-job-training helps them to cope with workers lacking proper vocational education.

In addition, factors such as the social origin of MSE owners, their social networks[9] and their membership in business associations seem to matter as well in India and the Philippines – but less so in Egypt. Access to land for production and market diversification (especially towards export markets) emerged as a success factor in Egypt and in India – but less so in the Philippines, where portfolio diversification seems to be more important. BDSs were found to be a success factor in Egypt, whereas we have no such evidence for India or the Philippines (which may be due, however, to the limited outreach and quality of such services in the other two countries) (see Table 2).

Table 2: Success factors: What makes an upgrader?

	Egypt	India	Philippines
Entrepreneur characteristics	• Human capital (education, experience and international exposure of owner) • Individual / family wealth • Motivation • Readiness to take risks • Corporate governance	• Human capital (education, experience and international exposure of owner) • Individual / family wealth • Motivation • Social origin (caste and business family identity)	• Human capital (education, experience and international exposure of owner) • Individual / family wealth • Motivation • Social origin (region) • Readiness to take risks
Firm characteristics	• HRD / workers' welfare • Spending on R&D and market research • Market diversification	• HRD / workers' welfare • Spending on R&D and market research • Market diversification • Location (access to land, electricity and workers)	• HRD / workers' welfare • Spending on R&D and market research • Portfolio diversification
Personal networks		• Social networks	• Social networks
Professional networks	• Integration in GVCs (but few cases!)	• Integration in GVCs • Membership in a business organisation	• Integration in GVCs • Membership in a business organisation
Business environment	• Access to credit • Access to land, electricity and road infrastructure • Access to business development services	• Access to credit • Access to land and electricity	• Access to credit • Political stability (notably in the South)

Source: Hampel-Milagrosa (2014), Loewe et al. (2013) and Reeg (2013b)

9 Social networks are particularly important for MSE owners in the Philippines for getting access to finance, advice, know-how, emotional support, unpaid labour, connections and support for child care. The results for India are somewhat ambiguous, whereas social networks seem to play a much less important role in Egypt: at least for the three sectors that we studied there, we did not find any evidence that differences between entrepreneurs regarding social capital have any impact on their likelihood to upgrade. However, the situation might be different in other economic sectors such as tourism and construction, where there is much anecdotal evidence about the importance of *wasṭa* (connections) for doing business.

This, our third finding, is based on the use of three research tools, which point to the same variables as major factors behind enterprise upgrading in Egypt, India and the Philippines.

(i) Upgraders across the three countries were asked in an open question how they had managed to grow despite all the obstacles, whereas non-upgraders were asked why other companies were more successful in upgrading despite the fact that they all faced similar obstacles. In Egypt, MSE owners were further asked to select what they perceived to be the five main reasons for differences in the upgrading success of MSEs in their country from a closed list of about 30 factors taken from the four layers of the Onion Model. The result was that in all three countries, a clear majority of upgraders *and* non-upgraders attributed differences in the individual likelihood of firms to upgrade mainly to entrepreneur characteristics. And, according to our interviewees in Egypt, India and the Philippines, the most important factors of success in upgrading include the human capital of company owners (education, experience and international exposure) and their ambition / motivation, followed by their readiness to take risks, their investment in marketing, their access to credit and their HRD efforts. In addition, smart corporate governance in Egypt and the strategic use of social and professional relations by entrepreneurs in India and the Philippines were also found to be success factors (see Table 3 for the results from our Egyptian sample).

Table 3: Main factors of success for MSE upgrading according to MSE owners from Egypt

	Answers to our open question	Items selected from a closed list of answers	Answers to either of the two questions
Entrepreneur characteristics			
Education, experience and international exposure of owner	8%	49%	51%
Ambition of owner	18%	43%	51%
Readiness of owner to take risks	5%	25%	27%
Gender of owner	0%	4%	4%
Firm characteristics			
Investment in marketing	14%	10%	20%
Corporate governance	14%	3%	17%
Training of, incentives for or participation of workers	16%	0%	16%
Specialisation	7%	0%	7%
Rationalisation	5%	0%	5%
Formality status	0%	4%	4%
Personal and professional networks			
Cooperation with other firms	0%	6%	6%
Business environment			
Access to finance	12%	9%	19%
Bribery and favouritism	6%	0%	6%
Access to BDSs	0%	6%	6%
Access to insurance	0%	3%	3%

Source: own data collected for Loewe et al. (2013 Tables A13–A14)

(ii) Upgraders were compared with comparable non-upgraders with regard to these same variables (e.g. level of education, formality status, access to credit, membership in business organisations, etc., see Table 4). The differences between the two groups were particularly

significant regarding the levels of formal education, international exposure, investment in HRD, investment in marketing, access to credit and access to BDSs (which may, however, include credit as well). Differences between upgraders and non-upgraders in having inherited their firms from their families and in "bribing when necessary" are also significant but contradictory. These factors seem to have a positive effect on upgrading in India and the Philippines but a negative one in Egypt – or the correlation is due to reverse causality in one or more of the three countries. Formalisation and membership in business organisations was found to also correlate positively with upgrading, but the in-depth part of our interviews with MSE owners gave us the impression that this is indeed due to reverse causality.

Table 4: Correlation of MSE upgrading with selected independent factors

Proportion of companies with the following characteristics	Egypt			India			Philippines		
	Up-grader	Non-up-grader	Signi-ficance (t-test)	Up-grader	Non-up-grader	Signi-ficance (t-test)	Up-grader	Non-up-grader	Signi-ficance (t-test)
Entrepreneur characteristics									
Female owner	28%	10%	**	5%	4%		66%	48%	
Owner has university degree	80%	63%	*	83%	47%	***	81%	24%	***
Owner has had international exposure	70%	48%	**	52%	20%	***	62%	4%	***
Company was inherited	18%	28%		57%	39%	**	86%	26%	***
Firm characteristics									
More than 20% of workers have enjoyed formal training	25%	5%	**	n/a	n/a	n/a	100%	2%	***
Company is formalised	93%	75%	**	100%	39%	***	100%	15%	***
Invests in market information	n/a	n/a	n/a	52%	22%	***	90%	37%	***
Personal and professional networks									
Is member of a business association	28%	18%		86%	27%	***	81%	6%	***
Is located in a cluster	23%	18%		n/a	n/a	n/a	n/a	n/a	n/a
Cooperates with similar companies	48%	33%		31%	14%	**	95%	44%	***
Business environment									
Has received BDSs from the state or NGOs	33%	5%	***	48%	24%	**	71%	62%	
Has received a bank loan	13%	3%	*	60%	12%	***	5%	2%	
Has ever bribed	40%	55%	*	74%	35%	***	33%	90%	***
Has problems with power supply	20%	20%		71%	47%	**	n/a	n/a	n/a
Has problems with transportation	48%	43%		10%	22%		19%	31%	

*** / ** / * = t-test shows statistical significance at the 1% / 5% / 10% confidence level.

Source: Hampel-Milagrosa (2014), Loewe et al. (2013) and Reeg (2013b)

(iii) Panel data from two rounds of representative enterprise surveys conducted in Egypt in 2004 and 2008 were used for a logit estimate on the impact of selected independent variables on the propensity of a firm to upgrade (unfortunately, no panel data are available on MSEs in India or the Philippines). The dependent variable was constructed as a dummy depending on both innovation and firm growth. Table 5 shows that this technique of analysis points mainly to the effects that workers' training, investment in R&D, target-market diversification (share of exported products) and access to credit have on upgrading. Considering licensing as the main obstacle for enterprises was also found to correlate significantly with the likelihood of an MSE to upgrade, but this correlation seems to be positive – at least in Egypt – which would mean that companies complaining mainly about problems concerning business licensing do not have much reason to be complaining at all: their main problem is minor compared with the problems that other enterprises face.

Our results are ambiguous with regard to the gender of owners, formality and the age of MSEs.

We did not find evidence that female ownership negatively impacts MSE upgrading – at least in Egypt and in the Philippines. It is true that most MSEs are still run by males. But the share of women entrepreneurs was even somewhat higher (but not statistically significant) among upgraders than among non-upgraders in both countries (Tables 3 and 5). In addition, most women entrepreneurs interviewed in Egypt and the Philippines stated that being female was an advantage rather than a disadvantage for their business. According to them, the low number of women entrepreneurs is due to negative notions about women's participation in economic activities rather than objective constraints. However, once a woman runs an enterprise, she gains the same level of respect as a man. In India, by contrast, we cannot say for sure, as we were not able to interview more than four female entrepreneurs. This may hint to uneven opportunities for men and women as entrepreneurs, but it can also be due to a gendered selection bias. In-depth interviews suggest that some sectors (e.g. leather and footwear) seem to be inaccessible for women entrepreneurs in general.

For informality, we found a statistically significant correlation with upgrading across the three countries. However, this correlation is probably due to reverse causality, that is, informal companies that had grown or decided to grow had sooner or later decided to formalise. Many owners of formal and informal MSEs stressed that formalisation did not constitute a barrier to growth. Informality would thus be a deliberate choice of most micro and small entrepreneurs, because they perceive the disadvantages of formality to outweigh its advantages. Once companies upgrade, they reconsider their formality status and often gradually formalise when they believe that the advantages of formality have gained in importance.

The age of an MSE is obviously correlated with its likelihood to upgrade, but this correlation is non-linear, and age is not the independent variable in the correlation. After their founding, MSEs must first get settled and organised; normally, they do not yet have the capacity to expand substantially. The likelihood of upgrading is greatest after this start-up phase, which may last one to four years, but then diminishes steadily over time: if MSEs have the potential to upgrade, they will try to do so as soon as possible rather than wait.

Table 5: Logit estimations for "upgrader" dummy as the dependent variable for MSEs in Egypt – based on panel data from two rounds of the Egypt Investment Climate Survey (2004 and 2008)				
Independent variables	**1**	**2**	**3**	**4**
Female owner (dummy)	0.225 (0.324)			
Single shareholder (dummy)		-0.00426 (0.00448)		
Years of top manager's experience		0.00516 (0.0116)		
Size of company (total number of employees)	-0.000266 (0.000690)			
On-the-job training for workers available (dummy)	0.702** (0.302)		0.703** (0.301)	
Has specialised R&D department (dummy)		0.646** (0.310)		0.576* (0.306)
Independent variables	**1**	**2**	**3**	**4**
Use of foreign technology (dummy)	0.257 (0.392)		0.190 (0.400)	
Located in an industrial zone (dummy)	0.336 (0.306)		0.209 (0.312)	
Share of products sold domestically	-0.0170*** (0.00442)		-0.0164*** (0.00445)	
Access to external finance (dummy)	0.624* (0.330)		0.555* (0.322)	
Access to insurance (dummy)	-0.115 (0.306)			
Main obstacle is infrastructure (dummy) +			0.372 (0.488)	0.182 (0.478)
Main obstacle is access to labour (dummy) +			0.0125 (0.810)	0.0738 (0.785)
Main obstacle is access to finance (dummy) +			0.217 (0.542)	0.513 (0.510)
Main obstacle is illegal competition (dummy) +			-0.627 (0.780)	-0.592 (0.771)
Main obstacle is uncertain macro-economic or political situation (dummy) +			0.544 (0.379)	0.612* (0.367)
Main obstacle is corruption (dummy) +			-0.0830 (0.601)	0.0296 (0.587)
Main obstacle is business licensing (dummy) +			1.487** (0.698)	1.498** (0.662)
Main obstacle is other factor (dummy) +			-0.556 (0.663)	-0.551 (0.648)
Constant	-1.159** (0.454)	-2.261*** (0.383)	-1.361*** (0.485)	-2.545*** (0.273)
Observations	625	610	625	628

Table 5 (cont.):	**Logit estimations for "upgrader" dummy as the dependent variable for MSEs in Egypt – based on panel data from two rounds of the Egypt Investment Climate Survey (2004 and 2008)**
Standard errors are in parentheses. *** / ** / * = significant at the 1% / 5% / 10% confidence level. The estimates use data from two rounds of representative EICSs conducted in 2004 and 2008 (Enterprise Surveys 2004 / 2008). Each round covered about 1,000 systematically selected enterprises but panel data exist for only slightly less than 700 of them because 300 companies had disappeared for unknown reasons between 2004 and 2007 and had to be replaced by other ones. The "upgrading" dummy variable was constructed from the difference between the data for 2004 and 2008: it was set as "1" for companies that grew by at least 40 per cent (i.e. 10 per cent per year) in their number of employees and also introduced at least one type of innovation; otherwise "0". For the independent variables, we used only data from 2004 in order to control for possible reverse causality. + In models 3 and 4, "Main obstacle is the tax system" is the reference category for the other obstacles.	
Source: Loewe et al. (2013, Annex C)	

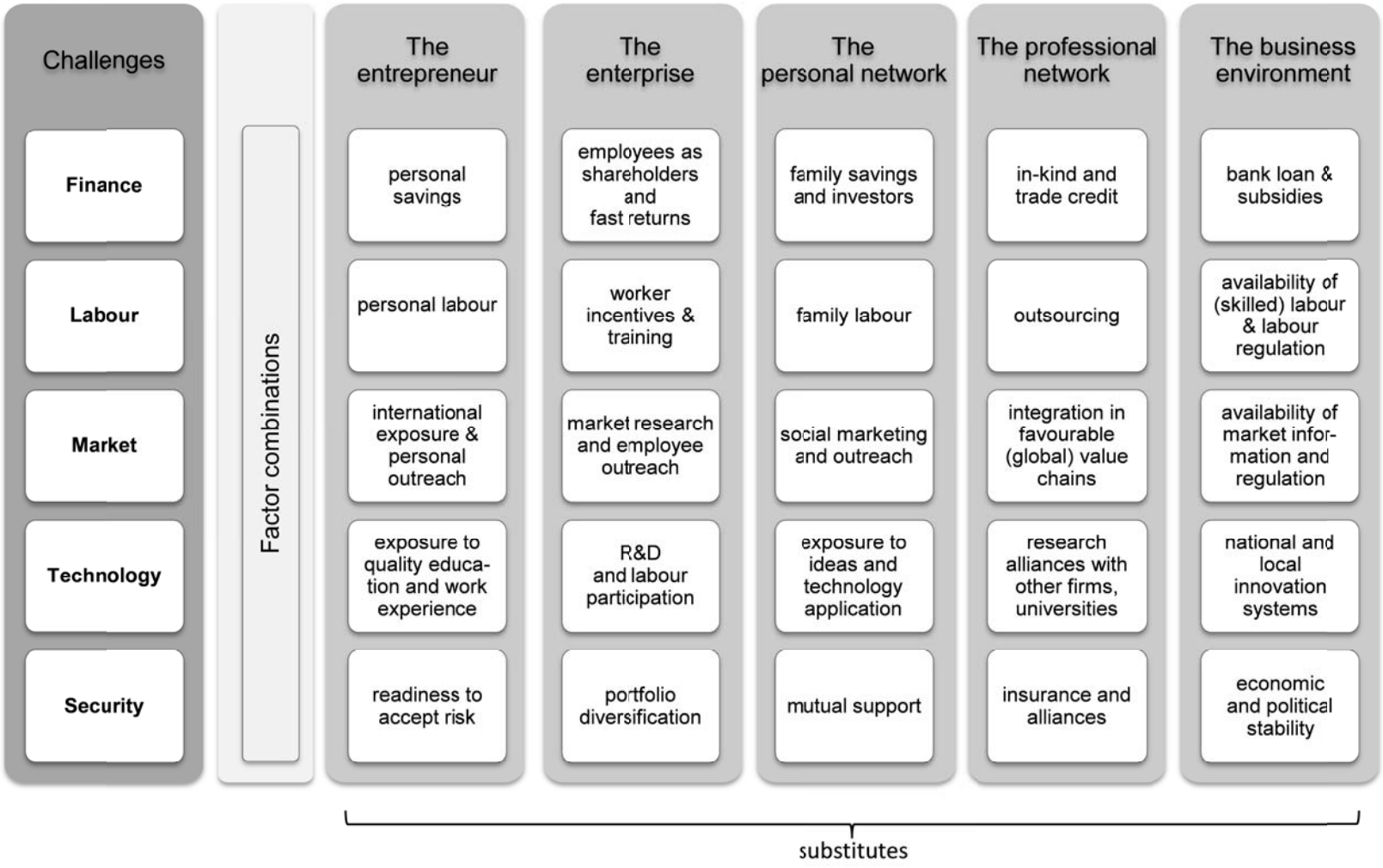
Hence, if an MSE does not upgrade during the first five years, it becomes less and less likely that it will ever upgrade – unless there is a change in ownership or management. For example, in the case of an upgraded family business in India, a change in management – in most cases the handover of the business from the father to the son – led to considerable growth dynamics in the firm.

Our *fourth finding* is that upgrading requires a *combination of success factors* for most MSEs in the three countries. Entrepreneurs find themselves confronted with different challenges that must be dealt with simultaneously in order to upgrade. According to the results of our interviews, these challenges can be grouped under five main headings: obtaining finance; access to labour; markets; technology; and a minimum level of reliability / security (see Figure 3).

However, there are different options for entrepreneurs to address each of these five challenges (see Figure 3). Each option is to some extent related to different layers of the Onion Model portrayed in Figure 1. Production technology, for example, may be readily available for MSEs for free or for sale from the *business environment* (national innovation systems, research institutions, machinery suppliers, etc.). But MSE owners could also be very creative and develop their own ideas about how to manufacture their products (which would be an *entrepreneur characteristic*). Or they could set up an R&D department to develop a suitable production technology (*enterprise characteristic*) or acquire the necessary know-how from their foreign purchaser (*business networks*).

The way in which entrepreneurs combine solutions for each of the five challenges depends strongly on their context, because the availability of these "success factors" differs from one sector and country to the other. Still, MSEs operating in the same context (country, region, sector, etc.) tend to use very similar strategies for mastering each of the five big challenges mentioned above, so one could say that a specific combination of success factors characterises MSEs of the same kind in a given country. The following section presents examples for such kinds of "combinations of success factors".

Figure 3: Possible combinations of success factors



Source: Own design

The *fifth finding* is that *entrepreneur characteristics tend to be the cornerstones* of these factor combinations. The bulk of MSE owners rely on their own education, work experience, international exposure, motivation, risk-readiness and savings for their upgrading strategies. The majority of key success factors listed above belongs to the core of our Onion Model (see Figure 1). Most of the other key success factors are also contingent upon the personalities of entrepreneurs: MSE owners need a certain level of education, experience and possibly even international exposure to understand how important it is to invest in social networks, R&D, marketing and workers (training, provision of incentives, participation in decision-making) and to have a well-framed firm strategy (e.g. on market orientation or portfolio diversification). They also need certain levels of education and risk-readiness in addition to access to finance in order to be able to successfully implement all this. Finally, even access to finance often depends much more on demand-side factors (such as the financial literacy of entrepreneurs or their ability to draw up a proper business plan) than on supply-side factors (provision of credit by banks or other organisations).

The reason is that, due to chronic imperfections in the business environment of low- and middle-income countries, entrepreneurs have to take it upon themselves to compensate for the deficits in the system. They must invest their own capital to offset difficulties in obtaining credit. They must train their workers on the job to compensate for the low quality and limited outreach of the vocational training system. They must be willing and able to accept high risks because of severe deficits in the rule of law. And so forth.

As a consequence, and this is our *sixth finding*, there is glaring inequality regarding opportunities for MSEs to upgrade. The requirements for coping with the chronic imperfections in the business environment are unequally distributed across the population. Only the most privileged – those who have enough capital, good education, international experience, relevant work experience, motivation and enough security to accept risks – are able to circumvent structural constraints, whereas the huge majority of less fortunate entrepreneurs fail. In other words: the entrepreneur her- / himself makes the difference!

5 Showcases of successful upgrading strategies

In the following, we present upgrading trajectories that are typical for MSEs in specific sectors of the three examined countries: ICT companies in India, food processors in the Philippines and textile and garment producers in Egypt. These three examples showcase how upgraders have made use of particular factor combinations to tackle their main challenges and developmental constraints.

Apparently, the central element of all of these combinations of success factors is in the very core of the Onion Model presented in Figure 1: *entrepreneur characteristics*. A large number of MSEs in Egypt, India and the Philippines rely heavily on the interactions of a well-informed, educated and socially embedded entrepreneur using his own resources as well as his own personal networks to compensate for multiple dysfunctions in the outer layers of the Onion Model – in particular in the business environment.

Although this “entrepreneur-driven” upgrading is observed in all three countries, there are, in fact, differences between the countries regarding the intensity with which entrepreneurs

make effective use of their networks. As a consequence, our *seventh and last finding* is that there are significant differences in the degrees to which MSEs can tap the support of their personal and professional networks to help them cope. Entrepreneurs in India and the Philippines are able to compensate to some extent for deficits in the business environment by using mutual aid and action: to some degree, they exchange funding and knowledge, convinced that cooperation pays off in the long run. In contrast, in Egypt entrepreneurs are much more reluctant to invest in, and rely on, their personal and professional networks. This does not mean at all that people in Egypt are different from those in India and the Philippines. Rather, the framework conditions do not reward joint action. Whereas entrepreneurs in India and the Philippines have apparently learnt that they can benefit from investments in social capital, many of those in Egypt explain that they have had (or heard much about) bad experiences with the provision of mutual support (e.g. partners have not paid back what they were given). In the end, the behaviour of entrepreneurs in Egypt is due to deficits in the rule of law: in Egypt, legal procedures are even more lengthy and unreliable than in India and the Philippines, with the effect that it is even more difficult for entrepreneurs to have their contracts enforced.

5.1 The ICT sector in India and the challenge to access markets

In the last three decades, India has developed an internationally competitive ICT sector. With the improvement of the information technology and telecommunication infrastructure, as well as the supply of educated manpower through the establishment of the Indian Institutes of Technology, 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 United States to work on assigned projects (also called "body shopping") within multinational subsidiaries led to the development of an ICT diaspora, which has gained substantial exposure in developing technical, industry as well as domain experience. Due to low initial investment costs, the ICT service industry provided opportunities for first-generation entrepreneurs to start their own small companies. Yet, a major challenge for ICT start-ups is access to profitable markets. Many segments of the Indian ICT market are still too small to allow for MSEs to access a reliable base of clients and buyers. Most public organisations and larger companies buy reputed international products, whereas smaller companies prefer low-cost providers. Thus, breaking into the more profitable domestic markets as a smaller "no-name" IT start-up without having a direct linkage is quite challenging.

Upgraders had to compensate for the lack of accessible domestic market opportunities by developing two main coping strategies: either accessing international business (i) directly, or (ii) by establishing entry to the very few profitable business opportunities in the national market. For these strategies to unfold, upgraders initially used factors at the *entrepreneur*, *personal network* and *professional network* layers. At a later stage, factors associated with the *enterprise* layer were added.

These factors were most prominently the entrepreneurs' quality education at reputable graduate schools, their subsequent work exposure in international lead firms as well as their ability to instrumentalise *personal* as well as *professional networks* to gain market access. Indeed, most upgraders knew their international clients before starting their enterprises. This is because entrepreneurs build strong informal networks while employed

in international lead firms. Also, whether initial clients were located in India or abroad was irrelevant. However, the strategic decision to initially focus on one or two strategic partners helped small enterprises to build stronger reputations. With these strategic partners, upgraders reported gaining crucial learning experiences that helped their firms. Above all, the strong cooperation with lead firms allowed micro and small ICT companies to become more visible to other market participants.

Further, with the development of stronger market visibility, upgraders started to invest in more professionalised in-house market research, marketing and sales. Thus, at this point, factors at the *enterprise level* became instrumental to broaden market coverage and to expand the business beyond the established base of clients. However, *personal networks* were reported to have remained the main marketing channels for extending the client base. Yet, extending the client and market bases was not random, but rather 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 have conflicted with the short-term need to customise certain activities. It seems that successful companies have rejected business or individual requests in order to save genuine software products from falling into the customisation trap, instead of having it become 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 as possible.

5.2 The food processing sector in the Philippines and the challenge to get well-educated and skilled workers

Philippine food manufacturing – including the food processing sector – is the country's biggest industry. In 2009, the industry accounted for around 40 per cent of total manufacturing output, represented a gross value added of more than US$ 2 billion and exhibited an annual growth rate of 9.7 per cent from 1999 to 2003, with processed fruits such as mangoes, bananas and pineapple contributing the biggest share in processed food export at 32.7 per cent.

A common challenge for food processors is the lack of educated and skilled workers. Although food processors would prefer more highly educated or skilled employees, most of their workers are either primary or secondary school graduates who do not possess the relevant training. To overcome this constraint and increase their chances of success in upgrading, entrepreneurs use a combination of factors that encompass several layers of the Onion Model. Their most intensive efforts appear to focus on the first three layers of the model – investing in themselves and HRD for their employees first, then reaching out to their networks later.

Although some of the entrepreneurs had food processing degrees, many did not. Thus, at the level of *entrepreneur characteristics,* the owner prioritises learning the skills of the trade or improving his existing knowledge. A common undertaking of all upgraded entrepreneurs is to frequently participate in seminars and short-term courses to update their previous learning and skills. Investing in learning allows the entrepreneur to

effectively lead production and innovation, but also to replace an employee and use one's own labour when necessary. Furthermore, at the *enterprise level,* as a strategy to hedge against the lack of available skilled workers in the labour market, entrepreneurs were found to send their key employees to trainings as well as involve them in operational, technical and planning activities within the firm. At the *networks level*, entrepreneurs were found to frequently tap into personal and professional networks to overcome labour constraints. Family members, as part of the *personal network,* are the usual source of unpaid labour until skilled workers are found or replaced. Moreover, since they technically operate within the same sector, upgraders commonly contact other *professional networks* for referrals on qualified former employees to take in. Professional networks (including networks from within the government) have also been tapped for information on the different kinds of employee skills-training on offer from both public and private agencies.

Finally, as a strategy at the enterprise level, successful entrepreneurs were found to provide incentives to keep skilled workers in the company. Absorbing monthly costs such as social security and health insurances, providing benefits, being flexible during workers' family emergencies and hosting social events in-house are measures that effectively limited the rapid turnover of skilled employees.

5.3 The textile and garments sector in Egypt and the challenge to access finance

The textiles and garments industry is one of the oldest manufacturing sectors in Egypt and continues to be one of the most important ones. Textile production started early in the 20th century when Egypt was still controlled by the United Kingdom. It benefitted from cheap labour, proximity to European and Asian markets and the outstanding quality of Egyptian cotton. These production advantages still play a role, but the competition from East and South Asia has become very tough because labour productivity is much higher in these regions compared to Egypt. Nevertheless, textiles and garments accounted for 27 per cent of Egypt's total industrial output and 14 per cent of all non-petroleum exports in 2008, and 76 per cent of all producers were MSEs (CAPMAS 2009; Oxford Business Group 2012, 118).

The main concern for MSEs in the textiles and garments sector is access to finance – much more than in the other sectors studied (food processing and ICT). This holds true in particular for textile producers, which need comparatively expensive machines. The *business environment* (outer layer of the onion portrayed in Figure 1) fails to provide adequate credit and venture capital to the majority of MSEs. One reason is that the Egyptian banking system is rigid and underdeveloped. The level of competition is still low, with just a few large lending institutions dominating the sector. In addition, banks are extremely cautious – they prefer to lend to the government or large companies rather than to MSEs. Also, bank employees are not well trained to assess the business plans of MSEs; instead, they require levels of collateral that most MSE owners cannot provide (Loewe et al. 2013, 154–161).

But much of the problem lies also on the demand side. Many MSE owners are afraid of taking a loan (because they might not be able to pay it back) or they refuse to pay interest in general. Others do not know how to apply for credit or to fill in credit request forms,

whereas others are unable to provide financial documentation about their businesses or a proper business plan.

Egyptian MSEs must resort to other sources of funding. But, in contrast to their Indian and Philippine peers, only a few are granted credit from their customers or suppliers (i.e. from the *professional networks* layer of our Onion Model), and hardly any take up informal loans from friends, neighbours or relatives (i.e. from the *personal networks* layer). This is symptomatic of the coping strategies of Egyptian MSEs in general, which very rarely tap their social or business networks for mastering any of the challenges displayed in Figure 3 (finance, labour, markets, technology, security). The reason is the low level of mutual trust between companies and individuals in Egypt. MSEs are very reluctant to cooperate in any way because it is very difficult to enforce contracts – for example, to reclaim a loan. Many have had bad experiences in this regard, as legal procedures tend be lengthy and arbitrary. Deficits in the rule of law are, hence, once more the root of the problem.

So how do Egyptian entrepreneurs overcome the challenge of the lack of access to finance? Some MSE owners tap informal sources of credit, such as, for example, money lenders, but they have to pay considerable interest rates. The bulk of MSEs have no access to finance besides their own funds (i.e. from the core of our Onion Model) – with the result that more affluent MSE owners have greater upgrading potential. Many textile producers can therefore only survive because they have inherited a factory from their fathers or grandfathers and can still use the old machinery. Especially in traditional clusters of textile production, many of the engines date back to the 1920s and 1930s. But when these break down, only the more affluent entrepreneurs can afford new ones. Start-ups have hardly any chance to establish themselves in the textiles sector unless they have an alternative source of finance (e.g. another enterprise in a different sector) from which they can cover the necessary investments.

6 Conclusions and policy recommendations

This paper set out to explore why upgrading seems to be difficult for micro and small enterprises in many low- and middle-income countries and to identify "success factors" that explain why some MSEs manage to upgrade despite the general difficulties. To this end, we employed the four-layer Onion Model, which systemises entrepreneur and enterprise characteristics, personal and professional networks, and the business environment, for investigating upgrading dynamics in Egypt, India and the Philippines.

Despite apparent differences in the framework conditions among MSEs, our findings manifest a high degree of consistency across three countries. We found that micro and small enterprises in Egypt, India and the Philippines are confronted with very similar constraints to upgrading and yet, despite all identified constraints, upgrading is still possible for some of them. The likelihood to upgrade is higher for businesses where the entrepreneur is better endowed with human capital; has higher motivation and risk-taking ability; is willing to invest in human resource development, R&D and market research; and possesses personal wealth or easy access to family finance. Integration of the enterprise into global value chains also seems to increase upgrading likelihood. We found that enterprise upgrading is made possible when entrepreneurs develop strategies from a combination of success factors that allow them to simultaneously overcome a range of challenges. Although the exact combination of factors strongly depends on the

entrepreneurs' contexts due to sector- and country specificities, our research provides evidence that the cornerstones of these factor combinations are based on entrepreneurial characteristics. Most key success factors that we found are *entrepreneur characteristics*, which are at the core of the Onion Model, and most others are contingent on entrepreneurial characteristics as well. This points us to our last finding – that there exists an evident inequality of opportunity for MSEs to upgrade, because the fundamental requirements for overcoming upgrading constraints are unequally distributed across the population.

Thus, the three country studies have led us to conclude that the entrepreneur matters much more than what recent literature would lead us to believe. As a consequence, even if governments continue to improve the business environment, this does not automatically translate into success for a large number of MSEs. There is no question that the business environment is also important, but inequality of opportunity is going to prevail as long as governments are unable or unwilling to compensate actively for the uneven distribution of financial, human and social capital through the provision of quality education, quality training, and access to finance and market information for all. Unless governments address these structural issues, the number of upgraders will remain limited and the problem of the missing middle will prevail. Efforts to improve the business environment should be continued, but for MSE upgrading, the following policy directions that aim to create a level playing field may be even more important:

Education. Public education systems must be overhauled in a way that they promote creativity, imagination, analytical abilities, critical thinking and other skills needed for entrepreneurship. One way to achieve this is to promote basic primary schooling as fundamental entrepreneurship policy. Without basic primary education, individuals will face strong entry barriers to starting and running an enterprise later on. Moreover, at higher education levels, the coverage of vocational training programmes should be extended. Governments should raise awareness among entrepreneurs about the importance of human resource development.

Work experience. Prior to starting or taking over a business, industry exposure is critical for entrepreneurial success. Programmes that expose exceptional university graduates and high-performance employees to entrepreneurship training can therefore tap into a very fruitful source of entrepreneurship experience. Also, regarding loan applications, former industry credentials should play a crucial role in supporting the business case.

Human resource development. Governments should consider supporting firms in providing on-the-job training to their workers and raising entrepreneurs' awareness of the importance of human resource development (for example, workers' training, improvements in labour conditions, non-wage benefits, participation of workers in decision-building) as a means to gain worker loyalty towards a firm.

Access to markets. Policy-makers are encouraged to make information on local and foreign markets available to all MSEs and help them to link with larger domestic and foreign firms. Enabling MSEs to participate in established fairs or market their services in local and national media will help in overcoming the lack of visibility that most MSEs suffer from.

Access to finance. Governments should encourage banks to provide more credit to MSEs and improve the financial literacy of MSE owners with an eye towards strengthening their

capacities to apply for credit. Incentivising bankers to develop targeted financial products for “opportunity” and “necessity” entrepreneurs is another strategy. Moreover, in order to improve the quality of financial services, it is necessary to improve the local information and knowledge infrastructure of banks assisting MSEs. Industry associations might play an important role in facilitating know-how on trends and business opportunities for financial institutions.

Rule of law. Governments should enhance the rule of law by strengthening the accountability of public sector employees and the provision of incentives for better compliance by everybody with existing laws and regulations.

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