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Which factors determine the upgrading of small and medium-sized enterprises (SMEs)? The case of Egypt

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Studies

Which Factors Determine the Upgrading of Small and Medium-Sized Enterprises (SMEs)?

The case of Egypt

Markus Loewe
Iman Al-Ayouty
Annegret Altpeter
Lisa Borbein
Marc Chantelauze
Maximilian Kern
Elisabeth Niendorf
Malak Reda

In co-operation with the Egyptian Center for Economic Studies (ECES)

Which factors determine the upgrading of small and medium-sized enterprises (SMEs)?

The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) is a multidisciplinary research, consultancy and training institute for Germany's bilateral and for multilateral development cooperation. On the basis of independent research, it acts as consultant to public institutions in Germany and abroad on current issues of cooperation between developed and developing countries. Through its 9-months training course, the German Development Institute prepares German and European university graduates for a career in the field of development policy.

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Studies
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Abstract

Many low- and middle-income countries have many micro and small but only a very few medium-sized and large enterprises. Micro and small firms seem to have difficulties growing into medium-sized companies. This is problematic because it is medium-sized companies that tend to be the main creators of higher quality and better-paid employment, motors of innovation and economic diversification, and future exporters.

Companies grow for various reasons that are beyond their control, such as an increase in demand or failures of competitors. However, the only strategy that an enterprise can control is growth through innovation, which we term 'upgrading'.

A large strand of literature discusses the factors that favour or hamper the upgrading of small and medium-sized enterprises (SMEs): entrepreneur characteristics (education, gender, behaviour, etc.), firm characteristics (sector, location, workforce characteristics, etc.), inter-firm linkages (integration into value chains, clusters or business networks) and the business environment (macroeconomic and political stability, regulation, availability of finance, etc.). However, only a few studies provide empirical evidence for determining the most significant factors for SME upgrading in low- and middle-income countries.

This study is meant to fill this gap thereby referring to Egypt. It is based on enterprise panel data from 2004 and 2008, a survey conducted by the authors in early 2012 among 102 SMEs and interviews with experts on private-sector development. It draws five main conclusions:

- The scarcity of medium-sized enterprises in Egypt is not only due to the difficulty of SMEs to upgrade but also to their challenges in remaining medium-sized – or large.
- In Egypt the main determinants for upgrading are the entrepreneur's: (i) human capital (quality of education, work experience and international exposure), (ii) motivation and readiness to take risks, (iii) investment in human resources, (iv) market research, (v) access to finance and (vi) ability to deal with persistent deficits in the rule of law.
- SMEs in Egypt are also constrained by the business environment, notably problems in state-business interactions such as licensing, taxa-

tion, inspections and competition control. But these problems are mainly due to deficits in law enforcement rather than what these procedures cost in time and money.

- While integration into value chains and clusters might help SMEs to upgrade, the great reluctance of Egyptian entrepreneurs to co-operate with each other means that they cannot benefit from the advantages of vertical or horizontal business linkages.
- The success of an SME largely depends on the owner's capabilities. All SME owners in Egypt are constrained by structural factors such as deficiencies regarding education, skilled workers, market information, access to finance and law enforcement. However, a few SMEs manage to circumvent these obstacles.

To enable more SMEs to upgrade, the government of Egypt should improve its educational and vocational training system, help entrepreneurs conduct human resource development and market research, ease SME owners' access to finance and strengthen the rule of law.

Foreword

This report presents the findings of a research project on the determinants of the upgrading of small and medium-sized enterprises (SMEs) in Egypt. It was conducted between November 2011 and May 2012 by an eight-member team from the German Development Institute/ Deutsches Institut für Entwicklungspolitik (DIE) in Bonn and the Egyptian Center for Economic Studies (ECES) in Cairo. The team included Markus Loewe (DIE), the team-leader, and seven other researchers: Iman Al-Ayouty and Malak Reda from ECES, as well as Annegret Altpeter, Lisa Borbein, Marc Chantelauze, Maximilian Kern and Elisabeth Niendorf from DIE.

The research project on Egypt was part of a larger cluster of DIE research projects on SME upgrading in low- and middle-income countries. Projects using similar research methodology were conducted in the Philippines and India, which will also be published by DIE in 2013.

The findings of the case study on Egypt were presented at a workshop at ECES on 24 April 2012 in Cairo and during a conference held at the Arab Academy for Science, Technology and Maritime Transport on 26 June 2012 in Alexandria. The results received a lot of attention in the Egyptian media; for example, the front-page story of the June 2012 issue of *Business Today Egypt* was devoted to the DIE–ECES study (Aref 2012). The study was also presented for discussion, along with the two case studies on India and the Philippines, on 29 May 2012 at the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Eschborn, Germany and at an academic workshop at DIE on 28 November 2012 in Bonn.

The DIE–ECES research project had two major objectives: (i) to provide empirical evidence for academic debate on the determinants of SME upgrading and (ii) to learn which factors policy-makers should focus on so as to facilitate the upgrading of SMEs in Egypt.

This report addresses academics, journalists and policy-makers such as the government of Egypt, independent private-sector associations, non-governmental organisations and foreign donors that would like to contribute to the field of SME development.

Of course, the special conditions of post-revolutionary Egypt have significantly affected both the conduct and the results of this research. Many in-

terlocutors cited the post-revolution downturn of the Egyptian economy as a major problem – not just for SMEs. Since this shock affected almost everyone in the country, it cannot be regarded as a factor that specifically constrains SMEs from upgrading. It was sometimes difficult to isolate the effects of this one-time general shock from the effects of more structural and long-term factors.

All names of persons are spelled as the individuals wish. The names of towns and other geographical terms have been transliterated into English in the most common fashion.

By agreement, the names of all SME representatives and their companies have been changed. We do not quote any of the interviewed SME owners by their name or by the name of their company. We have promised them beforehand to treat all information given by them confidentially.

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Thank you very much for your support!

Bonn, November 2012

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Iman Al-Ayouty

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Abbreviations

AfDB	African Development Bank
AFESD	Arab Fund for Economic and Social Development
AIDS	acquired immunodeficiency syndrome
AUC	American University in Cairo
BDS	business development service
BoH	bundles of hypotheses
BTI	Bertelsmann Transformation Index
CAPMAS	Central Agency for Public Mobilization and Statistics
CBE	Central Bank of Egypt
CGC	credit guarantee company
CIDA	Canadian International Development Agency
CIPE	Centre for International Private Enterprise
CIS	co-operative insurance society
DIE	Deutsches Institut für Entwicklungspolitik / German Development Institute
DFID	Department for International Development
EBI	Egyptian Banking Institute
ECA	Egyptian Competition Authority
ECES	Egyptian Center for Economic Studies
EGP	Egyptian Pound
EICS	Egypt Investment Climate Survey
ERF	Economic Research Forum
ETTIC	Egyptian Technology Transfer and Innovation Center

EU	European Union
FDI	foreign direct investment
GACC	German-Arab Chamber of Commerce
GAFI	General Authority for Investment and Free Zones
GCR	Global Competitiveness Report
GDP	gross domestic product
GEM	Global Entrepreneurship Monitor
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GTZ	German Technical Co-operation
GVC	global value chain
HDI	Human Development Index
HDR	Human Development Reports
HIC	high-income country
HIV	human immunodeficiency virus
HR	human resource
HRD	human resource development
ICT	information and communications technology
IDA	Industrial Development Authority
IDLM	Institut de la Méditerranée
IDRC	International Development Research Centre
IDSC	Information and Decision Support Center
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
ILO	International Labour Organization
IMC	Industrial Modernisation Centre
IMF	International Monetary Fund

ISIC	International Standards Industrial Classification
ITIDA	Information Technology Industry Development Agency
IPO	Initial Public Offering
LIC	low-income country
MCIT	Ministry of Communications and Information Technology
MENA	Middle East and North Africa
MFI	microfinance institution
MFTI	Ministry of Trade and Industry
MIC	middle-income country
MoF	Ministry of Finance
MoIFT	Ministry of Industry and Foreign Trade
MSEs	micro and small enterprises
MSMEs	micro, small and medium-sized enterprises
NDP	National Democratic Party
NGO	non-governmental organisation
NILEX	Nile Stock Exchange
OBM	original brand manufacturer
ODM	original design manufacturer
OECD	Organisation for Economic Co-operation and Development
OEM	original equipment manufacturer
OLS	ordinary least squares
PBDAC	Principal Bank for Development and Agricultural Credit
QIZ	Qualifying Industrial Zones
R&D	research and development
SCAF	Supreme Council of the Armed Forces
SFD	Social Fund for Development

SMEs	small and medium-sized enterprises
TVET	Technical and Vocational Education and Training System
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSTATS	United Nations Statistics Division
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
USAID	United States Agency for International Development
WEF	World Economic Forum

Executive summary

Most low- and middle-income countries are characterised by the phenomenon of the so-called *'missing middle'*. These countries have a huge number of micro and small enterprises and only a few larger companies, which are not well linked to the smaller ones. In particular, companies in the medium-sized segment are rare. Egypt is a typical case for this phenomenon: More than 90 per cent of Egyptian firms are micro enterprises, which is at least partly due to difficulties that small firms face in growing and transforming into medium-sized companies. In Egypt, medium-sized businesses provide only 3 per cent of total employment (CAPMAS 2006), which is a problem because medium-sized companies usually create most of the higher-quality and better-paid jobs, are motors of innovation and economic diversification and are firms that could begin to export sometime in the future (El-Megharbel 2008). A large strand – of mainly theoretical – literature discusses why only a very few small and medium-sized enterprises (SMEs) manage to upgrade, that is, to innovate and grow. Many factors are suggested – ranging from the gender of the owner to the national tax system – but no literature explains *which* factors are the *most important.*

This study seeks to redress the deficit by giving an answer to the question: *What are the main determinants of upgrading for small and medium-sized enterprises (SMEs) in Egypt?* There are two aspects to the research question:

Which factors explain why upgrading seems to be particularly difficult for SMEs in Egypt? (macro-perspective identifying structural factors)

Which factors explain why some SMEs manage to upgrade better than others despite the general difficulties? (micro-perspective identifying individual/ differentiating factors)

This study was conducted to provide empirical evidence for answering these questions but also to offer policy recommendations. Focused on Egypt, it is mainly based on empirical research conducted during its eight authors' three-month mission to the country in early 2012. The study is part of a larger research initiative of the *German Development Institute/ Deutsches Institut für Entwicklungspolitik (DIE)* on SME

upgrading. Two other studies using similar research methodology were conducted simultaneously in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

SME upgrading and its factors: the conceptual framework

In this study, 'upgrading' is understood as *successful* innovation – innovation that induces an increase in any target variable such as the company's returns, sales, assets or number of employees. The term contains 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 grow, and we wanted to focus on growth through innovation, the only growth strategy that entrepreneurs can control.

Innovation can mean the launch of a new or improved product *(product innovation),* improvement in the production process *(process innovation),* introduction of a new packaging, labelling or marketing method *(marketing innovation),* an enterprise's participation in new stages in the value chain *(functional innovation),* or its entry in a new sector *(sectoral innovation)*. Innovation enables firms to gain advantages over their competitors for a period of time, thereby generating 'innovation rents' and growth.

Different strands of literature stress the *role of different factors* in determining whether a single SME can upgrade (micro-perspective) respectively whether it is generally easy for SMEs in one country or region to upgrade (macro-perspective). These factors can be grouped into four broad categories:

Entrepreneur characteristics (the gender, human capital, social capital, family background and behavioural characteristics/personal qualities of the SME owner),

- *Firm characteristics* (the age, size, sector, location, workforce characteristics, product portfolio, strategy and formal status of the SME),

- *Inter-firm linkages* (the integration of an SME into value chains, functional clusters or business networks such as business associations), and
- *Business environment* (macroeconomic and political stability, regulation, taxation, trade policy, corruption, access to finance, business development services and infrastructure).

It is likely that most of these factors matter to some degree. However academic literature has not yet drawn a broad conclusion as to which factors are the most important (most significant) – something that this study aims to do with regards to Egypt.

The 'missing middle' in the context of Egypt's development conditions

Egypt enjoys many *favourable natural conditions for development:* mineral and energy resources; the potential for wind and solar-power production; the Suez Canal; a huge potential for tourism; an economically and politically ideal location at the crossroads of Africa, Asia and Europe; a large domestic market; and remittances from the Gulf countries.

At the same time, Egypt suffers from *structural deficits* such as low productivity, weak international competitiveness, limited technological capacities, low structural diversification and low export rates. These deficits are the main reasons why unemployment and external debt are high, growth is neither sustainable nor pro-poor and the domestic budget is in the red.

One cause of these deficits is the 'missing middle'. In terms of numbers of companies, employees and employment creation, Egypt's private sector is dominated by micro and small enterprises. 92 per cent of all companies are *micro enterprises* (1 – 4 employees), 7 per cent are *small enterprises* (5 – 49 employees) and much less than 1 per cent are *large enterprises* (100 employees or more). *Medium-sized enterprises* (50 – 99 employees) account for just 0.13 per cent of all formalised Egyptian companies (CAPMAS 2006).

Research methodology

We used three tools to answer our research question: (i) an econometric analysis of panel data from the Egypt Investment Climate Surveys (EICSs) of 2004 and 2008, (ii) semi-standardised interviews with SME owners and (iii) more open in-depth interviews with experts from the public sector, the private sector, academia, media, civil society and donor community. We also compared our results with previous studies on related issues that are mentioned throughout the text.

Unfortunately, the econometric analysis did not provide the insights we needed to answer our research question. This is because the EICS only studies companies in the formal economy and lacks data on many of the potential factors for SME upgrading in Egypt. No other representative enterprise surveys have been conducted in recent years.

For this reason, the findings are mainly based on our SME sample. We used it: (i) to find out what Egyptian SME owners consider to be the main constraints as well as the success factors for upgrading, (ii) to learn what kinds of support they would like for their upgrading efforts and (iii) to compare the characteristics of those who upgrade with those who do not. We used both qualitative and quantitative analysis techniques.

When selecting SMEs for our sample, we applied four different techniques so as to ensure (i) that the sample includes similar number of upgraders and non-upgraders are similar with respect to other characteristics, and to ensure that their biases were counterbalanced and minimised by the other selection techniques. As a result, our sample turned out to mirror the entirety of SMEs in Egypt with regards to several parameters.

Our sample contained 102 SMEs, 80 of which were selected for the core sample because five years earlier they had been micro or small (at that time, the other 22 companies were already medium-sized). All 102 interviews were used for the qualitative analysis, but only the interviews with the 80 core-sample companies were used for the qualitative analysis. In the core sample, 40 SMEs turned out to be upgraders while the other 40 were non-upgraders.

To be classified as an 'upgrader', an enterprise had to fulfil three criteria.

1. To have grown by 50 per cent or more in the previous five years as measured by one of five criteria (number of employees, sales, profit, assets or size of production area)
2. To have introduced some kind of innovation in the previous five years
3. To have grown faster than its competitors in the previous five years.

Twenty upgraders had even grown by 100 per cent or more during the previous five years. We termed them 'gazelles' and the remaining 20 upgraders 'non-gazelle upgraders'.

Factors in SME upgrading in Egypt

Our research led to five main conclusions:

First, the shortage of medium-sized enterprises in Egypt is not only due to the difficulty of small firms to upgrade, but also because upgraded firms have difficulty sustaining their new (medium) size. It was easy for us to identify upgraders: half the companies that we have interviewed had upgraded since 2007 – despite the global financial crisis of 2008–2009 and the Egyptian revolution of 2011.

Second, six factors are main determinants of upgrading in Egypt: (i) human capital (quality education, work experience and international exposure), (ii) motivation and readiness to take risks, (iii) investment in human resources development (HRD), (iv) market research, (v) access to finance and (vi) deficits in the rule of law (especially in state-business interactions).

There are two aspects to all but one of these factors (deficits in the rule of law). All of them explain why upgrading is generally difficult for SMEs in Egypt. All SMEs suffer from: (i) the owner's inferior education and work experience; (ii) the owner's risk aversion; (iii) the lack of, and high turnover of, trained workers; (iv) difficulties accessing finance; (v) lack of market information; and (vi) deficits in the rule of law.

At the same time, five of these six factors also explain why, despite all structural constraints, some SMEs manage to upgrade – while others do

not. Owners of upgrader firms tend (i) to have superior education, work experience and international exposure; (ii) to be more motivated and willing to take risks; (iii) to invest more in HRD (training of, incentives for and participation by workers); (iv) to spend more on market research and (v) to have their own financial means.

It may not be surprising that these factors influence SME upgrading. But it is probably less obvious that a number of other factors were found to have little effect – including the company's size, whether it is formal or informal, its location and age, the owner's gender, social capital, social status and membership in business associations, as well as Egyptian trade and monetary policies.

Four factors turned out to be moderately important: corporate governance and access to land, business development services (BDSs) and infrastructure.

These findings seem to hold true for various SME sectors in Egypt, irrespective of the company's size. We only provide findings for the textiles and garments, food-processing and software (ICT) sectors, but since there is no significant variance in the results for these three sectors, they could well be valid for other economic sectors in Egypt.

Third, SMEs in Egypt are constrained by the business environment, especially problems in state-business interactions such as licensing, taxation, inspections and governmental efforts to protect competition. Yet these problems are mainly due to deficits in law enforcement rather than the cost of these procedures in terms of time and money. Despite the high costs, if the likely results could be assessed in advance and the costs estimated, they would be affordable for most SMEs. This is not possible, though, because public officials' huge discretionary leeway results in the arbitrary interpretation of laws and guidelines.

Fourth, while integration into value chains and clusters might help SMEs upgrade, we found no evidence of this because hardly any SMEs in our sample were vertically or horizontally linked to other firms. This is probably because entrepreneurs are generally reluctant to co-operate in any way due to mutual mistrust. They report bad experiences from the difficulty in enforcing contracts, yet they rarely undertake legal

action because judicial decisions tend to be arbitrary. Once again the root cause is the lack of law enforcement. Egyptians also have never learnt to co-operate with others in business because at school, they are taught to work by themselves rather than in teams.

Fifth, a lot depends on the capabilities of the individual entrepreneur. All SME owners are constrained by structural factors such as the lack of quality education, skilled workers, market information, access to finance and law enforcement. A privileged few manage to circumvent these obstacles because they have enough money to be able to do without loans, and also to bribe public officials and invest in education, work experience, international exposure, market research and worker training. They have had enough education to understand the importance of work experience, international exposure, market information, HRD and solid finance. They also have the contacts necessary to obtain relevant market information and find trained workers. It seems that a privileged few SME owners were born with work experience, international exposure and market know-how, while the vast majority lack these means of circumventing the structural constraints of upgrading.

These conclusions were drawn from our research data in three steps: *First,* we quantitatively analysed the SME-survey interviewees' answers to the question about what they consider to be the main obstacles to upgrading in Egypt – by simply counting the number of companies that mentioned single factors. *Second,* we used various quantitative tools to determine which factors account for the ability of some SMEs to upgrade better than others. We ran a regression analysis with the EICS data, counted the number of SME owners in our sample that cited specific factors that account for some SMEs' comparative ease in upgrading, and compared the average characteristics of upgraders and non-upgraders in our sample. *Third,* we applied a qualitative approach to analyse the causal relations between independent variables and the variable we sought to explain through our research: the ease of SME upgrading. We also dissected the entrepreneurs' stories about their upgrading efforts in order to find out how different variables are interrelated, or work together, to promote or constrain SME upgrading.

The six main determinants of SME upgrading in Egypt were derived through this three-step process because they dominate the causal chains

that impact on the potential of individual, or groups, of SMEs to upgrade.

The human capital of SME owners (quality basic and vocational education, quality work experience and international exposure): Almost half the SME owners identified education, work experience or international exposure as an important factor for SME upgrading in Egypt. Human capital is also found at the beginning of numerous causal chains, indirectly affecting SME upgrading in ways which may be even more significant. For example, human capital positively impacts on conducting market research, as well as on product quality and HRD. International exposure was also found to be a key factor in SME owners' creativity, market research and innovation.

Ambition and SME owners' readiness to take risks: Many upgraders identified their own motivation and readiness to take risks as crucial for their success and as a reason for investing in market research and HRD. Similarly, a lack of motivation and risk aversion were among the principle reasons why other entrepreneurs did not invest in machines, new products or worker training.

HR development in SMEs: Differences in the level and quality of investment in the workforce is one of the main reasons why some SMEs upgrade and others do not. Investment includes worker training, incentives (extra payments, health insurance, free transportation to work, on-site childcare, etc.) for workers to remain at the firm and produce quality, and the involvement of employees in fundamental decisions about the firm's organisation and innovation processes.

Market research: Systematic market research was identified by many SME owners – especially upgraders – as a key explanation for differences in the likelihood of SMEs in Egypt to upgrade. They recognised that market research is crucial for generating ideas, identifying market niches and making entrepreneurs aware of the importance of top-quality products.

Access to finance: While access to finance is another immediate determinant of SME upgrading, since it is decisive for the entrepreneur's capability to invest in international experience, market research, prod-

uct quality and HRD, it is also a factor of other immediate determinants. Access to finance increases an entrepreneur's readiness to take risks.

Law enforcement: Deficits in the rule of law explain why upgrading is generally difficult for SMEs in Egypt; they are the root cause of obstacles for SMEs in state-business interactions such as licensing, taxation, customs and company inspections, as well as the prevalence of corruption.

Policy recommendations

Our findings have shown that action is needed in five fields in order to enable all entrepreneurs rather than only the more privileged ones to overcome the structural obstacles to SME upgrading in Egypt, but also to eliminate them:

Three initiatives are needed in the field of *human capital* (quality basic and vocational education, quality work experience and international exposure): (i) The entire educational system must be overhauled to promote creativity, imagination, analytical abilities, critical thinking and other skills required for entrepreneurship instead of rote memorisation of facts. Teachers should encourage pupils to work in teams. (ii) Basic economic and business know-how should be part of school curriculum. Practice-oriented business schools should be founded, SME incubators set up at universities and business-plan competitions held. (iii) International student exchanges should be fostered and undergraduates encouraged making internships in firms.

Human resource development: The government should (i) intensify its support for firms sending their workers to short-term vocational training courses, (ii) raise entrepreneurs' awareness of the importance of HRD and (iii) support SME owners' efforts to develop their own human resources.

Market research: In order to reduce the costs of market research for Egyptian SME owners and increase their knowledge of domestic and export markets, the government of Egypt should: (i) enlighten entrepreneurs about the importance of demand orientation, market knowledge and product quality; (ii) provide free information on markets and recent market developments, as well as on current offers in relevant markets; (iii) assist SME owners with their own market research; and

(iv) foster co-operation with international firms within global value chains and other co-operative forms.

Access to finance: In order to boost the amount of finance available to SME owners, the government should consider: (i) providing banks with funds for lending to SMEs at preferential interest rates, (ii) fostering competition in the banking sector in an effort to encourage banks to move into market niches such as SME lending and (iii) permitting the establishment of commercial microfinance institutions (MFIs).

At the same time, however, the government should also consider ways to encourage banks and MFIs to widen their product portfolios: Islamic Financing – still underdeveloped in Egypt – could be helpful for entrepreneurs who refuse ordinary loans on religious grounds. Leasing and private equity would help SME owners who need more long-term finance.

In order to strengthen the demand side, the government should: (i) start an initiative to inform entrepreneurs of the advantages and disadvantages of various funding forms and increase their financial literacy (including basic information about credit, leasing and equity, as well as the skills needed to keep proper accounts, write business plans and apply for credit); (ii) improve banks' capacities to screen SME customers by training lending officers, who are often unfamiliar with the peculiarities of SMEs; and (iii) establish a registry of ownership and possession of movable assets at Egypt's credit bureau, I-Score, in order to help SME owners prove that they have enough collateral to qualify for loans.

Finally, the government should review the bankruptcy law, which banks use to put defaulting borrowers in prison – thereby discouraging many SME owners from applying for bank loans.

Law enforcement: Egypt is still impacted by the Mubarak era. The current lack of law enforcement in Egypt is predominantly due to insufficient checks and balances within and between governmental institutions, which is symptomatic of states shaped by neo-patrimonial regimes. A lack of accountability allows neo-patrimonial rulers to interpret legislation in their favour. In Egypt, serious law-enforcement reform requires a much more democratic regime than the old one.

The government should increase the accountability of public officials by: (i) creating incentives for compliance with laws and guidelines; (ii) publishing all laws and regulations, so as to allow citizens to compare their experience with official procedure; (iii) introducing elements of e-government in public administration (especially e-procurement and e-tendering); (iv) conducting a performance evaluation of the public administration; and (v) facilitating customer complaints and whistle-blowing in cases of public officials' incorrect conduct.

1 Introduction

Most low- and middle-income countries (LICs and MICs) are characterised by the so-called *'missing middle'* phenomenon: They have many micro and small enterprises and comparatively few medium-sized and large companies. They may host some large companies, which are able to compete on world markets and generate a considerable portion of gross domestic product (GDP). But most of these are not linked to smaller companies in the country. In comparison with high-income countries (HICs), LICs and MICs have a notable lack of companies in the 'second tier' – companies that might be able to export their products in the near future, or become suppliers of larger firms and integrated into global value chains (GVCs). Most workers in LICs and MICs are employed in comparatively low-productivity and low-income jobs in micro and small firms.

Many medium-sized and large companies in LICs and MICs were created that size by foreign investors or a handful of affluent natives; very few large companies started small and grew over time. Apparently it is difficult for small firms to transform into medium-sized enterprises.

There are three reasons why the 'missing middle' phenomenon is problematic: *First,* medium-sized enterprises are the main providers of quality employment. Most people in low- and middle-income countries work in micro and small enterprises where many of them are underemployed and poorly paid. Since medium-sized enterprises typically offer better-paid, more secure jobs for better-trained people who also receive social security benefits, a country's average wage tends to correlate positively with its share of medium-sized enterprises (Altenburg / Eckhardt 2006, 7). *Second,* medium-sized enterprises are significant in terms of a country's current account. Medium-sized enterprises are better able than small ones to produce commodities and services that can compete in world markets: they can export their products themselves or through domestic or foreign exporting partners. *Third,* a country's total factor productivity is correlated with its share of medium-sized and large companies. These tend to be more productive than smaller firms because they have the financial and personal means to invest in research and development (R&D), new products, new methods of production, new organisational forms and divisions of labour, new ways of marketing and the like (Mead / Liedholm 1998, 64) – which is the main reason that they provide higher-quality employment and higher pay.

Enterprises grow for various reasons. They may benefit from rising demand for their kind of product, competitors' difficulties and other forms of windfall profits – factors that they are rarely able to influence. The only mechanism that enterprises can control is growth through innovation or 'upgrading', which appears to be a significant challenge for small and medium-sized enterprises (SMEs) in low- and middle- (and probably also in high-) income countries. Yet the fact that some companies do manage to upgrade, thereby generating endogenous growth (Berner / Gomez / Knorringa 2008), shows that in principle, small companies can transform themselves into medium- or large-sized ones.

The question then is: What exactly do small companies need to be able to upgrade? What do most of them lack? The low number of SME upgraders in developing countries is not new. A huge strand of literature discusses the factors that are required for SME upgrading and offers some plausible explanations. But most studies analyse only individual or specific sets of factors that are responsible for small company upgrading. It is possible that each of these factors plays a role; however, we need to know *the most significant factors*. While it is true that these may differ from country to country, answering this question requires empirical evidence and so far, only a very few empirical studies have been published on the issue.

This study helps fill the gap in the empirical literature about SME upgrading in developing countries. It is mainly based on empirical research conducted during the eight authors' three-month mission in Egypt. Additional studies of the same issue have been conducted with a similar research methodology in the Philippines and India (Hampel-Milagrosa 2013; Reeg 2013a).

Egypt was selected for three reasons: *First,* Egypt is a typical example of a middle-income economy with the 'missing middle' phenomenon. More than 90 per cent of all firms are micro enterprises, while the share of large- and medium-sized companies has grown during the last decade but remains negligible. Furthermore, most micro firms are necessity-driven and do not provide satisfying employment and income for their owners, let alone the employees (El-Megharbel 2008, 1). *Second,* Egypt suffers from high unemployment, low levels of total factor productivity, a low degree of economic diversification, highly concentrated exports, very few manufacturing exports and a current structural deficit. A greater number of medium-sized enterprises could help solve some of these problems – and given the sharp economic downturn that followed Egypt's revolution, the need

is great and urgent. Rising productivity, exports and per-capita income are required to stabilise the country economically, socially and politically. *Third,* there are very few studies on private-sector development in the Middle East and North Africa (MENA). Therefore a study on SME upgrading in one country will contribute to filling the gap in empirical literature on SME upgrading in the whole MENA region.

We address the question: *Which are the main factors determining the upgrading of small and medium-sized enterprises in Egypt?*

The question has two aspects:

- *Which factors explain why upgrading seems to be particularly difficult for SMEs in Egypt?* (macro-perspective identifying structural factors)
- *Which factors explain why some SMEs manage to upgrade better than others despite the general difficulties?* (micro-perspective identifying individual/differentiating factors)

The study does not end with the answers to these questions, but also derives policy recommendations and comes to four major conclusions:

First, many more SMEs than expected manage to upgrade. More than half of all the companies in our sample grew by at least 50 per cent between 2007 and 2012 although these were particularly difficult years, and a quarter grew by even more than 100 per cent. This share is high, even if we take into consideration that we have explicitly watched out and asked experts for successful upgraders when we composed our sample.

At the same time, however, an equal number of companies contracted by 100 per cent. This means that despite the astonishingly high number of upgraders, the group of medium-sized companies in Egypt did not expand. In Egypt, the 'missing middle' is not just due to obstacles to upgrading; it may be more due to upgraders' difficulties in sustaining their growth. Additional research is needed on this issue.

Second, SME upgrading in Egypt is mainly determined by: (i) human capital (quality basic and vocational education, quality work experience and international exposure); (ii) the owner's ambition and readiness to take risks; (iii) investment in human resource development (HRD); (iv) market research; (v) access to finance; and (vi) law enforcement (for example, in taxation, registration, licensing, and competition).

Third, with regard to regulatory hurdles, what most affects firms is the unpredictability of law enforcement, not the time and cost of compliance. With regard to taxation, for example, what SME owners mostly suffer from is not the tax burden as such but the arbitrariness in the determination of their rates. Likewise, while complying with standards costs SME owners' time and money, their main problem is not being able to even know the standards – because inspectors routinely come up with new ones.

Fourth, inter-firm linkages are extremely weak in Egypt. Hardly any SMEs are effectively integrated into a global value chain (GVC) or a cluster – which is why we were unable to ascertain if integration into GVCs or clusters is helpful. Presumably it would be. But many SME owners mistrust each other and so are reluctant to co-operate – perhaps as a result of bad experiences with contract enforcement. Egyptians prefer to avoid legal disputes because trials take forever and the outcomes are totally unpredictable. Egyptians also have never learnt to co-operate because even at school they were taught to work alone.

Fifth, upgrading requires a combination of factors. It cannot be explained by one or two isolated factors such as access to finance or deregulation. Some factors are substitutes, such as a bank loan (for the entrepreneur's own capital), or access to trained workers (for the entrepreneur's in-house worker training). Other factors, such as labour and market information, are complements. Upgraders need some of the substitute factors and all of the complement factors, which means that SME owners' success depends on access to all of the complements as well as their ability to substitute missing factors (e.g. their own market research when they lack market information).

Based on our findings, we recommend the government of Egypt: (i) to improve the quality of its educational and training systems, and to promote young people's travel to foreign countries; (ii) to raise entrepreneurs' awareness of the importance of HRD and to offer more short-term training for workers; (iii) to provide market information for SME owners; (iv) to improve SME owners' access to finance by measures targeting both the supply side (banks and micro-finance institutions) and the demand side (entrepreneurs' financial literacy); and (v) to strengthen the rule of law – especially in state-business interactions such as taxation, licensing, regulation, company inspection and competition policy – by improving accountability mechanisms.

These results are mainly based on the findings of our empirical research in Egypt between February and April 2012. It included: (i) an econometric analysis of panel data from two rounds of the Egypt Investment Climate Survey (EICS) that the American University in Cairo (AUC) conducted of some 1,000 manufacturing companies for the International Finance Corporation and the World Bank in 2004 and 2008; (ii) a semi-standardised survey of 102 SMEs in the textiles and garments, food-processing and software sectors in five Egyptian governorates; and (iii) interviews with 123 'experts' (representatives of the Egyptian government, the private sector, academia, civil society, the financial sector and media, as well as foreign donors). Throughout this study, our results are contrasted with other findings on SME development in Egypt.

It should be stressed that our research tools had obvious limitations. The EICS only covered a limited number of variables that could explain SME upgrading in Egypt, while our own SME survey was small and unrepresentative. It provided a mere snapshot of some causal relations for some economic actors, and looked at just three sub-sectors of the Egyptian economy and a few SMEs in five of 27 governorates. Still, we believe that our survey is broad enough to reveal more about Egypt than just about the few sectors and governorates it covers.

This report has six chapters. Chapter 2 presents the conceptual framework for our analysis. It explains how we defined the term 'upgrading' for our research and summarises what factors have been considered as relevant in the literature on SME upgrading – on the basis of theoretical arguments or empirical findings from countries other than Egypt. Chapter 3 shows that 'the middle' is missing in the landscape of enterprises in Egypt and that this phenomenon is one of the major reasons that the Egyptian economy is under-performing. Chapter 4 describes our research methodology. It explains our research tools and provides insight into the composition of our SME sample and expert interviews. Chapter 5 presents and interprets our findings – and answers our research question. Chapter 6 concludes with policy recommendations.

2 SME upgrading and its factors: the conceptual framework

We define upgrading as the growth of SMEs through innovation. Various strands of literature make most different factors responsible for differences in the ease with which SMEs upgrade. These factors can be grouped into four broad categories: entrepreneur characteristics, firm characteristics, inter-firm linkages and the business environment.

Section 2.1 explains SME upgrading in greater detail and Section 2.2 presents possible determinants of SME upgrading.

2.1 SME upgrading

In this study, 'upgrading' refers to the growth of a small or medium enterprise (SME) that results from any kind of innovation. In this context, innovation means a firm doing different things or doing the same things in a different way *and* in a manner that is different from its *direct* competitors (Humphrey / Schmitz 2000, 3). The term refers thus to the introduction of something new to a firm's relevant markets – not something that is new to the whole country or the world at large. The innovation could be a new good or service, or a process that is new or significantly improved that can generate a rent, the 'innovation rent', for a certain period – because until competitors imitate the innovation the company has a monopoly, although it might be an imperfect one (OECD 1996).

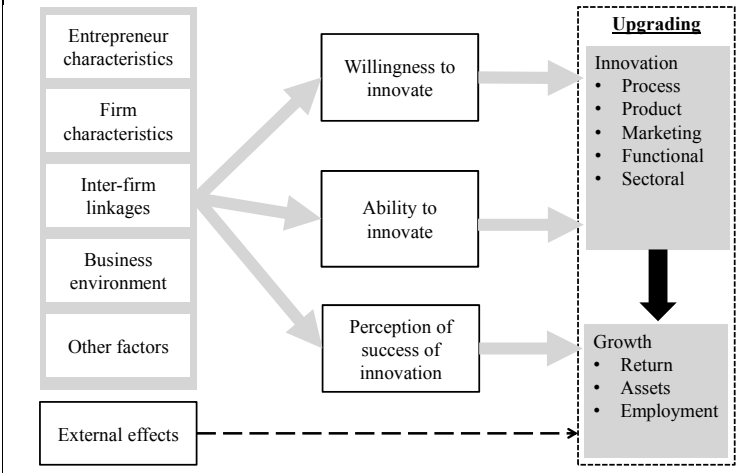
Our definition of 'upgrading' differs slightly from some uses of the term, which was coined by authors such as Gary Gereffi, Hubert Schmitz and John Humphrey to describe processes within the narrow framework of global value chains (GVCs). They identified four kinds of upgrading: product, process, functional and inter-sectoral (Humphrey / Schmitz 2000, 3).[1]

We add a fifth kind of upgrading that we call 'marketing upgrading' that includes all kinds of changes in product labelling, packaging, advertising

1 Numerous researchers have adopted this definition and refer to these kinds of upgrading as the four "trajectories of upgrading" (see Navas-Alemán 2011; Dunn et al. 2006; Giuliani / Pietrobelli / Rabellotti 2005; Kaplinsky / Readman 2001). Dunn et al. (2006, 4) added a fifth category, the 'channel level'.

and selling (see Figure 1). In the initial literature on the subject, these forms of SME upgrading were subsumed in other categories. Our adaptation, however, is in line with the literature on innovation itself, which also distinguishes between product, process, functional and inter-sectoral innovation but includes, in addition to these a fifth category, 'channel innovation', which refers to new ways of distributing a product.

Figure 1: SME upgrading



Source: own design; explanations in Sections 2.1 and 2.2

Our second adaptation of the standard definition of upgrading is to not restrict its use to the framework of GVCs.

Our third adaptation limits use of the term 'innovation' to something that could also be called 'successful innovation', that is, innovation that leads to any kind of improvement that matters to the entrepreneur or the economy at large. This might be a significant increase of an enterprise's return, number of employees or assets (see Figure 1). Such growth may occur without innovation, for example, because of an unexpected increase in demand for the firm's products. Growth of this sort, however, cannot be influenced by the firm, which can only control its own innovation efforts.

This exactly is why we do not use the term 'SME graduation', which is mainly used to indicate a company's move from one size bracket to another (i.e. from micro to small or from small to medium) – regardless of the reason for the growth. We understand 'upgrading' to combine both aspects – the qualitative aspect of innovation, normally referred to as 'upgrading', and the quantitative aspect of firm growth, normally referred to as 'graduation'. We prefer the term 'upgrading' to 'graduation' because the latter is also sometimes used for a company's formalisation, that is, its transition from an informal to a formal business, which can be confusing.

We consider five trajectories in which innovation may occur:[2]

- Product innovation is the introduction of new goods or services and leads to increased unit values (Humphrey / Schmitz 2000, 3).
- Process innovation is the introduction of a new production technology that enhances the flexibility of production, the speed of the production process or the efficiency of input use (Tokatly / Kizilgün 2004, 227; Gibbon / Ponte 2005, 89).
- Marketing innovation is the introduction of a new marketing method including improvements in product design or packaging, product placement, product promotion or pricing, or entry into a new, higher value-added end market (Dunn et al. 2006, 4; OECD 1996).
- Functional innovation is the participation in additional stages of a value chain and the gradual assumption of these activities. It could also involve switching from being a simple assembler to being an original equipment manufacturer (OEM) or to original design (ODM) or original brand name (OBM) types of manufacturing (Gereffi 1999, 17).
- Sectoral innovation[3] uses knowledge about the functions of value chains to enter other sector(s).

Innovation can be simultaneously introduced in more than one trajectory, and an innovative activity in one trajectory can stimulate changes in others.

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2 These trajectories result from combining the definitions of several authors: Schmitz (2004, 7 f.), Dunn et al. (2006, 4), OECD (1996, adapted).

3 Kaplinsky and Readman (2001, 30) use the term 'chain upgrading' to refer to this shift to another sector.

An innovative activity is not necessarily new to the world, but rather something new in the given context, for example on the local market.

SME growth: Our definition of SME growth comprises different aspects of growth: aspects that are key goals for entrepreneurs, such as company sales and return, as well as aspects that primarily matter from a macroeconomic or developmental perspective, such as employment. It is possible for each of these aspects to increase while others either do not increase or actually decrease, for example, firm owners can sometimes boost returns by sacking workers. If, however, the measures display growth that is specifically due to innovation, they should be termed 'upgrading'.

Growth through innovation: An SME manages to upgrade when an innovation makes it more competitive than other market participants and the new competitive advantage causes the firm to grow. The link between innovation and growth is illustrated in the following: *Process innovation* causes higher returns if a certain amount of units can be produced with less input than before; *product innovation* causes higher returns if units can be sold for a higher price; *channel innovation* causes higher returns if products are sold to additional markets; *functional innovation* causes higher returns if more value is added at this stage of the chain; *sectoral innovation* causes higher returns if products are sold to additional sectors. A firm that innovates must remain competitive in price and/or quality; but it generates higher profits by being more innovative than its competitors.

Formalisation and entering new markets: Other processes, such as formalisation and export orientation, are to some degree also related to innovation and growth – and count as upgrading processes. In particular, formalisation may favour, or even be a prerequisite for, the first step in firm upgrading (see Section 2.2.2). Likewise, a firm's upgrading can *induce* its formalisation because when an SME reaches a certain size, its greater visibility limits its ability to work informally. Upgrading could also enable a company to export its products (which is another innovation: an innovation such as product innovation makes a firm grow, thus helping it enter export markets).

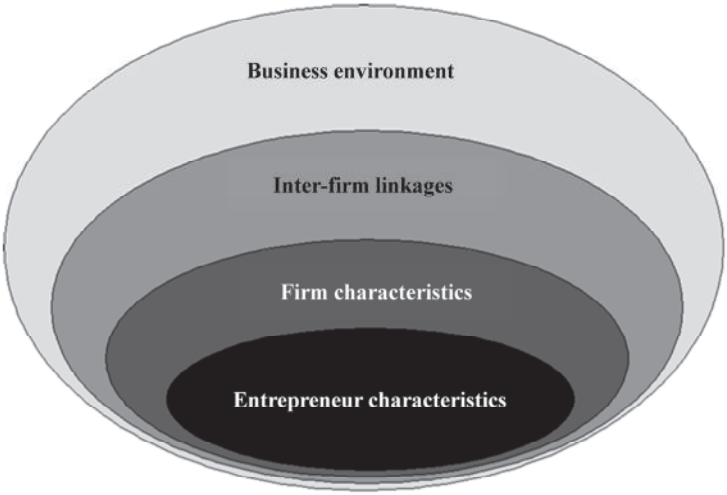
2.2 Determinants of SME upgrading

Scholars have long been debating which factors affect SME upgrading. Their opinions can be divided into four groups, each related to one of the layers of factors that influence the entrepreneur's behaviour:

- Some believe that mainly the *entrepreneur's characteristics* determine a firm's upgrading potential.
- Others consider the *characteristics of the firm* itself to be much more important.
- Yet another group of scholars believes that the upgrading potential of SMEs is mainly determined by their integration into horizontal and vertical linkage systems (clusters and value chains).
- A fourth group emphasises the role that the business framework plays in SME upgrading.

Figure 2 illustrates these four layers of factors. In Chapter 5, we argue that our empirical research was guided by four bundles of research hypotheses, each of which focuses on a different layer.

Figure 2: The four layers of factors that determine SMEs upgrading



Source: Adapted from Reeg (2012)

We lacked empirical evidence to determine the most significant factors. Although qualitative and quantitative studies on this subject exist, their results are highly contradictory. However, we can safely say that they influence SME upgrading in three different ways (see Figure 1):

- Some affect the *willingness of entrepreneurs to innovate.* This is the case for such entrepreneur characteristics as motivation and risk readiness.
- Some factors affect the *ability of entrepreneurs to innovate and grow.* These include entrepreneur characteristics (e.g. an SME owner's education and work experience), enterprise characteristics (e.g. worker training or the existence of an R&D department) and elements of the business environment (e.g. access to credit or a licence to introduce new products or production processes).
- Finally, some factors affect the possible *impact of an innovation on SME growth as perceived by the SME owner.* By definition, what we call an 'innovation' automatically leads to the SME's growth. No entrepreneur would introduce anything new knowing that the measure would not positively impact on the firm's sales or profit or number of employees. But incomplete information can cause an entrepreneur to misjudge an innovation's impact. An owner could introduce something new, not realising that it will have no impact – or refrain from making an innovation, misunderstanding its potential to stimulate SME growth. What matters most is whether a factor influences the impact of an innovation on SME development (as perceived by the entrepreneur) – not the impact itself. One example is the tax system: An SME owner might perceive the benefit of any given innovation as negligible in view of the taxes that would be due as a result of the increase in company earnings.

Below we provide an overview of the most common explanations for the success or failure of SMEs to upgrade. We start with entrepreneur characteristics (2.2.1) and firm characteristics (2.2.2) and continue with inter-firm linkages (2.2.3) and the business environment (2.2.4). In each sub-section, we present the major theoretical and empirical publications.

2.2.1 Entrepreneur characteristics

Many authors emphasise the characteristics of an individual entrepreneur as being key to the SME's upgrading potential. They refer to the entrepreneur's

human capital, social capital, achievement motivation, readiness to take risks and gender.

Human capital: Some authors argue that differences in education, training and work experience explain why some SME owners find it easier to upgrade than others. Human capital – the skills and knowledge that individuals acquire by investing in schooling, on-the-job training and other types of experience (Becker 1964) – could explain the likelihood of SMEs to upgrade in a particular country. Shane (2003) argues that the more skills and knowledge an SME owner has, the greater is their capability to exploit opportunities, learn about new processes or develop a growth strategy. Empirical studies report that entrepreneurial innovativeness is positively and statistically significantly impacted by variables such as the owner's years of schooling or years of experience in the sector (Ayyagari / Demirgüç-Kunt / Maksimovic 2011; Koellinger 2008).[4] At the same time, since a country's educational and apprenticeship systems contribute to its entrepreneurs' average human capital, they can help predict the general likelihood of SMEs to upgrade – or not. (These systems also determine the availability of skilled labour, another crucial factor for SME upgrading, as is shown in Section 4.4).

Social capital / networks: Other authors point to the fact that an entrepreneur's social capital –broadly defined as social relations and networks – accounts for differences between SMEs with regards to their likelihood to upgrade. Social capital might also explain why SMEs are more likely to upgrade in a particular country (van Dijk 2000). The SME owner's social network might facilitate access to information and resources such as finance, advice and/or support, as well as expedited access to official documents. Social capital might thus enable SME development through the owner's use of this rather informal support for upgrading. At the same time, exclusion from certain social networks could disadvantage some SME owners. This argument is supported by a case study on Ghanaian entrepreneurs

4 McPherson finds statistical significance for the positive impact of the proprietor's education on firm growth by using survey data from about 1,600 MSEs from five countries in Southern Africa (McPherson 1996). Other studies, however, hint at problems in measuring human capital: Unger et al. (2011) conducted a meta-study and argue that the variables commonly used in empirical studies, such as years of schooling and work experience, are imperfect proxies for skills and knowledge.

where the bonding in certain circles of acquaintances constitutes an access barrier for entrepreneurs who are outside those circles (Fafchamps 2001). Other studies argue that social capital – like human or physical capital – requires investments in terms of time, effort or money. Investing in social capital may come at the cost of investing time, effort or money in the business itself, for example, in improving the product (Loewe et al. 2007, 87; Putnam 2001). Nevertheless, the impact of social capital on SME upgrading depends on the SME's societal context, which might explain the general propensity of SMEs in a given country to upgrade. Social capital matters most in countries where its use is widely accepted and informal institutions are well established, and it seems to matter less in societies with strong formal and transparent institutions. To our knowledge, no study adequately compares the relationship between social capital and SME upgrading at the country level.

Achievement motivation and risk acceptance: Some literature indicates that differences in behavioural characteristics, such as an entrepreneur's achievement motivation and willingness to take risks, explain why some SMEs are more likely to upgrade than others. In turn, a country's social and political structure, as well as its values and norms, can explain the dominance of certain behavioural characteristics in the society.

Some scholars argue that SME owners' varying degrees of achievement motivation might determine whether or not SMEs manage to upgrade. Achievement motivation is shaped by the owner's family background, social position, convictions, and life and career experience. McClelland (1961) argued that achievement motivation is significantly related to economic growth and development – an argument supported by a meta-study that found a correlation between the achievement motivation of SME owners and their business success (Rauch / Frese 2000).[5] However, the average degree of achievement motivation in a particular country might explain the general likelihood to upgrade there. It is argued that strong motivation to achieve is based on the conviction that an individual's actions determine the reward, which is sometimes referred to as the 'internal locus of control'. An internal locus of control might in turn be influenced by the system of norms

5 Shane (2003) provided an extensive review of literature on empirical studies from advanced economies that supports a positive link between achievement motivation and business success.

and values that prevail in a society; for example, in societies where the dominant belief is that destiny alone decides individual success, the individual internal locus of control will be much lower than in countries where the dominant belief is that success results mainly from one's own efforts. Achievement motivation also may be encouraged in societies where an individual's reputation is solely based on their success. People from these societies are – on average – more motivated to achieve than people in other societies, and generally have more potential to upgrade SMEs.

Other scholars stress the role of the entrepreneur's readiness to take risks with investments with respect to their likelihood of upgrading. While a certain degree of risk willingness is a precondition for any business, extreme risk-seeking is negatively associated with business success (Rauch / Frese 2000).[6] Some authors provide empirical evidence for the non-linear relationship between risk-taking and success (De Mel / McKenzie / Woodruff 2008; Begley / Boyd 1987; Rauch / Frese 2000). At the same time, the average inclination to take risks may diverge between countries, thereby accounting for general differences in the likelihood of SMEs in various countries to upgrade. It can be assumed that an SME owner's willingness to take risks depends to a large extent on their vulnerability[7] and perception of the risk involved. In turn, vulnerability is determined by the probability and possible effect of risk occurrence as well as the ability to adequately manage risks (Loewe 2010, 26 ff.). A person's ability to manage risk depends on their assets that can be liquidated to cope with risks as well as access to social protection schemes. Public social protection schemes can help reduce concern about the possible effects of shocks that could occur as a result of old age, illness and unemployment, and thereby strengthen an individual's readiness to accept the new risks that come along with investing (Loewe 2010, 27). Furthermore, an SME owner's perception of vulnerability depends on the country's history. Inhabitants of a politically and economically unstable country might have experienced greater vulnerability over the long term, causing them to be more sensitive to risk-taking than inhabitants

6 However, empirical research on the impact of SME owners' growth motivation on upgrading should be read with care, as this may be a matter of reverse causality. In other words, the correlation is driven by positive feedback from earlier performance (Delmar and Wiklund 2008).

7 Vulnerability can be defined as the probability of occurrences of unpredictable risks which influence the individual's well-being.

in relatively untroubled countries. Such conditions influence an SME owner's willingness to take risks and hence the general chances for SMEs in a certain country to upgrade.

Gender: Some authors argue that an SME owner's gender also affects the ease with which the enterprise can upgrade. While many empirical studies show that female ownership is associated with lower firm performance (Mead / Liedholm 1998; De Mel / McKenzie / Woodruff 2008; McPherson 1996), this negative correlation is mainly a result of differences in wage-employment conditions, time and mobility, access to resources, markets and social networks (Nichter / Goldmark 2009). Indeed, a study conducted for the International Labour Organization (ILO) shows that the fact that women in some countries have greater problems regarding innumeracy, illiteracy and a lack of business skills, are more risk-averse and belong to less growth-oriented networks – explains their difficulties in upgrading better than their gender (Greenwood 1999). Gender seems to be a crosscutting issue that must be analysed in combination with other factors. A country's societal norms and values that hamper or facilitate female participation in business networks might well explain women entrepreneurs' comparative ease or lack of it in upgrading.

2.2.2 Firm characteristics

According to a second bundle of explanations in the literature, it is the characteristics of the enterprises rather than of the owners that explain differences in SMEs' upgrading potential. Some researchers also account for differences in the SMEs' general likelihood of upgrading in different countries. They distinguish between structural factors such as an enterprise's age, size, sector, location and formal status on one hand, and SME policies, as well as organisational factors such as knowledge and innovation management, on the other.

Age: Many studies find a statistically significant relationship between the age of an enterprise and its likelihood to upgrade. Nevertheless it is difficult to establish causality between these two factors. The empirical literature is undecided regarding the direction of the correlation. On one hand, younger firms are more often associated with innovativeness than their older counterparts (Evans 1987; Hausman 2005; Ayyagari / Demirgüç-Kunt /

Maksimovic 2011),[8] while on the other, older firms are more likely to grow in terms of sales and profits as a result of their greater business sophistication (Shanmugam / Bhaduri 2002; Sleuwaegen / Goedhuys 2002). Age may have an indirect impact on SME upgrading. If all other factors remain constant over the lifetime of an enterprise, nothing will change with respect to the company's potential to upgrade. It is the high correlation between age and other factors such as the accumulation of experience and business sophistication that informs the relationship between age and SME upgrading.

Size: Many authors argue that an SME's initial size, generally measured by the number of employees, explains its likelihood to upgrade: the size of an enterprise affects its capability to innovate and thereby grow (Schumpeter 1964). Small firms are less able to spread risk over a product portfolio, might encounter difficulties starting up in foreign markets and are likely to experience difficulties funding long-term R&D (Rothwell / Dodgson 1991). Several studies have provided empirical evidence on the correlation between a firm's initial size and its likelihood to upgrade (De Mel / McKenzie / Woodruff 2008; Ayyagari / Demirgüç-Kunt / Maksimovic 2011; McPherson 1996) – but none have been able to demonstrate a corollary between the average initial company size in a particular country and the average propensity of its firms to upgrade.

Sector: Some scholars argue that the sector in which an SME operates affects its potential to upgrade, however, we can only make assumptions about whether or not the concentration of SMEs in a given sector also affects their average upgrading potential. The level of competition between sectors diverges so that upgrading might be easier in some sectors than in others (Altenburg / Eckhardt 2006). Several studies have provided empirical evidence for this correlation, among them Ayyagari, Demirgüç-Kunt and Maksimovic (2011), Mead and Liedholm (1998)[9] and Mel, McKenzie and Woodruff (2008).[10] They find that firms in the manufacturing sector

8 Mead and Liedholm (1998) present similar results.

9 The authors use survey data from the Dominican Republic as well as five countries in East and Southern Africa.

10 De Mel, McKenzie and Woodruff (2008) use data from surveys of about 2,300 entrepreneurs from Sri Lanka.

tend to be more innovative – which suggests that the overall likelihood of a given country's SMEs to upgrade can be linked to the number of that country's manufacturing-sector SMEs.

Location: Other authors emphasise that an SME's location also has an impact on its individual potential to upgrade (while, of course, it does not explain variations in the average likelihood of SMEs to upgrade in different countries). SMEs in urban areas are more likely to upgrade than those in rural areas because they tend to be closer to suppliers and customers. Empirical studies have found a positive correlation between the location of SMEs and their likelihood to innovate (De Mel / McKenzie / Woodruff 2008; Mead / Liedholm 1998; McPherson 1996).

Informality: Another strand of literature stresses the role that informality plays in upgrading. Informal SMEs are less likely to upgrade than formal ones: first, because they cannot sign contracts with large domestic or foreign firms, and second, because they don't have such easy access to credit and business development services. Sleuwagen and Goedhuys (2002) provided empirical evidence for this correlation in the SME manufacturing sector in Côte d'Ivoire.[11] At the same time, countries with large informal sectors generally have a smaller number of upgraders, which could be due to the fact that a large informal sector normally results from the country's high tax rates and regulatory burden. When the costs of formalisation and taxes are high, most SME owners decide to remain informal (see Section 2.2.4).

Knowledge and innovation management: The notion that the nature of an SME's knowledge and innovation management influences its likelihood to upgrade almost goes without saying (Van den Bosch / Volberda / de Boer 1999; Zahra / George 2002). However, it could be argued that this factor not only explains differences in an individual SME's ease of upgrading but also the average likelihood that SMEs will upgrade. An SME's ability to conduct market research and acquire, integrate, utilise and manage knowledge and innovation is shaped by internal (i.e. individual) as well as external (i.e. sectoral or nationwide) factors.

Internal factors include the number of qualified scientists and engineers, as well as management leadership and education, the existence of a strategy

11 Porta and Schleifer (2008) also observed this correlation.

for technology management and investment in R&D (Radas / Božić 2009). Empirical studies have confirmed that the education of employees and management strongly affects a firm's potential for innovating – and upgrading (Ayyagari / Demirgüç Kunt / Maksimovic 2011; Lee / Temesgen 2009; Tan / Batra 2003).

External factors are found in the political, economic and social spheres, which means that a country's average quality of knowledge and innovation management determines the SME owners' propensity to upgrade. One such factor is the existence and potential of a national innovation system[12] that greatly enhances the quality of the SME owners' knowledge and innovation management, and thereby, their chances of upgrading. The same can be said about the availability of financial and non-financial business development services (BDSs) and funding for R&D (Cohen / Levinthal 1989; Radas / Božić 2009) (see Section 2.2.4). The societal context plays a similarly central role, for example, we can assume that SMEs in countries with patriarchal structures are less likely to be innovative since introducing new technology requires the patriarch's consent.

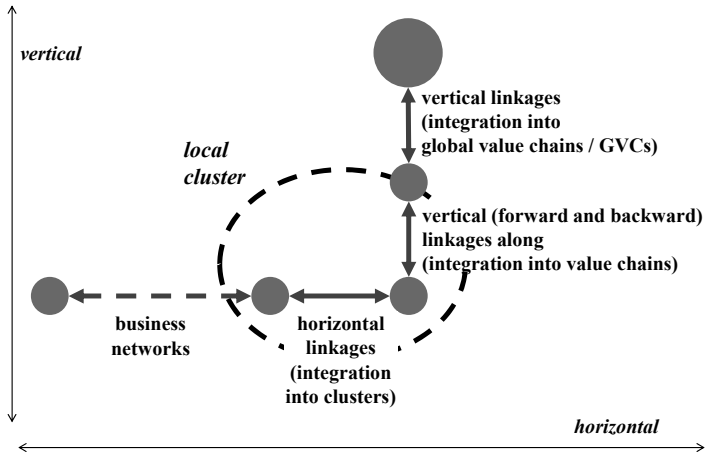
2.2.3 Inter-firm linkages

Another group of authors states that the average and individual likelihood of SMEs in any given country to upgrade is mainly determined by the existence of horizontal and vertical inter-firm linkages. Such linkages provide SME owners with access to knowledge, resources and collective action. Figure 3 depicts these linkages and differentiates between vertical linkages in the form of GVCs and horizontal linkages in the form of formalised business networks. Firms in clusters can be horizontally and/or vertically linked.

Global value chains (GVCs): The integration of an individual firm into a global value chain (GVC) may facilitate its upgrading; likewise, the overall degree of SME integration in GVCs in a given country is a good predictor of their average potential to upgrade. The term 'GVC' implies that the production process often takes place in various locations (Humphrey / Schmitz 2000, 9). While it is difficult for firms in developing countries to

12 A 'national innovation system' is a network of state and economic institutions that seeks to initiate, foster and spread innovation (Belitz / Schrooten 2008).

Figure 3: Inter-firm linkages



Source: Authors

enter international markets on their own, participation in GVCs can help them to export (Schmitz 2006; Stamm 2004). In addition, supplying bigger global buyers can create regular demand and generate a stable cash flow for a local producer. The accumulated capital can then be reinvested, thereby facilitating expansion (Gereffi 1999). Furthermore, many authors point out the learning opportunities that are possible through forward linkages in a chain. Buyers not only transfer money, but also consciously invest in their suppliers' competences and capabilities, or produce unintended knowledge spill-overs (Stamm 2004, 27) that enable local producers to meet high product specifications (Schmitz 2006). Earlier studies in the GVC debate demonstrated these advantages (Gereffi 1999; Kishimoto 2004; Lee / Chen 2000). Nevertheless, the potential benefits from integration into GVCs do not equally apply to all SMEs: upgrading chances largely depend on the governance and power relations within the chain[13] (Humphrey / Schmitz

13 Hierarchical value chain governance favours process and product upgrading but hinders functional upgrading (Schmitz 2006; Navas-Alemán 2011).

2000; Navas-Alemán 2011). For example, larger firms might try to avoid SME upgrading because they prefer to have "weak" counterparts than potential competitors. Various case studies have provided empirical evidence that an individual SME benefits less from being integrated into a chain if certain dominant firms exercise power and defend their market positions by discriminating against other members of the chain.[14] In addition, a country's overall level of integration into GVCs might explain the comparative difficulty for SMEs to upgrade. Integration into GVCs depends on the degree to which SMEs are globally linked and their ability to create vertical linkages with global companies. Some countries are generally less integrated into the world market, which means that from the outset local SMEs find it more difficult to upgrade through GVCs.

Cluster:[15] Some authors argue that clustering has an even stronger impact on SMEs' upgrading potential – both individual SMEs and SMEs countrywide. Case studies on Pakistan (Nadvi 1999), Brazil (Schmitz 1999), Mexico (Rabelotti 1999) and India (Knorringa 1995) demonstrate how clusters help SMEs to upgrade. Being part of a regional agglomeration can raise an SME's competitiveness and promote upgrading (Caniels / Romijn 2003; Knorringa / Meyer-Stamer 1999; Humphrey / Schmitz 2000). Firms in a cluster can divide labour and specialise within the production cycle (Kaplinsky / Readman 2001). Nadvi (1999) showed the advantages of sharing investment costs in his case study on a surgical-instrument cluster in Pakistan. Spillovers mainly relate to learning effects within clusters which are crucial for a firm's chances to upgrade (Kaplinsky / Readman 2001). Clusters are reported to have a positive impact on the spread and application of knowledge (Humphrey / Schmitz 2000). Audretsch and Feldman (1996) have provided econometric evidence for the effect of knowledge spillovers on innovative activities in the United States. The prevalence of

14 These case studies include investigations by Giuliani, Pietrobelli and Rabellotti (2005) of Latin-American clusters in the manufacturing and software sectors, Knorringa and Schmitz (2000) on the footwear industries in China and India, Bazan and Navas-Alemán (2004) on the Brazilian footwear industry, and Bair and Gereffi (2001) on jeans production in Mexico.

15 A 'cluster' can be defined as the sectoral and geographical concentration of enterprises and other public and private institutions and research centres (Schmitz 1997, 3; Kappel 2007, 235; UNCTAD 1999).

clusters in a given country might explain the average propensity of local SMEs to upgrade by helping increase the average number of firms integrated in clusters and facilitating inter-firm co-operation.

Formalised business networks: Some authors argue that formalised co-operation through business networks increases the likelihood of SME upgrading. Upgrading opportunities may also depend on the type and prevalence of formalised networks in the country, which include sector-specific networks such as trade or business associations and regional organisations such as chambers of commerce. They can be important providers of knowledge, enable access to resources and markets and facilitate collective efficiencies. In addition, members of business and trade associations may choose to share risks and increase their bargaining power Humphrey / Schmitz 2000, 19 f.). A shared – and thereby reduced – risk increases an individual firm's willingness to invest, and facilitates upgrading. Greater bargaining power increases the chance of influencing policy-making and encourages a favourable environment for upgrading. However, the structure of business networks is very different in each country. The benefits of formalised networks are significantly reduced in countries where business associations are controlled by the state and do not represent or support their members' interests. SMEs in these countries may find it generally harder to upgrade than SMEs in countries with strong and independent formalised network structures.

2.2.4 Business environment

Many studies have shown the business environment to be the key determinant of the *average* likelihood of SMEs in a given country to upgrade, although its ability to account for the differences in the likelihood of *individual* firms to upgrade is limited. Various authors have illustrated how components of the business environment impact on the innovative potential, growth and investment behaviour of SMEs.[16] Macroeconomic and political stability, regulation, competition, corruption, availability of skilled labour, trade policy, access to finance and insurance, non-financial business development services (BDSs) and infrastructure are the most important elements of the business environment.

16 Publications that deal with this correlation include: OECD 2010a, World Bank 2010a, WEF 2011, de Soto 1989, Klapper 2006a, Djankov et al. 2002.

Macroeconomic stability: Several authors have argued that macroeconomic stability eases the upgrading of SMEs in a country. Moderate inflation and a stable real exchange rate provide firms with more security and greater ease in predicting future developments, which positively affect their investment behaviour and upgrading efforts (Stieglitz et al. 2006). Bhattarchajee et al. (2002) found that macroeconomic stability reduces the risk of bankruptcy.

Macroeconomic stability does not have the same effect on every firm. Firm-level data suggests that SMEs are more affected by instability than large firms because they have less flexibility to deal with volatilities at the macro-level (Beck / Demirgüc-Kunt / Maksimovic 2005). Furthermore, fluctuations in inflation or exchange rates are especially critical for firms with little access to finance since a lack of liquidity makes it more difficult to cope with imbalances.

Political stability: Many authors similarly argued that a stable political environment increases a firm's willingness to invest and therefore facilitates SME upgrading. In contrast, political instability, such as that in a post-conflict phase, may hinder firm growth. Collier and Duponchel (2010) used a survey of firms in Sierra Leone to show that political instability negatively affects productivity and the use of new technologies.

Regulation: Other scholars have emphasised that the regulatory framework impacts on the general propensity of SMEs to upgrade and can also explain differences between countries. Regulation can have both positive and negative effects on firm investments and likelihood of upgrading.

On one hand, regulation provides entrepreneurs with more security in both their business-to-business and their business-to-state relations. For example, regulation is needed to protect intellectual and other property, and for contract enforcement and dispute resolution (World Bank 2012a). All this is particularly helpful for SME owners, which tend to be disproportionately risk-averse (Loewe et al. 2007, 18). Regulation also means that the public administration has clear rules for dealing with private entrepreneurs that ensure transparency in government procedures and the equal treatment of firms (both large and small).

On the other hand, regulation may raise the costs of doing business in terms of both time and money. Various empirical studies have shown that excessive regulation burdens entrepreneurs and reduces their propensity to invest

and innovate (World Bank 2010a; OECD 2010a). The World Bank's *Doing Business 2012* argues that when less time and money and fewer procedures are needed for dealing with construction permits, registering property, paying taxes and closing a business, the business environment is more favourable for SME owners (World Bank 2012a). The same applies to the cost and time required to get land titles, permissions or licences to operate a business. Djankov et al. (2002) argued that high barriers to register a business result in a large informal economy (see above). SME owners weigh the trade-off between the benefits and the costs of regulation in deciding whether or not to formalise (de Soto 1989).

The influence of these two contradictory effects of regulation on a firm's propensity to upgrade depends to a large degree on its individual characteristics. Some authors have argued that the degree of formalisation and the size of the firm are important. Informal SMEs are excluded by and large from the advantages of regulation. They do not benefit from the protection of property rights, the possibility of enforcing contracts through judicial processes, government BDSs or access to formal credit – which limits their ability to upgrade. At the same time, informal firms save substantial costs that formal firms have to pay for taxes, registration, licensing etc., and which limit profits, thereby discouraging them from investing and upgrading. Meanwhile, SMEs are disproportionately affected by high tax burdens and the costs of regulation, which large firms can absorb more easily (Weichenrieder 2007; Schiffer / Weder 2001; OECD 2004).

Competition: Other scholars have argued that competition is the main determinant of SME upgrading: without it, firms have few incentives to invest and innovate. Michael Porter, in particular, emphasises that competition increases a company's value, productivity and profitability. In Porter's understanding, the main goal of competition is to be unique, which allows a firm either to lower its costs or to charge higher prices. The threat of new entrants into markets forces firms to optimise and innovate (Porter 2008). Many authors have emphasised the need for effective laws regulating competition and strong institutions to guarantee fair competition (Singh 2002; Laffont 1998).

At the same time, competition within a country could account for differences in some companies' ease in upgrading, with unfair competition privileging some firms at the expense of others. For example, firms with social capital – good personal connections to the government or influential people

in the bureaucracy – may get preferential treatment regarding registration, licensing or taxation, or when applying for land, credit or a government tender that can ease market access and help expand the business (Loewe et al. 2007). Such firms accumulate artificially created rents. In contrast, most SME owners do not have good connections and are unable to influence decisions taken by the government or public administration. For them, unfair competition constitutes a high barrier to market entry and an obstacle to upgrading.

SMEs in the informal sector are an exception to this rule because they depend much less on the public administration's goodwill than companies in the formal sector. While informal SME owners have limited access to credit, licenses and government tenders, they can circumvent government regulations and so are less concerned by unfair market competition (OECD 2009). Their informal status also creates unfair conditions that work to their benefit and that are harmful to formal enterprises. Since informal enterprises do not comply with government-defined standards and requirements, they can often produce at lower costs, meaning that from the point of view of formal enterprises, they are unfair competitors.

Corruption: Many scholars have emphasised that corruption negatively affects the upgrading potential of firms in a country. Some have argued that corruption could have positive effects such as reducing information and transaction costs or speeding up administrative procedures.[17] However, only wealthy entrepreneurs can afford to pay high bribes and only entrepreneurs with connections benefit from favouritism in state-business relations; all others are disadvantaged by corruption. If one group of entrepreneurs benefits from connections or pays bribes and another does not, the former will see its applications and requests processed more quickly with better chances of approval, while the latter will have to wait longer and work harder to get its applications processed – with greater likelihood of being refused (Loewe 2013). Corruption also reduces entrepreneurs' incentives to be competitive. If it is clear that bribes and connections are the main determinants for getting an application approved or winning a government bid, they will shift their time and money investments from the research and development of new products to investments in connections and bribery. As

17 For a review of such studies see Bardhan (1997).

a consequence, widespread corruption decreases entrepreneurs' rates of investing, which may have a negative effect on the average chances of SMEs in a country to upgrade (Loewe et al. 2007).

Availability of skilled labour: Empirical evidence shows that a lack of skilled labour constitutes a constraint to SME upgrading, explaining why SME upgrading might be particularly difficult in some countries – although it does not explain differences for SME upgrading within a single country. Humphrey (2003) argued that firm upgrading requires highly skilled managerial and technical workers *"that can provide the management and supervisory systems that will ensure adherence to the specifications demanded by global buyers"* (Humphrey 2003, 16). Even SMEs require skilled – as opposed to unskilled – labour when they upgrade in order to be able to use technology effectively and become competitive on international markets (Lall 1999). According to the enterprise survey in the *Global Competitiveness Report 2010–2011,* many business leaders in the developing world consider an inadequately educated workforce to be one of their main constraints (WEF 2011).

Trade Policy: Other authors have demonstrated that the liberalisation of external trade positively impacts on the upgrading of all local SMEs. However, trade does not easily explain variations in the ease with which SMEs in the same country upgrade unless other factors such as differences in market orientation are taken into account (for example, while companies that export may benefit from trade liberalisation, companies that serve the local market do not).

The World Bank's *Innovation Policy: A Guide for Developing Countries* claimed that deregulated cross-border trade opens windows for the transfer of technology to local firms (World Bank 2010a). Trade liberalisation also opens up new opportunities for sales by giving SMEs access to international markets (Wignaraja 2003). It makes it possible for SMEs to use cheap imported goods and thereby become less dependent on the limited, and sometimes more expensive, domestic supply market. This enhances SME productivity.

At the same time, trade policy does not affect all firms in one country in the same way since the ability to reap the benefits of liberalisation is dependent on each firm's individual competitiveness in export markets (Tambunan 2011). Tewari and Goebel (2002) show that liberalisation produces winners

and losers in the auto-components industry of southern India. They found that some firms were able to upgrade and take advantage of technology spill-overs from foreign firms, while most firms saw no difference, and 15 per cent of all companies in the study had gone bankrupt as a result of the increased competition following liberalisation.

Access to finance: Many scholars have focused on access to finance to explain the general potential of a country's SMEs to upgrade, as well as variations in the ease of upgrading within the country. Empirical evidence has mainly been provided for access to credit but some scholars have also discussed other forms of finance such as factoring, leasing or equity.

While there is a lot of literature on the link between finance and economic growth in general (Levine 1997), the channels through which finance affects firm growth have not been studied as well. Several cross-country regressions and case studies have found that access to finance appears to be positively correlated with firm growth[18] and productivity[19]. Other studies have sought to identify the channels through which finance enables growth. King and Levine (1993) developed a theoretical model in which financial institutions mainly provide finance to firms that engage in innovation. Another study (Demirgüç-Kunt / Beck / Honohan 2008) suggested that external finance enables firms to invest and take advantage of opportunities for growth and investment, thus enabling entrepreneurs to obtain a more productive set of assets. Ayyagari, Demirgüç-Kunt and Maksimovic (2006) stated that the financial system might foster growth at the firm level by channelling funds to those firms that employ innovation in order to become more efficient.

Evidence on the correlation of access to finance and innovation is rather limited. A study of firms in Eastern Europe and Central Asia by Correa,

18 See Rahaman (2011), Beck et al. (2000) as well as Ayyagari, Demirgüç-Kunt and Maksimovic (2006). Other sources of empirical evidence are case studies that analyse the impact of finance on firm development. They exhibit mixed results: two studies (Zia 2008; Banerjee / Duflo 2008) found a positive impact, i.e. greater access to finance is associated with firm growth, while other studies did not find that credit or capital significantly determine firm performance (Akoten / Sawada / Otsuka 2006; Fafchamps, McKenzie / Woodruff 2011).

19 For example see Butler and Cornaggia (2011) or Gatti and Love (2006), who examined the impact of external finance on productivity and found a significant positiverelationship.

Fernandes and Uregian (2008) provided evidence that access to finance is correlated with technology adoption. Maksimovic, Ayyagari and Demirgüç-Kunt (2007) used a sample of 10,000 firms in various developing countries to show that external finance – both equity and bank finance – correlates positively with firm innovation and firm dynamism.[20]

While in most cases, access to finance is equally ranked with access to credit, the availability of additional financing instruments may be an important determinant for SME upgrading. Factoring might be an alternative financing instrument for SMEs in developing countries that cannot get bank credit (Klapper 2006b). Leasing helps SME owners obtain business equipment without having to pledge collateral (UNCTAD 2001), and equity provides entrepreneurs with long-term capital. Venture capital can promote innovation at the firm level because it supports young and quickly growing firms.

The effect of a firm's size on its access to finance is viewed as a determinant that explains differences in upgrading between SMEs within a country. A study of more than 10,000 firms in 80 countries found that access to finance is more difficult for small enterprises than for large ones (Schiffer / Weder 2001; Beck et al. 2006). Small firms are also more vulnerable to limitations in accessing finance than large companies, which can better assume the functions normally provided by financial intermediaries (Beck / Demirgüç-Kunt / Maksimovic 2005).

Access to insurance: Another strand of literature stresses that insurance has a very strong effect on the investment decisions of SME owners, explaining both the general chances for SMEs in a country to upgrade and within-country variations in the chances to upgrade. It is argued that insurance decreases vulnerability to risks, thereby encouraging entrepreneurs to make investments that bring about additional risks (Slater et al. 2009). Some authors have even stated that protection against basic risks (such as illness, work disability and death) predisposes entrepreneurs to accept the additional risks that investments and upgrading efforts usually entail (Loewe 2009, 42). Empirical literature on this subject supports these claims. Elbers,

20 They define innovation as "activities such as the introduction of new products and new technologies" and firm dynamism as "activities that promote knowledge transfers such as signing joint ventures with foreign partners" (Maksimovich / Ayyagari / Demirgüç-Kunt 2007, 2 and 11 f.).

Gunning, and Kinsey (2003), for example, demonstrated that in Zimbabwe risk substantially reduces firm growth as measured by the firm's capital stock, and Cai et al. (2009) found that access to formal insurance increases Chinese farmers' willingness to invest, while Cichon and Scholz (2009) emphasised that health insurance increases labour productivity.

Non-financial business development services (BDSs): Many authors have also emphasised the role of BDSs in explaining the general propensity of SMEs to upgrade in a given country, as well as accounting for some differences between SMEs within one country. BDSs include *"services that improve the performance of the enterprise, its access to markets, and its ability to compete* […] *both strategic and operational"* (UNDP 2004, 5). A distinction is often made between financial and non-financial BDSs. The former are intended to ease the access of enterprises to finance, while the latter may include *"training, consultancy, marketing, information, technology development and transfer, business linkage promotion, etc."* (ibid.).

Few empirical studies have rigorously tested the impact of non-financial BDSs on firm upgrading or growth. Bennett and Robson (2000) did, but found no significant correlation. In contrast, Goldmark (1999) analysed the financial viability of BDS programmes in Latin America, interpreting the high level of cost recovery of many of the programmes as an indicator for the fact that they helped SMEs increase profits: had that not been so, the SME owners would not have been willing to pay for the services. Zandniapour, Sebstad and Snodgrass (2004) reviewed the impact evaluations of 27 BDS programmes throughout the developing world and found that many of these programmes impacted positively on SME growth. Unfortunately, the evaluations suffer from severe methodological weaknesses such as the lack of control groups and selection bias.

Infrastructure: Many scholars argue that the general likelihood of SME upgrading in a given country, as well as differences in SME upgrading within the country, is significantly influenced by the infrastructure. Good transportation links, reliable supplies of energy and water and access to up-to-date information technology are required to efficiently run a business, while inferior infrastructure may lower returns and levels of private investment (Hausmann / Klinger / Wagner 2008). The state of the infrastructure either similarly affects all the SMEs in a country or influences the upgrading chances of individual firms – depending on the overall availability of these resources and the conditions for access.

There is a good deal of empirical evidence on the link between infrastructure and SME upgrading, but the relationship between infrastructure and innovation has not yet been discussed. Dollar, Hallward-Driemeier and Menigstae (2005) showed that the quality of infrastructure is the most important determinant of firm performance as measured in terms of profits and productivity in five developing countries in Asia. Hallward-Driemeier, Wallsten and Xu (2006) studied firm performance in five large Chinese cities and found that physical infrastructure, such as transportation and energy supply, is less important for firm performance than elements of the technological infrastructure such as telecommunications, which significantly and positively impacts on firm productivity. Goedhuys and Sleuwaegen (2010) analysed firms in the manufacturing sector in 11 countries in Sub-Saharan Africa and found that firms with their own transport facilities grew faster. Using a sample of 70,000 enterprises in 107 countries, Aterido, Hallward-Driemeier and Pages (2007) showed that weak infrastructure – in the form of power outages – negatively affected SME employment growth.

3 The 'missing middle' in the context of Egypt's development conditions

Despite its considerable potential for development, Egypt suffers from significant structural deficiencies, partly caused by the 'missing middle' phenomenon, a lack of medium-sized companies that are able to graduate and become exporters or link with larger domestic or foreign companies integrating into global value chains (GVCs).

This chapter begins with an analysis of Egypt's potential for development (3.1) and discusses how neo-patrimonial structures in the political and economic systems, which emerged under the previous authoritarian regime, affect entrepreneurship in Egypt in 3.2. Section 3.3 identifies Egypt's most significant economic problems and 3.4 explains how filling the 'missing middle' could help to solve them. Section 3.5 closes with an overview of the sector of Egyptian small and medium-sized enterprises (SMEs).

3.1 Economic development conditions

Egypt has both favourable and disadvantageous conditions for development.

In particular, the country enjoys numerous favourable natural conditions for development – extensive energy reserves and excellent conditions for the production of renewable energies, especially wind and solar. Egypt has a large domestic market, and easy access to sizeable sales markets by reason of its proximity to Europe and location between Asia and Africa. Egypt also has a variety of sources of external income, such as Suez Canal user fees, a large tourism industry, development aid, military assistance and remittances. Egypt is ethnically homogeneous (over 90 per cent of the population are Sunni Muslims) with a common language, which can help reduce the risk of certain types of conflict. Finally, Egypt displays a low rate of epidemic diseases such as HIV/AIDS and malaria (Brach 2011; Loewe 2012).

At the same time, however, some factors hamper Egypt's economic development. Rapid population growth, for instance, aggravates a number of already existing problems. The fact that the Egyptian economy is not growing much faster than the population intensifies the already critical employment situation and the scarcity of water Sustainable use of water is not in sight: today, the agricultural sector alone consumes as much as 70 per cent of Egypt's water, which is largely sourced from the Nile. Egypt's development is further hindered by the scarcity of arable land. Finally, the country suffers from the heritage of decades of neo-patrimonial political rule.

3.2 The neo-patrimonial rule under Mubarak

Prior to the so-called 'Tahrir revolution' that took place in January and early February 2011, Egypt was ruled by President Mubarak's neo-patrimonial regime, which had hampered the country's economic development. Since then, Egypt has moved: President Mubarak resigned and was condemned to life imprisonment in a trial, the old ruling party was dissolved, and for the first time a parliament was elected in democratic elections. The army took over for a transition period until a new president, Mohamed Morsi from the Muslim Brothers party *Al-Ḥurriyya wal-ᶜAdāla,* was elected president and formed a new government in summer 2012.

However, Egypt's polity, economy and society still bear the marks of the neo-patrimonial structures of the old political system, which means that knowledge

of Egypt's past is crucial for understanding some of the country's most pressing current problems (see Box 1).

'Neo-patrimonialism' describes a type of authoritarian rule based on the strong formal and informal ties of personal relationships.[21] In a neo-patrimonial system, the formal state apparatus is supplanted by an informal pyramidal system of personal relations: only people with connections have power, not those who hold higher positions. The sole leader (the president in Egypt) commands patron-client relationships and uses state resources to legitimise his power (Nawaz 2008; Bank / Richter 2010).

Neo-patrimonial patterns of rule are observed in almost all countries of the Middle East and North Africa – including Egypt under Mubarak. Prior to the 2011 revolution, the president stood at the centre of all decision-making in the country. No political decision could be taken against his will, and he could veto all decisions taken by other Egyptian political bodies. Decision-making did not follow formal channels and rules, but instead was characterised by complex processes of balancing, containing, exploiting and neutralising various influential segments of the power elite (Loewe 2010; Loewe 2012). All the political elites depended directly on Mubarak, who recruited the political elites primarily with regard to their personal (political) loyalty to him, rather than because of their professional performance and competencies. Loyalty to Mubarak was based partly on traditional loyalties (family, heritage and religion) but also on material rewards, such as jobs, grants and licences (Bank and Richter 2010).

Egypt's economic development suffered from its neo-patrimonial political framework because of:

- *The misallocation of state resources:* The legitimacy of the president and the ruling elite was based on the strategic allocation of state resources (jobs, income, housing, etc.) to specific societal groups (patronage). The same mechanism was used at the micro-level to reward individuals for loyalty to the regime with employment, housing and promotions (clientelism). The allocation of state resources thus primarily served to ensure loyalty to the regime rather than serve the interests of the people or to increase Egypt's economic efficiency (Loewe 2013).

21 There is an ongoing discussion in the literature about whether or not neo-patrimonialism can be considered to be a sui generis regime type. We treat neo-patrimonialism as one particular manifestation of authoritarian rule.

Box 1: The political economy framework: a historical breakdown and the effects of Egypt's revolution

Following Egypt's independence, Gamal Abdu-n-Nasir led the 'Free Officers' coup d'état in 1952and installed an authoritarian regime. Although elections were held occasionally, they were never free and transparent. Power was shared among the army, the president, who relied on his charisma (Nasir) or personal networks (Mubarak), the state bureaucracy and the state political parties (the National Democratic Party under Mubarak). Events during and after the January 2011 revolution have shown that, despite what has been written before about the political role of the various Egyptian presidents, the army has probably always been the real cornerstone of the political order with the presidents powerless to take decisions conflicting the core interests of the army – even during 1988—2011 when the army was hardly apparent at all.

Egypt followed various economic policies between independence and the revolution of 2011. Under Nasir, who became president in 1954, most large companies were nationalised and foreign trade was heavily regulated. But Nasir's ambitious policy of import substitutions failed for both economic and foreign policy reasons.

In 1970, Anwar as-Sadat succeeded Nasir and adopted a strategy of 'controlled opening' (infitāḥ). He created new incentives for investors (tax holidays, tariff reductions on imported goods and guarantees for private property). His strategy benefited from the 1970s oil boom as well as from increased income from Suez Canal user fees, tourism and remittances but it failed to initiate a real structural change. As a result, Egypt continued to suffer from large public debt. It was unable to attract increasing amounts of foreign investment, and because most foreign investments did not target productive sectors of the economy, the manufacturing sector deteriorated a lot. Egypt's economic situation was further aggravated by the post-1985 collapse of international energy prices.

In 1981, Sadat was assassinated by an Islamist terrorist and succeeded by his Vice President Husny Mubarak, a military man who stepped up Sadat's efforts to deregulate markets and attract investors. In an effort to make Egypt more competitive on world markets, Mubarak abolished central planning and devalued the Egyptian Pound (EGP) – which did stimulate economic growth, increasing the share of manu-facturing goods in total GDP and industrial workers' productivity. However, Mubarak continued to support public-sector companies by manipulating prices, customs tariffs and interest rates, which retarded the development of the private sector. Despite the growth of Egypt's manufacturing sector, the economy was unable to cope with declining oil prices and rising global interest rates.

In 1991, almost-bankrupt Egypt was forced to accept the conditions set by the International Monetary Fund (IMF) and the World Bank for a stand-by credit. Mubarak reduced government spending, deregulated markets, liberalised foreign trade, cut subsidies, introduced a general sales tax and began to liberalise the financial market. However, despite his promise, he only half-heartedly pursued the privatisation of state-owned industries. In 2000, after a period of relatively high growth rates and macroeconomic stabilisation which was largely due to external windfall profits, the Egyptian economy again began to stagnate. Experts hold that this recession resulted from an incomplete and short-sighted structural adjustment programme that failed to create incentives for the underdeveloped manufacturing sector.

In 2004, Mubarak appointed a new 'reform cabinet', headed by Prime Minister Ahmed Nazif, that included a good number of successful businessmen. Much more ambitious and better designed than all previous reform efforts, the cabinet quickly launched new economic reforms to promote Egypt's private sector, improve the country's international competitiveness and further its integration into the global economy. As a result, Egypt's economy experienced another growth spurt, which was only slightly slowed by the global financial and economic crisis of 2008 to 2009. However, the development benefits were very unevenly distributed: While the wages of workers and informal sector employees almost stagnated, the urban middle class experienced an extraordinary economic boom, and some members of the business elite saw their incomes and fortunes explode within just a few years. Among the main beneficiaries were those with good connections to President Mubarak's family and the reform cabinet.

On 25 January 2011, a widespread popular uprising began to protest Mubarak, his sons and the government. Following two weeks of non-violent demonstrations, civil resistance, civil disobedience and labour strikes, during which the security forces killed hundreds of protesters and maimed thousands, Mubarak resigned on 11 February 2011. He ceded power to the Supreme Council of the Armed Forces (SCAF), an institution that had never been public before. The SCAF's head, Mohamed Husein Tantawi, became the effective head of state. He suspended the constitution, banned the state party, the National Democratic Party (NDP) and dissolved both houses of parliament. In March, the army appointed a new cabinet as the interim government.

In the meantime, the Egyptian economy had almost collapsed. Right after the January 2011 uprising, tourists stayed away, foreign investors put new projects in Egypt on ice, and manufacturing-sector workers halted production in order to conduct huge strikes for higher wages and protest the old regime and the prohibition of independent labour unions. The domestic security situation deteriorated because

the police had completely disappeared from the streets after the revolution. In order to safeguard basic public order, thousands of Egyptians stepped in to regulate local traffic and to safeguard security in the streets at night, but they were unable to prevent the rise in pick-pocketing and sexual harassment that made women in particular anxious about going to work. In some parts of Greater Cairo, vehicular traffic came to a standstill.

During the spring of 2011, tourism and production in the manufacturing sector slowly picked up, but domestic consumers drastically cut back wherever they could. As a consequence, smaller Egyptian companies that had been geared to the local market experienced a collapse in sales. Some were forced to lay off workers, which reduced domestic consumption while at the same time, the cost of imported goods continued to rise because of the increase in global energy prices following the recent world financial and economic crisis. This added pressure to the government budget as the state continued to subsidise consumer goods such as energy, water and basic food items. The interim government was loath to make major policy changes before a new parliament was elected. By late 2011, more than half of Egypt's foreign currency reserves had been depleted.

Initially, the Egyptian population had welcomed the army seizing power. But when it saw little progress was being made towards democracy, it renewed and intensified its protests. In July 2011, hundreds of thousands of Egyptians in Suez, Alexandria and Cairo demanded faster progress towards elections and the elaboration of a new democratic constitution – as well as swifter and more rigorous prosecution of former officials. Fierce fighting broke out in November and December 2011, with the police beating, shooting and using tear gas on demonstrators. Although the SCAF issued an apology, the public had turned against it. Most of the population considered that the army had lost its legitimacy.

Between November 2011 and January 2012, a new parliament was elected in three rounds. The result was an unexpectedly clear victory of Islamist parties, which won more than two-thirds of the seats in parliament (the Freedom and Justice Party of the Muslim Brotherhood got 42 per cent, the Salafist An-Nour Party 21 per cent and other Islamist parties 9 per cent). Former NDP members captured a mere 1 per cent of the seats, liberals and social democrats 10 per cent and the old national Wafd Party 7 per cent.

The new parliament soon turned out to be powerless as the army still made the important decisions. On several occasions in April 2012, protesters gathered in Cairo and elsewhere to demand an end to military rule and the cleanup of the judicial system, as well as to complain about the disqualification of several candidates for the impending presidential election.

The June 2012 presidential election resulted in the victory of Mohammed Mursi, the Muslim Brotherhood's number-two candidate (their preferred candidate had been disqualified by the electoral commission), who was inaugurated as the fifth President of Egypt on 30 June 2012. He appointed a government that was composed of a combination of Islamists, representatives of the old Mubarak regime and the interim military regime and a few independents. On 12 August 2012, Mursi dismissed Mohamed Husein Tantawi from his functions of Minister of Defense and head of SCAF, along with Sami Annan who, as the Army Chief of Staff, was probably behind most of the military regime's post-revolution decisions. He appointed a new government that was dominated by the Muslim Brothers. A new constitution was drafted by a Constituent Assembly dominated by Islamists in November 2012 and ratified in a referendum held in December 2012. However, it is not yet clear if the Egyptian army has definitively ceded power.

Source: Loewe (2012); Loewe (2013); Matzke (2011); Roll (2010); Stevenson (2010)

- *Ineffective administration:* Pervasive clientelism led to massive underemployment and the public administration's ineffectiveness. Employment in the public sector was commonly used to reward individuals for loyalty to the regime. As a result, the public administration was highly developed and omnipresent, with even small villages having their own schools, health stations and offices for the public administration. Vast employment in the public sector burdened the state with high costs for wages, while at the same time, the quality of public services was low, bureaucratic procedures were slow and administrative decisions were unpredictable (Loewe 2013).
- *Great income inequality:* Neo-patrimonial systems typically suffer from great income inequality. Significant state resources are directed to elites and individuals who benefit from patronage and clientelism, while those outside the neo-patrimonial informal structures bear the costs (e.g. through taxes). For example, in Nigeria it is estimated that in recent years, 1 per cent of the population received 80 per cent of the oil revenues (Nawaz 2008). In Egypt, the army and a few influential families have accumulated vast sums through neo-patrimonial structures.
- *Corruption:* The informal patrimonial governance system that overrules the formal rational-legal state apparatus and formal laws meant that corruption was rife under Mubarak. Egypt scored a mere 2.8 on a scale of

1 (high corruption) to 10 (low corruption) in Transparency International's Corruption Perception Index. According to the *Global Competitiveness Report,* corruption was Egyptian entrepreneurs' single most important concern in 2010 (Loewe 2013).

- *No authentic private-sector participation:* Chambers of commerce and industry, professional unions, employer's associations and labour unions all played roles that benefited the government much more than their members. These bodies have been described as 'neo-corporatist organisations' that exist to inform the government early about changes in public opinions and explain government policies to their members and mobilise them on behalf of the government – rather than to represent members' interests and opinions to the government. Until 2010, many of their leaders were not even elected by their members but rather were appointed by the government and had no veto power (Loewe 2013).

3.3 Economic problems

One issue that substantially contributes to Egypt's economic problems is the lack of a robust private sector. Experts argue that Egypt's reliance on external resources has hindered sustainable, employment-intensive, pro-poor growth. The Egyptian economy is characterised by low productivity, international competitiveness and weak technological capacities (Malik 2011; Dessus / Suwa-Eisenmann 1998). Steve Lee comments,

> *"Too much of the private sector in Egypt is based on cheap labour, low productivity, limited value-added production. This has to change. The challenge is to raise the productivity, add more value and employ more skilled labour in the production-steps done within Egypt."* (Steven Lee, freelance consultant, 17 February 2012)

Economic growth: In the last 10 years, Egypt has experienced an impressive growth spurt. Gross domestic product (GDP) increased on average by 4.7 per cent annually between 2000 and 2008, when it peaked at 7.2 per cent. Thereafter it decreased – mainly because of the global financial and economic crisis. Principle factors driving GDP growth were increased revenues from Suez Canal user fees and remittances, rising commodity prices, and easier and cheaper access to capital and international markets (Loewe 2012; Stevenson 2010).

Not pro-poor: The steady GDP increase was not especially pro-poor. GDP growth had little impact on poverty levels and income distribution. Some 20 per cent of the approximately 82 million Egyptians get by on less than USD 2 per day, with 16 per cent of them below the national poverty line (Bertelsmann Stiftung 2009; Stevenson 2010).

Not employment-intensive: GDP growth also had no significant impact on unemployment and underemployment.[22] The official unemployment rate stands at about 10 per cent, while independent observers estimate the effective rate to be between 20 and 25 per cent. With an unemployment rate of 25 per cent (in 2006), adult women are particularly exposed to unemployment (Bertelsmann Stiftung 2009). More than one million women would like to work but cannot find employment (Stevenson 2010). The unemployment rate among university graduates is also rising (Bertelsmann Stiftung 2009). With the total population growing by 2 per cent annually and the working-age population growing even faster (by 2.5 per cent per year), Egypt must create more than half a million new jobs each year just to keep unemployment rates at their current levels (Loewe 2013; Stevenson 2010).

Unsustainable growth: The growth spurt of the last decade lacks sustainability because it resulted from changes in commodity and capital prices and temporary windfall profits rather than from innovation and industrial diversification. The share of manufacturing exports has remained comparatively low. In order to attain sustainable long-term growth, Egyptian enterprises must diversify their product base, and improve both the quality of their products and their competitiveness. Increases in economic productivity and productive investment are essential (Brach 2010; Loewe 2012; Stevenson 2010).

Current account deficit: Egypt suffers from a sizable balance of trade deficit. Although the country's exports rose considerably during the last decade (more than 20 per cent annually between 2003 and 2008), the country suffered from a trade balance deficit of USD 25 billion in 2009 to 2010. Imports amounted to USD 49 billion with exports of less than half that value (USD 24 billion) (Marks 2010, 5).

22 Most poor people in Egypt lack the necessary resources to register as unemployed and instead try to earn a little money, even if the required effort is very time-consuming. This widespread phenomenon is viewed as 'underemployment'.

Limited level of technology absorption: The technological content of Egyptian exports is low. In 2008, only 30 per cent of the country's exports were finished goods. High-technology products accounted for just 1 per cent of Egypt's exports, while they made up 13 per cent of Turkey's exports, 16 per cent of Tunisia's exports and 54 per cent of Malaysia's exports. According to the *Global Competitiveness Report,* in 2009 Egypt ranked 66th out of 133 countries with regard to the availability of the latest technologies. The Philippines, which is roughly the size of Egypt, reports more technology royalty payments (an indicator of technology importation) than all Arab countries combined (Loewe 2013).

Limited level of diversification: It is not surprising that the Egyptian economy is not diversified enough since manufacturing accounts for just 16 per cent of GDP. Likewise, exports are still dominated by primary goods: In 2008, electricity, oil, gas and their derivates accounted for almost two-thirds of the merchandise exports, with other raw materials making up 4 per cent. The remaining 30 per cent consisted mainly of foodstuffs (9 per cent), textiles and clothes (6 per cent each), chemicals and pharmaceuticals (5 per cent) and machinery (5 per cent). Thailand, with a population smaller than Egypt, exports 10 times as many manufactured goods. Egypt's export volume amounts to USD 100,000 – for a mere 1,000 different products – in comparison with 2,000 for the Philippines and 4,000 for Malaysia (Loewe 2012).

Inflation: In 2008, rising commodity prices and strong domestic demand pushed inflation to an average of 18 per cent, with a peak of 24 per cent in August. Subsequent tight monetary policies by the Central Bank of Egypt (CBE) and decreasing international commodity prices lowered inflation, with the year-on-year rate of inflation dropping steadily to 11 per cent in 2010. Since the revolution, however, inflation has risen and commodity prices are expected to continue to increase (EIU 2011).

3.4 Responding to Egypt's economic problems by filling the 'missing middle'

Several of Egypt's problems have to do with its 'missing middle'. There are many ways that increasing the number of medium-sized enterprises could help advance Egypt's economic development.

- *Reduce unemployment and underemployment:* In Egypt, most people are employed in micro and small enterprises. An increase in the number of medium-sized companies would be helpful since jobs at medium-sized companies require higher skills, are better paid and involve better work (in terms of rights at work, working conditions, social-security provisions and the promotion of social dialogue).
- *Promote pro-poor and sustainable growth:* The growth of medium-sized companies is labour-intensive and generates above-average income for people from the lower and middle classes. Jobs created by medium-sized companies are usually more stable than those in micro and small enterprises.
- *Enhance productivity and economic diversification:* Total factor productivity is associated with a higher share of medium-sized enterprises in economic activity (Altenburg / Eckhardt 2006). This is probably because medium-sized enterprises are flexible and active and willing to invest in research and development (R&D), with all its ramifications for knowledge accumulation, innovation and economic diversification.
- *Ease technology absorption:* Medium-sized enterprises have greater potential to absorb technologies than micro and small enterprises.
- *Reduce the current account deficit:* Medium-sized enterprises may be able to export their products, either through domestic brokers who connect them with foreign buyers or by directly engaging with foreign partners (Dessus / Suwa-Eisenmann 1998).
- *Establish resilience to cyclical fluctuations:* More medium-sized enterprises would help make Egypt more resilient to the effects of international crises because medium-sized companies generally suffer less from external shocks than small enterprises.

3.5 The SME sector

Egypt's very large SME sector is heavily skewed towards small and very small companies – and in Egypt, the terms 'small' and 'medium' indicate much smaller sizes than in industrialised countries. In Egypt, just 1.6 per cent of all enterprises have more than 10 employees. Only 0.2 per cent have more than 50 employees – compared with 0.6 per cent in Turkey and 0.7 per cent in Jordan. Although several government programmes were launched in

the last decade to provide business development services (BDSs) to SME owners and thereby promote their upgrading, the number of medium-sized companies has not substantially increased. The middle is still missing.

3.5.1 Definition of SMEs

In Egypt, various criteria are used to distinguish between 'micro', 'small' and 'medium' enterprises. No official standard definition exists.[23]

In this study, we apply the criteria for defining SMEs that are used by the Central Agency for Public Mobilization and Statistics (CAPMAS), Egypt's central authority for statistics, because they are most common. Since it uses only the number of employees, the definition is unequivocal and easy to apply:

- 'Micro' enterprises are individuals or business entities with 1 to 4 employees,
- 'Small' enterprises are business entities with 5 to 49 employees,
- 'Medium' enterprises are business entities with 50 to 99 employees, and
- 'Large' enterprises are business entities with 100 employees or more.[24]

In terms of ceilings for staff headcount, this definition differs only slightly from the definition for 'micro' and 'small' enterprises in the Egyptian Small Enterprise Development Law of 2004, which defines micro and small but not medium-sized companies.[25]

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23 Interviews with Jennifer Bremer, American University in Cairo, Giza, 14 February 2012 and Mohamed Zakaria, Egyptian Banking Institute, Cairo, 21 February 2012.

24 The upper and lower thresholds of this definition of SMEs are in line with the criteria used in the studies simultaneously conducted in India by Caroline Reeg and the Philippines by Aimée Hampel-Milagrosa.

25 Articles 1 and 2 of 'Law141/2004' define micro enterprises as every individual undertaking or business entity engaged in economic, productive, service or commercial activities with: (1) less than 50,000 Egyptian Pounds (EGP) capital paid and (2) below 5 employees up to 10 employees. Small enterprises are defined as every individual undertaking or business entity with: (1) between EGP 50,000 and EGP 1 million capital paid and (2) up to 50 employees.

Other SME definitions[26] include additional indicators such as a firm's turnover or assets. The use of more than one indicator helps create a more comprehensive and accurate picture, while the use of a single indicator can be misleading because the labour intensity of production differs substantially between economic sectors. However, a single indicator does help to compare firms.

3.5.2 Characteristics of the SME sector

Although Egypt is estimated to have 4.3 million formal and informal SMEs, most of them are *micro* or *small.* According to CAPMAS (2006), micro and small enterprises account for 99 per cent of all enterprises, 80 per cent of total employment and 75 per cent of the national value added, with micro enterprises accounting for 92 per cent of all enterprises and 58 per cent of total employment (see Table 1) but only 29 per cent of domestic sales and just 4 per cent of industrial exports (El-Megharbel 2008, 4). According to El-Hawary (2007), between 1998 and 2006 the number of micro and small enterprises grew annually by about 5 per cent, while their contribution to total employment also increased (El-Hawary 2007, 68). By way of contrast, in Europe (EU 27) micro enterprises account for only about 30 per cent of total employment (Stevenson 2010, 83).

Micro and small enterprises (MSEs) are also the main source of employment generation. Between 1986 and 1996, they created about 1.4 million new jobs, while medium-sized and large enterprises created only 200,000 new jobs (Court / Osborne 2006).

Most MSEs belong to the tertiary sector with 66 per cent of them in trade and 20 per cent in services. Only 14 per cent belong to the manufacturing or construction sector (Stevenson 2010; Court / Osborne 2006). Here, they contribute, in particular, to the production of food, leather, wood, paper, rubber, metal and electronic products (El-Megharbel 2008, Table 3).

26 For example: In order for a company to be listed on the Nile Stock Exchange (NILEX), the Egyptian stock exchange market for SMEs, its paid in capital must not exceed EGP 25 million. No differentiation is made between small and medium-sized enterprises.

Table 1: Distribution of formal private-sector enterprises and share of nation-wide employment

Category	Size	Contribution to total employment	Share of all enterprises
Micro enterprises	1–4 employees	58%	91.91%
Small enterprises	5–49 employees	22%	7.82%
Medium enterprises	50–99 employees	3%	0.13%
Large enterprises	100 employees or more	17%	0.14%

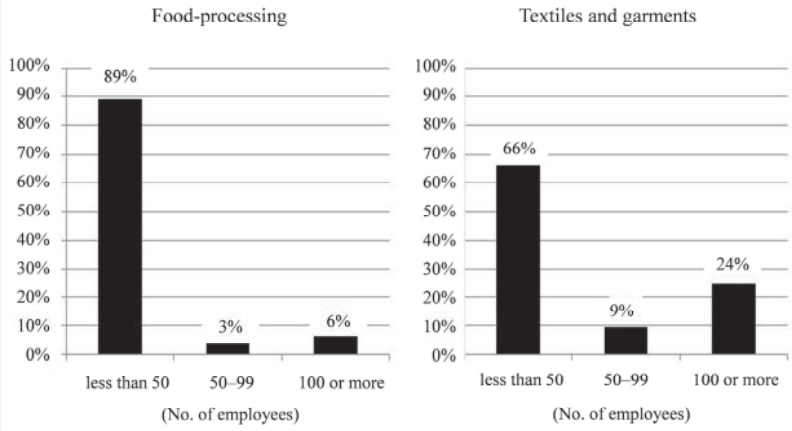
Source: CAPMAS (2006)

Most micro enterprises are informal, while most small and medium-sized enterprises are formal. Generally, the bigger a firm is the less likely it is to be informal. Hardly any large companies are informal (El-Hawary 2007, 73).

The phenomenon of the 'missing middle' is also illustrated in individual economic sectors. Figure 4 displays data on the distribution of both public and private formal-sector firms in two of the three sectors of this study – food-processing and textiles and garments – in the categories of micro and small, medium-sized and large companies. The U-shape distribution illustrates the dearth of medium-sized companies. Unfortunately, no corresponding data are available for the information and communications technology (ICT) sector.

The U-shaped distribution of firm size is a characteristic of the 'missing middle' phenomenon. It is particularly evident in the textiles and garments sector, while food-processing is characterised by a left-skewed distribution that indicates the huge predominance of micro to small enterprises in the sector. Of the 3.4 per cent (middle category) share in food-processing firms with between 50 and 99 employees, the public-sector share is 0.5 per cent; of the 9.3 per cent (middle category) share in textiles and garments, the public-sector share is 0.1 per cent; public-sector enterprises have always been large.

Figure 4: Distribution by size of formal-sector firms in food-processing and textiles and garments sectors in Egypt



Source: CAPMAS (2008); CAPMAS (2009)

The problem of the 'missing middle' is linked to the failure of Egypt's policy-makers and governments to effectively support SME upgrading. The state's efforts to foster large-scale private economic activities were much more obvious and effective than its support for the SME sector. Until the late 1990s state policies favoured big business, relying on a few large, mostly public, firms to increase exports and create jobs, while state efforts to promote the SME sector were smaller in scope and less efficient (Court / Osborne 2006). Nihal El-Megharbel, Director of the Decentralization Support Unit at the Ministry for Local Development commented:

> *"In the past, governmental efforts had a focus on large companies. The large companies were supposed to directly create employment and in the long run take the SMEs along. However, the SME sector never 'took off'."* (Nihal El-Megharbel, Ministry for Local Development, 19 February 2012)

The Nazif cabinet under Mubarak boosted several private-sector development programmes. However, many of these adopted a piecemeal approach that focused on just one category of enterprises. The individual programmes were poorly coordinated and lacked follow-up mechanisms to

monitor the upgrading of enterprises from one category to another – micro to small, small to medium, and medium to large. The three most prominent governmental BDS institutions were the Social Fund for Development (SFD), the Industrial Modernisation Centre (IMC) and the General Authority for Investment and Trade Zones (GAFI) (see Section 5.2.4).

4 Research methodology

The obvious question arises: Why does the 'missing middle' persist in Egypt? Which factors explain why only a limited number of micro and small companies in Egypt are able to upgrade and become medium or large? Why are some able to upgrade while others are not?

Although the literature on small and medium enterprise (SME) development in Egypt does not adequately answer these questions, it does contain some evidence about the factors that enable SMEs to upgrade, and shows that most of the factors discussed in Chapter 2 are relevant. But it does not prioritise the factors.

In light of this, we adopted a different approach: *Which are the most significant – the most important – factors for SME upgrading in Egypt?* This approach is new, at least for Egypt.

Our research approach takes both macro- and micro-perspectives on SME upgrading.

- The macro-perspective asks: *What factors explain why upgrading seems to be particularly difficult for SMEs in Egypt?*
- The micro-perspective asks: *Which factors explain why some SMEs are better able than others to upgrade – despite the common difficulties?*

Most empirical research that has been conducted on SME upgrading has focused on either the micro- or the macro-perspective and therefore emphasised either the importance of the business environment or the importance of the entrepreneur and firm characteristics. We sought to compare both sets of factors and to shed light on their interactions.

The third novelty of our research approach is that it uses a broad combination of qualitative and quantitative research tools: (i) an analysis of econ-

ometric panel data, (ii) a semi-standardised SME survey and (iii) semi-structured interviews with SME experts in Egypt.

The rest is fairly standard: We focused on three economic sectors and five Egyptian governorates, which account for about half of the Egyptian SME sector.

Our methodology was designed in close coordination with the two research projects that DIE was running simultaneously on SME upgrading in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

In the rest of this chapter, we formulate our research hypotheses (4.1), explain how we selected the sectors (4.3) and describe our research tools (4.3).

4.1 Research hypotheses

To guide our research, we formulated a number of research hypotheses that are based on assertions about the factors important for SME upgrading that are made in the conceptual and empirical literature (see Chapter 2). Each hypothesis refers to one factor that could explain differences in SMEs' ease in upgrading.

However, since the various strands of literature suggest so many factors for differences in SME upgrading, we came up a large number of hypotheses, each referring to one factor. Rather than list all of them, we grouped the hypotheses into four broad bundles containing the hypotheses that are related to: (i) enterprise characteristics, (ii) firm characteristics, (iii) inter-firm linkages and (iv) business environment (see Figure 2).

Since each factor can explain differences regarding the ease of upgrading for companies in Egypt (the micro-perspective highlighting individual factors) or general trends in Egypt (the macro-perspective highlighting structural factors) – or both – all four bundles of hypotheses (BoH) have both a micro-level dimension (a) and a macro-level dimension (b):

BoH 1: *Individual entrepreneur characteristics* (such as education, motivation, gender, etc.) are the main determinants for the probability of SMEs to upgrade.

- BoH 1a: Individual entrepreneur characteristics best explain the differences in the ease with which various Egyptian SMEs are able to upgrade (the micro-level).

- BoH 1b: The accumulation of specific individual entrepreneur characteristics in Egypt (e.g. the average educational level of SME owners in Egypt) best explains the propensity of SMEs throughout the country to upgrade (the macro-level).

BoH 2: *Firm characteristics* (such as firm size, location, informality, etc.) are the main determinants for the probability of SMEs to upgrade.

- BoH 2a: Firm characteristics best explain the differences in the ease with which various Egyptian SMEs are able to upgrade (the micro-level).
- BoH 2b: The accumulation of specific firm characteristics in Egypt (e.g. the size of the informal sector in Egypt) best explains the propensity of SMEs throughout the country to upgrade (the macro-level).

BoH 3: The degree of integration of SMEs into *inter-firm linkages* (such as global value chains (GVCs) or clusters) is the main determinant of the probability that they will upgrade.

- BoH 3a: The degree of integration of individual SMEs into inter-firm linkages best explains differences in the ease with which various Egyptian SMEs are able to upgrade (the micro-level).
- BoH 3b: The spread of inter-firm linkages in Egypt (e.g. the occurrence of business clusters in Egypt) best explains the propensity of SMEs throughout the country to upgrade (the macro-level).

BoH 4: The *business environment* contains the main determinants for the probability of SMEs to upgrade (the degree of regulation, the prevalence of corruption, etc.).

- BoH 4b: The business environment in Egypt best explains the propensity of SMEs throughout the country to upgrade (the macro-level).
- BoH 4a: Elements of the business environment best explain the differences in the ease with which various Egyptian SMEs are able to upgrade (the micro-level).

  (Explanation: Some elements of the business environment differ between regions, sectors, enterprise- size category, etc. Others are similar for all SMEs in a country but cause problems that some SME owners can solve or circumvent more easily than others – for example, because they have higher financial reserves or better personal connections.)

4.2 Sector selection

In order to ensure the most concrete results possible, we focused our research on three sectors of the Egyptian economy and, within each of them, on only one or two sub-sectors. This was necessary to more easily compare the results of the interviews regarding SMEs that had successfully upgraded with those that have not (yet) upgraded and are still small (see Section 4.3). It would have made no sense to combine information generated from interviews referring to completely different sub-sectors because differences regarding SME upgrading are more likely to be due to differences between the framework conditions of these sectors than to differences between the explanatory (independent) variables of SME upgrading processes.

At the same time, however, we recognised that the determinants of SME upgrading could vary between sectors. We wanted to ensure our ability to estimate the degree to which our results were valid for not just one or two of our selected sub-sectors but also for other sectors of the Egyptian economy. In order to represent a broad range of the Egyptian economy, we selected three sectors that are as different as possible in terms of products (merchandise goods vs. services) and historical timeframe (traditional vs. new sectors).

The sectors had to fulfil three criteria in order to fit into our research:

(i) *The sector had to include a significant share of SMEs:* Only in sectors with a significant share of SMEs could we possibly find enough evidence to support or refute our research hypotheses.

(ii) *The sector had to contribute a significant share to gross domestic product (GDP) or display high growth potential:* Only sectors that contribute a large share to Egypt's GDP or enjoy high growth rates were relevant to our research. SMEs that manage to upgrade in these sectors could meaningfully address economic problems such as high unemployment and the high balance of trade deficit.

(iii) *The sector had to display opportunities for SMEs to integrate into GVCs:* This criterion allowed us to compare SMEs integrated into a global value chain (GVC) with those that are not so as to discover whether such integration affects upgrading. Had we only studied sectors that do not display opportunities for SMEs to integrate into a GVC, we would not have been able to find any counterfactuals (integrated SMEs) to those companies that are not integrated.

On the basis of these criteria, we selected two well-established manufacturing sectors –food-processing and textiles and garments – and one recently emerging service sector, the information and communications technology (ICT) sector.

4.2.1 The food-processing sector

The food-processing sector has high potential for development since the relatively high cost of imports creates no serious competition for domestic products. Exports to Sub-Saharan Africa, other countries in the Middle East and North Africa (MENA) or in Asia are increasing.[27]

The food sector as a whole has suffered much less than other sectors from the Egyptian economy's post-revolution downturn – perhaps because the domestic demand for food is relatively inelastic with regard to changes in income and prices compared with the demand for other commodities (e.g. textiles and garments). In addition, many producers were able to counterbalance the decrease in domestic demand for their products by expanding their exports.[28]

At the same time, however, we realised that SMEs in the food sector face numerous challenges that producers in other sectors do not have at all, or to a smaller degree. Many regulations apply only to food-sector producers, as well as high health and safety standards and the need to renew licences and health certificates on a regular basis. Food also requires special storage, cooling and transportation facilities.

The food-processing sector fulfils our three selection criteria:

(i) The sector had to comprise a significant share of SMEs:

The Egyptian food industry is characterised by a dual market structure. Few large firms produce a wide range of products for the local and export markets, while some 87 per cent of all formal-sector food-processing is by small or medium-sized enterprises, which focus on regional and local markets (IMC 2005).

27 Interview with Mohamed Abo Elwafa, United States Agency for International Development (USAID), New Maadi, 21 February 2012.

28 Interview with Khalil Nasrallah, Wadi Food, Giza, 27 February 2012.

(ii) The sector had to contribute a significant share to GDP or display high growth potential:

Egypt's food-processing sector is the second largest industry – after textiles and garments. The formal food-processing sector is estimated to have 4,700 registered establishments with a total of 250,000 employees. The formal sector alone generates 31 million Egyptian Pounds (EGP) annually (8 per cent of GDP), about 25 per cent of Egypt's total industrial manufacturing output. The total market size (both formal and informal) is estimated at EGP 155 million (Coface 2011). Local demand continues to grow because of steady population growth and increasing demand for convenience foods, pre-cooked meals, snack foods and confectionery (El Araby / Irgens 2005). In 2009, food accounted for 38 per cent of domestic consumption; annual retail sales of domestic food grew by an average 19 per cent between 2006 and 2010 (OBG 2012, 129). Because of the low income-elasticity of demand for food items, the sector has not been severely impacted by Egypt's post-revolution economic downturn.

(iii) The sector had to display opportunities for SMEs to integrate into GVCs:

Egypt's location has many potential advantages for food processing including very good agro-climatic conditions, low labour costs, increasing availability of skilled labour, and proximity to Europe and the Gulf. However, the small-, cottage- and micro-scale food-processing sectors underperform and little has been done to increase their competitiveness, so that their export performance is negligible. Its successful expansion depends on improved product quality and the implementation of current standards (El Araby / Irgens 2005).

We focused on two sub-sectors of the food-processing sector:

- Vegetable processing (according to the International Standard Industrial Classification: *the processing and preserving of fruits and vegetables, including vegetable oil such as olive oil)* (UNSTATS 2012), and
- Sweets and cookies (according to the International Standard Industrial Classification: *the manufacturing of cocoa, chocolate, and sugar confectionary,* which includes among others biscuits from bakeries) (UNSTATS 2012).

We focus on these sub-sectors because they have a substantial export potential and a high concentration of SMEs.[29]

4.2.2 The textiles and garments sector

Of the many sub-sectors in the Egyptian textiles and garments sector, we chose the *ready-made garments,* which fulfils our criteria in contrast to some of the other sub-sectors:

(i) The sector had to comprise a significant share of SMEs:

Whereas the spinning, weaving and dying industries are comparatively capital-intensive and thus are dominated by medium-sized and large companies (GAFI 2010), there are many more small companies in the ready-made garments industry. This is because this sector requires less expensive machinery and is therefore much less capital-intensive. Around 76 per cent of all enterprises in the textiles and garments sector are micro, small or medium-sized enterprises (CAPMAS 2009). In 2005, they accounted for 42 per cent of the production of textiles in Egypt and for 43 per cent of their export – but only for 24 per cent of the production of ready-made garments and 23 per cent of their exports (El-Megharbel 2008, Table 3).

(ii) The sector had to contribute a significant share to GDP or display high growth potential:

The textiles and garments sector is a key element of Egypt's economy. In 2008, it accounted for 30 per cent of local employment. In 2009, it accounted for 3 per cent of GDP, 27 per cent of total industrial output and 14 per cent of all non-petroleum exports. Furthermore, it accounted for 30 per cent of local employment in 2008. In 2010, it had 3,243 registered companies (OBG 2012, 118). The 2004 termination of the multi-fibre agreement, which ensured textiles producers in developing countries preferential access to markets in industrialised countries, had hurt Egypt's textiles and garments industry because competitors in China and other Asian countries were able to produce more cheaply. The Egyptian textiles and garments industry was then rescued by several free-trade agreements, notably one with the US and Israel, which gives Egyptian products free access to the US

29 Interview with Mohamed Abo Elwafa, USAID, Maadi, 21 February 2012.

market provided that they have been produced in a 'Qualifying Industrial Zone' (QIZ) and at least 37.5 per cent of the final consumer price was added by the input of goods from Israel. This agreement has convinced Turkish garments producers to also move to QIZs in Egypt in order to benefit from the cheaper local labour and free access to the US market.

Egypt's textiles and garments sector greatly benefits from endogenous advantages such as the high quality and moderate price of locally grown cotton, cheap power supply, low labour costs and the proximity to European markets. Egyptian cotton costs the same as that from China and India and only slightly higher than Turkish cotton – but it is much higher quality. At the same time the cost of Egyptian labour is comparable Chinese, lower than Indian and much lower than Italian or Turkish (OBG 2012, 118). Egyptian labour productivity is admittedly much lower than in these countries – which means that in spite of very high rates of unemployment and underemployment, unit labour costs are still very high (Kheir el-Din 2005, xvii). More significantly, perhaps, the Egyptian textiles and garments industry has embarked on down-stream operations – all the way from cotton farming to high-end ready-made garments and upholstered furniture with ample capacities and expertise on all stages of the value chain.

The ready-made garments industry is the largest sub-sector – 75 per cent – of the Egyptian textiles and garments industry (GAFI 2010).

(iii) The sector had to display opportunities for SMEs to integrate into GVCs:

In general, the growth rates for textiles exports are very high. The main markets for the Egyptian textiles and garments sector are Arab countries; in 2008 exports grew by 38 per cent (GAFI 2010). Principally companies operating within QIZs[30] have been able to sustain their business through export orders,[31] while other companies were hit by the recession and the revolution. When export orders are urgent, companies in QIZs can always outsource sewing and assembly to SMEs, which suggests that SME owners may have less difficulties in this sector than in other sectors to build linkages to other large firms and thus integrate into GVCs.

30 'Qualifying Industrial Zones' or 'QIZs' are designated areas that benefit from a duty-free status with the United States, provided that they satisfy the Israeli component stipulated in the rules of origin (MFTI 2012).

31 Interview with Ahmed El Genedy, Friedrich Ebert Foundation, 27 February 2012.

4.2.3 The information and communications technology (ICT) sector

We added the ICT sector to the food-processing and textiles and garments sector as our third research focus so as to have a modern service sector alongside two manufacturing sectors.

Within the ICT sector we focused on software producers because it is the only sub-sector that fulfils all three criteria:

(i) The sector had to comprise a significant share of SMEs:

The share of SMEs in the ICT sector is relatively high: only 6 per cent of all companies are large while 94 per cent are micro, small and medium-sized enterprises. However, the relative concentration differs considerably between the sub-sectors. In the telecommunications, internet provision, call centres and hardware-assembly sub-sectors, the share of SMEs is particularly low, while it is much higher in the software production and ICT service and maintenance industry sub-sectors.[32]

(ii) The sector had to contribute a significant share to GDP or display high growth potential:

Since the beginning of the new millennium, the ICT sector has been one of the most quickly growing industries in Egypt, with its growth rate exceeding 20 per cent annually between 2003 and 2008. Thereby, its contribution to the country's total GDP more than to almost 4 per cent in 2008 (Helmy 2009). Although software production contributes only a minor share to value added in the entire ICT sector, it is growing at similarly high rates.

(iii) The sector had to display opportunities for SMEs to integrate into GVCs:

Egypt has become one of the leading developing economies in the trade of ICT goods and services. The UNCTAD *Information Economy Report 2007–2008* ranked Egypt 40th of the top-50 exporters of ICT-enabled services between 1996 and 2005, with an ICT-enabled- services export value

32 Interview with Heba Youssef, Ministry of Communications and Information Technology, Smart Village, 4 March 2012.

of USD 2.3 billion in 2006. In 2006, the per capita volume of Egypt's ICT service exports surpassed those of Indonesia, China and Brazil. In 2008, the National Outsourcing Association in London named Egypt the "Outsourcing Destination of the Year", which shows that Egypt's competitive workforce and location are making it a competitive international location for offshore ICT services (Helmy 2009).

4.3 Research design

We used a predominantly qualitative approach to answer our research questions because our preferred tool – an econometric analysis of panel data taken from two rounds of enterprise surveys – could not provide the necessary data.

First we ran an econometric analysis of panel data that was provided by two rounds of the Egyptian Investment Climate Survey (EICS) conducted in 2004 and 2008 by the American University in Cairo (AUC), funded by the Enterprise Survey Unit of the International Finance Corporation (IFC) and the World Bank. Each round covered about 1,000 companies that were representative of the formal firms in Egypt's manufacturing sector.

However, the utility of this approach was limited for four reasons: *First,* the EICS only provided information regarding a limited number of possible factors in SME upgrading such as: (i) the existence of a specialised research and development (R&D) department, (ii) workers' training level, (iii) company location, (iv) company export orientation, (v) owner's educational background and (vi) owner's gender. Many other factors – such as the owner's social networks and behavioural characteristics, the degree to which the company was integrated into clusters or GVCs and the amount of market competition – were not investigated. *Second,* the EICS covers only formal-sector firms, while most SMEs in Egypt are informal. *Third,* the data were from 2004 and 2008. *Fourth,* SMEs frequently change their identities, which makes it difficult to trace developments over a four-year period.

For these reasons we chose to use the results of the econometric analysis just to triangulate the results of our own enterprise survey, which became our main research tool. It covered 102 SMEs in the food-processing, textiles and garments, and software sectors in five governorates, out of

which we could however fully use only 80. The interviews that were conducted during a three-month research trip to Egypt (February to April 2012) were analysed using both quantitative and qualitative techniques. In the interviews, we applied a two-step technique that Liedholm and Mead (1991, 21) called the 'bore hole survey'. First we asked SME owners about the firm's current position and problems, and then we explored the firm's history to identify factors for its recent progress or lack thereof.

This approach allowed us: (i) to identify causalities rather than just correlations; (ii) to detect unidentified variables (i.e. explanatory factors that had not yet been considered in literature); (iii) to study soft variables, such as risk aversion, in the same way as hard variables, such as access to electricity; and (iv) to determine if only a combination of independent variables affected the dependent variable (SME upgrading). These effects would have been difficult to achieve with quantitative research techniques.

As a third research tool, we conducted semi-structured interviews with experts on SME development in Egypt from the government, the private sector, academia, civil society, the financial sector and development cooperation.

Starting in November 2011 in Bonn, Germany, we prepared our research mission to Egypt, where from 12 February until 28 April 2012, we conducted on-site empirical research. We started to interview the experts in Weeks I and II and continued with our enterprise survey during Weeks III to VII (see Table 2). In Week VIII, we analysed the data from the interviews and then during Weeks IX and X we drafted a preliminary report, which was presented for discussion with various SME experts at the Egyptian Center for Economic Studies (ECES) in Cairo in Week XI. We referred to the comments made about our preliminary report to rewrite and finalise the report that we presented at DIE in Bonn on 24 May and 28 November 2012.

Table 2: Timeline of research mission to Egypt (February–April 2012)

Week:	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Interviews with experts on SME development:											
Interviews with non-upgrading SMEs:											
Interviews with upgrading SMEs:											
Data analysis:											
Report drafting:											
Presentation and discussion of results:											

4.3.1 Analysis of panel data from the Egypt Investment Climate Surveys 2004 and 2008

The results of our econometric analysis are based on an average of 600 firm cases (the exact number differs somewhat between the various regressions built on different models). The EICS contains data on about 1,000 firms in each round, but we could only analyse the cases for which panel data are actually available, and almost 300 cases from 2004 had to be replaced by new cases in the 2008 round for various reasons. Another 100 cases could not be used because data was not available for either dependent or independent variables in one of the rounds.

The EICS panel data had already been used by Stone and Badawy (2010) to run logistic regressions to explain SME development in Egypt by means

of different independent variables (mainly firm characteristics).[33] However, Stone and Badawy's dependent variable was firm growth that was generated by innovation, market forces or other reasons. We wanted to look at the *factors* for upgrading and so focused on firm growth that was due to innovation.

We generated a new 'upgrader' variable for the dependent variable in our regressions. It is a dummy variable, which is '1' only for firms that were both 'innovative' *and grew* in terms of their number of employees by at least 40 per cent ('upgrader') – respectively more than 80 per cent ('gazelle') (depending on the model) – between 2004 and 2008. In order to cover as many different trajectories of innovation as possible (see Section 2.1), we termed a company 'innovative' if it fulfilled at least one of the following five criteria: (i) began a new major production activity, (ii) upgraded an existing product line in the factory, (iii) obtained a new licensing agreement, (iv) outsourced a major production activity, or (v) received an internationally recognised quality certificate. Meanwhile, the two thresholds used to define firm growth were in line with the thresholds that we later used in our own enterprise survey (growth by 50 – respectively 100 – per cent – within five years, i.e. both times about 10 per cent respectively 20 per cent annually).

The EICS dataset contains panel data for 695 enterprises. Of these, between 2004 and 2008 232 had introduced some of the innovations[34] described above. Of this group, 69 grew by at least 20 per cent in terms of number of employees (which is equal to 10 per cent of all enterprises with panel data), 47 grew by at least 40 per cent ('upgraders': 7 per cent of all enterprises with panel data), and 30 grew by at least 80 per cent ('gazelles': 4 per cent of all enterprises with panel data).

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33 According to Stone and Badawy (2010), Egyptian SMEs in the manufacturing sector that grew by at least 20 per cent annually between 2004 and 2008 tended to: (i) have trained employees, (ii) use e-mail, (iii) be less than 10 years old, (iv) have frequent inspections by the public administration, (v) experience few power cuts, and (vi) employ foreign-licensed technology.

34 Of the 232 innovators, 63 per cent had upgraded an existing product line, 46 per cent had built up a major new production activity, 37 per cent had received a new licensing agreement, 9 per cent had outsourced a major production activity and 2 per cent had received an internationally recognised quality certificate (double counting was allowed).

Since our dependent variable was binary, we used logit models with entrepreneur and firm characteristics as independent variables (see Table 3). In order to control for reverse causality, we just used data from 2004 for our independent variable, and the variations in numbers of employees between 2004 and 2008 for the growth component of our dependent dummy variable. The complete results of the estimations are displayed in Annex C.

The results of the logit estimations revealed that the following factors influence SME upgrading in Egypt (see Tables C1–C4 in Annex):

Knowledge and innovation management: The estimations showed that the existence of a specialised R&D department has a positive effect on the upgrading potential of manufacturing SMEs in Egypt. Most regressions delivered high positive coefficients and a significance at the 5 per cent level (meaning that the probability that the high positive correlation was due to coincidence was lower than 5 per cent) (see Table C1 in Annex).

Training of workers: Worker training also seemed to play a positive role. In most of the logit model specifications, we found a positive correlation of our dependent variable with the training index variable, which was significant at the 5 per cent level (see Table C1 in Annex).

Export orientation: Estimations further showed that Egyptian manufacturing SMEs were more likely to upgrade if they exported a large share of their products. The 'domestic sales' variable showed a negative correlation in all model specifications, which for most of them was significant at the 1 per cent level (see Table C1 in Annex). It is improbable that this resulted from reverse causality because we generated our independent variables from the EICS data from 2004, the year before any possible upgrading.

Location: The results of the logit estimations showed that the likelihood of SMEs upgrading is highest in the governorates of Sharqiyya and Al-Minya, followed by Minufiyya and Gharbiyya (with Cairo as the reference category). The correlation with upgrading of the dummy variables 'Sharqiyya' and 'Al-Minya' turned out to be significant through all specifications, while the correlation of 'Minufiyya' and 'Gharbiyya' were only significant for the 40-per cent-growth threshold – which means that location in these governorates increased the chances of being an upgrader, while location showed no clear effect on becoming a gazelle (see Table C2 in Annex). This result is in line with the descriptive statistics: In the EICS study, the relative share of upgraders was highest in Al-Minya, Sharqiyya, Gharbiyya and Minufiyya and below average in Alexandria, Dakhiliyya, Bahaira and Cairo.

Table 3: Description of variables in analysis of EICS panel data (logit estimations)	
Dependent variables	
Upgrader	Dummy variable: 1 if the company grew by at least 40% over the previous four years and introduced at least one type of innovation; 0 otherwise
Gazelle	Dummy variable: 1 if the company grew by at least 80% over the previous four years and introduced at least one type of innovation; 0 otherwise
Independent variables	
Entrepreneur characteristics	
Manager's education	Level of education
Female owner	Dummy variable: 1 if principal owner female; 0 otherwise
Firm characteristics	
Size	Total number of employees in 2004
Domestic sales	Per cent of domestic sales
Training index	Dummy variable: 1 if training available; 0 otherwise
Specialized R&D department	Dummy variable: 1 if had R&D department; 0 otherwise
Used foreign technology	Dummy variable: 1 if company used technology licensed from foreign company; 0 otherwise
Industrial zone	Dummy variable: 1 if located in industrial zone
Single shareholder	Per cent of firm owned by the single largest shareholder or owner
External finance	Dummy variable: 1 if company had a loan at the time; 0 otherwise
Insurance	Dummy variable: 1 if company had an insurance contract at the time
Location	Dummy variables for one of the 12 governorates in study; 'Greater Cairo' is the reference category
Sector	Dummy variables for dairy, finance, textiles and garments, and other; meat is the reference category

The results of the econometric estimations from the EICS panel data revealed that location in an industrial zone increased the likelihood of being a gazelle, but not necessarily the likelihood of being an upgrader. The coefficients for the respective independent variables were positive in all models, but this result was only significant (at the 5 per cent level) in the model that used the 80 per cent threshold (Table C1 in Annex). An industrial zone location has several advantages that are discussed under the heading 'access to land' in Section 5.2.4.

Sector: The results of the econometric estimations using the EICS panel data also showed that SMEs in the textiles and garments sector were less likely to upgrade between 2004 and 2008 than those in the other sectors. The coefficient for the respective independent variable was negative; this result was significant at the 10 per cent level (Table C3 in Annex). The results for the dairy sub-sector were not significant. Unfortunately, the EICS did not cover companies from the software or the food-processing sectors (besides the dairy and meat sub-sectors).

Business environment: With two exceptions, analysis of the EICS data did not display significant results on the upgrading of SMEs for factors related to the business environment. However, firms that considered 'business licensing' or 'macro-instability' to be their main challenges in the business environment had an above-average likelihood to upgrade. These results were significant at the 5 and 10 per cent levels, the reference being firms that mainly suffered from problems with the tax system (see Table C4 in Annex). One interpretation could be that firms with no challenges that were more serious than those they faced in 'business licensing' or 'macro-instability' had fewer problems than other firms. Put differently: The challenges regarding 'business licensing' and 'macro-instability' were less serious than other challenges in the business environment – meaning that for SME owners in Egypt 'business licensing' and 'macro-instability' are not major issues.

The same exercise with probit models delivered very similar results.

We also ran an ordinary least square (OLS) regression using firm growth as the dependent variable, and the same variables from the logit estimations as independent variables. We ran OLS regressions separately for innovators and non-innovators – again using firm growth as the dependent variable. This exercise was intended to separate the direct effects of the independent variables on SME growth (measured by the OLS regression with only non-innovators) from the indirect effects of the independent variables, that is, their impact on innovation, which again allows for additional SME growth (mea-

sured by the differences between the results of OLS regressions with innovators and non-innovators). In this exercise, too, innovators were defined as the companies in the EICS sample that fulfilled at least one of the five criteria that we applied in the logit estimations: (i) had developed a major new production activity, (ii) had upgraded an existing product line in the factory, (iii) had obtained a new licensing agreement, (iv) had outsourced a major production activity, or (v) had received an internationally recognised quality certificate.

Unfortunately, the OLS regressions did not deliver significant results.

4.3.2 SME survey

The core element of our research was our survey of 102 SMEs in the three sectors described in Section 4.2. The survey was restricted to five governorates (Cairo, Giza, Gharbiyya, Qalyubiyya and Sharqiyya) for pragmatic reasons (to reduce the transaction costs) as well as for reasons of comparability. Comparability is easier when firms have similar local environments.

Most of our conclusions are based on the analysis of a smaller core sample of 80 enterprises that we generated from the full sample by excluding all the companies that had more than 50 employees in 2007 (that year, 78 companies had a maximum of 30 employees). Exactly half (40) of the companies in the core sample were classified as 'upgraders' (they had introduced some kind of innovation and grown by at least 50 per cent in the previous five years), while the other half (40) were 'non-upgraders'.

The interviews with upgrading and non-upgrading enterprises were intended to:

- Learn what the SME owners perceived to be the main determinants of upgrading in Egypt – or the most important constraints and factors for success;
- Find out about the main differences between upgraders and non-upgraders in Egypt, in the hopes of identifying the main reasons why some SMEs were able to upgrade while others were not; and
- Learn what kinds of support the SME owners believed would facilitate the upgrading of their businesses.

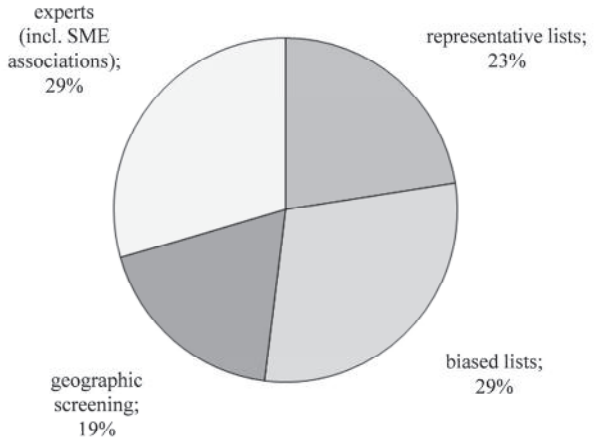
Below we describe: (i) the selection of interview partners; (ii) the criteria used, including the SME's location and sector or the owner's gender; (iii) the structure of the owner interviews; (iv) the classification of an SME as an 'upgrader' or 'non-upgrader'; and (v) the analysis of the interview data.

Selecting the SMEs (sampling methodology)

The methods that we used to select SME owners for our interviews were intended to create a sample that fulfils three criteria despite its limited size:

- It should be fairly representative of the distribution of firms across sectors and locations, as well as the owner's gender and educational level.
- It should include comparable numbers of upgraders and non-upgraders.
- It should include upgraders and non-upgraders that, in 2007, were as similar as possible – in terms of size, location, sector, owner's gender, etc. – in order to help identify the factors important for subsequent development.

Figure 5: Selection methods for SME survey



Source: Table A1 in Annex

For this purpose, we applied four different selection methods (see Figure 5 and Table A1 in Annex). Each selection strategy creates a different major or minor bias in the sample, so combining different methods allowed us to limit the effect of each bias on the total sample.

The *first method of selection* was to randomly pick companies from representative enterprise lists, such as the member list of the Egyptian Chambers of Textile Industries as well as Food Industries or the official yellow pages. In our sample, 23 of 102 companies were selected this way. This method's bias delivers mainly formalised companies. While all companies are required to register with the chambers of industries and may register in the yellow pages for almost nothing, only formal enterprises actually do. Some owners may not list their companies in the yellow pages because they are unaware of its benefit.

The *second method of selection* was to randomly choose companies from lists that were less representative but had already been used by other researchers.[35] A total of 30 companies were selected in this way. We applied this method for three reasons: *first,* it helped us make contact with some informal companies; *second,* it allowed us to identify SMEs in the software sub-sector, for which we had no chamber of industry member list; and *third,* we realised how difficult it was to identify a sufficient number of SMEs using the first method because many companies were listed with outdated names, addresses and telephone numbers. However, since companies were selected from non-representative lists, we defined an upper limit of six companies to be taken from each of them.

We called the *third method of selection* 'geographic screening'. To begin with we looked for geographical accumulations of food-processing, textiles and garments, or software companies such as Tanta or Mahalla-al-Kubra in the Gharbiyya governorate, or Shubra, Warraq and Imbaba in Greater Cairo. Then we requested interviews with the owners of 19 local SMEs – from the three sectors – that we happened to meet in the street. The bias was limited because all owners agreed to talk with us. This method led,

35 These included the database that the ECES uses for its barometer, the customer list of the Information Technology Industry Development Agency (ITIDA), local branch books and the list of participants at programmes organised by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

however, to some geographical bias, which is apparent in the distribution of the companies across locations: 14 are located in Shubra and eight are based in Tanta or Mahalla-al-Kubra (see Tables A2 and A3 in Annex). But it helped us to locate many informal companies, as well as a number of upgraders and non-upgraders that had been of similar size in the same place and under comparable conditions five years earlier.

Our *fourth method of selection* was to ask experts on Egyptian SME development to indicate interesting SMEs from different sectors: success stories, such as SMEs that were micro or small (preferably with fewer than 30 employees) five years earlier and that had significantly grown since then, as well as SMEs that had tried to grow but failed. We used this method to ensure a sufficiently large number of upgraders in the sample. In the course of our research, we realised that it was easier than anticipated to find success stories in the company lists and by 'geographical screening'. Nevertheless, the experts' recommendations did contribute a considerable share of the successful upgraders to our sample. The weakness of the method is that it produces a comparatively strong bias in the sample because each expert knows only specific types of SMEs. Therefore, we interviewed at most two SME owners suggested by each expert and requested suggestions from as wide a variety of experts as possible – from financial institutions (such as NILEX), German development co-operation (GIZ), chambers of commerce (e.g. the German Arab Chamber of Commerce), sector-specific training centres (e.g. the Technical and Vocational Education and Training System – TVET), governmental SME-promotion programmes (e.g. the Social Fund for Development) and small enterprise-development associations. We also asked leading firms in our focus sectors for the contact details of one or two of their suppliers. In this way we selected 30 companies.

To be as representative as possible, we applied three rules: *First,* since each selection method involves a certain bias, we counterbalanced this bias by using four different selection methods. *Second,* we set upper thresholds for the number of interview partners identified by each of the four selection methods. *Third,* we made sure to counterbalance stark disequilibria in the main composition criteria such as gender, formal status, location, sector and size. We were constantly on the lookout for women entrepreneurs and informal enterprises so as to have at least a minimal number of SME owners with these criteria. We also made sure to include a certain number of SMEs from all three sectors, as well as a certain number of companies from the five governorates.

Sample composition

Although the sample was not representative of the entire SME sector in Egypt, our focus on specific sectors and governorates made it comparatively well-balanced. It contains the various kinds of SMEs classified by criteria such as the owner's gender, formality status, size, etc.

Location: Because we focused on five governorates (Cairo, Giza, Gharbiyya, Qalyubiyya and Sharqiyya), our sample does not cover the entire geographical range of SMEs in Egypt. It contains 46 SMEs from Cairo,[36] 19 from Giza,[37] 18 from Gharbiyya, 13 from Qalyubiyya and six from Sharqiyya (Figures 6 and 7). According to the Egyptian Banking Institute (EBI 2012b), 52 per cent of all Egyptian SMEs are located in these five governorates (Table 4).

Sector: More than half of the SMEs in our sample were active in the textiles and garments sector (46 produced clothes and seven produced textiles), while 34 were active in the food-processing sector (sweets and cookies, 14; processed vegetables, 7; other food, 13) and 14 were software producers (Figure 8, Table A4 in Annex). More than 50 per cent of all Egyptian manufacturing SMEs are in these three sectors (see EBI 2012b, Table 4).

Formality: We classified the 13 companies that did not have tax identification numbers as 'informal', and the remaining 89 as 'formal' (Table 4 and Table A21 in Annex). Most experts in Egypt agreed that the tax identification number was a useful criterion to distinguish between formal and informal companies.

Gender of company owner: In our core sample 15 companies (19 per cent) were owned by women, while men owned 65 (81 per cent) (Table A5 in Annex). The share of women owners of all SMEs in Egypt is only slightly higher, at 20 per cent (IFC 2004–2008) (Table 4).

Owner's educational level: According to the EICS panel data, most SME owners in Egypt have a university degree (73 per cent) (IFC 2004–2008). In our core sample, the respective share was slightly smaller (71 per cent) (see Figure 9, Tables 4 and A18a in Annex).

36 Five companies from the Cairo Governorate are located in the 10th of Ramadan City.

37 Five companies from the Giza Governorate are located in the 6th of October City.

Innovation: In our sample, the most common innovation was the introduction of new products (39 per cent of all companies), followed by the improvement of a product (38 per cent). The production process had been improved by 15 per cent of the companies, 10 per cent had changed their labelling or packaging, and 6 per cent had entered new domestic and 6 per cent new foreign markets (Figure 10 and Table A9). These results are similar to the EICS panel data. In the EICS sample, the most frequent innovations were upgrading an existing product (146 cases) and introducing a new product (107 cases) – followed by the purchase of a new licence (86 cases), the outsourcing of major production activities (21 cases) and the receipt of an internationally recognised quality certificate (four cases) (IFC 2004–2008).

Table 4: Representativeness of sample

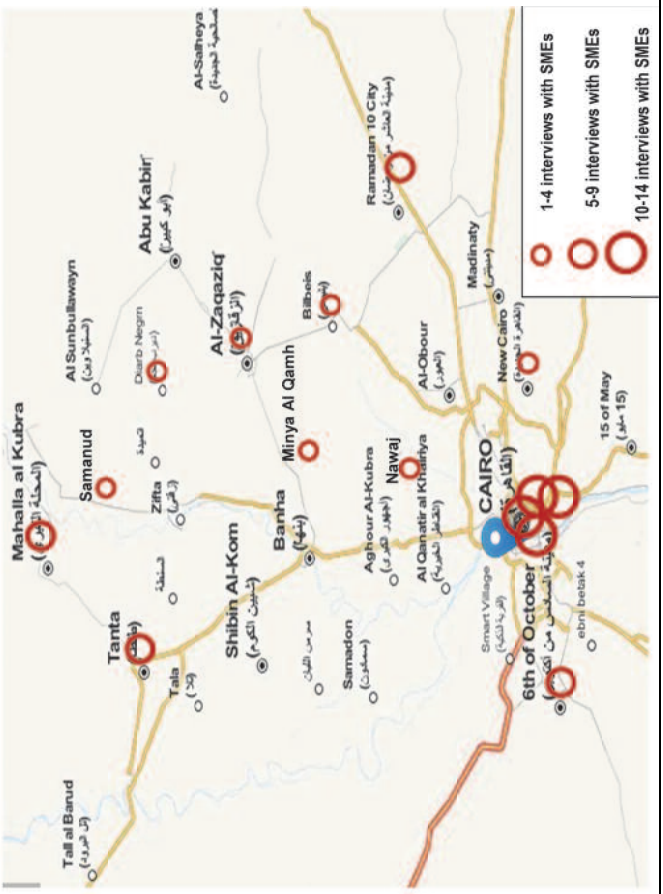
Characteristics	**Our sample**	**Country level**
Sectors	Food-processing, textiles & garments, software development	Food-processing and textiles & garments account for 52% of all manufacturing SMEs in Egypt
Location	Five governorates: Cairo, Giza, Sharqiyya, Qalyubiyya, Gharbiyya	52% of all Egyptian SMEs are located in these governorates
Education	71% of company owners have a university degree	73% of company owners have a university degree
Gender	19% female entrepreneurs	20% female entrepreneurs

Source: Tables A9 and A18a in Annex; EIB (2012);, EICS panel data (2004–2008)

Figure 6: Location of SMEs in Greater Cairo

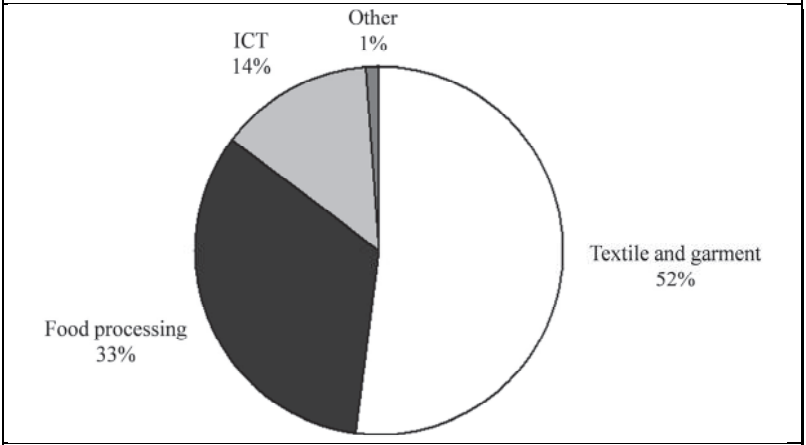
Source: Weltatlas (2012), information about the composition of the sample added by authors (Table A3 in Annex)

Figure 7: Location of SMEs in Greater Cairo and elsewhere



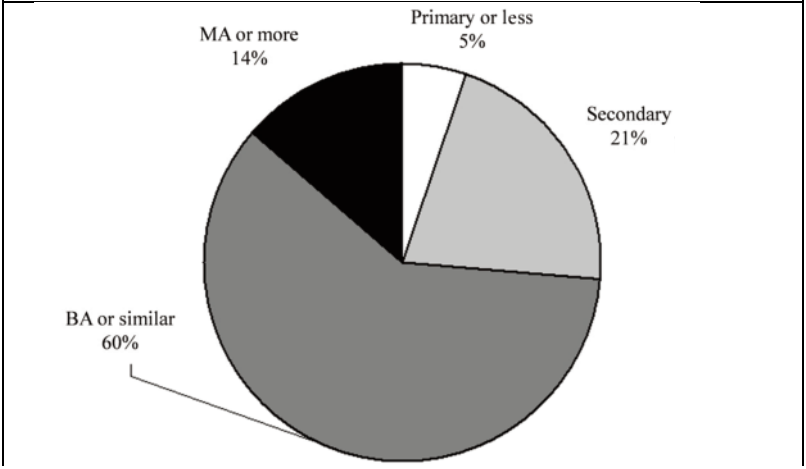
Source: MapAtlas.org (2012), information about the composition of the sample added by authors (Table A3)

Figure 8: Distribution of companies interviewed – by economic sector



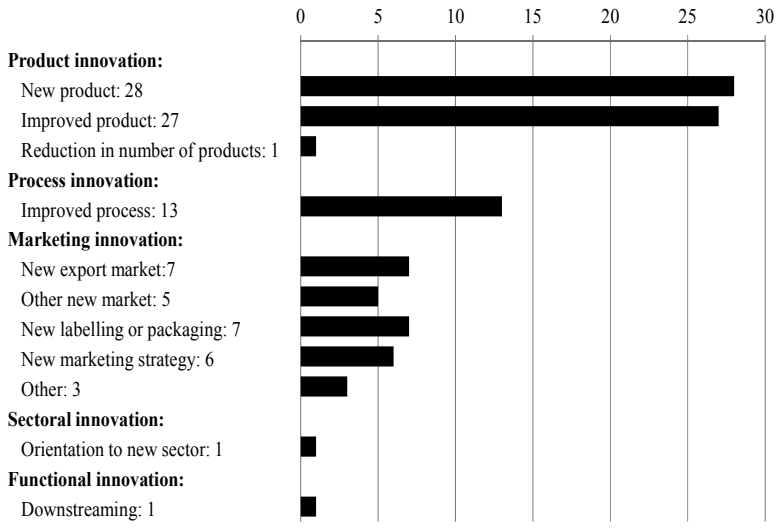
Source: Table A4 in Annex

Figure 9: Distribution of companies interviewed – by owner's educational level



Source: Table A18a in Annex

Figure 10: Types of company innovations



Note: Multiple innovations were acceptable

Source: Table A9 in Annex

Interview structure

Our interviews with SMEs were semi-structured with five elements (guidelines in Annex B):

The *first element* consisted of questions that allowed us to classify the interviewee as an 'upgrader' or a 'non-upgrader'. The questions focused on the company's start-up phase and development in terms of quantitative growth (e.g. employment and sales figures) and qualitative growth (e.g. innovation within the company) – in line with the philosophy of the borehole survey methodology developed by Liedholm and Mead (1991, 21).

The *second element* included open questions about what the interviewee considered to be the major constraints of and factors in Egyptian SMEs' successful upgrading. We also used these open questions to capture explanatory factors that had not occurred to us.

The *third element* was closed questions about the most important factors that had influenced so far the growth of the SME both positively and negatively. We presented a set of cards (featuring the factors presented in Chapter 2) and asked the interviewees to choose up to four factors that positively affected their business, and four factors that negatively affected it. This was done to help interviewees think of yet other factors. We also asked the entrepreneurs to rank the four positive and four negative factors in order of their significance, hoping to discover which factors were not just relevant for SMEs but were also the most binding constraints for SMEs in their efforts to upgrade. We then asked how these factors affected the company.

The *fourth element* consisted of one open and one closed question about what kind of governmental support would facilitate upgrading.

The *fifth element* was a number of closed questions about general characteristics of the SME: entrepreneur characteristics such as education; firm characteristics such as size; business linkages such as membership in a business association; and regarding the business environment, issues such as access to finance. These questions were used to find out if the two groups of interviewees (upgraders and non-upgraders) differed significantly in terms of one of the characteristics, which could be a variable explaining why some SMEs manage to upgrade while others do not.

Before starting our survey, at the beginning of Week III in Cairo, we pretested our questionnaire on five SMEs from different sectors. These interviews were not included in our final sample because after reviewing the test results, we tweaked the questionnaire.

Classification of SMEs

Classifying the interviewed companies involved three steps: (i) checking whether in 2007 the company was micro or small (preferably with fewer than 30 employees); (ii) differentiating between upgraders and non-upgraders; and (iii) identifying especially fast-growing upgraders, or 'gazelles'.

Concentration on companies that had been small (fewer than 50 employees) five years earlier

In order to determine the causes of Egypt's 'missing middle' syndrome, we were mainly interested in companies that had managed to upgrade (or not) from being a micro or small enterprise, preferably with fewer than

30 employees, into being a medium-sized enterprise with more than 50 employees.

We tried to only contact companies with fewer than 50 (preferably fewer than 30) employees, which turned out to be very difficult because many SME owners could not or did not want to tell us the exact number of employees in their firm on the phone or before the interview.

As a result, we eventually found out that 22 of the 102 companies interviewed had had more than 50 employees in 2007. Since we wanted to use the information from our interviews with these firms we did not eliminate them from the sample. We included these interviews in our qualitative analysis and limited the quantitative analysis to a core sample of 80 companies, all of which had had fewer than 50 employees in 2007 (see Figure 11).

The decision to use the number of employees as the sole identification criterion for small enterprises was taken for pragmatic reasons. During the interviews it quickly became obvious that other criteria (sales, commercial return, assets, or size of production area) could not be used because interviewees were not willing – or able – to provide us with reliable figures. The threshold of 50 employees corresponds with our definition of SMEs in Section 3.5.1, as well as with existing studies on SMEs in Egypt. In fact, in 2007, 78 companies had had fewer than 30 employees.

Distinction between upgraders and non-upgraders

Of the 80 companies in our core sample, exactly half (40) were classified as upgraders (see Figure 11). Of course, this ratio is not representative of the whole country, partly because we searched for success stories in order to have two comparator groups (upgraders and non-upgraders) of similar sizes. By chance we found more upgraders than we had expected so little purposive sampling was needed. The fact that the two groups were exactly the same size was accidental.

To be classified as an 'upgrader', an enterprise had to fulfil three criteria (see Table 5):

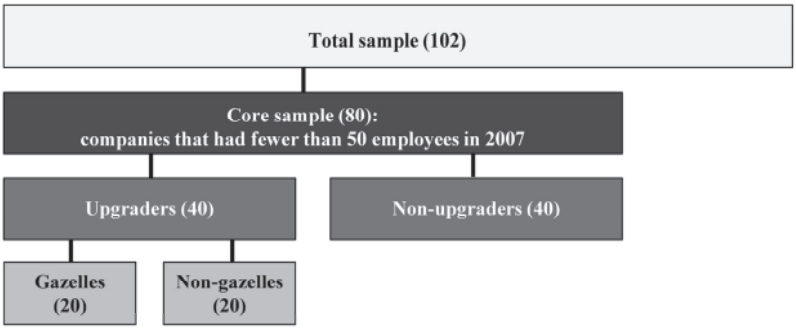
- Have grown by at least 50 per cent during the previous five years by one of five criteria (number of employees, sales, profit, assets or size of production area).

- Have introduced at least one innovation during the previous five years.
- Have grown faster than the competition during the previous five years.

Table 5: Indicators used to verify upgrading

Criterion 1: **Quantitative dimension**	***Criterion 2:*** **Qualitative dimension**	***Criterion 3:*** **Comparison with competitors**
Increased by at least 50% within the previous 5 years in terms of: (i) Employees, (ii) Returns, (iii) Assets, (iv) Sales, (v) Or size of area used for production, storage and administration.	Innovation within the previous 5 years: (i) Product innovation • Improved product(s) • Introduced new product(s) (ii) Process innovation • Improved process(es) • Introduced new process(es) (iii) Functional innovation • Increased domestic input as % of total inputs • Moved up/down value chain (iv) Marketing innovation • Applied new forms of marketing, labelling or packaging • Oriented towards new markets • Was certified for typical standards (ISO, labour) (v) Or sectoral innovation • Moved from one sector to another	Within the previous 5 years: Grew faster than competitors

Figure 11: SME classifications



Source: own design

These criteria were meant to typify the definition of upgrading explained in Section 2.1.

The *first criterion* was intended to capture only the quantitative dimension of upgrading: the growth of the company. Of course, the threshold of 50 per cent growth within five years is arbitrary, but any other threshold would have been even more so. Our threshold was in line with that applied for the same purpose by the DIE case studies on SME upgrading in India and the Philippines, and is sufficiently high to identify companies that grew significantly faster than the average. A total of 51 companies out of 80 in our core sample fulfilled the criterion (see Table A9 in Annex).

With the *second criterion* we wanted to ensure that the growth of a company was not due to windfall profits but coincided with some kind of innovation, that is, any of the changes in the second column of Table 5. In our core sample, 55 companies fulfilled this criterion but only 42 fulfilled both the first and second criteria (Table A9 in Annex).

The *third criterion* (the company grew faster than its competitors) was applied for two reasons: *First,* to know whether an innovation (Criterion 2) brought something new to the whole market rather than to just the firm.

Here, comparison with the competitors was used as a proxy indicator for the accumulation of an innovation rent, which only occurs when something new is introduced to the market. *Second,* this criterion showed whether the growth spurt of a company (criterion 1) was actually due to some innovation (Criterion 2), and did not just happen to coincide with it. In our core sample, 44 companies had grown faster than their competitors, thus fulfilling the third criterion for an upgrader. But only 41 of them had effectively grown by more than 50 per cent within five years (Criterion 1), only 42 had introduced any innovation (Criterion 2). Only 40 fulfilled all three criteria – while 15 fulfilled none (Table A9 in Annex).

Identification of very fast growers ('gazelles')

Finally, within the group of 'upgraders' we distinguished between two more sub-categories of SMEs: We labelled all upgraders that had grown particularly fast in the previous five years (by at least 100 per cent, or about 20 per cent per annum) as 'gazelles'. This criterion was fulfilled by exactly half of all upgraders (20, the result of pure coincidence), while the other half (20) fell into the category of 'non-gazelle' upgraders (Figure 11 and Table A6 in Annex).

The term 'gazelle' was taken from a concept that David Birch introduced in the early 1980s to analyse very-rapidly-growing SMEs and has been further developed by other scholars such as Zoltan Acs, who added an 'employment growth' component to Birch's definition (Gibson / Stevenson 2011, 3–4). Stone and Badawy (2011), who studied the determinants of high growth in SMEs in the Middle East and North Africa (MENA) region, also used the term.[38] Our definition of a gazelle is similar to theirs: While we used a threshold of 100 per cent for the growth of an SME over a five-year period (approximately 20 per cent per annum), Stone and Badawy (2011) set a threshold of 80 per cent within four years (2004 to 2008). In contrast to our definition, for them, gazelles need not have introduced an innovation.

38 Stone and Badawy's 2011 study analysed the same EICS panel data that we used in our econometric analysis of SME development in Egypt between 2004 and 2008 (see Section 4.3.1).

Data analysis

We analysed the data that we gathered in interviews with SME owners using quantitative and qualitative techniques.

The *quantitative analysis,* used to detect the main determinants of SME upgrading in Egypt, had two elements.

The first element was to count how many interviewees had identified different independent variables as a major constraint (or pushing factor) for upgrading in Egypt in general, or as a major factor that explains well why some Egyptian SMEs are more successful at upgrading than others. Separate analyses were made of answers to the open and closed questions (see interview guideline, Annex C).

The second element was to make a correlation analysis. We compared the gazelles, the non-gazelle upgraders and the non-upgraders to find out if they differed substantially in any of the independent variables – which would indicate that the respective factor might be a major determinant of SME upgrading in Egypt. We used various statistical methods for this comparison.

Both elements produced lists of ordered factors for SME upgrading in Egypt that ranged from 'significant at a high level' to 'significant at a lower level' and from 'very important' to 'less important'. We had to set a cut-off somewhere in order to ascertain what is a main determinant and what is not. Table 6 illustrates our solution. It ranks factors A, B, C, etc. by the percentage of interviewees who identified them as major constraints for SME upgrading. In this example, we marked the cut-off between the important and less important factors between Factors B and C because this is where the difference between the respective percentage points is particularly wide. There is only a 1 per cent difference in mentioning Factor C, D and E, whereas the difference in mentioning Factors B and C is 16 per cent. Thus, Factors A and B were included in the list, while Factors C, D and E were excluded.

Table 6: Identification of cut-off points (exemplified)	
Factor	Frequency of mentioning in per cent of total companies of the core sample
Factor A	34%
Factor B	29%
Factor C	13%
Factor D	12%
Factor E	12%
Source: own design	

The qualitative analysis, in contrast, was intended to show how the independent variables affect SME upgrading in Egypt and provide evidence that the correlations between independent factors and SME upgrading that were identified by the quantitative analysis were in fact due to causalities. We began by assigning codes to sentences and paragraphs in the transcripts of interviews with SME owners (as well as in the transcripts of interviews with experts – see Section 4.6), which reflected their statements. Then we created lists with all the quotations for the respective codes. These lists were the basis for our discussions about causal relationships and interrelations. For instance, reading the statements for the code 'state-business relations' helped us not only to understand in which context state-business relations hinder or facilitate upgrading, but also why and through which channels they do so. For example, which aspects of state-business relations are problematic? Is it getting a business licence or getting a construction permit? Is it too costly, in terms of time and money, to get a licence or a permit? Or is the main problem the insecurity of state-business relations: Will I be able to even *get* a permit or licence?

The qualitative analysis helped us to interpret our qualitative findings and derive causal chains for the interrelations between the factors. Apart from the factors that were most relevant for upgrading (that were mentioned most frequently and showed up in many causal chains), we also identified factors of moderate importance for upgrading. Finally, for some factors we found no evidence indicating their role in upgrading.

4.3.3 Interviews with SME experts

A third component of our empirical research was interviewing experts for SME development in Egypt from a variety of professional fields.

The objective of these interviews was to obtain general information and opinions on the SME sectors and SME upgrading in Egypt, especially on the factors that constrained or helped SMEs to successfully upgrade. We also collected viewpoints on the differences between Egypt and other countries and the reasons for such differences.

Altogether, we conducted 104 interviews with 123 persons from more than 70 institutions:

- *The government* (the Agriculture and Agro-Industries Technology Center, the Egyptian Banking Institute at the Central Bank of Egypt, the Egyptian National Competition Council, the Egyptian Regulatory Reform and Development Authority, the Enterprise TVET Partnership for Food, the Enterprise TVET Partnership for Ready Made Garment, the Food Technology Centre, the General Authority for Investment and Free Zones, the Industrial Council for Technology and Innovation Council, the Industrial Development Authority, the Industrial Modernization Centre, the Industrial Training Council, the Ministry of Communications and Information Technology, the Ministry of Finance, the Ministry for Industry and Foreign Trade, the Ministry for Local Development, the Social Fund for Development, the Technology Innovation and Entrepreneurship Center, and the Textile and Clothing Business Center),
- *Private-sector institutions* (the American Chamber of Commerce, the Chamber of Food Industries, the Egyptian Chamber of Textile Industries, the Egyptian Junior Business Association, the Egyptian Stock Exchange, Endeavour, Entrust, the German-Arab Chamber of Industry and Commerce, Nile Stock Exchange, Sphinx Private Equity Management and 11 SME associations).
- *Micro and SME finance institutions* (Tanmeyah Microenterprise Services, First Microfinance Foundation and Banque du Caire).
- *Non-governmental organisations* (the Association for Women's Total Advancement & Development and Expolink).

- *Academia* (the American University of Cairo, Cairo University, the Economic Research Forum, Fraunhofer Society, the German University in Cairo, the University of Mainz and the University of Minnesota).
- *Lead firms* (the Bishara Textile and Garments Manufacturing, the Cairo Cotton Center, Femina, Juhayna, Sekem, Wadi Food and the World Trading Company Egypt).
- *The media* (Al Ahram and Al Iqtisadi).
- *Development co-operation* (the Canadian International Development Agency, the Deutsche Gesellschaft für Internationale Zusammenarbeit, the Egypt Enterprise Development Project, Egypt's Competitiveness Programme, the Friedrich Ebert Foundation, the Friedrich Naumann Foundation, Global Project Partners, the KfW Development Bank, the Konrad Adenauer Foundation, the United Nations Industrial Development Organization, the World Bank, the United States Agency for International Development and the International Finance Corporation)

A detailed list of interlocutors is in the Annex.

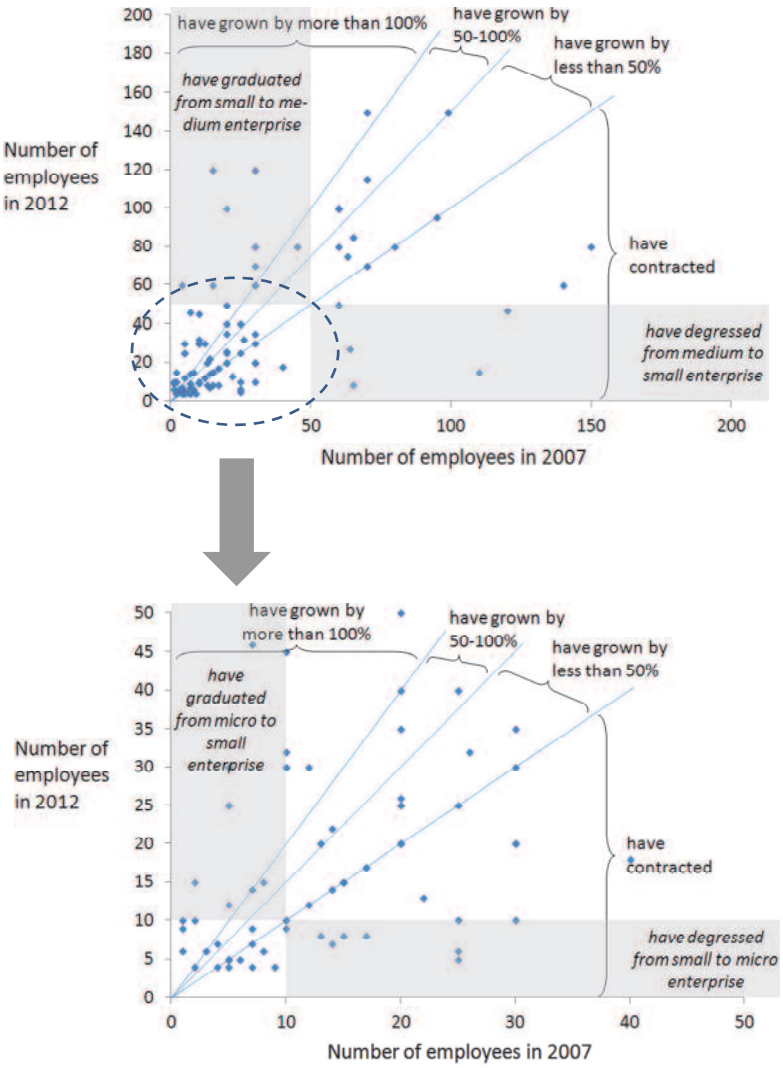
5 Factors in SME upgrading in Egypt: the findings

Our research led us to five main findings:

First, the shortage of medium-sized enterprises in Egypt is not only due to the difficulty that small firms have upgrading, but also to the difficulties that upgraded firms face in sustaining their growth. Our research identified a significant number of small and medium-sized enterprises (SMEs) that were able to upgrade at different periods. We found many more such firms than we had expected – most of them by chance.[39]

39 In our core sample, 59 companies were selected either through geographical screening or from a more or less representative list of firms. Originally we assumed that most SMEs selected in one of these ways would be non-upgraders because our only criterion for selection was that the company had had fewer than 50 employees five years earlier. But this assumption turned out to be wrong: 29 of the 59 companies selected by one of the two strategies had grown by at least 50 per cent – and 17 had grown by at least 100 per cent – between 2007 and 2012 (see Table A7 in Annex).

Figure 12: Growth and contraction of companies in sample



Source: Own design based on survey data

More than half of all the companies in our sample grew by at least 50 per cent between 2007 and 2012 despite the effects of the global financial crisis and the post-revolution economic downturn. To some extent we had explicitly searched for upgraders and the share of upgraders is high, with a significant number of firms that had grown by more than 100 per cent (see Figure 12 and Table A7 in Annex).

We also found a large number of companies that had contracted in size between 2007 and 2012. During those five years, the number of firms that grew was equal to the number of firms that contracted – in all sectors and bracket sizes.[40] Such a coincidence of ups and downs is a common phenomenon known as 'churning'. As long as the number of firms that is growing exceeds the number of firms contracting, the group of medium-sized companies can expand. This situation may have occurred 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. However, the evidence is weak, because a similarly large number of companies might have contracted during the period of 2002 to 2007 and were no longer around to tell us what happened (see Figure 12 and Table A7 in Annex).

In any case, we can say for sure that even during the difficult years 2007–2012, upgrading was possible for Egyptian SMEs. If the number of medium-sized companies did not increase during that period, it must be because an equal number of companies contracted (or went out of business) during the same period. The 'missing middle' in Egypt would therefore be due not only to the obstacles that SMEs face in upgrading, but also (and perhaps more so) to the difficulty in sustaining their growth. Additional research is needed on this issue.

Second, there are six main factors that determine upgrading in Egypt: (i) human capital (quality basic and vocational education, quality work experience and international exposure), (ii) ambition/motivation and risk

40 Even if we had excluded all the SMEs that experts recommended, we still would have had 29 upgraders in our sample, including seven SMEs that had crossed the threshold from micro to small companies (10 employees) and 12 that had crossed the threshold from small to medium-sized companies (50 employees). At the same time, six SMEs (excluding those recommended by experts) had dropped below 50 employees (transforming from a medium-sized to a small enterprise) and eight dropped to 10 employees (becoming micro enterprises) (Table A7).

readiness, (iii) investment in human resource development (HRD), (iv) market research, (v) access to finance, and (vi) deficits in the rule of law (especially in connection with taxation, company registration, licensing, company inspections, quality infrastructure and competition control). Most of these factors were revealed as major determinants of SME upgrading in the studies conducted in India and the Philippines (see Tables 7, 8, 9 and 10).

Table 7: Main determinants of SME upgrading in Egypt

	Why is upgrading generally difficult for SMEs in Egypt?	**Why are some SMEs better able to upgrade than others?**
Entrepreneur characteristics	– Low quality of *entrepreneur's education and training* Generally *limited level of risk acceptance* – *Lack of finance* (see also below)	– Entrepreneur's *human capital* (education, work experience and international exposure) Entrepreneur's *ambition/motivation* and *readiness to take risks*
Firm characteristics	– Low quality of *workers' education and training* – Lack of *market information*	– *Investment in HRD* (skills and incentives for employees) – *Market research*
Inter-firm linkages		
Business environment	– *Lack of finance* (can explain differences, but usually characterises the entrepreneur; see above) – *Deficits in the rule of law* (especially in taxation, company registration, licensing, inspections, quality infrastructure and competition control)	– Entrepreneur's individual *access to finance* (personal savings or assets that can be sold or serve as collateral for a bank loan; preferential access to formal or informal credit; financial literacy & ability to design a business plan, etc.)

There are two aspects to all but one of these factors (deficits in the rule of law). On one hand, they explain why upgrading is generally difficult for SMEs in Egypt. All SMEs tend to suffer from: (i) the owner's low quality of education and work experience, (ii) the owner's risk aversion, (iii) the lack of or high turnover of trained workers, (iv) difficulties accessing finance, (v) lack of market information, and (vi) deficits in the rule of law (Table 7).

On the other hand, five of the six factors *also* explain why some SMEs in Egypt are more likely to upgrade than others. Owners of upgraders tend to: (i) have better education, more work experience and international exposure; (ii) be more motivated and more willing to take risks; (iii) invest more in HRD (worker training, incentives and participation), (iv) spend more on market research, and (v) have personal wealth or easy access to finance in the core family (Table 7).

While it may not be surprising that these factors affect SME upgrading, our results also found that certain other – not so obvious – factors are less relevant (see Table 8):

- Hardly any interviewees mentioned *trade or monetary policies, the exchange rate* or *inflation* as obstacles to the firm's development.
- *Insurance* was not an issue for the SME owners we surveyed.
- Membership in *formalised business networks* was not decisive for SMEs' success. Some upgraders joined business associations but did not find membership beneficial.
- The *location* of a firm was found to have no direct impact. Companies in industrial zones generally face fewer difficulties in upgrading because such companies have better infrastructure and more space for production. The big challenge is being admitted to an industrial zone in the first place, which is a complicated and not always transparent procedure. There is great competition for the limited number of parcels of land in the more popular industrial zones because Cairo and other large Egyptian towns are becoming increasingly overcrowded. One could in fact argue that *access to land determines* a company's success.

Table 8: Classification of factors based on importance for SME upgrading

	Most important factors (main determinants)	Factors with intermediate importance	Less important and unimportant factors	Factors with ambiguous or insufficient evidence
Entrepreneur characteristics	– *Human capital* (quality basic and vocational education, quality work experience, international exposure) – *Ambition and risk readiness* – *Individual access to finance*		– *Gender* – *Social capital*	
Firm characteristics	– *Market research* – *HRD* (skills and worker loyalty)	– *Corporate governance*	– *Location* – *Age* – *Informality* – *Size*	– *Sector*
Inter-firm linkages			– *Business networks*	– *GVCs* – *Clusters*
Business environment	– *Access to finance* – *Law enforcement* (esp. in taxation, company registration, licensing, inspections and competition control) – *Economic downturn after the revolution* – *High input prices*	– *Access to land* – *Availability of BDSs* – *Infrastructure* (mainly transportation)	– *Trade policy* – *Insurance* – *Exchange rate* – *Inflation*	

Classification based on research results presented in Tables A11a to A14a in Annex

- The *gender* of an entrepreneur was also not found to have a negative impact on a firm's upgrading potential. The portion of female upgraders in our sample was no smaller than the share of women entrepreneurs in Egypt as a whole. Some tests in our sample even indicated a positive correlation between female ownership and SME upgrading – probably due to a selection bias (on experts' recommendations, an above-average – disproportionately successful – share of female entrepreneurs was selected). In any case, the number of female entrepreneurs who regarded their gender as an advantage in doing business was much higher than the number of those who saw it as a disadvantage.
- *Social capital* did not appear to be a major factor for explaining differences between more and less successful SMEs in Egypt's food-processing, textiles and garments, or ICT sectors. Of course, personal relations are helpful for entrepreneurs, but we did not find evidence for the assumption that they are essential for SME upgrading in Egypt. However, the situation might be different in other economic sectors such as tourism or construction, where a lot of anecdotal evidence exists about the importance of wasṭa (connections) for doing business in Egypt.

Four factors turned out to be of *medium* importance for SME upgrading in Egypt: (i) *access to land,* (ii) the availability of *business development services* (BDSs), (iii) *infrastructure,* and (iv) *corporate governance.* A few companies cited deficits in Egypt's infrastructure as being responsible for the general difficulty of SMEs in Egypt to upgrade, while access to land, the availability of BDSs, and the nature of corporate governance were mentioned several times in explaining differences in the upgrading potential of individual firms (see Table 8).

Our results were ambiguous regarding an SME's formal status. Statistical tests display a positive correlation to both growth and upgrading which is not surprising. However, this statistical correlation is probably due to reverse causality, that is, informal companies that had grown or decided to grow have sooner or later decided to formalise. Many owners of formal and informal SMEs stressed that formalisation did not constitute a barrier to growth. For smaller companies, the advantages of being formal did not outweigh the disadvantages – although the opposite was true for larger companies.

The age of an SME is obviously correlated with its likelihood to upgrade although this correlation is non-linear, and it is not because of age. After an SME is founded, it must first get settled and organised; normally it does not yet have the capacity to expand much. The likelihood of upgrading is greatest after this start-up phase, which may last one to four years, and then diminishes steadily over time. If an SME does not upgrade during the first five years after its start-up, it is unlikely to upgrade later. This is because an SME either has what it takes to upgrade and uses this potential as soon as possible – or it does not. An SME that does not upgrade early probably does not have the potential to upgrade.

Our findings seem to hold for different sectors in Egypt, independent of company size. We only provide evidence for the textiles and garments, food-processing and software sectors. However, since there is no significant variance in the results for these three sectors, they might also be valid for other economic sectors in Egypt. Some statistical tests reveal that upgrading may generally be easier in some sectors than in others, but this is probably due to the fact that the Egyptian textiles and garments sector was more affected by the economic downturn after the revolution than the food-processing sector.

Most of these findings are in line with the results of the studies that DIE has conducted in parallel on SME upgrading in India and the Philippines. Human capital (quality education and training, work experience and international exposure, and investment in market information and human capital) and access to finance play are also significant for SME upgrading in India and the Philippines, while gender, informality, regulation, infrastructure, taxation and customs are not – just as in Egypt (Tables 9 and 10).

The main differences seem to be that deficits in law enforcement do not significantly affect SME upgrading in India and the Philippines, while – in contrast to Egypt – the following factors do impact in one or both of these countries: (i) social capital (networks), (ii) social origin (caste or region), (iii) vertical inter-firm linkages (global value chains (GVCs)), (iv) horizontal inter-firm linkages (clusters, *only in India*); (v) market orientation (*only in India*), and (vi) portfolio diversification (*only in the Philippines*) (Hampel-Milagrosa 2013; Reeg 2013a).

Table 9: Main obstacles to SME upgrading in Egypt, India and the Philippines

	Egypt	India	Philippines
Entrepreneur characteristics	– Entrepreneur's low education and training – Risk aversion		– Entrepreneur's low education and training
Firm characteristics	– High turnover and lack of skilled workers – Lack of market information	– High turnover and lack of skilled workers	– High turnover and lack of skilled workers – Lack of market information
Inter-firm linkages		– Delay in payments by clients/buyers	– Unstable relationships with suppliers
Business environment	– Difficulties accessing finance – Deficits in law enforcement	– Difficulties accessing finance – Deficits in law enforcement	– Difficulties accessing finance

Source: for India: Reeg (2013a); for the Philippines: Hampel-Milagrosa (2013)

Third, with regard to the regulatory environment, what most affects SMEs in Egypt is the unpredictability and arbitrariness of law enforcement rather than the cost and time needed for compliance. Entrepreneurs can never know the outcome of an administrative or judicial process before it ends because there is too much room for discretionary decisions taken by civil servants and judges. This is particularly true for taxation, company registration, licensing, company inspections and competition control. SME owners suffer from the arbitrary determination of the annual business tax. Some owners cannot understand why they have to renew their business licence every few years while others receive permanent licences. It is not necessary

Table 10: Main success factos for SME upgrading in Egypt, India and the Philippines

	Considerable impact in all three countries	No major impact in any of the three countries	Divergent results
Entrepreneur characteristics	– Entrepreneur's human capital (quality of education and work experience, international exposure) – Availability of finance – Motivation	– Gender	– Readiness to take risks (Egypt and Philippines) – Social origin (India and Philippines)
Firm characteristics	– Employee welfare (training, incentives, working atmosphere, participation) – Market research	– Degree of formalisation	– Market orientation (only in India) – Portfolio diversification (only in the Philippines)
Inter-firm linkages	– GVCs (no evidence in Egypt)		– Social networks (India and Philippines) – Clusters (only in India) – Business organisations (only in the Philippines)
Business environment	– Access to credit	– Registration, licensing – Infrastructure – Taxation, customs – Market regulation – Corruption	– Access to land (Egypt and Philippines) – Political stability (only in the Philippines)

Source: for India: Reeg (2013a); for the Philippines: Hampel-Milagrosa (2013)

to comply with standards as long as small bribes are paid regularly to company inspectors, but personal connections are essential to acquire government tenders. Egyptian SME owners do not consider lengthy procedures or high fees to be problematic because they can bear the costs and waiting times. But the insecurity that results from deficits in the rule of law prevents them from developing their businesses.

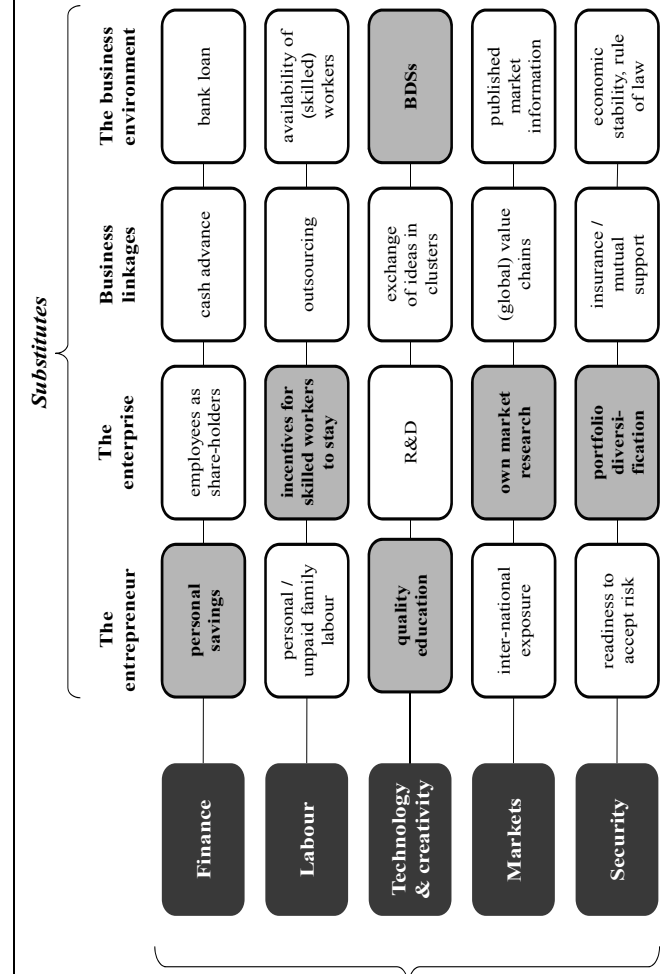
Fourth, although vertical and horizontal linkages with other firms probably would be important push factors for the upgrading efforts of Egyptian SME owners, these are extremely reluctant to co-operate. Hardly any company covered by our survey was integrated into a functional cluster or GVC – which meant that we were unable to determine the effects of clusters or GVCs on SME upgrading in Egypt. Many experts confirmed the hypothesis that we had derived from theoretical literature (see Chapter 2): clusters and GVCs are important conduits of upgrading. But we could not find evidence either supporting or contradicting this hypothesis because we were unable to find a relevant SME case.

This is probably because there is so little co-operation between enterprises in Egypt. Hardly any of the SMEs in our sample co-operated with another company in any meaningful way; most interviewees said that they were not interested in co-operating. They all argued that they could never trust a contract with an Egyptian – based on their own bad experiences or stories they had heard from other businesspeople.

Once again, deficits in the rule of law appear to be the root of the problem. Co-operation can be beneficial everywhere – as long as the terms are clear, transparent and enforceable. A detailed contract and a fair arbitration authority are necessary in case of disagreement. The judicial branch normally handles such arbitration, but in Egypt, entrepreneurs tend to avoid legal proceedings of all kinds because they are so unpredictable.

Furthermore, the Egyptian educational system does not train people to co-operate. Pupils are not encouraged to work in teams, which negatively affects their readiness and ability to collaborate with others when they are adults (Al-Ayouty 2011). The lack of training in teamwork in Egyptian schools is probably not a matter of chance. Authoritarian political and religious leaders have never been interested in teaching the population why and how to organise joint action: such knowledge could help an opposition get organised and eventually overthrow the political and social order.

Figure 13: Upgrading factors: complements and substitutes



Source: own design

Fifth, the success of SMEs in upgrading depends on the combination of the right factors. Just citing one or two isolated factors, such as access to finance, a deregulated business environment or spending for research and development (R&D), is not an explanation. Some factors, such as a bank loan and the entrepreneur's own capital or the entrepreneur's access to trained workers and their in-house training, are substitutes; other factors, such as finance, workers and market information, are complements. Successful SME upgrading depends on having access to all of the complements and being able to substitute missing factors (e.g. to compensate for the lack of market information by conducting independent market research) (Figure 13).

Structural constraints such as the lack of finance and law enforcement make it possible for very few privileged entrepreneurs to upgrade: those who have money, connections, good education, international experience, land, relevant work experience, motivation and the readiness to accept risks. While some structural constraints are insurmountable for all Egyptian SMEs, some owners have the means to circumvent them. Those with their own financial means need not depend on a bank loan, and those who have international experience need not depend on export market information. Those with money can bribe public officials in order to influence their decisions on requests and submissions made by the company; those who can train their own workers are not dependent on the availability of well-trained labour.

5.1 Identification of the main determinants

Our research findings suggest that the main determinants of SME upgrading in Egypt include: (i) human capital (quality basic and vocational education, quality work experience and international exposure), (ii) ambition and risk readiness, (iii) HRD investment, (iv) market research, (v) access to finance and (vi) law enforcement (in taxation, registration, licensing, company inspections and competition control).

We used three procedures to derive this result from our SME survey data. *First,* we analysed the responses from SME owners about what they considered to be the main obstacles for upgrading in Egypt by counting the number of companies that mentioned single factors. *Second,* we used

quantitative tools to learn which factors explain why some SMEs in Egypt were able to upgrade while most were not. *Third,* we applied a qualitative approach to analyse the interviewees' stories to discover how the factors identified in the first and second steps are related, that is, which are the initial factors and which are the results of the initial factors.

Step 1: Identifying general obstacles to upgrading in Egypt (quantitative analysis)

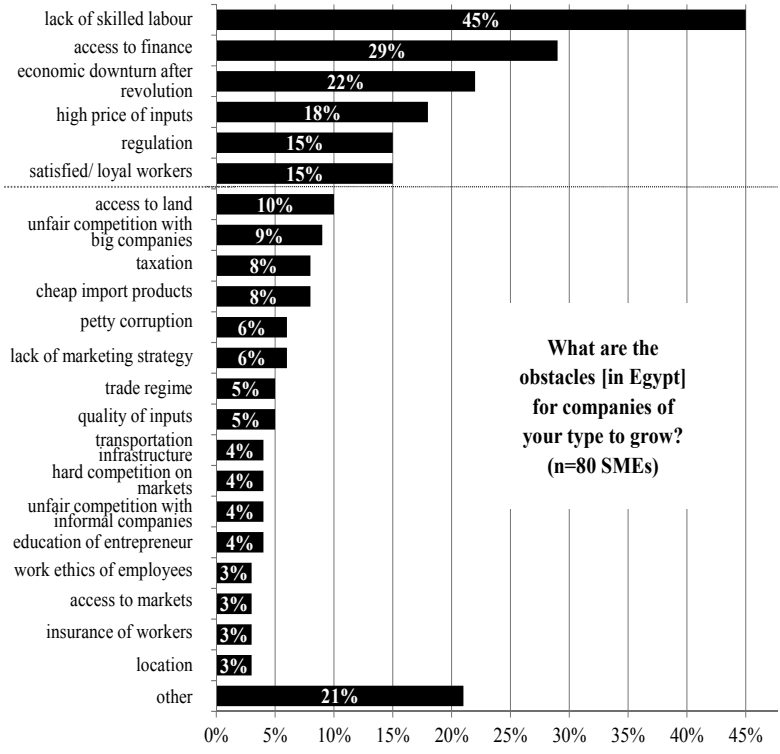
Our first step in the qualitative analysis identified seven factors that largely account for the general difficulty of Egyptian SMEs to upgrade: the lack of skilled labour, high prices of inputs, restrictive regulations, unfair competition, widespread corruption (bribery and *wasṭa*), lack of finance and the post-revolution economic downturn.

Most SME owners had mentioned these factors when answering two questions.

Open question: Figure 14 shows that when asked in general terms about their main obstacles to growth, the SME owners mostly complained about the lack of skilled labour (45 per cent), problems in accessing finance (29 per cent), the economic downturn after the revolution (22 per cent), high prices of inputs (18 per cent), regulation (15 per cent), and deficits in worker motivation and loyalty (15 per cent). Other factors were mentioned less often (by 10 per cent of the respondents or less).

Closed question: When the interviewees were offered a closed list of possible answers, most chose the post-revolution economic downturn (35 per cent), the lack of skilled labour (34 per cent) and petty corruption (bribery and *wasṭa:* 29 per cent) for their problems in upgrading (Figure 15).

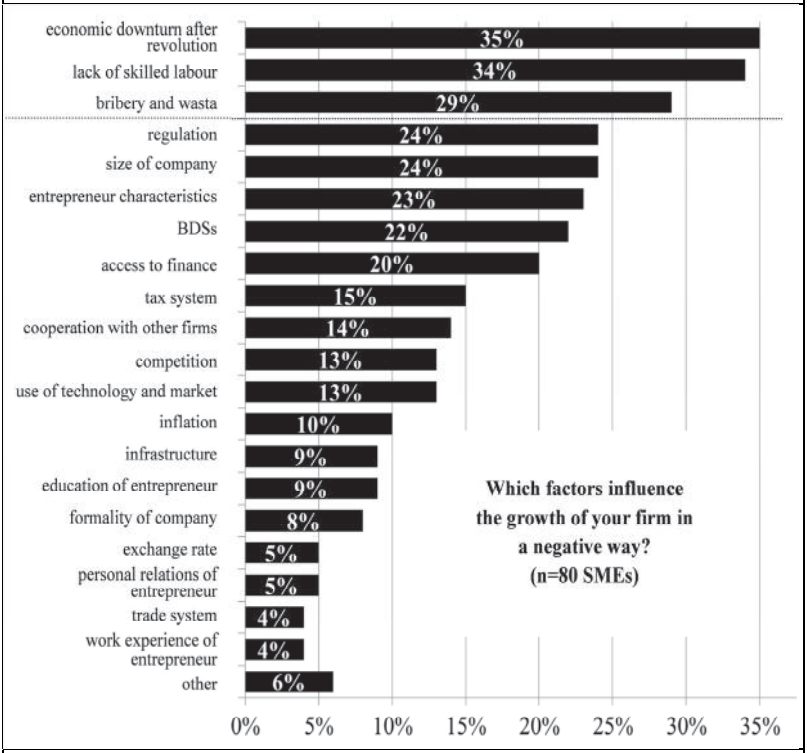
Figure 14: Main obstacles to SME growth (open question)



Comment: The figure presents the SME owners' responses to Question 22 of the Questionnaire (see Annex B). No answers were suggested: interviewees simply said whatever came to mind. Therefore, multiple answers were possible (in practice, the maximum was 5).

Source: Table A11a in Annex

Figure 15: Main obstacles to SME growth (closed question)



Comment: The figure displays the SME owners' responses to Question 26f of the Questionnaire (see Annex B). Interviewees were asked to select the three most important factors that influenced the firm's growth (from a closed list of options).

Source: Table A12 in Annex

Step 2: Identification of factors explaining differences in the likelihood of SMEs to upgrade (quantitative analysis)

Ten factors appear to explain why some SMEs in Egypt manage to upgrade despite all the obstacles: the owner's international exposure, work experience and education, worker satisfaction and loyalty, product quality, owner's use of technology and market information, owner's individual access to finance, ambition and readiness to take risk. Upgrading also seems to be easier at certain locations and during a certain period in the history of an SME.

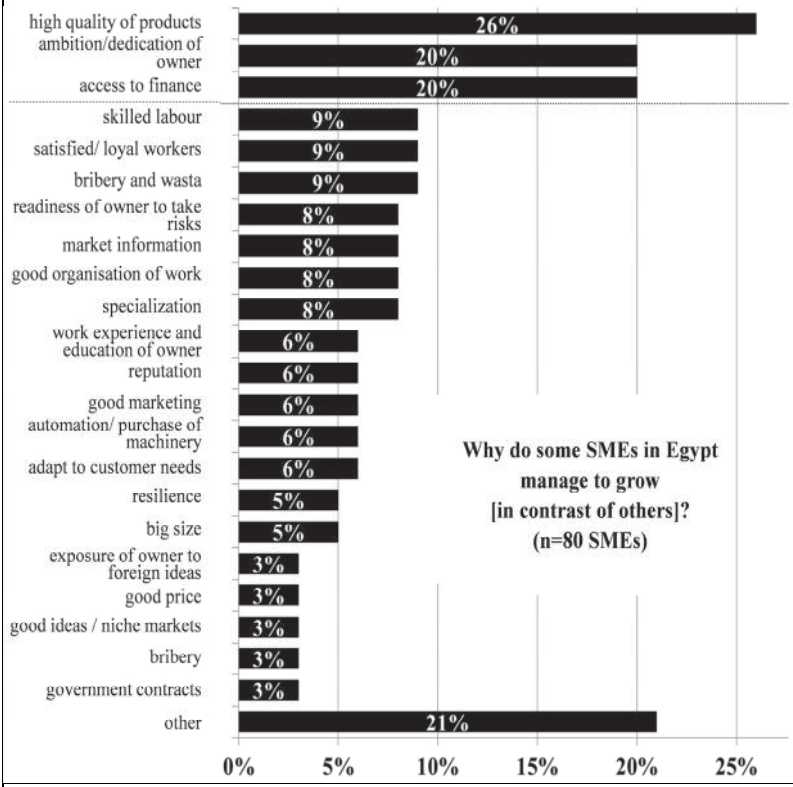
These are the conclusions from using various quantitative techniques to analyse the data provided by our survey:

Open question: Just as we had asked SME owners about the main obstacles to upgrading, we asked upgraders why they had managed to grow despite all the obstacles, and non-upgraders why other companies were more successful in upgrading despite the fact that they all faced similar obstacles. The most frequent explanations given for the differences were: variations in product quality (mentioned by 26 per cent of the respondents), the entrepreneur's ambition (20 per cent) and the availability of finance (20 per cent) (see Figure 16).

Closed question: SME owners were also asked to identify the three factors most likely to positively influence them to upgrade. The answers: the owner's work experience (45 per cent), the owner's ambition (45 per cent), competition (as an incentive to improve) (34 per cent), the use of technology and market information (26 per cent), and the owner's readiness to take risks (25 per cent) (see Figure 17).

Comparison of the characteristics of gazelles, non-gazelle upgraders and non-upgraders: Upgraders (especially gazelles) and non-upgraders differed substantially in several aspects. Proportionately more gazelle owners had university degrees, international exposure and work experience in a larger firm in the same sector than owners in the other two groups. They also had a high share of workers with formal training (see Figure 18).

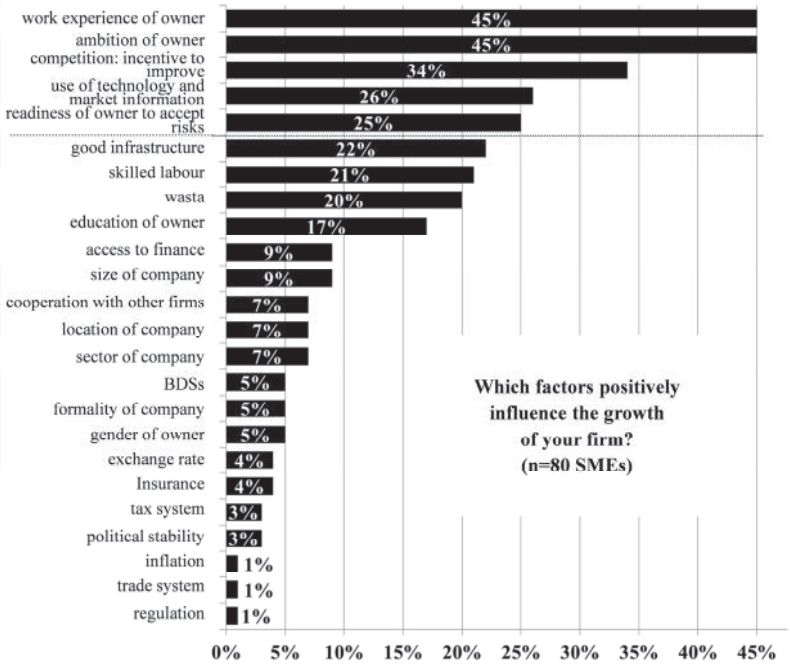
Figure 16: Main reasons for differences in SME upgrading ease in Egypt (open question)



Comment: The figure displays the responses of SME owners to Question 26b of the Questionnaire (see Annex B). No answers were suggested; they said whatever came to mind. For that reason, multiple answers were possible (the maximum was 5).

Source: Table A13a in Annex

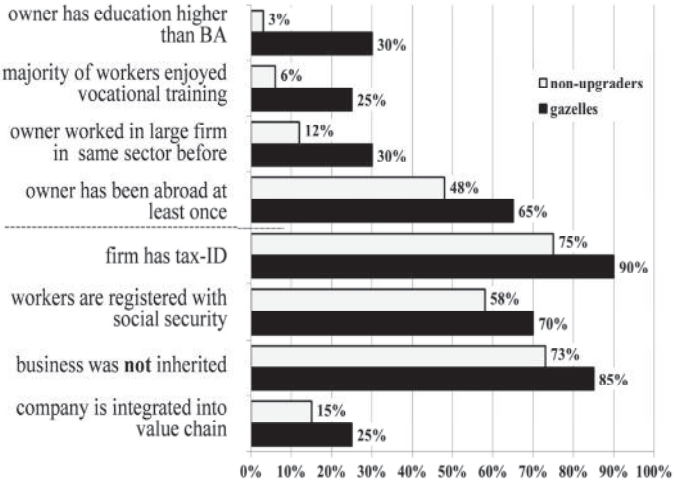
Figure 17: Main reasons for differences in SME upgrading ease in Egypt (closed question)



Comment: The figure displays the SME owners' responses to Question 24 of the Questionnaire (see Annex B). Interviewees were asked to select the three factors that most influenced their firm's positive growth (from a closed list of options).

Source: Table A13a in Annex

Figure 18: Characteristics of 'gazelle upgraders' and 'non-upgraders'



Source: Tables A17, A18a, A19a, A22, A23 and A24 in Annex

T-tests for the divergence of means for gazelles, non-gazelle upgraders and non-upgraders: This finding is underscored by the fact that the mean value for these (and other) characteristics diverged markedly between upgraders and non-upgraders, and between gazelles and non-gazelles. T-tests confirm that this divergence is statistically significant for the SME owner's gender, highest level of education, work experience and international exposure, as well as the company's share of trained workers, age and location (see Table 11).

Regression analysis: Logit estimations point only to statistically significant correlation of upgrading with the age of SMEs (at the 5 per cent level). In addition, there is also a correlation between upgrading and the food-processing sector but it is only significant at the 10 per cent level. Ordinary least square (OLS) regression models indicate a correlation between the relative growth of an SME (in terms of the percentage growth of the number of employees as the dependent variable) as well as the age of an SME and its owner's university education. No other independent variables are correlated with upgrading in a statistically significant way (see Figure 19).

Table 11: Statistical significance of divergence of means for gazelles/non-gazelles and upgraders/non-upgraders (by t-tests)

Variable	Gazelles (20 observations)				Non-gazelles (60 observations				Upgraders (40 observations)				Non-upgraders (40 observations			
	Mean	Std dev.	Min	Max	Mean	Std dev.	Min	Max	Mean		Std dev.	Min	Max	Mean	Std dev.	Min	Max
SME owner is female	0,20	0,41	0	1	0,18	0,39	0	1	0,28	(**)	0,45	0	1	0,10	0,30	0	1
...with a university degree	0,80	0,41	0	1	0,68	0,47	0	1	0,80	*	0,41	0	1	0,63	0,49	0	1
…with work experience in same sector	0,55	0,51	0	1	0,50	0,50	0	1	0,60	*	0,50	0	1	0,43	0,50	0	1
…with international experience	0,65	0,49	0	1	0,57	0,50	0	1	0,70	**	0,46	0	1	0,48	0,51	0	1
…became entrepreneur through inheriting the company	0,15	0,37	0	1	0,25	0,44	0	1	0,18		0,38	0	1	0,28	0,45	0	1
…belongs to a business organisation	0,25	0,44	0	1	0,22	0,42	0	1	0,28		0,45	0	1	0,18	0,38	0	1
…would like to expand the business	0,90	0,31	0	1	0,83	0,38	0	1	0,83		0,38	0	1	0,88	0,33	0	1

Table 11 (cont.): Statistical significance of divergence of means for gazelles/non-gazelles and upgraders/non-upgraders (by t-tests)

Variable	Gazelles (20 observations)				Non-gazelles (60 observations			Upgraders (40 observations)				Non-upgraders (40 observations			
	Mean		Std dev.	Min	Max	Mean	Std dev.	Min	Max	Mean		Std dev.	Min	Max	Mean	Std dev.	Min	Max
More than 20% of the employees have enjoyed formal training.	0,25	*	0,44	0	1	0,12	0,32	0	1	0,25	**	0,44	0	1	0,05	0,22	0	1
SME age (in years)	8,75	**	5,82	5	27	16,25	14,44	5	82	10,98	**	6,70	5	27	17,78	16,88	5	82
SME has a tax ID (is formalised)	0,90		0,31	0	1	0,82	0,39	0	1	0,93	(**)	0,27	0	1	0,75	0,44	0	1
Located in a geographic cluster	0,35		0,49	0	1	0,15	0,36	0	1	0,23		0,42	0	1	0,18	0,38	0	1
Located in an industrial zone	0,10		0,31	0	1	0,05	0,22	0	1	0,13	**	0,33	0	1	0,00	0,00	0	0
Located in the Delta	0,30		0,47	0	1	0,20	0,40	0	1	0,28		0,45	0	1	0,18	0,38	0	1
Active in the food-processing sector	0,35		0,49	0	1	0,32	0,47	0	1	0,43	*	0,50	0	1	0,23	0,42	0	1
Active in the textiles & garments sector	0,40		0,50	0	1	0,57	0,50	0	1	0,43	[*]	0,50	0	1	0,63	0,49	0	1

Table 11 (cont.): Statistical significance of divergence of means for gazelles/non-gazelles and upgraders/non-upgraders (by t-tests)

Variable	Gazelles (20 observations)				Non-gazelles (60 observations				Upgraders (40 observations)				Non-upgraders (40 observations			
	Mean	Std dev.	Min	Max	Mean	Std dev.	Min	Max	Mean	Std dev.	Min	Max	Mean	Std dev.	Min	Max
In the ICT sector	0,25	0,44	0	1	0,10	0,30	0	1	0,15	0,36	0	1	0,13	0,33	0	1
Co-operates with other companies	0,45	0,51	0	1	0,38	0,49	0	1	0,48	0,51	0	1	0,33	0,47	0	1
Integrated in global production networks	0,25	0,44	0	1	0,13	0,34	0	1	0,18	0,38	0	1	0,15	0,36	0	1
Integrated in a local cluster	0,00	0,00	0	0	0,05	0,22	0	1	0,05	0,22	0	1	0,03	0,16	0	1
Has problems with transportation	0,35	0,49	0	1	0,48	0,50	0	1	0,48	0,51	0	1	0,43	0,50	0	1
Has problems with power supply	0,25	0,44	0	1	0,18	0,39	0	1	0,20	0,41	0	1	0,20	0,41	0	1

Explanation: *** = statistically significant at the 1% level, ** = statistically significant at the 5% level, * = statistically significant at the 10% levelStd. dev. = standard deviation, min. = minimum value, max. = maximum value

Normal brackets indicate that the correlation may be due to reverse causality or a selection bias.

Square brackets indicate that the result may be due to the fact that the Egyptian textiles and garments sector was more affected by the economic downturn after the revolution than the food-processing sector.

Source: T-tests with data from Enterprise Surveys (2004/2008)

Figure 19: Regression results for SME growth based on SME age and owner education

Source	SS	df	MS	Number of obs =	80
Model	81.1005577	3	27.0335192	F(3, 76) =	3.90
Residual	527.284023	76	6.93794767	Prob > F =	0.0120
				R-squared =	0.1333
Total	608.38458	79	7.70107064	Adj R-squared =	0.0991
				Root MSE =	2.634

growth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	-.0485212	.0228879	-2.12	0.037	-.0941065	-.0029359
female	.904387	.7579256	1.19	0.236	-.6051528	2.413927
ma	1.86823	.9520039	1.96	0.053	-.02785	3.76431
_cons	1.801002	.498691	3.61	0.001	.8077729	2.794231

Source	SS	df	MS	Number of obs =	80
Model	72.4264387	4	18.1066097	F(4, 75) =	2.53
Residual	535.958142	75	7.14610856	Prob > F =	0.0471
				R-squared =	0.1190
Total	608.38458	79	7.70107064	Adj R-squared =	0.0721
				Root MSE =	2.6732

growth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	-.0516109	.0234028	-2.21	0.030	-.0982316	-.0049902
ma	1.705089	.9790907	1.74	0.086	-.2453597	3.655538
cairo	-.0400934	.6879639	-0.06	0.954	-1.410588	1.330401
formal	.3227797	.8608194	0.37	0.709	-1.39206	2.03762
_cons	1.791581	1.048575	1.71	0.092	-.2972879	3.88045

Source: Regression with data from Enterprise Surveys (2004/2008)

Econometric analysis of EICS: Logit estimations using panel data from the Egypt Investment Climate Surveys (EICSs) 2004 and 2008 provide additional evidence for a statistically significant correlation between upgrading and investment in worker training and the existence of a specialised R&D department (both at the 5 per cent level) , see Table C1 in Annex C).

Being located in Al-Minya, Port Said or the Nile Delta (Gharbiyya, Sharqiyya and Minufiyya governorates) also has a statistically significant, positive effect on the likelihood of a company to upgrade (however, only at the 10 per cent level) – as compared with being located in Cairo (see Table C2 in Annex C).

Logit estimations using the EICS panel data similarly show a statistically significant, negative correlation of upgrading with the textiles and garments sector and with confronting the most serious problems in 'business licensing' (tables C3 and C4 in Annex C).

The EICS panel data also indicates that exporting is positively correlated with upgrading (see Table C1 in Annex C). However, this finding is probably the result of reverse causality because there must have been some upgrading before a company could export, and additional upgrading is more likely to happen after some upgrading has taken place.

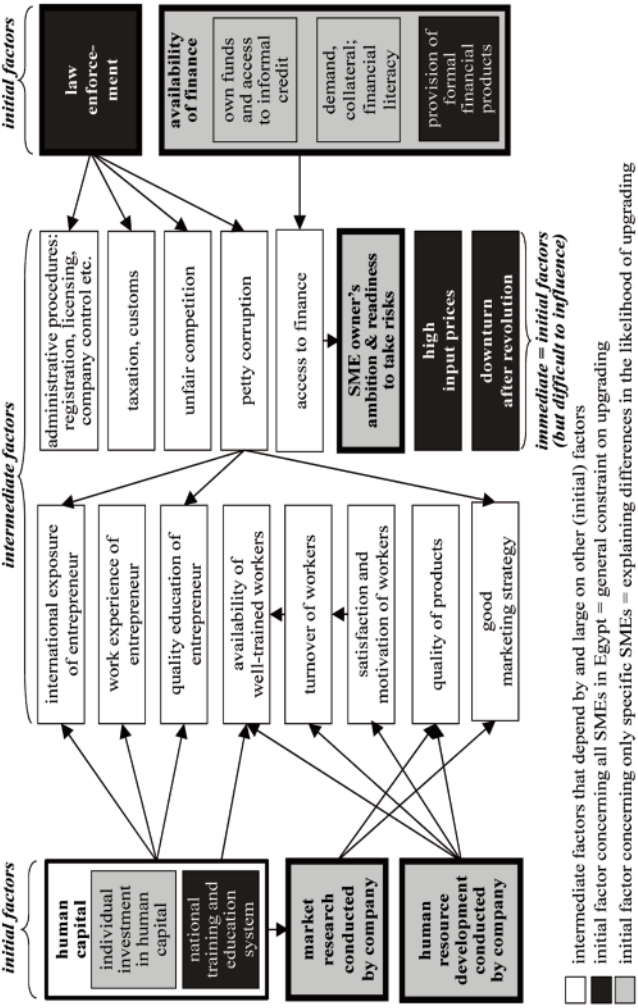
Step 3: Tracing intermediate factors to initial factors (qualitative analysis)

In the third step of our analysis, we applied qualitative techniques to check which factors in upgrading that we had identified in Steps 1 and 2 are in fact initial (independent) or intermediate variables. We reviewed the stories told by the SME owners in order to draw causal chains and highlight the factors at the beginning of these chains.

This analytical step (which is shown in Figure 20) revealed the following:

- The SME owner's education, international exposure and work experience should be subsumed in their human capital. They are strongly interdependent, for example, people with better education have greater chances of getting a job in a leading firm (work experience) or being eligible to study abroad for a year. At the same time, living abroad can be an education in itself.

Figure 20: Initial and immediate factors in SME upgrading



Source: own design

- Worker training in an SME is not an independent variable. It partly depends on the availability of skilled labour on the national labour market – and on the quality of the national *educational and vocational training system.* But employers can also provide on-the-job-training, while other forms of *human resource development* (above-average wages, good treatment, non-wage benefits such as day-care facilities, and transparent and participatory decision-making in the company) encourage well-trained workers to remain at the firm.
- The motivation and turnover of labour in a company can similarly be improved through *human resource development.*
- Product quality is not an independent variable either. Although many upgraders attributed their success to product quality, their success primarily resulted from the *ambition and determination of the entrepreneurs, the skills and motivation of their workers and the use of technology and market information,* which was clearly linked again to the entrepreneurs' work experience and international exposure.
- Almost all the problems that plagued the entrepreneurs in state-business relations (taxation, registration, licensing, company inspections and competition control) stemmed from a more fundamental problem: significant *deficits in law enforcement.* If, for instance, the regulation and application of laws is not transparent and arbitrary, an SME owner cannot estimate the effort that will be necessary to obtain a licence.
- The *ambition* of SME owners and their *readiness* to take risks are intermediate factors –to a limited degree. They are dependent on other factors such as the SME owner's education and access to finance. But to a significant degree, these factors are givens (inherited or influenced by an SME owner's upbringing).
- Many interviewees cited the *economic downturn* in Egypt that followed the 2011 revolution and the *high prices of inputs* for production (mainly imported goods); these do not depend on other, more initial factors. For that reason, they are portrayed in Figure 20 as both intermediate and initial factors. However, since both are difficult to influence or alter we do not discuss them further here.

Impact of the main determinants

Human capital includes quality basic and vocational education, quality work experience and international exposure. It is one of the key factors for SME upgrading in Egypt, where education and vocational training are generally of inferior quality. Schoolchildren do not learn to be creative and to think analytically. They also lack the basics for proper vocational training or useful tertiary education – which is why Egyptian workers' educational and training levels are generally low and why SME owners also lack the cognitive and inventive skills needed to initiate upgrading.

On the other hand, some SME owners have benefited from superior education, travelled abroad, attended a foreign school or got work experience at a larger, successful firm in the same sector before starting their own business. Such experiences give them a comparative advantage, which is why these entrepreneurs are more likely than others to upgrade.

Good education is also an important prerequisite for understanding that the product quality, human resource development and market know-how are crucial for the success of an enterprise as well as the ability to conduct proper market research and human resource development (HRD). A good education is also essential for accessing finance, which requires 'financial literacy' (familiarity with different financial products and their strengths and weaknesses, as well as application procedures) and the ability to draft a business plan (which is required for a bank loan) (see Figure 20).

Human resource development covers in-house training, recruitment, incentives for employees to remain at the firm, fair treatment by the employer and the right to participate in the firm's decision-making. It is another factor that explains differences between SMEs in Egypt with respect to their likelihood of upgrading. HRD increases worker training and productivity, satisfaction, motivation and loyalty to the firm, that is, workers' inclination to stay rather than to seek a job elsewhere. HRD improves the quality of products, the efficiency of production, workers' acceptance of innovation and overall output.

Market research is another important factor in upgrading because it enables SME owners to identify market niches for their products, learn about customer preferences, identify the necessary product quality and elaborate adequate marketing strategies. Market research also raises SME owners' awareness of the need to always respond to customer demand.

Access to finance is another crucial factor in the general difficulty of Egyptian SMEs to upgrade, as well as for related differences in Egypt. There are many reasons why Egyptian SME owners have difficulty obtaining external financing for their investments: the scarcity of funds in SME credit programmes, restrictive lending conditions at banks, the entrepreneur's lack of registered collateral, rigid bankruptcy legislation, etc. But in addition to the lack of quality human capital in Egypt, there is another explanation for the difficulties that SMEs in Egypt experience in upgrading. Some SME owners have easier access to finance because they have their own funds, preferential access to informal credit, or registered collateral or connections *(wasṭa)* to bank lending officers.

Access to finance also helps SME owners to obtain other factors that are crucial for upgrading such as international experience (foreign travel is expensive), market research (travelling to trade fairs in Europe, America or Asia is not cheap), quality (requires investments in the production process), well-trained workers (expect higher salaries or may need in-house training), the acceptance of risk (is easier with capital) or the ability to bribe (to circumvent insecurities due to deficits in the rule of law).

Law enforcement: Deficits in the rule of law also help account for the general difficulty of Egyptian SMEs to upgrade. Many owners complain about major problems interacting with the public administration or judicial system for typical state-business relations such as company registration, licensing, taxation, customs, company inspections, etc. While the costs and time needed for these interactions are a burden for SME owners, they are bearable. The real problem is the insecurity regarding the outcome of these interactions. For many procedures, there are no clear legal standards and the application of standards is not well monitored, leaving a lot of leeway for public officials and judges. Decision-making by the public administration and the judiciary is arbitrary, and entrepreneurs cannot know how much time administrative and judicial procedures will take or how they will turn out – unless they have the funds to bribe all the officials involved.

Arbitrariness in law enforcement also creates unfair competition between enterprises: Some may be treated better than others, especially if they have better connections or pay higher bribes. This phenomenon lowers the quality of the country's infrastructure because SME owners can circumvent compliance with standards by bribing inspectors. Corruption also affects public finance as many entrepreneurs pay high bribes to reduce their tax rates.

Finally, arbitrariness in law enforcement affects the readiness of SME owners to co-operate with other companies. Very few Egyptian SMEs are linked to the value chain (with clients) or within clusters (with competitors), mostly because of the difficulty Egyptian owners have enforcing co-operation contracts. In Egypt there is no point in going to court to arbitrate contracts because of the length and unpredictability of the outcomes.

5.2 Detailed findings for all factors

As has been shown, variance in the upgrading potential of SMEs in Egypt can largely be explained by differences in the entrepreneurs' behavioural characteristics such as ambition and risk acceptance, as well as in their financial and human capital (and to a lesser extent, their social capital). Variance in the upgrading potential of SMEs is partly due to differences in firm characteristics such as the level of investment in market research and human resource development (workers' in-house training and incentives). Whether or not an SME makes such investments largely depends on the owner's mind-set.

However, the fact that upgrading is generally difficult for SMEs in Egypt is mainly due to the business environment – deficits in the availability of finance and law enforcement (but not legislation and regulation, financial and political stability or infrastructure). The inferior quality of education and training in Egypt plays an equally important role. Formally, this factor is an entrepreneur characteristic (the entrepreneur's human capital) as well as a firm characteristic (worker education and training). But it stems from deficits in Egypt's system of public education and vocational training, which is an element of the business environment.

Below we present in detail our research results for all factors of SME upgrading in Egypt: entrepreneur characteristics (Section 5.2.1), firm characteristics (5.2.2), inter-firm linkages (5.2.3) and the business environment (5.2.4).

5.2.1 Entrepreneur characteristics

According to our findings, *human capital* (quality basic and vocational education, work experience and international exposure), the *availability of finance* (discussed below in connection with the business environment) and

behavioural characteristics (ambition and the readiness to take risks) are key determinants of SME upgrading in Egypt, while *social capital* and *gender* are insignificant.

Human capital

Our findings show that differences in education, work experience and international exposure largely explain why some Egyptian SMEs are better able to upgrade than others. This result corresponds with the conclusions of the DIE case studies in India and the Philippines.

Education: In our Egyptian sample, 59 per cent of the interviewees identified education and work experience as key factors for successful SME upgrading (Table A14 in Annex). In fact, educational attainment differs considerably between the upgraders (especially the gazelles) and the non-upgraders. Of gazelle owners, 30 per cent hold master's degrees compared with only 3 per cent of the non-upgraders (Table A18a in Annex). Within the textiles and garments sector, where 25 per cent of the gazelles hold master's degrees and none of the non-upgraders, the difference is especially significant. There seems to be much less difference in the information and communications technology (ICT) and food-processing sectors. All interviewees in the ICT sector have master's degrees, while in the food-processing sector neither gazelles nor non-upgraders do. The t-test shows that throughout the sample, the difference in educational attainment between upgraders and non-upgraders is statistically significant at the 10 per cent confidence level (Table 11). However, the quantitative analysis of the EICS panel data did not produce evidence for a significant correlation between the educational degree of SME owners and the upgrading of their companies (Table C1 in Annex C).

The quantitative analysis of our interviews illustrates how the education and work experience of SME owners affects company upgrading. The owner of an ICT upgrader saw these as prerequisites for being innovative and creative: *"I have a university degree from the American University that enables me to think innovative"* (Software developer, Cairo, 29 February 2012). The executive director of another ICT upgrader stressed that superior education was essential for acquiring the know-how to run a business in the ICT sector: *"It is the win factor in our business"* (Cairo, 29 February 2012). At the same time, many non-upgraders also stated that better education would have helped them both run and upgrade their businesses. They

requested public programs to help boost their management skills, technical know-how and capabilities to conduct market research. The director of a donor-funded BDS programme confirms:

> *"The number one reason why SMEs do not grow is that they lack knowledge. All other issues like access to finance, infrastructure, etc. can be solved."* (Alaa Fahmy, UNIDO Agriculture and Agro-Industries Technology Center. Cairo, 22 February 2012)

Previous studies confirmed that most SME owners in Egypt have limited education. On average, they attend school for only eight years; only 30 per cent have completed their secondary education (El-Mahdi 2006, 29).

More important than the quantity of education is the quality. Many gazelle owners we interviewed had attended foreign or other private schools, which are superior to Egyptian public schools. But this involves substantial costs and is dependent on the entrepreneur's family background and financial situation:

> *"Being the son or daughter of a successful business person is also a success factor. The children of business people can be educated abroad and they have already a foothold in the business world."* (Jennifer Bremer, American University in Cairo, 14 February 2012)

The lack of quality education constitutes not only a problem for individual entrepreneurs but also for the general development of Egypt's private sector. Many experts emphasised that the educational system suffers from significant quality deficits and is therefore responsible for the widespread lack of entrepreneurial spirit, management capacities and innovation potential among Egyptian SME owners:

> *"There is a lack of creativity which is due to the education system. It does not push talents, it does not teach you how to market ideas, how to become a risk taker, how to transfer an idea to an output, how to get market information."* (Mona Garf, Cairo University, 29 February 2012)

The need for educational system reform has been emphasised by Kirby and Ibrahim (2011) as well as Parnell (1995), who compare the entrepreneurial propensity of Egyptian with American and British students. Both studies concluded that the Egyptian educational system stifles entrepreneurialism.

In 2010, according to the World Economic Forum, Egypt ranked 132nd among 142 countries in mathematics and science, and 133rd with regard to business schools (WEF 2010). The 2011 World Economic Forum (WEF) *Global Competitiveness Report,* ranked Egypt's educational system 135th among 142 countries. Given that in 2010, Egypt's capacity to innovate was ranked 109th (WEF 2010), the figures from 2011 should come as no surprise.

Work experience: As important for SME upgrading as the other factors cited above is quality work experience, which can be derived in four ways: (i) working at the company of the father or other relative (often an uncle), (ii) working at the lead firm or a large, well-established firm in the same sector, (iii) working in a less well-established firm, or (iv) attending business school. No one we interviewed had taken the fourth route. Our results showed that by far the most useful experience is working at a lead firm or another large and well-established firm in the same sector. While a recent study[41] by the German Friedrich Ebert Foundation confirmsthat working for a family business tends to expose the would-be entrepreneur to traditional company structures and production modes, but it can also provide technical know-how about business operations as well as the managerial skills needed to steer the business through hard times.

Of our interviewees, 45 per cent considered work experience to be an important factor for differences in the success of Egyptian SMEs to upgrade. This finding was confirmed by the fact that 60 per cent of the upgraders interviewed had worked in another company in the same sector before starting their own business – in contrast to 43 per cent of the non-upgraders. In other words, among the successful upgraders, 76 per cent of the SME owners had worked previously and 33 per cent had not (Table A17 in annex). According to the t-test, this difference is statistically significant at the 10 per cent confidence level (see Table 11).

In addition, 30 per cent of the gazelles stated that their main reason for starting a business was that they had considerable work experience in the same sector – in contrast to only 18 per cent of the non-upgraders (Table A14).

However, as with education, we found evidence that the *quality* of work experience is more important than the work experience as such. Working

41 Unfortunately, the study has not been published. Interview with Ahmed Geneidi, Friedrich Ebert Foundation, Cairo, 27 February 2012.

for a relative or in just any small company in the sector has only limited positive influence on an SME owner's upgrading potential. Experience as a simple worker in production is not very helpful, either. In contrast, an entrepreneur's experience in an influential position in a foreign company, an Egyptian exporter or another lead firm in the same sector is very helpful – especially if the entrepreneur starts a firm that subsequently supplies that lead firm. Several interviewees reported that they had greatly benefited from such work because it enhanced their marketing skills, improved their awareness of customer needs and preferences, provided them with information about the structure of the sector, the characteristics of suppliers, buyers and competitors, the requirements for exporting and important contacts. A female food producer from the 6th of October City reported:

> *"I worked for a long time in a multinational company so I know the international language and the culture of the export business."* (Food producer, 6th of October City, 29 February 2012)

A producer of processed vegetables from Mahalla al Kubra similarly argued:

> *"The contacts I have from working for BEST Juices [the biggest juice producer in the Middle East] are my success factor."* (Food producer, Mahalla al Kubra, 15 March 2012)

International exposure: Having some kind of international exposure is also relevant for SME upgrading. Of the upgraders interviewed, 70 per cent had travelled abroad to study, or for professional or private reasons, but only 48 per cent of the non-upgraders had been abroad. According to a t-test, this difference is statistically significant at the 5 per cent confidence level (Table 11).

Although international exposure is supposed to be highly correlated with the educational background of SME owners, it deserves separate analysis because an SME owner's educational attainment and international experience variously influence their potential to upgrade. An SME owner's international experience can help the business by generating new business ideas, providing information on export markets and marketing skills, as well as by providing business contacts. This was substantiated by the qualitative and quantitative analyses of our interviews. McCormick and Wahba (2002) found that international exposure fosters entrepreneurship: the percentage of entrepreneurs was significantly higher among migrants who had returned to Egypt than among people who shared other similarities.

One quarter of our interviewees cited foreign travel as an important source of their business ideas (Table A26 in Annex); for upgraders the rate was even higher (43 per cent). A textile producer from Cairo said:

> *"I travel a lot to see what is new, I visit international trade fairs, I search for new designs, colours and materials." (*Textile producer, Cairo, 17 March 2012)

Travelling abroad can also generate ideas regarding product innovation as a channel for upgrading. A producer of goat cheese noted:

> *"When my father was in Holland he visited a dairy-goat farm and he liked the goat cheese. He thought to himself: Why should we not do the same thing in Egypt?"* (Food processor, Cairo, 29 February 2012)

Of the upgraders, 14 per cent said that travelling abroad was helpful for making business contacts (Table A20 in Annex), which they considered important for importing and exporting as well as for purchasing machinery:

> *"A key determinant of our success is that my father travelled to Spain and brought back new machines. Without these new machines, I would not be successful."* (Producer of processed vegetables, Tanta, 13 March 2012)

Social capital

Although social relations play a role in the upgrading of SMEs in Egypt, it is difficult to assess the magnitude of their impact. Several SME owners emphasised the importance of social relations for their success in upgrading, but most interviewees said that other factors were more important. Social relations apparently matter in some areas and hardly at all in others; their influence also varies considerably between different economic sectors. They do not play much of a role in the three sectors we studied (textiles and garments, food processing and ICT), but it is likely that social relations are more important for other sectors.

According to our survey, social relations are especially important in state-business relations. In Arab countries, social relations are often called *'wasṭa'* ('connection'), which denotes the misuse of a position (in a company or the public administration) to help a friend or relative, or favouritism (Loewe et al. 2007, 21). Well-connected entrepreneurs can use their social relations with public officials, other entrepreneurs or influential people to speed up procedures in the public administration or judicial system,

reduce their costs or influence their outcome. The use of *wasţa* seems to be very common practice in public tenders in Egypt:

> *"Government tenders are not won by the best product with the best price but by the company that has was□a."* (Textile producer, Cairo, 29 February 2012)

However, only a third of the SME owners covered by our survey admitted to regularly using their *wasţa*. Most interviewees stated that *wasţa* may be helpful but is rarely indispensable. This is in stark contrast to the findings of a recent DIE study on Jordan (Loewe et al. 2007). Some observers hold that *wasţa* is more of a problem in Jordan, while bribery is more problematic in Egypt.[42] *Wasţa* presumably plays a much more important role in Egypt for medium- to large-sized companies and in other sectors than those we studied.

In areas other than state-business relations, the role that social capital plays on SME upgrading in Egypt is ambiguous. The parallel case studies conducted in India and the Philippines reveal that social relations considerably impact on many aspects that are relevant for SME upgrading: access to finance, advice, know-how, emotional support, the provision of cheap labour by family members, connections, child care, etc. In India, a distinction can be made between the impact of strong social ties (especially referring to the nuclear family) and weak social ties (more distant relatives, neighbours, friends, etc.). In Egypt, however, only 19 of our interviewees stated that social relations were significant for business, while four of these stated that the effect of social relations was very negative. Only one interviewee had received funding from a relative to finance business investments (Tables A12, A14a and A28 in Annex).

This might be because personal relations can cause conflicts of private and professional interests. A textile producer from Cairo, for instance, noted that his father had felt obliged to employ his uncle in the family business. But the uncle did not do a good job.

42 Among them, Khaled El-Gazawi, a native Jordanian who has been working in Egypt for many years and is Chief Executive Officer of the First Microfinance Foundation – Egypt, interviewed in the Maadi suburb of Cairo on 22 February 2012.

> *"Still, he is my uncle, so I could not tell him anything. It was a typical conflict between personal and professional interests. In other companies, you can find many other cases where no separation is made between business and family relations."* (Textile producer, Cairo, 7 March 2012)

Hardly any interviewees reported greatly benefiting from family or friends. Some had been able to borrow small or moderate amounts of money when they were insolvent but none mentioned receiving more substantial assistance to operate the enterprise.

This may be due to four reasons: *First,* entrepreneurship is not particularly appreciated in Egypt. Many interviewees stressed that Egyptian culture does not tolerate failure so people reject risky projects, and workers much prefer stable wage employment even if it is low-paid. *Second,* in Egypt there seems to be a lack of trust between people in general and businesspeople in particular. Some observers believe that this is because many people have at least heard how others were unable to recoup money they had lent to friends and relatives, which is another expression of the difficulty of enforcing legal claims in Egypt, as well as the limited predictability of the course and outcome of judicial processes (Magdy 2012, 18). *Third,* businesspeople are not accustomed to co-operating because they have never learnt to do so. Even at school, pupils are taught to do their work alone rather than on teams (Al-Ayouty 2011). Fourth, SME owners' social networks may be weak: While relatives and friends might be ready to provide support, like the owners, they may lack capital, trained workers and good business ideas. This indicates that the problem is the inferior quality of SME owners' social networks, not that they do not exist.[43]

Behavioural characteristics

Our survey revealed two other personal qualities that are determinants of SME upgrading in Egypt: ambition (motivation and dedication) and the readiness to take risks.

43 There is a huge strand of literature discussing strong and weak networks. See Grimm, Knorringa and Lay (2012) and others.

Ambition: According to our interviews, ambition is one of the most important factors for upgrading in Egypt, with 45 per cent of the respondents stating that variations in the ambition of owners was one of the main reasons that some SMEs were more successful at upgrading than others (see Figure 17). For upgraders, the percentage was even higher: 55 per cent of the gazelles identified ambition as a positive factor as compared with only 38 per cent of the non-upgraders (Table A13 in Annex). Of the gazelles, 35 per cent identified ambition as the single most important factor positively affecting their business – as compared with just 18 per cent of the non-upgraders (Tables A14a and A14b in Annex). This finding coincides with the results of the case studies on SMEs in India and the Philippines.

Some SME owners explained that their motivation and dedication were shown by their constant efforts to improve the business and products, and by their persistence and efforts to overcome problems. A textile producer from Cairo said:

> *"My ambition is important. I am more persistent than many of my friends, many of them closed their business in the last years."* (Textile producer, Cairo, 15 March 2012)

One of the experts told us:

> *"Some manage to grow because they are smart, well-qualified, and individually skilled. And they are fighters, they continue even after having failed two or three times."* (Mona Garf, Cairo University, 29 February 2012)

Risk acceptance: The readiness to take risks also plays an important role for SME upgrading in Egypt. It is part-and-parcel of entrepreneurship, or as a textile producer from Sharqiyya put it:

> *"I produce a lot, hoping that Mother's Day will trigger high demand. You have to take risks to be successful."* (Textile producer, Sharqiyya, 8 March 2012)

A fourth of all SME owners – most of whom were upgraders – identified risk acceptance as a factor, explaining that some entrepreneurs are more successful in upgrading than others (Tables A13a and A14a in Annex).

An entrepreneur's readiness to accept risks is dependent on three factors: (i) their individual *exposure to risks,* that is, the number and significance of individual risks (probability and expected effect of risk occurrence); (ii) their personal *affinity for risks,* which depends on the shape of the owner's individual function[44] of utility on income; and (iii) their *ability to manage* (prevent, mitigate or cope with) *risks.*

There can be significant differences between entrepreneurs with regard to the first factor. Some are exposed to many major risks, while others are exposed to fewer and less significant risks. However, many of the risks in running a business – such as exchange rate fluctuations or increases in input prices – are unavoidable and there is no way to insure against them. For instance, a food producer from Cairo said that without his willingness to take risks he would not have been able to export to Australia or Japan (Cairo, 29 February 2012).

Regarding *risk affinity,* an expert said that on average, Egyptian entrepreneurs do not rank very high in terms of this personal characteristic.

> *"The main problem is culture! Companies in Egypt are underestimating the importance of innovation. Also, they are no risk takers. They try to do always the same thing again as they have learnt it rather than to do something new."* (Dalia Gamal, TIEC, 4 March 2012)

The third component of a person's ability to accept risks – to manage risks – is the only one that can be altered either by the individual or with outside help. For example, the government can provide insurance against the most serious risks for entrepreneurs (theft, fire, input-price fluctuations, bad weather, etc.). Our findings show that insurance is not an important factor in SME upgrading in Egypt (see Section 5.2.4), but this may be due to the fact that neither the market nor the government offers the kind of insurance products that SME owners need to withstand their main risks.

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44 In neo-classical economic theory, the function of utility on income tends to be modeled as a concave curve because of the assumption that the marginal utility of income decreases. As a consequence, economic subjects prefer security to insecurity. They prefer the utility of the expected value of different possible income levels over the expected value of the utility levels of different possible income levels. Individual variations regarding the affinity for accepting risks are due to variations in the degree of concavity of their utility function: The more a person's marginal utility of income decreases with rising income levels, the more reluctant they are to accept risk.

In principle, entrepreneurs can diversify their risks by widening their product range or serving different markets (e.g. the domestic and foreign markets). However, we did not find evidence that these steps significantly impact SME upgrading in Egypt. The DIE parallel case studies reveal that portfolio diversification has had a significant positive effect on SME upgrading in the Philippines but ambiguous results in India – though market diversification did help Indian SMEs to upgrade (Hampel-Milagrosa 2013; Reeg 2013a). It is possible that most of our SMEs were too small to sufficiently diversify their portfolios or offer their products on more than one market.

As long as entrepreneurs can neither prevent their risks nor mitigate them (by insurance or diversification), their risk-management capacity mostly depends on their own background risk, i.e. the assets that they can use to cope with risks. Poor people are obviously much more vulnerable to specific risks than rich people. Unfortunately, however, we could not find evidence for this correlation because we were unable to retrieve reliable data regarding the wealth of the entrepreneurs we interviewed.

We did, however, find evidence that the arbitrary application of laws by public officials in Egypt strongly affects Egyptian SME owners' readiness to accept risk. Deficits in the rule of law are a major source of risk for SMEs, and reduce an owner's willingness to accept additional risks. Many interviewees cited these deficits as the reason for their reluctance to innovate and take new, often unknown, risks.

Gender

Our results did not provide evidence that female entrepreneurs face more difficulties than male entrepreneurs in upgrading their companies. Some female SME owners even emphasised that they had some advantages over their male competitors.

Our sample included 15 SMEs owned by women (Table A5 in annex), making the share of female entrepreneurs 19 per cent, just a bit shy of their share of all SME owners in Egypt (20 per cent). Only five female interviewees – three of them upgraders – identified their gender as an important factor for their business – and four of them considered it to have a positive effect on their potential to upgrade. Only one female entrepreneur stated that being a woman constituted a challenge to doing business in Egypt.

A female textiles producer from Cairo said:

> *"I can motivate my staff. People think: You are a woman – you can make a factory? Wow! Clients are impressed. I try to change the mentality of my culture."* (Textiles producer, Cairo, 4 March 2012)

Other female entrepreneurs from the textiles and garments sector stated that it was easier for women to run a company in their sector because they know more about marketing and fashion.

Some female interviewees said that women entrepreneurs are often confronted with gender-specific challenges. However, these challenges appear as soon as a woman considers starting a business and not just when she tries to upgrade her company. They are due to widespread concerns among both among men and women in Egypt about women's participation in economic activities. Egyptian society is very conservative, with values and norms that favour a strict distinction between the functions of men and women in the economy and the society.

For instance, many men forbid their wives to work outside the family home, which means that some married female entrepreneurs can only run the business from home. The female owner of a food-processing company in Giza told us that despite this restriction she had been able to found a company that prepares pre-cooked meals. The company started with three employees and now employs around 30 workers to supply Egyptian and foreign retail chains like Carrefour.

Some women entrepreneurs also said that they did not have enough social contacts to grow their businesses or that they felt hindered by a lack of self-confidence. One female textiles producer from Cairo said that the opportunity to meet and talk with other women entrepreneurs was helpful and encouraging.

> *"At the beginning I was afraid because it is harder for women to do business – especially in manufacturing and if you want to create something. Then I started to visit the meetings of the Businesswomen of Egypt 21 association and I saw that other ladies do the same."* (Textiles producer, Cairo, 13 March 2012)

Some of our experts maintained that there is no structural discrimination against women in Egypt's legal framework. Nevertheless, many female entrepreneurs have difficulty combining business and family. Being held

responsible for the family also affects their readiness to take risks: they tend to be more conservative in their investment and business decisions because they worry about the consequences of business failure for their families. Of course, the way women are raised also affects their entrepreneurial spirit.

> *"Women tend to be more conservative than men. We are raised to be fearful. We do not like to take risks because we have been taught to think about the consequences of our doing for our family and children. Our culture is not permitting us to go into business."* (Amany Asfour, Egyptian Business Women Association, 14 February 2012)

These findings are confirmed by quantitative analyses of our sample and the EICS panel data. In our sample, the share of women entrepreneurs is much higher (28 per cent) among the upgraders than among the non-upgraders (13 per cent). According to the t-test, this difference is statistically significant at the 5 per cent confidence level (Table 11). However, this difference could be a result of selection bias because we selected an above-average share of female-owned SMEs on the recommendations of experts who are more aware of comparatively successful companies than those who have failed to upgrade. This bias came about because of concerns that we would not be able to find enough female-owned SMEs and asked representatives of several women's business associations to suggest one or two of their members for interviews. The regressions that we ran with the EICS panel data from 2004 and 2008 did not provide any evidence for a statistically significant correlation between an SME owner's gender and the firm's upgrading success (Table C1 in Annex).

5.2.2 Firm characteristics

Two firm characteristics appear to be particularly important for the upgrading efforts of SMEs in Egypt: (i) knowledge and innovation management in general (and market research in particular) in addition to (ii) HRD. Both have emerged as the main characteristics for upgrading SMEs in India and the Philippines as well. In Egypt, other factors such as corporate governance or the firm's location, size, age or sector also play roles, but they are less significant. A firm's degree of formality tends to result from its success in upgrading rather than to affect it, while the role of portfolio and market diversification is ambiguous, although it appears to significantly impact SME upgrading in the Philippines and India (Hampel-Milagrosa 2013; Reeg 2013a).

Knowledge and innovation management

Knowledge and innovation management, which includes both market and technological research, plays an important role in SME upgrading.

In Egypt, the lack of reliable market information forces private enterprises to conduct their own market research (El-Megharbel 2008, 6). However, many SME owners do not have the necessary capacities. Most of our interviewees – upgraders and non-upgraders – reported conducting some market research, but that of the upgraders generally appeared to be more sophisticated than that of the non-upgraders, who mostly researched online, on television or by observing competitors. In contrast, many upgraders got new product ideas at international fairs or exhibitions as well as from foreign travel, or by constantly soliciting customer feedback. A food processor told us:

> *"Most of the new recipes that I introduce in my butchery are from my customers, for example, from a well-known restaurant here in Cairo, 'Swiss Restaurants'."* (Food processor, Cairo, 7 March 2012)

A Cairo producer of goat cheese said:

> *"Staying in regular contact with our clients helps us a lot to keep our high-level quality and to improve and further develop our products."* (Food producer, Cairo, 29 February 2012)

A producer of sweets described his strategy:

> *"I needed to do market research so I went to cafes and restaurants. I thought a lot about what I can do to serve my customers. Then I recognised that 90 per cent of the restaurants in Egypt outsource deserts and I saw the need for a high-quality product."* (Sweets producer, Cairo, 26 March 2012)

There are various reasons why many non-upgraders do not conduct proper market research: some are unaware of its importance, while others lack the proper skills or budget.

> *"We conducted a field study and the SMEs told us that their main problem is that they do not know how to get market information."* (Mona Garf, Cairo University, Giza, 19 February 2012)

SME owners' success in upgrading similarly depends on their investments in technological research, and product and process development – a finding that is in line with the results of the case studies on SME upgrading in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013). The results of our econometric estimations that were run with the EICS panel data showed that an SME with a specialised R&D department was more likely to grow than one without: the correlation coefficient was very high and the correlation was statistically significant at the 5 per cent confidence level. But the estimations did not provide evidence that the use of foreign technology positively influences the likelihood of SMEs to grow (Table C1 in Annex).

Earlier studies reported that most SME owners in Egypt lack adequate knowledge and innovation management. El-Mahdi (2006) and Hattab (2008), for example, showed that SME owners in Egypt invest very little in R&D.

Macro data indicated that the whole country spends only about 0.2 per cent of its gross domestic product (GDP) on R&D, which is not only far below the average of EU countries (1.8 per cent of GDP) but also below the average spending of MENA countries (0.3 per cent) (UNESCO 2010, 259). Large-scale R&D projects are very rare in Egypt, and private R&D spending is very low (Stevenson 2010, 238). National experts reported a negligible transfer of knowledge and technology from universities and public research centres to new and growing firms (Hattab 2008). According to the WEF's *Global Competitiveness Report*, Egypt ranked 106th of 142 countries with regard to company spending on R&D (WEF 2011).

This problem may be at least partly due to the fact that Egypt is – to some degree – a rentier economy: Its significant natural resources (energy, the Suez Canal, etc.) give it easy access to foreign income (see Section 3.1). According to the first Arab Human Development Report (UNDP / AFESD 2003), rentier economies tend to exploit available raw materials and foreign expertise rather than build up domestic knowledge capabilities. While this strategy generates quick and easy returns, creating know-how within the country requires considerable effort, time and money. That is why rentier economies encourage spending and acquisition – and a mind-set that is rarely interested in the risk-taking that is part of innovative entrepreneurial activity (UNDP / AFESD 2003).

Human resource development

Investment in human resources is another major determinant of SME upgrading in Egypt. Almost half of the company owners identified the lack of skilled labour and the high turnover of trained workers as major obstacles to doing business in Egypt. Firms that were able to make up for this deficit through an effective HRD strategy were significantly more likely to upgrade than others. Training for workers, the creation of incentives for them to remain at the firm and their integration into the decision-making processes were major factors of success for SME upgrading efforts. All these factors were also identified in the case studies on SME upgrading in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

Our SME survey indicated that in Egypt the lack of and high turnover of skilled workers is the most serious challenge for both SME upgraders and non-upgraders: 35 per cent of our interviewees identified it as the single most important constraint on doing business while 45 per cent considered it to be among the four biggest constraints. Firms with more than 20 employees complained about this issue the most: 71 per cent – in comparison with just 31 per cent for companies with fewer than 10 employees (Table A11 in Annex).

Other empirical studies support our findings. According to the EICS panel data, 51 per cent of owners of all formalised SMEs viewed the Egyptian workforce's low level of education and training to be one of their main constraints (Enterprise Surveys 2004/ 2008), while the WEF *Global Competitiveness Report 2010–2011* ranked the lack of skilled labour as the second most serious constraint on doing business in Egypt (WEF 2011). A study commissioned by the Egyptian Ministry of Finance (MoF 2008) also concluded that SME owners found it difficult to keep qualified and committed workers.

Lack of skilled workers: The lack of skilled labour is mainly due to Egypt's inferior educational system and the mismatch between school and university curricula regarding the knowledge that employers require (El-Megharbel 2008, 6). According to the *Global Competitiveness Report 2010–2011,* Egypt ranked 135th among 142 countries regarding the quality of its educational system and 131st with regard to the quality of staff training (WEF 2011). Many graduates have skills that the private sector does not need. Many business people therefore rely on better skilled, but more expensive, expatriates (Malik 2011). Mohamed Youssef from the Ministry of Finance confirmed:

> *"Education is really an important issue. For example, university graduates enter the labour market and expect to find good jobs, but the market does not need engineers, it needs technically trained workers."* (Mohamed Youssef, Ministry of Finance, Cairo, 16 February 2012)

High worker turnover: The lack of well-trained workers is the main reason for the high turnover of labour in Egyptian SMEs. Since there are not enough properly trained workers on the market, many companies try to poach well-trained workers from their competitors by offering a marginally higher wage that many workers gladly accept. This creates competition between firms in the recruitment of skilled labour.

The share of SME owners who considered the lack of and high turnover of skilled workers in Egypt to be among their main constraints was almost equal among upgraders (47 per cent) and non-upgraders (43 per cent). It was a bit lower only for gazelles (37 per cent) (Table A11a in Annex).

Training of workers: Still, worker training accounted for differences in upgrading success. At 25 per cent of the gazelles at least 50 per cent of the workers had formal vocational training per cent, while this was true for a mere 6 per cent of the non-upgraders (Figure 18). Similarly, at 25 per cent of the upgraders at least 20 per cent of all workers had formal vocational training – which was true for only 5 per cent of the non-upgraders. This difference is statistically significant at the 5 per cent confidence level (Table 11). The results of the econometric estimations that we ran with the EICS panel data confirmed this finding. The share of workers in a company with formal vocational training correlated positively with the company's likelihood to upgrade between 2004 and 2008; this correlation was statistically significant at the 5 per cent confidence level (Table C1 in Annex C).

The SME owners in our sample themselves also viewed worker training as one of the main factors why some SMEs were more successful in upgrading than others. Among the gazelle owners, 40 per cent identified this as one of the most important reasons for their success while 18 per cent of the non-upgrader owners considered that other firms were more successful because their workers were better trained (Table A14a in Annex).

The quantitative analysis of our interviews explained this seeming contradiction: All SMEs in Egypt suffer from the lack of trained workers on the labour market, but some manage to solve this problem and upgrade. We

found that upgraders are better able to attract trained workers, train untrained workers and keep skilled workers at the firm than non-upgraders.

Several SME owners – mostly upgraders – sent their workers to specialised training. Since 2005, numerous commercial training institutes have offered short-term training courses that are very generously subsidised by the Industrial Modernization Center (IMC). Many manufacturing companies have taken advantage of these courses, thereby creating a stable and reliable source of income for the training institutes.

Most of our SME owners, however, have not taken advantage of this opportunity. Many said that the IMC-subsidised training courses were not useful because the content was geared to the needs of medium-sized to large, rather than micro to small, enterprises. The SME owners also did not want many workers to be absent from work for several weeks at a time. They maintained that they could not afford to continue paying them if they were not actually working on-site.

Many SME owners have instead offered in-house training for their workers. Some of them claimed that providing on-the-job training was an effective strategy – not only for improving workers' skills but also for boosting their loyalty to the firm, that is, to keep the workers:

> *"Most of my employees come directly after graduating. I mostly train them in-house. The turnover of my employees is not very high. Most of my employees stay for long time because I give them the training. I have a good personal relationship with them and I sometimes pay them extra money as incentive."* (Software producer, Cairo, 29 March 2012)

The owner of a leading firm in the food sector confirmed:

> *"Our vision was, and is, to grow within the company. We wanted the people we employ to grow. Wadi Food has the concept to start with employees without experience and then train them. This is the strength of the Wadi Group. This creates loyalty to the company. Wadi has its own training system in firm. This is our success strategy."* (Khalil Nasrallah, Wadi Food, Cairo, 27 February 2012)

Other SME owners, however, stated that it was useless to train workers, and recounted their bad experiences with worker training: After the training was finished, the workers had left for another firm in the same field (often a direct competitor), which offered higher wages or better career prospects:

> *"Trained workers are a big problem. Graduates come fresh out of school or university and know nothing. We have to teach them and when they are finally trained, they leave the company."* (Food processor, 6th of October City, 6 March 2012)

Many SME owners are reluctant to train their workers at all – *"fearing that the trained employees will move on to competitors"*. (Natalija El-Hage, GTZ, 28 March 2010) They would prefer to have untrained workers rather than invest in their training and lose them shortly thereafter.

We did in fact find ample evidence that training workers bears considerable risks – especially for women who tend to stop working once they get married or give birth, and who sometimes also leave the firm to do agricultural work during the harvesting season. The risk is especially problematic in sectors such as ICT where former employees take the firm's 'intellectual property' with them… in some cases, to competitors.

Incentives for workers: Some SME owners concluded that they needed to do more than just train their workers – that it might be more important to provide incentives for trained, motivated and capable workers by allowing them to participate in the organisation of production and marketing processes. Upgraders in particular described their HRD strategy as an effective instrument against high worker turnover. This view is in line with the results of the case studies on SME upgrading in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

One way to build loyalty among workers is to offer above-average pay, and a textiles producer from Cairo pays not monthly but weekly, adding monthly premiums for workers who fulfil certain criteria such as showing up on time every day.

A software producer confirmed:

> *"Extra money and good relations seems to be a factor to keep people."* (ICT business owner, Cairo, 29 March 2012)

Some entrepreneurs share the additional profits from a new product or an improved production or marketing process with their workers as a reward for their good ideas or extra effort.

Other entrepreneurs offer non-wage benefits such as free private health insurance, meals or transportation to work. Or they make it possible for fe-

male workers to bring their children to work by setting up a small day-care centre at the firm.

In order to attract and keep female workers, SME owners also must deal with the fact that many fathers or husbands forbid them to work outside the home. Some companies relied on the 'putting-out system', which was common in some rural regions of Europe at the beginning of the industrial revolution. In Egypt, this is particularly widespread among informal textile companies that are women-owned. The company owners hire a very limited number of workers to work in the factory with formal employment contracts and outsource much of their production to female home workers, who do all their work at home. Factory owners deliver the raw materials to where the women live and collect the finished products. Home workers are paid 'by the piece', that is, a certain amount for each satisfactorily finished piece of work. This practice helps employers prevent a big turnover of female employees and allows home workers to combine work and family. Homework is not practical, however, when large machinery is required for production.

Good working atmosphere: Some interviewees stated that a pleasant work environment or good treatment suffices to improve workers' loyalty.

> *"Since my employees are already trained, I want to retain them, because this is better for the quality of my product. That is why I have to be patient with them."* (Textile producer, Cairo, 25 March 2012)

In this context, one interviewee stressed that he was one of the few employers in town who did not beat his workers. (!)

Worker participation: Another element of human resource development is participation. Some upgraders encouraged their employees to give feedback to managers and submit ideas for improving products or production processes. Some entrepreneurs even let their workers participate in decision-making, for example, in reorganising the firm's production processes. Mohammed Hameed from the Textile Development Center maintained that such a strategy was not easy in a cultural setting where top-down decision-making is the norm. He emphasised how crucial it is for successful upgraders to not just train their workers: employers must improve their management skills in order to attract and retain well-trained workers.[45]

45 Mohammed Hameed, Textile Development Centre, Cairo, 22 February 2012.

Some entrepreneurs, however, admitted having installed cameras in the factories in order to constantly monitor their workers – instead of creating incentives for them.

Corporate governance

Several SME owners and experts emphasised that weaknesses in corporate governance compound the difficulties that Egyptian SME owners have in upgrading. They noted that most companies in Egypt are still 'one-man-shows', meaning that the family business is run by just one family member – the patriarch – who has complete authority. One expert put this approach into words: *"This is my company, and I do not want anybody else to manage it!"* (Ahmed El Sayed, NILEX, Cairo, 28 February 2012). The firm's strong hierarchical organisation is rooted in the highly patrimonial nature of Egyptian society: vertical structures and decision-making processes. Segments, rather than classes, are the main objects of identification, and decisions are taken in an authoritarian top-down, rather than a participatory, way.

In contrast, some upgraders highlighted the positive role of decentralised decision-making and teamwork as a main factor in their success. One stated that teamwork was good for business because everyone could rely on the others, with each person performing the tasks they were most suited. Another upgrader stressed the importance of the division of labour within the company:

> *"We work in a team, together we can do it. I have a rather small turnover in staff: they stay. I invest in my team. I now have planning, accounting, HR."* (Textile producer, Cairo, 04 March 2012)

Corporate governance affects the upgrading of SMEs in Egypt in three ways. *First,* it paves the way for obtaining external finance from investors or through an initial public offering. *Second,* good corporate governance leads to the introduction of improved internal control systems, which result in more accountability and higher profitability – for instance, by minimising losses due to fraud. *Third,* conflicts between owners and mid-level managers can be reduced by corporate governance structures (Abou El-Fotouh 2009).

Location

Our results show that both the geographical and structural dimensions of the location can affect an SME's upgrading potential – even though not all that much. This finding coincides with the results of the DIE case studies on SMEs in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

Geographical dimension of the location: Both in our sample and that of the EICS, the share of upgraders was higher in some governorates and lower in others. As much as 61 per cent of the companies in the Nile Delta (the Gharbiyya and Sharqiyya governorates) were found to be upgraders, but only 42 per cent of the companies in 'Greater Cairo' (Cairo and Giza, see Table A3 in Annex). Furthermore, 44 per cent of the SME owners in Greater Cairo that identified their location as an important factor for upgrading stated that it had a positive impact on business, while 56 per cent said that it had a negative impact. Only 44 per cent of our interview partners in Gharbiyya and 31 per cent of those in Sharqiyya believed that their location negatively influenced the business.

However, the t-test showed that these differences are not statistically significant and could be due to a selection bias. A considerable number of interview partners in Greater Cairo were selected by walking through the streets (see Section 4.3.2), but that method was not used to find most of the SMEs in the Delta. There, most SMEs were selected from enterprise registries and other company lists, which meant that almost all of them were formal.

Interestingly, the econometric analysis of EICS panel data provided additional evidence that upgrading is slightly easier for SMEs outside Greater Cairo – especially in the Gharbiyya and Sharqiyya governorates. In all specifications of the logit estimations, the coefficients for Sharqiyya (and Al-Minya) were slightly positive, with the correlation found to be statistically significant (in some specifications even at the 1 per cent confidence level, with the governorate of Cairo as the reference category in all cases). The coefficients for Gharbiyya were also positive, but there the correlation was found to be statistically significant in only two specifications (those with upgrading as the dependent variable) and not in the two others that had gazelle upgrading as the dependent variable (see Table C2 in Annex).

In contrast to these results, several experts on private-sector development in Egypt were convinced that upgrading is more difficult outside Cairo and Alexandria because business development services (BDSs) are more ac-

cessible in the two metropolitan areas than elsewhere. This contradiction could be explained by the fact that BDSs are not a very important factor for upgrading in Egypt (see Section 5.2.4).

Structural dimension of the location: Other aspects of the location of SMEs also seem to play limited roles in upgrading. For example, the qualitative analysis of our SME owners' interviews revealed that some locations – even in the same town – are more accessible by public transport than others, which reduces the employees' costs and commuting time, as well as the risk of arriving late because of heavy traffic.

The social milieu at a firm's location seems to be a factor in its upgrading potential. Particularly owners of small shops mentioned that their location not only determined the quantity but also the kinds of customers. Some SME owners stated that being located in a neighbourhood with low purchasing power constituted a relevant constraint for the business.

> *"I can only sell at a low price, because the income level of my clients is low."* (Producer of sweets, Cairo, 28 March 2012)

Our quantitative analysis provided some evidence that being located in an industrial zone could impact positively on an SME's upgrading potential. In our sample, the SMEs that are located in an industrial zone are all upgraders; according to the t-test, this correlation is statistically significant at the 5 per cent confidence level (Table 11).

The econometric analysis of the EICS supports this finding. It shows that between 2004 and 2008, being located in an industrial zone was positively correlated with becoming a gazelle (though not with becoming an upgrader); this correlation is statistically significant at the 5 per cent confidence level (Table C1 in Annex).

However, the correlation could be due to reverse causality because it is unusual for an SME to be located in an industrial zone. An SME only moves to an industrial zone once it has outgrown its original location – usually in a town or village – because it is more difficult to hire workers in the zones.

Other studies have shown that SMEs in urban areas have more potential to upgrade than those in rural areas. El-Mahdi (2006), for example, showed that the owners of SMEs in urban areas (about half of all SMEs in Egypt) are wealthier, a fact that she interprets as an indicator of their business success. The share of manufacturing SMEs, which tend to be more innovative

than trade or services SMEs, is slightly higher in urban than in rural areas (El-Mahdi 2006). Our sample did not address this issue because it included very few rural SMEs.

Our research also did not provide evidence on the possible impact of being located in a geographical cluster. In our sample 16 SMEs were located in areas that were home to many similar SMEs: nine of them were upgraders and seven were non-upgraders. According to the t-test, this difference is not statistically significant (Table 11).

Size

Our findings were rather ambiguous with regard to the significance of an SME's size. A total of 28 entrepreneurs stated that a firm's size affects its upgrading potential: 19 said that the size of their own company had a positive impact, and seven said that the size of their company was a constraint (Tables A12 and A14a in Annex). However, both groups included enterprises from all size brackets, meaning that the result is inconclusive.

Small firms might suffer more than others from lack of finance: 34 per cent of the companies with fewer than 10 employees complained about difficulties accessing finance, while the share was only 13 per cent for companies with more than 20 employees (Table A11b in Annex). This correlation could be due to reverse causality since it is easier for companies with access to finance to grow and they might have grown before being interviewed.

Small firms may have more problems with state-business relations such as registration, licensing, taxation or company inspections. The qualitative analysis of our SME sample suggests that large companies are more able to bribe public officials thus avoiding administrative red tape.

Some interviewees also associated large company size with a higher budget for worker training which in turn had a positive effect on the SME's upgrading potential. At the same time, however, larger companies seemed to suffer more than smaller ones from the lack of trained workers. Of the SMEs with at least 20 employees, 71 identified the lack as a major obstacle, while only 31 per cent of companies with fewer than 10 employees did. Likewise, 26 per cent of the companies with at least 20 employees complained about the high turnover of workers compared with 3 per cent of the companies with fewer than 10 employees (Table A11b in Annex). It might

be more difficult for an Egyptian company to attract and retain a large number of trained workers than a small number of them.

Some SME owners stated that small companies have more problems than big ones in obtaining access to government support services, finance and land. In our sample, 13 per cent of the companies with more than 20 employees identified the lack of land for production as a major constraint, but only 3 per cent of the SMEs with less than 10 employees did (Table A11b in Annex).

In any case, the initial size of a company does not seem to have any impact on its upgrading potential. We found no evidence for a correlation in either our SME sample or in the EICS panel data (Tables A8 and C1 in Annex). The gazelles in our sample started their businesses with an average of seven employees, while non-upgraders began with an average of eight.

Age

While younger SMEs are more likely to upgrade, this correlation is probably not the result of a direct causality. On average, upgraders in our SME sample were younger than non-upgraders (11 as opposed to 18 years in operation), and the gazelles were the youngest of all (8 years) (Table A3). According to the t-test, this correlation is statistically significant at the 5 per cent confidence level (Table 11).

However, this does not indicate a direct causality between age and an SME's upgrading potential. The only clear impact of age on an SME is that upgrading is especially difficult during its first two to four years of operation. After starting up, a company must first establish itself on markets and organise production. Only then can it attempt to innovate and expand. Most upgraders in our sample had grown between the fifth and the tenth years of their existence. A company that does not upgrade during this five-year period is highly unlikely to do so later.

This might be because a company that has the potential to upgrade will do so as soon as possible after the critical start-up phase. It could upgrade again later, too, but it is unlikely to wait 10 years to first attempt to upgrade. Young SMEs may be either upgraders or non-upgraders, but old SMEs are very likely to be non-upgraders because older firms that have successfully upgraded tend to be larger than the firms we studied. Therefore, the age of an SME would not have a direct impact on its likelihood to upgrade.

Apart from this, the age of an SME did not correlate with many other independent factors. Old firms (at least 15 years in operation) complained more often about the lack of skilled labour than young firms (fewer than 10 years). The respective shares were 52 and 32 per cent in our sample (Table A11b in Annex). However, the difference could result from differences in the size of the companies (see above) because old firms tend to be larger than young firms.

In contrast, young firms seemed to suffer more than older firms from the lack of a marketing strategy. The share of interviewees who complained about this problem was 11 per cent for young firms and 0 per cent for old firms (Tables A11b and A13b in Annex).

Sector

According to our research, an Egyptian SME's economic sector has little impact on its upgrading potential. This astonishing finding contrasted with the findings on SMEs in India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013). Our results probably would have been different if we had focused on other economic sectors in Egypt such as tourism, trade or agriculture. For the three sectors that we studied, however, we found neither a significant correlation between the sector and an SME's potential to upgrade, nor did we find significant differences in the upgrading trajectories of SMEs in different sectors (i.e. how they innovated and grew).

The only tangible result showed that there were slightly fewer upgraders in the textiles and garments sector than in the food-processing or ICT sectors. In our sample, the share of upgraders was 40 per cent in the textiles and garments sector compared with 65 and 55 per cent in the other two sectors (Tables A18b and A18c in Annex). According to the t-test, this difference is statistically significant at the 10 per cent confidence level (Table 11). Likewise, our logit estimation based on the EICS panel data revealed that between 2004 and 2008, upgrading was particularly difficult for SMEs in the textiles and garments industry, the correlation being statistically significant for gazelles at the 5 per cent confidence level (Table C3 in Annex).

But even this result must be interpreted with caution. Most probably, the poor performance of SMEs in the textiles and garments sector should be attributed to the fact that this sector had long suffered from structural deficits. Between 2004 and 2008 it declined in relative terms, then was the

hardest hit by the post-revolution economic collapse. In our sample, 31 per cent of the textiles and garments producers identified Egypt's 2011 economic downturn as one of their main obstacles, compared with only 12 per cent of the food processers and 9 per cent of the software developers. The textiles and garments sector had suffered the most from fierce competition, mainly from Chinese companies: 12 per cent of the textiles entrepreneurs mentioned it, and almost none of the food-processing or ICT sectors (Table A11b in Annex).

At the same time, we found hardly any other major differences in the characteristics of the SMEs in the three sectors we studied. Producers of textiles and garments suffered disproportionately from the post-revolution economic downturn and from international competition. Food processors complained more than the others about red tape in state-business relations, while ICT companies suffered more from widespread bribery than SMEs in the other two sectors (Table A11b in Annex).

Informality

We found no evidence that informality is a constraint to SME upgrading in Egypt. Informal SMEs cannot grow beyond a certain size. The threshold is not clear-cut, but once an SME has a certain number of employees it becomes more and more difficult to shirk economic regulations. However, entrepreneurs are free to formalise whenever they consider formality to be beneficial. Informality is not about being caught in a growth trap; it is a rational decision that is taken because the disadvantages of formality outweigh its advantages. However, when an SME grows, the advantages of formality may eventually outweigh the disadvantages – leading the SME owner to formalise the business. Although this may be difficult in some countries, in Egypt it is not. This finding is in line with the results of the DIE case studies on India and the Philippines (Reeg 2013a; Hampel-Milagrosa 2013).

For our survey, we used a company's tax registration as the indicator of its formality status. In practice, the formalisation of a company involves several steps including registering the company, licensing its production processes, registering the land, registering the workers' social security, etc. Some enterprises have gone through some of these procedures but not all of them – so that different degrees of formality and informality coexist. However, all the experts confirmed that the most important element of formal-

ity is getting a tax identification number (tax ID). Only one other indicator is used in other studies: the registration of a company's workers with Egypt's National Social Insurance Organisation. We tried to categorise SMEs using this criterion, too, but had the impression that tax-ID information about was more reliable.

Unfortunately, our sample included only 13 informal SMEs, or companies without tax registration (Table A21 in Annex), 10 of which were non-upgraders, while three had upgraded and remained informal (between four and eight other companies had been informal in 2007 and had formalised since then in order to be able to upgrade). Three informal companies were micro enterprises, nine were small enterprises and one was a medium-sized enterprise (with 60 employees). Eleven enterprises were active in the textiles and garments sector and two in the food sector. Women owned four enterprises and men nine.

Eleven owners of informal companies identified their company's formality status as a major advantage in doing business. While seven of them considered their firm's informality to be a disadvantage, four considered it to be an advantage (Tables A12 and A14a in Annex). It is impossible to say whether informality hinders or fosters SME upgrading in Egypt.

An informal textiles manufacturer from Cairo stressed that for him, informality was a handicap:

> *"It is difficult to get the tax identification number, especially the papers. I perceive being informal as something bad. I am worried all the time that inspectors [will] come and close my business. Inspectors from the insurance came before and I needed to bribe them."* (Textiles producer, Cairo, 28 March 2012)

Other SME owners added that informal companies had difficulty exporting their products, participating in government tenders and getting loans. Experts also mentioned the lack of access to finance, public services and civil-society organisation programmes as the main disadvantages – a finding confirmed by other studies, such as Galal (2011).

Several experts mostly attributed many SME owners' decision to not formalise to the high costs of formalisation and the limited advantages of a formalised SME:

> *"Another problem is the costs of formality and the lack of benefits of formality. The social costs an employer has to pay for formal employees (e.g. insurance) are very high (sometimes 40 per cent of wages). The benefits of formalisation are very low because the courts do not work properly and access to finance is not so important for SMEs because they do not get capital from banks anyhow."* (Jennifer Bremer, American University of Cairo, 14 February 2012)

Portfolio diversification

None of our research instruments provided clear evidence in response to the question about whether diversification or specialisation was more conducive for SME upgrading in Egypt. Several upgraders attributed their success to their specialisation strategy. At some point in time, they had decided to limit production to a single product or to very few products, focusing on what they could produce best or what no competitor was producing in the same way (i.e. a product for a niche market). Several SME owners confirmed that the high quality of their products was because of their specialisation:

> *"In general, in Egypt, most companies offer the whole range of products and they are not as successful as we are. We specialise in a certain kind of software and our specialisation helps us to be the best in the sector. This is also the reason why big companies like Microsoft work with us."* (Software producer, Cairo, 26 March 2012)

At the same time, however, we also realised that many upgraders were unable to sustain their results because they had not sufficiently diversified their risks after upgrading. Many companies in our sample had upgraded before 2007 and then crashed because of external shocks (such as the arrival of foreign competitors from China or other countries, the global financial crisis in 2008–2009 or Egypt's post-revolution economic downturn). Diversification might have helped these companies mitigate the impact of external shocks.

DIE's parallel case studies indicate that a diversified portfolio seemed to be a major factor of SME upgrading in the Philippines while the results for India on this issue are at least as ambiguous as those for Egypt (Hampel-Milagrosa 2013; Reeg 2013a).

Market orientation

We found no evidence about whether domestic or export market orientation is better for SME upgrading in Egypt. Our sample included successful exporters and producers that focused on the domestic market and non-upgraders that were producing for the domestic market, as well as others that produced for the world market.

The logit estimation that we ran with the EICS panel data from 2004 and 2008 displayed a statistically significant correlation between the upgrading of SMEs and their export orientation. SMEs that mostly targeted the domestic market tended to grow more slowly than other companies. However, this correlation could be due to reverse causality because on average, successful upgraders have fewer difficulties conquering export markets than non-upgraders.

The case studies on SMEs in India and the Philippines revealed that export orientation was a major success factor for upgraders in India while in the Philippines it had no major impact on the likelihood of SMEs to upgrade (Reeg 2013a; Hampel-Milagrosa 2013).

5.2.3 Inter-firm linkages

Our research confirmed earlier studies that had found that institutionalised co-operation between Egyptian SMEs was rare. Very few of the companies covered by our survey were integrated into GVCs or clusters, so we were unable to draw any conclusions on the effects of such vertical or horizontal linkages on SME upgrading.

Many experts insisted that such linkages could significantly benefit all partners involved while also supporting the efforts of Egyptian SMEs to upgrade. They considered that the reluctance of Egyptian SMEs to integrate into GVCs and clusters was a major factor for their difficulties in upgrading and sustaining the upgrade.

The parallel case studies in India and the Philippines concluded that integration into GVCs is one of the main factors for successful SME upgrading. Clusters have also had a significant positive effect on SME upgrading in India (but much less so in the Philippines) (Reeg 2013a; Hampel-Milagrosa 2013).

Value chains

Our interviews with SME owners did not provide clear evidence about the impact of value chain integration on SME upgrading in Egypt. However, this is because we did not find enough vertically linked SMEs to study, not because of weak effects. Only one company reported that it was integrated into a GVC while a few said that they were subcontracting for other firms, which were only supplying the local market (i.e. they were integrated into value chains but not *global* value chains).

The picture remained equally inconclusive when we looked at all the companies working within global production networks. We had 13 such SMEs: five gazelles, two non-gazelle upgraders and six non-upgraders. The t-test confirmed no statistically significant correlation (Table 11).

The statements of our interviewees were also ambiguous. Some stated that they benefited from being integrated into domestic value chains:

> *"I produced for the Cairo Cotton Center before. I was subcontractor and I learnt a lot about mass production which is important for my export activities."* (Textile producer, Cairo, 4 March 2012)

However, others were less satisfied:

> *"One obstacle for me is being in a value chain because a lot of profit goes to the factory I am producing for."* (Textile producer, Cairo, 29 March *2012)*

Several experts stressed that the lack of vertical linkages between smaller and larger firms in Egypt constitutes an obstacle for SME upgrading:

> *"We have to promote these linkages [...] because the large provide know-how, technology, introduce international standards and guarantee market access. On the other hand, small firms can provide parts at a low price. It is a win-win situation."* (Mona Garf, Cairo University, Giza, 19 February 2012)

These expressions are in line with the findings of other empirical studies. Al-Ayouty (2010) and UNCTAD (2010) found evidence that some Egyptian SMEs considerably benefited from being integrated into a GVC.[46] The significance of their results is limited, however, because their studies did not compare the vertically linked SMEs with a control group – SMEs that were not part of a GVC but were otherwise similar. The SMEs that were analysed in the two studies might have developed positively without being integrated into GVCs.

El-Mahdi and Osman (2003) confirmed that only a very few Egyptian SMEs were effectively integrated into GVCs.

Our own research suggests that this phenomenon at least partly results from deficits in enforcing contracts and the law. Many SME owners stressed that they had no interest in establishing vertical linkages with other firms:

> *"I want to make all my production steps on my own […] because there are always a lot of problems with suppliers."* (Textile producer, Cairo, 6 March *2012)*

Representatives of lead firms in the food processing and textiles and garments sectors expressed the same view. They said that their companies made most of the production steps on their own because it was impossible to find suppliers to provide products with the requisite quality, reliability and compliance.

> *"We do vertically integrate in order to have 100 per cent control but this diversification in production steps is very costly. The future lies in specialisation."* (Helmy Abouleish, Sekem Group, Cairo, 5 March 2012)

This view is supported by the findings of El-Haddad (2008) who, referring to the Egyptian garments sector, argued that entrepreneurs were reluctant to integrate into value chains because of three concerns: (i) the quality of inputs bought from other firms, (ii) the timely delivery of

46 Al-Ayouty (2010) provided evidence for product, process and – to some extent – functional upgrading through linkages between the Egyptian textiles and garments firms as a result of their integration into GVCs governed by large European buyers. A study by UNCTAD (2010) found that the relationship between Microsoft and its medium-sized partners in Egypt led to the latter's channel upgrading. The co-operation enabled them to enter international markets and expand their scope of business. However, software is a rather atypical industry.

inputs and (iii) the buyers' failure to pay. Her interviewees expressed a strong preference for integrating all the production steps (spinning, weaving and knitting) into their own companies in order to control quality and timeliness (El-Haddad 2008, 18). At the same time, some had even tried to move downstream into retailing because of their bad experiences with corporate customers' attitudes towards paying. Some clients had delayed paying for years or simply had never paid. The judicial system was no help: some cases took several years, and it was never clear how they would turn out.

> *"Finally the verdict was that the defendant could not be located. In any case, it's either the defendant pays or he is put in jail. I don't benefit if he is in jail. All I want is my money back. And even if I get my money back the value is greatly discounted. So owning my own stores seemed like the only solution to me."* (Garments producer in Cairo, quoted by El-Haddad 2008, 22)

Clusters

Much the same is true for the integration of SMEs into clusters: We did not find any evidence for the impact of horizontal linkages on SME upgrading because no company in our sample was a member of an effective functional cluster. Although 16 companies were located in geographical clusters they did not co-operate in any way with other companies in the cluster. The clusters were just local concentrations of mostly uncoordinated economic activities of the same type, meaning that the SMEs in these clusters did not benefit from either external effects or joint action.[47] We interviewed 32 SME owners who said they co-operated with similar companies, but in most of these cases, co-operation was limited to exchanging raw materials as needed, helping repair machinery or outsourcing parts of large orders when one firm's production capacities were too small. Only two SME owners reported exchanging information with other owners, and one interviewee mentioned joint business activities (Table A25 in Annex). Ongoing interaction or information exchange seems to be rare in Egypt.

47 For a comparison between geographical and functional clusters, see Altenburg / Meyer-Stamer (1999).

This result has been confirmed by many other studies.[48] Stochierro (2002) analysed 28 areas of concentration of SMEs from the same manufacturing sub-sector in Cairo and Alexandria and found that almost all were just geographical clusters, that is, areas of concentration without regular co-operation or linkages between the SMEs, and only two were functional clusters. UNDP and AFESD (2003), IMC (2005) and Van Dijk (2001) reached similar conclusions.[49]

In our sample, several SME owners stated that mistrust caused them to be disinterested in any kind of co-operation with similar companies:

> *"I do not want to co-operate because they are my competitors."* (Textiles producer from Cairo, 22 March 2012)

As in the case of GVCs, SME owners' aversion to co-operating contrasted sharply with the convictions of many experts of private-sector development in Egypt, who consider clusters to be helpful tools to promote SME upgrading:

> *"For SMEs to be successful in the food-processing sector, clustering is an important factor. It means clustering of SMEs, but also large firms, business development services and institutions for quality standards."* (Nihal El-Megharbel, Ministry of Local Development, 19 February 2012)[50]

The representative of a big Egyptian bank who had worked in SME lending for a long time confirmed that the lack of functional clusters was mainly due to what Altenburg and Meyer-Stamer (1999) characterised as *"low trust and poor contract enforcement mechanisms"*.

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48 Exceptions include powerful clusters such as the furniture cluster in Damietta, the ICT cluster in Smart Village near Cairo, the marble and granite cluster in Sha'a El Te'aban, the leather manufacturing cluster in Robiky, the honey cluster in Al-Minya, handicraft clusters in Siwa and Upper Egypt, and the textiles and garments cluster in Mahalla al-Kubra (Loewe 2013, 28).

49 The first Arab Human Development Report addressed this problem (UNDP / AFESD 2003, 101). A review of the Egyptian food-processing sector also pointed out that the entrepreneurs recognised the need for technological improvements, but did not take collective action into consideration in order to facilitate SME upgrading (IMC 2005, 25 and 152). Van Dijk (2001) similarly emphasised that the SMEs he analysed in 10th of Ramadan City were not fully exploiting the advantages of local concentration. The cluster appeared to be merely geographical, not a site for collective efficiency.

50 See also: El-Megharbel 2008, 8.

> *"Clusters do not work in Egypt because people do not trust each other. They could only work if there was a third party involved that is able to create trust within the cluster. I know the cluster approach has been very successful in other countries! But I do not see the same for Egypt at the time being..."* (Yasser Zaher, Banque du Caire, Cairo, 26 April 2012)

Another reason is that businesspeople never learnt to co-operate. At school, they were not encouraged to work in teams. Pupils in Egypt are socialised to be lone fighters (Al-Ayouty 2011), while political and religious authorities have little interest in teaching people how to conduct joint action – and possibly organise an opposition.

> *"Teamwork: co-operating with others, learning from others. Entrepreneurs are not used to do so. This can be traced back to the education system in Egypt."* (El Bedawy, Ahmed, Endeavour. Cairo, 26 February 2012)

And again, several experts stress that the existence of clusters would help SMEs in Egypt to upgrade:

> *"Clusters are more important than the business environment. The companies in a cluster have better conditions. I think being in a cluster can really accelerate your growth. You can create economies of scale, reduce the price of inputs, work together in transport, share machines, and jointly benefit from vocational schools. And you have the opportunity to buy out your less successful neighbour and grow"* (Heba Handoussa, economist. Giza, 29 February 2012)

Formalised business networks

We found no evidence of an impact of formalised business networks on SME upgrading, although a quarter of the SMEs in our sample reported being integrated into such networks. The share of SME owners belonging to any kind of business association was found to be only slightly higher among gazelle upgraders (29 per cent) and non-gazelle upgraders (32 per cent) than among non-upgraders (18 per cent) (Table A26 in Annex). According to the t-test, the difference is not statistically significant (Table 11). It may well be due to reverse causality because seven of the upgraders that belonged business associations at the time of the interview had not belonged to any business association five years earlier, that is, they applied for membership only after they had successfully upgraded (Table A26 in Annex).

None of the upgraders in our sample identified membership in a business association as a major reason for their success. Very few interviewees believed that membership in an Egyptian business association benefited them in any way.

In contrast, Abdel-Latif and Nugent (1995) found evidence that small-garments producers' affiliation with a garments export association enabled them to reach economies of scale in the marketing phase and thereby overcome crucial cost barriers for exportation (Adel-Latif / Nugent 1995, 13 f.).

However, our findings were completely in line with the results of the DIE case studies on SME upgrading in India and the Philippines, where business associations also have no impact on SME development (Reeg 2013a; Hampel-Milagrosa 2013).

5.2.4 Business environment

Two elements of the business environment are among the chief determinants of SME upgrading in Egypt: access to finance and the rule of law. Apparently, the economic downturn that followed the revolution in 2011 also severely impacted the upgrading prospects for SMEs. It was, however, a one-time shock whose effects hopefully will soon be overcome. Many SMEs were sorely affected by the rise in the price of inputs, which is, however, a normal challenge in business and can hardly be averted. Numerous entrepreneurs also suffered from unfair competition, government regulations and petty corruption, but most such problems stem from deficits in the rule of law.

Second-tier factors in SME upgrading include access to land, the availability of BDSs and infrastructure (mainly transportation).

We could not find evidence of the effects of any other elements of the business environment – the trade regime, access to insurance, rates of inflation and exchange.

Access to finance

Finance is one of the main determinants of SME upgrading in Egypt. The problems that SME owners faced in accessing credit, leasing, insurance and other financial products largely explain the general difficulty of Egyptian SMEs to upgrade. However, these problems were only partly due to deficits

in the supply of finance; many of them were also due to deficits on the demand side (borrowers' lack of collateral or financial illiteracy, SME owners' incompetence in developing a business plan, etc.). Nor do deficits on the supply side of the financial market explain why some SMEs more easily upgrade than others. The difference is partly due to the fact that successful owners have their own funds (savings, inheritance, etc.) rather than to differences in access to credit.

According to our SME survey, deficits in accessing finance were the second largest constraint for SME owners in Egypt. In our open question, 29 per cent of the interviewees identified it as one of their main challenges and 20 per cent in our closed question (i.e. when we presented a list of possible answers) (Figures 15 and 16, Tables A11a and A12 in Annex).

SME owners regarded the availability of finance as a major factor for success, with 20 per cent of them identifying it as one of the five most important factors for differences in the likelihood of SMEs to successfully upgrade. However, when speaking about finance, most respondents were referring to their own funds rather than bank loans. In response to our closed question, only 9 per cent of the interviewees gave access to finance as one of the four most important explanations for successful upgrading. The share was considerably higher among the gazelles (20 per cent) than among the non-upgraders (8 per cent) (Figures 16 and 17 and Tables A13 and A14a in Annex).

Other studies confirm these results – for example El-Megharbel (2008, 6). An Egyptian Banking Institute study reported that 58 per cent of the SME owners interviewed considered their difficulty in accessing finance to be the most important constraint on the firm's development. El Kabbani and Kalhoefer (2011) found that access to finance was problem number two for Egyptian SME owners in general and problem number one for micro enterprises.

Our results did not provide clear evidence regarding the impact of access to finance on SME upgrading. Only a small portion of our SME owners had received formal loans. The share was higher among upgraders (5 out of 40) than among non-upgraders (1 out of 40) but the difference resulted from reverse causality: None of the upgraders had got a formal loan prior to their successful upgrading, which means that *their success was why they were able to get* a bank loan – not a result of having received one (Table A28 in Annex).

The results of our econometric analysis of the EICS panel data were equally ambiguous. Accordingly, "having a bank loan" had a positive effect on the likelihood of SMEs to upgrade, which is statistically significant at the 10 per cent confidence level. At the same time, "having a bank loan" negatively correlates with "being a gazelle upgrader". But this correlation is not statistically significant (Table C1 in Annex).

This finding is in line with other studies. Stone and Badawy (2011) also found no evidence for any significant correlation between access to finance and the growth of Egyptian SMEs between 2004 and 2008. El Mahdi and Osman (2003) were unable to show that bank loans positively impacted employment creation in Egyptian SMEs.

The difference between upgraders and non-upgraders is whether the SME owner has their own financial means: 76 out of 78 interviewees in our sample said that their personal funds were among the main sources of funding (two did not answer the question). At the same time, only six SME owners said that bank loans were their main source of funding, while seven mentioned informal credit, three mentioned supplier credit and only one mentioned a loan from a relative (Table A28 in Annex). Most SME owners had no access to sources of finance besides their own funds, which suggests that more affluent SME owners have greater upgrading potential. In contrast to India and the Philippines, in Egypt relatives or friends tended to grant only small loans because of weaker social ties (see Section 5.2.1). For many entrepreneurs informal loans were too expensive – as in most countries – while accessing formal credit appeared to be difficult.

This finding is in line with the conclusions of other studies. According to El-Hawary (2007), 93 per cent of the initial capital stock of Egyptian SME owners was their personal equity capital. Formal and informal loans contributed just 3.5 and 2.6 per cent, while about 2 per cent came from relatives or friends (El-Hawary 2007, Table 3.3); 78 per cent of all Egyptian companies have never applied for a bank loan. Formal or informal loans are the main source of finance for only 5 per cent of Egyptian SME owners, while 83 per cent do not have either an overdraft facility or a line of credit (ibid., 69).

Such difficulties in accessing finance are due to both supply- and demand-side factors.

Supply side: On the supply side, the Egyptian financial system is rigid, with retail banking that is well developed and corporate banking that is underdeveloped.[51] Banks prefer to lend to the government or other institutional borrowers, which is *"such an effortless and lucrative line of business to the nation's lenders that the private sector – with the exception of the blue chips – has been crowded out of the credit market"* (OBG 2012, 86). Although this trend has accelerated since the revolution, with the fiscal deficit widening to more than 10 per cent of GDP, it had already been well established before the revolution when the loan-to-deposit ratio stood at about 52 per cent and, as a result, banks were providing only about 20 per cent of all new investment finance in Egypt (El-Hawary 2007). Of course, this particularly affected SMEs because with the high concentration of banking services there was no incentive for lending institutions to be active in the market of micro and small loans.

Many observers have argued that Egyptian banks are also overcautious and try to avoid the risks associated with lending to private borrowers (e.g. El-Hawary 2007, 70). The total volume of domestic bank lending to the private business sector does not exceed a third of bank assets (CBE 2011).

There are three reasons for this risk aversion: (i) high demand by the government and the Central Bank of Egypt (CBE) for credit, (ii) limited competition in the banking sector and (iii) the increase in non-performing loans extended by Egyptian banks between 1990 and 2010. At least partly due to lenders' difficulties getting Egyptian courts to enforce their financial claims, this increase caused Egyptian banks to demand more collateral for loans. According to El-Hawary (2006, 71), in 2005 the average collateral required for a loan amounted to about 130 per cent of the loan. Some observers have pointed out that banks generally did not bother to screen their borrowers' business plans and just insisted on getting collateral.

At the same time, Egyptian banks preferred to lend to large and mature firms. Traditionally, only microfinance institutions have provided loans to SMEs. Banks started lending to SMEs only in 2005 when some domestic public banks turned to smaller clients. However, instead of taking stock of the new clients, they simply applied the conventional business model, which was tailored to corporate lending and evaluation standards.

51 Interview with Reem Elsaady, GAFI, Cairo, 16 February 2012.

> *"They were not at all aware of the differences between small and large companies. They had no idea how to deal with SMEs. They did not even speak their language and promised much too much. After a while the banks realised that many SMEs failed in repaying their loans. One of the reasons was that these had not been well informed about the products and the involved risks. In addition, many companies still had their experience with PBDAC in mind, which had extended loans to virtually everyone without ever asking for loan repayment."* (Yasser Zaher, Banque du Caire, Cairo, 26 April 2012)

As a result, large enterprises have continued to enjoy better access to finance than SMEs (Abdel-Kader 2006; EBI 2010). With only 7.5 per cent of all private-sector credit directed to SMEs, the ratio of liabilities to SMEs' fixed assets has also been very low (9 per cent) (Abulata 2011, 3 and 7). Information about how many SMEs in Egypt apply for loans but are rejected is contradictory: one study postulated a rejection rate of 66 per cent (EBI 2010, 21), while another put it at only 25 per cent (Abulata 2011, 6).

In any case, there are various reasons for Egyptian banks' reluctance to extend loans to SMEs. One is that many SME owners are unable to formulate a proper business plan, provide adequate collateral and submit all the documents required for a bank loan (see below).

Another reason is that since many banks still perceive SME lending as a relatively unprofitable endeavour, they do not invest in the necessary skills and systems. Since competition in the corporate banking segment is still weak, there are few incentives for banks to look for additional profit centres such as SME lending, where many more contracts have to be made to generate the same amount of profit made from medium to large borrowers.[52]

Furthermore, bankers are not interested in SME financing. As one public official put it,

> *"Bankers want to make big business, not deal with small fishes."* (Ahmed Hassan, Industrial Training Council, Cairo, 21 February 2012)

SME lending has been perceived as a rather risky business instead of a strategy for diversification. This lack of interest can also be traced to the lack of market information about SMEs and the resulting absence of systems to deal

52 Khaled Al-Gazawi, First Microfinance Foundation, Cairo, 27 February 2012.

with them. Market studies could investigate which type of SME – in terms of sector, size or location – might be an interesting target group (Poldermans 2011, 7). There are few of the structures, processes or staff capacities needed to evaluate SMEs through risk assessments – or to monitor them after loan disbursal. Businesses with alternative business models such as those in the ICT sector particularly suffer from this lack. An ICT business owner from Cairo lamented that *"they* [the bankers] *are just accountants, they do not read ideas"* (ICT business owner, Cairo, 29 February 2012).

Banks have been particularly reluctant to lend to SMEs in the textiles and garments industry which is highly exposed to external shocks such as abrupt declines in exports, sudden decreases in export prices and steep increases in input prices.

Demand side: However, Egyptian SME owners' difficulties accessing finance are also because of their own deficits. When we asked SME owners why they had not taken out a bank loan, only 12 per cent said that the bank had refused their request. The others had not even tried – 13 of them because they were afraid of the consequences of failing to repay, 12 because the interest rates were too high, nine because of religious convictions, eight because they did not need money, five because they had no collateral, three because they were unable or unwilling to do all the necessary paperwork and seven for other reasons. The shares were almost equal for upgraders and non-upgraders (Table A29 in Annex).

Thus the first factor on the demand side is entrepreneurs' fears of not being able to repay bank loans. This fear has been fuelled by Egyptian legislation that stipulates very severe sanctions for credit default and makes no distinction between private and corporate property, making the owner fully liable for the company. Should a company fail to repay a loan, all the owner's private assets could be confiscated to compensate the creditor. It is also common practice for banks to require borrowers to sign an undated check for the balance of the loan as additional security because they cannot be sure of gaining control over the collateral. Instead of calling in the loan, the bank could just date the check and present it for payment, in which case the borrower risks being jailed for passing a bad check.[53]

53 Jennifer Bremer (American University in Cairo, Cairo, 14 February 2012) and Yasser Zaher (Banque du Caire, Cairo, 26 April 2012).

A cheese producer from New Maadi commented,

> *"I thus have to guarantee myself for any credit that I take for the company. When I fail, I not only lose my invested capital but also my personal capital."* (Cheese producer, Cairo, 29 February 2012)

The representative of a businesswomen's association said,

> *"There is no division between corporate and private equity. If you go bankrupt, you go to jail. That is why many people fear risk-taking so much. Think about an expansion of the business, it is a risk. Many people decide not to grow therefore."* (Amany Asfour, Egyptian Business Women Association, Cairo, 14 March 2012)

A second factor is Egyptian SME owners' financial illiteracy. They lack know-how about the strengths and weaknesses of various financing options, how and where to get them, how to apply for them and how to use them (Terpstra 2012a; Terpstra 2012b).

Many micro and small entrepreneurs cannot even fill in credit request forms or provide financial documentation about their businesses. To take out loans, SME owners must show the bank three years of financial statements, but many SME owners have no clue about proper accounting. Abulata (2011, 3) estimated that 75 per cent of all SME owners lack the most basic financial reports.

Start-ups, which by definition cannot prove three years of proper accounting, must submit a business plan instead. However, Yasser Zaher from the Banque du Caire says that most start-ups in Egypt do not know how to formulate a good business plan:

> *"The majority of entrepreneurs in Egypt lack awareness and know-how. Many believe that the banks will write their business plans and that all what they have to do themselves is to have a good idea..."* (Yasser Zaher, Banque du Caire, Cairo, 26 April 2012)

A third demand-side factor is that SME owners consider Egyptian banks' interest rates for credit to be too high. According to Yasser Zaher, before the revolution SMEs with sales of less than EGP 10 million per year had to pay annual interest rates of about 13 per cent, which was not much more than what SMEs in peer countries pay for small bank loans. However, since the Egyptian revolution, SME owners have had to pay around 30 per cent per

annum.[54] Several SME owners in our sample said that even 8 or 10 per cent was too much.

A fourth factor is that for religious reasons, some SME owners flatly refuse to pay interest. For them, Islamic Finance could be an alternative because it involves no formal interest, usually by building equity (*mušāraka*: the bank buys a share of the borrowing firm) or by combining sale and target purchase (*murābaħa*: a collateral item is sold to the bank and is bought back later at a predetermined, higher price). However, in contrast to countries such as Malaysia or Pakistan, Islamic Finance is rather underdeveloped in Egypt.

A fifth factor is that many SME owners generally mistrust banks and therefore would never request loans.

A sixth factor is that many SME owners cannot provide any collateral, and even when they can, banks often refuse it. On one hand, it is difficult for banks to seize collateral other than real estate (e.g. machines or valuables) even if they theoretically have the right to do so. On the other hand, many bank employees lack the skills needed to assess proposed collateral.

Law enforcement

Many SME owners have difficulties with licensing, taxation, customs clearance, inspection or public tendering, as well as with competition, corruption and the protection of property rights. While these areas are diverse, the reason they present difficulties to SME owners is not: in the overwhelming majority of cases, their problems stem from deficits in the rule of law.

Government regulation and bureaucracy: Entrepreneurs in Egypt still face significant obstacles because of government regulation and bureaucracy, as is emphasised by many studies such as the World Bank Doing Business reports. These studies show that between 2004 and 2011, Egypt made considerable progress in several fields. For example, the number of administrative steps involved in starting a business was reduced from 10 to six, the duration of the procedure dropped from 22 days to seven and its cost from 105 to 16 per cent of per capita income. The minimum amount of start-up capital required was also reduced from 740 per cent of per capita income to

54 Yasser Zaher (Banque du Caire, Cairo, 26 April 2012).

virtually zero (World Bank 2012a). But the reports also stress that private-sector development remains hampered by overregulation and red tape and that Egypt still has much progress to make – especially regarding construction permits, power connection, tax payment (see below), property registration and company liquidation (World Bank 2012a).

This view was confirmed by several of our experts, who reported that administrative procedures still took a lot of time and money – especially for obtaining licences and approval for exports and imports or to close a business. As Mohamed Abo Elwafa of USAID stated,

> *"You can register a business in 48 hours but it takes 48 years to get out of it."* (Mohamed Abo Elwafa, USAID, 21 February 2012)

Government bureaucracy was identified as one of their main challenges by 24 per cent of the SME interviewees (and as many as 35 per cent of the SME owners in the food sector) (Table A12 in Annex). One SME owner even went as far as to employ one person to handle administrative issues, while some informal companies stated that the jungle of regulation kept them from formalising: the procedures just seemed too complicated.

However, the main problem that SME owners had with administrative procedures was not the costs and time involved, but rather the impossibility of accurately assessing the costs in time and money, and knowing what the outcome would be. A lot of time, money and effort must be invested without knowing whether this will suffice or whether the applications, requests and registrations will finally be approved. Either the public administration has not issued clear guidelines about the procedures, or the guidelines have not been well communicated – leaving public officials too much leeway for discretion when taking decisions.

In other words, entrepreneurs experienced great insecurity with regard to the outcome of their interactions with the state. SME owners suffered especially because they did not have enough financial reserves to surmount very negative outcomes. Normally, they do not have the connections *(wasṭa)* to the government or high-ranking public officials that bigger firms have to help speed the procedures and influence their outcome. Yousif and Humphrey (2008) showed that firms with good connections to the government – mostly larger enterprises – needed far less time and money for all official documentation to be processed. Likewise, a study commissioned by the Organisation for Economic Co-operation and Development (OECD

2010b) found that SMEs required twice the time as larger enterprises to obtain business basics such as construction permits.

Taxation: In the field of taxation SMEs suffer above all from deficits in the rule of law, that is, from the existing rules not being uniformly applied.

Several studies have described the Egyptian tax system in critical terms. According to *the Doing Business Report 2012* on the ease of paying taxes, Egypt ranks only 145th worldwide and last in the Middle East and North Africa (MENA) region. Data from the Enterprise Survey 2008 of the International Finance Corporation (IFC) show that 55 per cent of all small firms considered tax rates to be a major constraint for business in Egypt but only a minority of medium-sized and large firms (IFC 2008).

According to our findings, however, taxation is not among the most critical factors for SME upgrading in Egypt. Less than 8 per cent of our interviewees considered it to be a major obstacle (Table A11a in Annex).

Most SME owners complained that tax rates were arbitrarily calculated – not that they were generally too high or that the procedures too complicated or to too time-consuming. While some entrepreneurs apparently benefited from tax reductions, others paid far too much. A producer of sweets from Tanta[55] reported that the tax official had levied an extremely high tax by simply estimating the company's profit on the basis of its production during a one-day visit instead of consulting the books and basing the tax on turnover. Other interviewees confirmed that this is common practice, meaning that visits by tax officials during periods of high production (e.g. Ramadan for the food-processing sector) result in unreasonable taxes.

A high-ranking employee of a large Egyptian bank confirmed:

> *"The tax administration rapes SMEs in particular. For companies with sales below EGP 1 million per annum, tax officers are required to estimate actual income. And nobody controls them – with the effect that their estimations are completely arbitrary. And it is not about the legal tax rate. The tax rate is flat. It was lowered over the years from 40 to 20%. And companies with sales below EGP 200,000 per annum are currently completely freed from taxes."* (Yasser Zaher, Banque du Caire, Cairo, 26 April 2012)

55 Interview with a producer of sweets, Tanta, 13 March 2012.

Tax officials often ask SME owners to pay a bribe to lower the tax demanded:

> *"Some big companies pay the whole wage of some tax officers just to lower their tax burden. And of course, you better bribe tax officers than to pay the tax amount that they charge you! I know a pious Muslim who refused to pay any bribe. He ended up paying taxes three times a year and each time much too much, given his real income."* (Yasser Zaher, Banque du Caire, Cairo, 26 April 2012)

Some SME owners criticised the high tax burdens for start-ups that create incentives for companies to remain informal. A meat processor from Belbis who had been granted a tax holiday during his start-up phase, emphasised how important this concession had been for the development of his firm. Without it, he could not have competed with foreign companies.[56]

Quality standards: Deficits in law enforcement also affect the SMEs' compliance with standards, including quality standards. Yet the enforcement of quality standards is important for improving products made in Egypt – which in turn increases the export capacity of Egyptian enterprises. Restrictive quality standards automatically eliminate enterprises that do not produce in accordance with them (e.g. health standards), thereby increasing the market share for enterprises that do comply. In the ICT sector in particular, the fact that intellectual property rights are not enforced causes firms to curtail their investments in new products.

Competition: Although competition with other companies does not seem to be a main constraint for SME upgrading in Egypt, it does concern a considerable number of companies. This is partly due to increasing competition from abroad, but it is mostly due to deficits in law enforcement.

In our SME sample, competition was considered to be a moderately important factor for upgrading: 13 per cent of the entrepreneurs considered it to be a major constraint to their growth, with the share substantially higher among gazelles (21 per cent) than among non-upgraders (8 per cent) (Table A12 in Annex). At the same, 34 per cent of all interviewees identified competition as a positive factor, arguing that it created an incentive for them to continue to improve their products and production (Table A14a in Annex).

56 Interview with a meat processor, Belbis, 7 March 2012.

Some SME owners complained of foreign competition, which had risen in recent years because of globalisation and Egypt's liberalisation of foreign trade. Companies in the sewing and weaving sub-sector felt especially challenged by producers from China and Turkey. Mohamed Hameed from the Textile Development Centre argued that SME owners were less and less able to offer their products at the prices of imported products because the small quantities that they produced did not allow for economies of scale.[57] Their sole advantage was knowing the Egyptian market and the preferences of Egyptian consumers better than their foreign competitors. In our sample 12 per cent of the textiles and garments producers complained about the threat of cheap imports compared with only 4 per cent of the food processers and none of the software developers (Table A11b in Annex).

The majority of complaints, however, focused on "unfair competition" by other Egyptian firms: (i) large firms that used their good connections *(wasţa)* to influential people to get advantageous legislation and regulations and preferential treatment from the public administration, as well as (ii) small informal firms that could produce more cheaply than others because they did not comply with many standards, pay taxes or make social insurance contributions for their workers.

In our survey, software developers in particular complained about unfair competition from big and well-connected companies. A total of seven of our interviewees – four from the ICT sector – cited unfair competition as a problem. They emphasised that some of the big suppliers in the sector were often able to win bids by using their personal relations *(wasţa)* and bribing public officials or employees of their clients.

Unfair competition is alleged to constitute an even more serious challenge for SME owners in other sectors than the three we studied. Several studies have shown that – at least in the past – large firms with good connections enjoyed preferential treatment in many segments of the Egyptian economy, making it difficult for other companies to compete. The WEF (2008) confirmed that past governments had hampered a competitive environment in many economic sectors by issuing operating licences to a limited number of firms selected on the grounds of good connections rather than performance.

57 Interview with Mohamed Hameed, Textile Development Centre, Cairo, 22 February 2012.

Moreover, until recently the Egyptian Competition Authority simply did not supervise some sectors (Loewe 2013, 30).

Finally, some interviewees complained of competition from small and informal companies, which are able to produce at lower prices and ignore intellectual property rights (e.g. on designs). Textiles producers recounted how some of their employees had left the firm and opened their own informal workshops – using designs from their former employer.

> *"We suffer very much from unfair competition by small, informal companies. They copy our products, and we cannot do much against it. In addition, they can produce their products much cheaper than we do because they pay no tax, pay no fees for registration and licensing, pay no social insurance contributions, etc."* (Textiles producer, Cairo, 7 March 2012)

Petty corruption: Bribery is very widespread among businesspeople in Egypt – especially in interactions with the state. Although bribery lowers a producer's profit margin it did not seem to be a major constraint for SME upgrading in the three sectors covered by this study (things may have been very different in other sectors) and wasţa played an even more limited role. But corruption is only possible because of the lack of law enforcement in Egypt.

The SME owners are compelled to pay bribes on many occasions: when registering their business, at licensing, when dealing with tax authorities and during inspections (e.g. health inspections):

> *"To get my papers done was very difficult. There were many inspections, always someone coming, bothering me so that I am forced to pay bribes because I have no was□a."* (Textile producer, Cairo, 8 March 2012)

A survey conducted in 2009 with 800 Egyptian SME owners about their experience with corruption supported the finding that SME owners were confronted with bribery in various fields (CIPE 2009), with bribes most needed to formalise a company: 42 per cent of the SME owners reported having paid bribes during the business registration and licensing, 29 per cent while operating the business (ibid., 7, 13 and 25).

The level of corruption differed substantially between sectors. According to El-Hawary (2007, 73), extra-legal payments made by SME owners ranged from 15 per cent of the total costs of establishing, registering and licensing an accounting business to almost 90 per cent for computer accessories and electronic appliances stores. The level was high (80 – 90 per cent) in the

three sectors covered by our survey (ibid., Table 3.4). Nevertheless, only about 6 per cent of our SME owners identified bribery as one of their main constraints (Table A11a in Annex). Apparently, most can afford the bribes that are exacted.

> *"Bribery is a problem but I can overcome it because I am able to pay."* (Textiles producer, Cairo, 8 March 2012)

At the same time, 27 per cent of the companies in the software industry admitted that bribery was a factor in the success of their business, which was not the case for any companies in the textiles and garments or food-processing sectors (Table A13b in Annex).

Wasţa in contrast seems to be much less widespread than bribery (see "Social networks" in Section 5.2.1).

Input prices

A large number of interviewees emphasised that recent increases of input prices considerably challenged many Egyptian SME owners. The share was only slightly higher among non-upgraders (20 per cent) than among upgraders (16 per cent) (Table A11a in Annex). However, we did not further examine this factor because it became apparent that the SME owners were referring to normal fluctuations in the prices of raw materials and primary products, which we consider to be a standard challenge for enterprises in every country and in every size bracket.

Effects of the revolution

There is considerable evidence that the political instability and economic downturn in Egypt following the January 2011 revolution have significantly constrained the ability of SMEs to grow. The revolution and its political and economic effects were identified by 28 out of 80 SME owners as one of the most important challenges for their businesses (Table A12 in Annex). The sector most sorely struck was the textiles and garments industry: 31 per cent of the SME owners from this sector identified the revolution and its effects as a major problem for their company, compared with only 20 per cent in the food-processing and ICT sectors. At the same time, non-upgraders suffered more than upgraders: 43 per cent of the non-upgraders cited the revolution and its effects as a major challenge compared with only 21 per cent of the upgraders.

The revolution had various effects on SMEs. The most important one was a stark drop in domestic demand. Both private and public consumptive spending decreased significantly because everyone was fearful of Egypt's future political and economic situation. One donor representative even said: *"The country has no money anymore."* (Giovanna Ceglie, UNIDO, 15 February 2012)

On average, exporting companies were less affected by the revolution than those producing for the local market, which shows that exportation can be a strategy for diversifying risk.

Another effect was the deterioration of security in the streets in the aftermath of the revolution. Strikes and the disruption of public transportation prevented workers going to work during the revolution, and even months later, workers did not feel as safe on their way to work as they did before the revolution, and sometimes preferred to stay at home. Some SME owners even reported that lorries transporting their products to vendors had been robbed on the streets several times. As a consequence, since the revolution many SME owners have reduced their investments or moved to smaller or safer places of production.

A third effect of the revolution was that the political apparatus was only partially operative between the revolution in winter 2011 and the presidential elections in spring 2012. During this period, the government hesitated to take any major decisions before a new, democratically elected government took over. As a consequence, some of the most serious problems were not tackled.

> *"The government is not in a decision-making mode at the time being."* (Steven Lee, freelance consultant, 17 February 2012)

A fourth effect was the interruption of several SME-support programmes. The interim government challenged every institution that had been established by the last government under Mubarak, the "businessmen ministers cabinet".

> *"The big problem is that since the revolution they [those responsible for IMC funding] stopped their funds. We face a huge financial burden now, since they are defaulting on their contract. We relied on the credit commitments."* (ICT business owner, Cairo, 29 February 2012)

However, the revolution has also had some positive effects for SME development. Several interviewees confirmed that many government officials had become friendlier, more honest and more accountable.

> *"They [the public officials] now feel that they have to follow the rules more than before...and are now more afraid to be punished for misbehaviour."* (Mohammed Youssef, Ministry of Finance, 16 February 2012)

Some observers even believed that the new government was more interested in SMEs.

> *"Now the government is more concerned about enterprises. But so far they do not know what is important."* (Mohamed Kassem, World Trading Company, 22 February 2012)

Access to land

Many SMEs in Egypt suffer from the lack of appropriate land for production although this factor is not among the main determinants of upgrading for most firms (Table 8). More than 10 per cent of the SME owners in our sample identified it as one of their main obstacles to growth (Table A11a in Annex). Likewise, when SME owners were asked what kind of support they would like from the government or other institutions, 14 wanted better assistance in getting "access to land", which was the third most frequent answer to the question – after access to credit and worker training (Table A15 in Annex).

This result is in line with the findings on SME upgrading in the Philippines; access to land was not a significant factor in the DIE case study on India (Table 10).

For Egyptian gazelles in particular, limited access to land seems to constitute a serious constraint to growth: 21 per cent identified it as a major obstacle compared with just 5 per cent of the non-upgraders (Table A11a in Annex); 44 per cent of the gazelles wanted assistance for accessing land as compared with only 11 per cent of the non-upgraders. This finding can be explained by the obvious fact that a fast-growing company needs more land than a stagnating one.

Only a certain amount of land is available in Egypt for industrial production because agricultural land may not be used for industrial purposes. At the same time, the share of land used for housing is expanding quickly at

the expense of land used for both agricultural and industrial production. Industrial companies can only expand production in a so-called 'industrial zone', established by either the state or a private investor (Loewe 2013, 71).

The processes of getting a permit to create an industrial zone and of getting a piece of land in an industrial zone are heavily regulated, time-consuming and cumbersome. The state-owned industrial zones are managed by the Industrial Development Authority (IDA), which sells plots of land at subsidised rates – to those who fulfil certain criteria. While certain segments of the zones are reserved for specific sectors, enterprises that already own land in the zone have priority (Loewe 2013, 36).

This means that SME owners that want to upgrade are particularly hindered because they tend to be located in towns or villages rather than in industrial zones. Most of the time, in order to expand, they have to move. Since it is more difficult for SME owners to obtain a plot of land in an industrial zone, medium-sized companies – which usually are already located in industrial zones – find it easier to expand than do SMEs. The Social Fund for Development (SFD) has bought some land in industrial zones from the IDA for micro and small companies, but far too little for all the SME applicants. Furthermore, most of the SFD-acquired land is not attractive to SME owners. For example, hardly any land is available for them in the Delta.[58]

Once again, deficits in the rule of law seem to create serious problems for applicants. It is not at all clear whether the criteria listed above are effectively applied when land in an industrial zone is to be allocated. According to a textiles producer, *"it is like a lottery whether you get one"* (Textiles producer, Zagazig, 25 March 2012).

Infrastructure

To some degree, inadequate transportation facilities also impact on SMEs in Egypt. While this does not account for differences in the likelihood of SMEs to upgrade, it does obstruct their development in general. Only 4 per cent of our interviewees identified infrastructure as a major constraint for their businesses (Table A11a in Annex), while more than five times as

58 Interview with Ashraf Dowidar, Industrial Development Authority, 21 June 2009.

many, or 22 per cent, said that they benefited considerably from Egypt's infrastructure (Table A14 in Annex). Nevertheless, several SME owners mentioned that they and their employees suffered a lot from the lack of public transportation as well as from frequent traffic jams – particularly in Greater Cairo. In addition, some emphasised the inferior quality of roads, both in Cairo and in the countryside.

Other infrastructure elements, such as the provision of power, water, sanitation, telecommunications and Internet, are insignificant for SME upgrading. Power outages are the only minor exception. They affect SMEs more than large firms, because the former rarely have their own backup generators.[59] These findings are supported by other empirical studies on Egypt (AfDB 2009; Hattab 2008; OECD 2010b).

Business development services

Business development services (BDSs) are another second-tier factor of SME upgrading in Egypt, where they seemed to be further developed than in India or the Philippines. This fact might explain why they were considered relevant by a significant portion of SME owners in Egypt but not in the other countries (Table 11). In our sample, 24 per cent of the interviewees stated that they had received some kind of BDS (financial or technical) during the previous five years (Table A27 in Annex). This share is high but not necessarily representative for all SMEs in Egypt. It could be biased by our sample selection, in which several SME owners were recommended by representatives of organisations that offer BDSs. Our sample also included a limited number of informal companies, which probably make up some 40 per cent of Egyptian SMEs but are not eligible for most of the BDSs offered by the state. The high share of BDS recipients nevertheless allows us to conclude that access to BDSs seems to have a fairly positive impact on the likelihood of SMEs to upgrade.

Of the gazelles we interviewed, 35 per cent had benefited from BDSs during the previous five years (20 per cent from financial BDSs and 15 per cent

59 In 2008, 53 per cent of large enterprises owned generators compared with only 5 per cent of small ones (IFC 2008, 14). The IFC infrastructure indicator "per cent of firms owning or sharing a generator" is not included in the Egypt Country Profile (2008) but is contained in the associated dataset downloadable at http://enterprisesurveys.org/CustomQuery/egypt.

from technical BDSs), compared with only 6 per cent of the non-upgraders (3 per cent of them received financial and 3 per cent technical BDSs) (Table A27 in Annex). In the case of financial BDSs, reverse causality is improbable, because all the upgraders that benefited from such services during the previous five years had also benefited from BDSs more than five years earlier. In the case of technical BDSs, reverse causality is possible but unlikely. None of the upgraders that benefited from technical BDSs during the previous five years had benefited from them more than five years earlier. But this is not surprising because almost all the BDS programmes that are in place today had not yet existed five years ago.

When the SME owners in our sample were asked to select which BDSs they would like to have, most selected credit (38 per cent), followed by access to new markets (34 per cent), worker training (26 per cent), or help finding workers (23 per cent). Only a few preferred consultancy (17 per cent) or assistance in building up business networks (11 per cent) (Table A16 in Annex).

BDSs provided by the government are not well regarded. Claiming that the government services were inadequate, 10 per cent of all SME owners stated that they did not ask for any BDSs (Table A15 in Annex). Some referred to their bad experiences with public BDS programmes such as the Industrial Modernisation Centre (IMC). One company had worked for several weeks on an application for a consultant's fee to be financed by the IMC before learning that the support programme had been discontinued. Likewise, a study of 160,000 firms in four governorates conducted between 2005 and 2006 by the Information and Decision Support Center (IDSC) revealed that mistrust of the government was the main reason why micro and small enterprises (MSEs) did not apply for SFD loans.[60] The belief that the IMC and other providers of BDSs favour large companies is widespread among SME owners. Nihal El Megharbel from the Ministry of Local Development agreed that in the past, governmental BDSs primarily had been offered to large companies, which were supposed to create employment and help SMEs in the long run. However, the SMEs never "took off".[61] In contrast, Natalija El Hage from German Technical Co-operation (GTZ) confirmed

60 Khaled El Gahreni, Egyptian Stock Exchange, Cairo, 19 February 2012.

61 Nihal Megharbel, Ministry of Local Development, Cairo, 19 February 2012.

that a large share of government BDSs are still extended to large companies, but explained that most SME owners simply lack the skills to put their problems into words and apply for the right kind of support.[62]

Other studies have stated that because the official budget of BDSs for SMEs is miniscule it might not suffice to foster SME upgrading (Hattab 2008; El Dahshan / Tolba / Badreldin 2010, 21).

Three different Egyptian government institutions provide BDSs to local SME owners:

- The Social Fund for Development (SFD), which has assets amounting to EGP 2 million, supports MSEs. But most of its budget is allocated to micro loans, meaning that little is available for non-financial BDSs such as technical support and training, which are important for upgrading.
- The General Authority for Investment and Trade Zones (GAFI), which has assets of more than EGP 2 million, supports SMEs but also has a limited budget. It provides non-financial BDSs and operates a private equity fund for SMEs.[63]
- The Industrial Modernisation Centre (IMC) has the largest budget, and provides financial and non-financial BDSs to SMEs in the manufacturing sector. Officially, it targets both medium and large companies, but it seems to focus on large domestic exporters and their suppliers – to the detriment of SMEs.

Each of these institutions focuses on one segment of SMEs, but none of them really accompanies SME owners in their efforts to upgrade from the category of a micro to a small or from a small to a medium-sized enterprise (Loewe 2013). According to Mohamed Zakaria from the Egyptian Banking Institute, Egypt lacks a clear strategy for SME development:

> *"The SFD, GAFI, the Ministry of Finance and the Ministry for Trade and Industry are all players in SME promotion but they work on isolated islands."* (Mohamed Zakaria, Egyptian Banking Institute, Cairo, 21 February 2012)

62 Natalija El Hage, GTZ, Cairo, 18 May 2012.

63 GAFI's non-financial services include mostly training and support for accessing finance.

Trade policy

Egypt's foreign trade regime is not relevant to SME upgrading. Exporting and importing have become comparatively easy as a result of Egypt's liberalisation of foreign trade over the past two decades. Only four SME owners in our sample stated that Egypt's current cross-border trade regime represents an obstacle for them (Table A11a in Annex). According to the World Bank's *Doing Business Report,* Egypt's foreign trade regime has the acceptable rank of 64th out of 183 economies (World Bank 2012e).

Monetary stability

Inflation and the exchange rate also are not significant factors for SME upgrading in Egypt. None of the SME owners mentioned inflation as a major obstacle for their business, and only four expressed concerns about the exchange rate.

Access to insurance

Our findings suggest that access to insurance is irrelevant for SME upgrading. None of our interviewees referred to it to explain either differences in the likelihood of Egyptian SMEs to grow or the general difficulty of SMEs in Egypt to upgrade. Very few SME owners in our sample had any kind of private insurance (fire, theft or liability), which could indicate that the insurance sector in Egypt is still relatively small and underdeveloped.[64]

But it also might show that entrepreneurs do not yet understand which kinds of insurance – old age, health, life or investment failure – would be helpful. Normally, insurance is the best means for mitigating an entrepreneur's risks and stabilising business income. Since many entrepreneurs perceive insecurity as a problem in many business areas (finance, exportation, development of commodity and final-product prices, transportation, co-operation with other firms, interactions with the state, political developments, etc.) and many SME owners are highly risk-averse (see Section 5.2.1), appropriate insurance contracts might be an effective means of supporting SME owners' efforts to upgrade (Salah-Ahmed 2012).

64 In 2005, annual premiums did not exceed 0.8 per cent of GDP, compared with an international average of 9 per cent. Similarly, Egypt's USD 11 per capita spending for insurance is low (ERF / IDLM 2004, 51; Robalino 2005, 39).

6 Policy recommendations

Our results show that the likelihood of small and medium enterprises (SMEs) to upgrade in Egypt largely depends on the entrepreneur, which contrasts somehow with much of the recent literature on doing business. All Egyptian entrepreneurs suffer from multiple deficits in the business framework: the lack of quality education, skilled workers, relevant market information, a proper innovation system, finance and law enforcement – as well as a lack of confidence among the entrepreneurs themselves. Nevertheless, upgrading does occur. We discovered many successful SME owners who had found ways to circumvent these obstacles. This manoeuvrability requires personal qualities such as ambition, creativity, flexibility and persistence, which to a considerable degree an entrepreneur either has or does not have, and can only be developed through the influence of parents, friends and teachers. Our interview partners were alluding to these qualities when they repeatedly emphasised 'motivation' as being the key to their success.

At the same time, however, the successful upgraders generally had favourable starting conditions:

- They had savings or an inheritance which allowed them to invest without a bank loan, attend private school, travel abroad to get international experience, take risks without threatening their personal well-being and spend for market research and research and development (R&D). They also were able to pay bribes to influence the outcome of administrative procedures.
- They had received better education which impacted on the quality of their market research and R&D, had better chances to work at other firms, thereby gathering relevant experience, and were better able to elaborate a promising company strategy (including portfolio diversification and market orientation), identify suitable finance products for their company, write a business plan and keep the books. They were also able understand the central role human resource development plays in the motivation and loyalty of workers and the development of a firm.
- They had more social capital – they knew more (and more influential) people in business, politics and the public administration. This helped them find workers, get credit, identify good markets, and influence regulation and decision-making by the public administration and judicial system (even if this factor is much less important in Egypt than in India and the Philippines).

Structural constraints mean that only a small number of privileged entrepreneurs can upgrade. Only SME owners with money, good education, connections, international experience, land, and relevant work experience have good chances of succeeding, while most lack these means of circumventing the numerous structural constraints.

Such inequality of opportunity prevails because Egypt lacks sufficient services to help the excluded majority to upgrade: quality schools, including business schools, quality vocational training courses, adequate external finance (credit, leasing, insurance, etc.), open access to market information, an effective national innovation system and others.

SME promotion in Egypt requires a much more systemic approach – one that is better coordinated and harmonised than that currently taken. Policymakers should not only look at the business environment or individual entrepreneurs or enterprises. They should also consider how to best impart what SME owners need – including finance, skilled labour, technology and business ideas, market information and security (see Figure 13). This could be done through the business environment, business networks, enterprise promotion or the promotion of individual entrepreneurs. .

In other countries, where global value chains (GVCs) are common, they provide SME owners with at least some of these services. International partners help their national SME suppliers with training, credit and technology, and provide the market information that SME owners need to occasionally redefine their product portfolio. But the role of GVCs in Egypt is negligible.

The government of Egypt should extend and improve the business development services listed above that donor groups could support. This is not just about creating equal opportunities. Rather, in order to overcome the phenomenon of the 'missing middle', Egypt needs more SMEs to upgrade and sustain their upgrading success. As Chapter 3 shows, a greater number of medium-sized companies would help reduce some of Egypt's most virulent economic problems: limited economic growth, widespread unemployment and underemployment, rising poverty, insufficient economic diversification, low export rates, etc.

We recommend that the Egyptian government target five of the six areas that our research has revealed to be the main determinants of SME upgrading in Egypt: (i) human capital (quality basic and vocational education,

quality work experience and international exposure) (ii) human resource development, (iii) market research, (iv) access to finance and (v) law enforcement (see Chapter 5). We do not recommend action targeting the sixth area – entrepreneurs' ambition or motivation and risk readiness – because we do not know how, in the short term, these factors could be shaped by the government of Egypt or other actors.

6.1 Human capital

Improving Egyptian entrepreneurs' human capital is probably the cornerstone of any strategy for supporting SME owners' efforts to upgrade. Human capital is the prerequisite for innovation, investment and financial literacy, as well as for understanding how HRD, customer orientation, quality and market research help firms upgrade.

Three approaches have priority: (i) enhancing the quality of Egypt's formal educational and training system, (ii) increasing entrepreneurial know-how and (iii) enabling young entrepreneurs to get work experience and travel abroad.

First, Egypt must overhaul its entire educational and training system. It does not principally suffer from low attendance, but rather from the inferior quality and irrelevance of the curriculum. The educational system should focus on learners' creativity, critical thinking and analytical capabilities instead of pure knowledge transfer. It should build the foundations for more entrepreneurial spirit and thinking among future generations, and also teach and encourage teamwork.

Second, entrepreneurs must be able to more easily acquire the professional skills that they need. This could start in school, with basic economic and business know-how being made part of the curriculum in all secondary schools. To help those wishing to start a business, management/business schools that focus on applied business knowledge and managerial know-how should be opened. At Egyptian universities, economics and business administration should adopt a more practical approach; it is now far too theoretical and irrelevant to professional life. The government should establish more SME incubators at universities, technical schools and research institutions. It could also organise competitions for business plans like the Junior Business Association of Jordan has started to do more than five years ago.

Third, the government should help young people get international and work experience, perhaps by promoting student exchange programmes to foster innovative and entrepreneurial thinking in future entrepreneurs, and help them develop international networks. It should facilitate – and in some subjects even require – internships in firms. The government should also continue to underwrite SME owners' trips to international fairs and business conferences.

6.2 Human resource development (HRD)

In order to improve the human resources of Egyptian SME owners, three goals must be pursued: (i) a better trained workforce, (ii) entrepreneurs' heightened awareness of the importance of HRD and (iii) support for SME owners' HRD efforts.

First, the training of the Egyptian workforce needs to be generally improved. In the long run, Egypt must develop a comprehensive vocational training system for a broad range of professions that most blue-collar workers could attend before starting to work. First steps in this direction have already been taken, including the Mubarak-Kohl-Initiative. However, the Kohl-Mubarak-Initiative has only reached a tiny group of trainees. Experience has shown that it will take a very long time to train a reasonable share of workers entering the labour market and that very few private enterprises are ready to participate in vocational training for labour-market entrants and bear some of the costs. However, without practical teaching in private-sector factories, vocational training remains theoretical and superficial. The number of employers in a vocational training system will expand very slowly without meaningful government participation. (In Germany, too, factory owners must regularly be entreated to provide apprenticeship positions.)

Given this limitation, the Egyptian government should expand in parallel the outreach of short-term training courses, which could more quickly increase the number of workers who have had at least some training. In recent years the IMC has been pursuing this strategy – encouraging providers of private-sector training, awarding certificates of quality and subsidising worker training at eligible SMEs. While the subsidies may have been a bit too generous, the strategy has basically been sensible, and very beneficial to many of the SMEs we surveyed.

Second, the government should raise SME owners' awareness of the importance of human resource development (HRD) and corporate governance issues. It could co-operate for this purpose with chambers of commerce and industry and business associations, which could in turn inform their members. More SME owners need to understand that HRD is essential to boost their employees' motivation and loyalty, especially those that are better trained and skilled.

Third, SME owners should be supported in their HRD efforts and be taught about corporate governance issues. The government and other relevant actors might consider offering (or at least subsidising) managerial courses for SME owners to teach them to evaluate the skills and training deficits of applicants and employees. At this point, only a few private consulting firms offer HR training courses, most of which are too expensive for SME owners. Courses on HRD should also be made part of the curriculum at public universities.

6.3 Market research

In order to reduce the costs of market research for Egyptian SME owners and better inform them about domestic and export markets, the government of Egypt should consider (i) instructing them about the importance of demand orientation, (ii) providing free information about markets and recent market developments as well as about the offer of Egyptian SMEs, (iii) supporting SME owners in their own market research and (iv) fostering co-operation with international firms.

First, more SME owners need to understand that success requires them to orient production to customer needs, wants and demands, which requires in-depth knowledge of the market, that is, information on potential consumers in various regions, countries and social groups, as well as on their competitors. While such awareness can be raised through campaigns and management courses, it would also be possible to integrate courses on markets into school and university curricula.

Second, the government could fund a specialised unit at a centre of research or information that would be charged with gathering and publishing all relevant information on domestic and export markets, as well as producing in-depth sector analyses of both the demand and the supply sides. The unit could be located either in the Central Agency for Public Mobili-

zation and Statistics (CAPMAS) or the Information and Decision Support Center (IDSC), both of which already have a lot of data on market trends and experience editing statistical data. The Egyptian Technology Transfer and Innovation Centers (ETTICs) and various chambers of commerce should be encouraged to contribute data to the new market information system, whose database could also provide information on available technologies for SME owners and a directory of SMEs in different branches – so as to facilitate horizontal and vertical co-operation.

Third, the government should assist SME owners' market research efforts, for example, by expanding support for those who wish to attend international fairs and exhibitions.

Fourth, SME owners should be encouraged and supported in their efforts to integrate into global value chains. Another possibility would be to promote franchising from international firms. Both of these forms of co-operation provide SME owners with more security to sell their products and the know-how necessary for selling on international markets.

6.4 Access to finance

The difficulties SME owners have in accessing finance are largely due to information asymmetries between them and the financial institutions, which lead to adverse selection and moral hazard. On the one side, financial institutions have difficulty judging which customers will respect financial contracts while customers are unable to convince them of their creditworthiness. Such information asymmetry results in adverse selection that could at least be partially avoided by SME owners providing better information about their firms and by financial institutions enhancing the screening of customised products. On the other side, lenders are also not able to force borrowers to respect their financial obligations or to prevent them from engaging in inappropriate risks once the loan has been disbursed (moral hazard) – a different kind of asymmetry that could be mitigated by providing incentives to the borrower to act in the financial institution's interest.

The Egyptian government should do what it can to (i) reduce these information asymmetries. In addition, it might consider increasing banks' incentives to (ii) lend to SME owners and to (iii) diversify their product port-

folio. And it should also (iv) scrap the draconian punishments in Egypt's bankruptcy law for failing to repay a loan.

First, the government should start an initiative to educate borrowers and improve SME owners' financial literacy. The state might consider providing (or at least financing) training courses for SME owners to help them prepare better financial statements and business plans because to prove their trustworthiness when they apply for loans, they have to provide banks with insight into the company's economic position. The government could also make efforts to raise the financial literacy of the general population – for example, by including teaching modules on entrepreneurship and basic financial education in the secondary school curriculum. In addition, it could publish information on the pros and cons of various financial products and the borrowing conditions of various financial institutions. Finally, the government could expand GAFI's Cairo consultancy services which currently only inform SME owners about various financial products and where they are available. The General Authority for Investment and Free Zones (GAFI) officers have found that many SME owners ask for finance when they actually need non-financial business development services (BDSs) in order to be able to upgrade.

At the same time, the government should strengthen the banks' capacity to screen customers by proposing courses in SME lending to bank officers who often do not know much about SMEs and become overly cautious with loan provisions after reviewing a company's books and business plans. The government should also move faster to establish a registry of ownership and possession of movable assets at I-Score, which operates like the German credit bureau, SCHUFA, enabling SME owners to prove that they own enough collateral for a bank loan while also preventing them from simultaneously taking out loans from several banks.

Second, the government should create incentives for banks to increase their SME lending. One incentive could be the establishment of a new institution that offers credit guarantees to SME owners in order to enhance competition in this segment and make guarantees more attractive to borrowers by lowering prices and enhancing quality.

The government could also transform one of its own banks into a specialised SME bank or set up an SME programme to provide funds for micro and small credits extended by commercial banks the way banks in Germany make loans available using KfW Development Bank funds.

In addition, the government should consider issuing more bank licences. The financial sector has recently been liberalised and opened to foreign credit institutes. But there are still only 29 banking institutions in Egypt, and the Central Bank of Egypt is extremely reluctant to issue new licences on the grounds that it can barely supervise the existing banks. More personnel might enable the Central Bank to monitor more banks, which would increase competition in the financial sector and eventually force some banks to search for new market niches. Perhaps some banks would consider specialising in the SME market segment.

The government should simultaneously enact a microfinance law authorising the establishment of commercial microfinance institutions (MFIs) and also support the efforts of non-governmental organisations (NGOs) to transform into commercial MFIs.

Third, the government should encourage banks to develop and publicise new and innovative products such as Islamic Finance, leasing contracts, private equity, credit insurance and other kinds of micro-insurance products (Salah-Ahmed 2012). Islamic Finance products, which officially do not bear interest, might be particularly helpful because they allow SME owners who refuse normal credit for religious reasons to still borrow money. Micro-credit insurance would be helpful because it provides additional security to the bank against repayment failures. Leasing and private equity can help SME owners who need longer-term financial products.

Fourth, the Egyptian government should review the bankruptcy law, which condemns a person who presents a bad check to prison. This draconian sanction, used by banks to pressure borrowers to repay their loans, discourages entrepreneurs from taking out loans. Once banks have additional securities, this current practice could be averted.

6.5 Law enforcement

The lack of law enforcement in Egypt is mostly due to insufficient *checks and balances* within and between governmental institutions. It is symptomatic of states that are governed by neo-patrimonial authoritarian regimes, which use the lack of accountability to interpret the legislation in the regime's favour. Reforms aimed at strengthening the rule of law are rarely effectively implemented in authoritarian states.

Egypt's new regime just might make an earnest attempt to re-establish the rule of law. Its biggest challenge will be to strengthen the accountability of public officials at all levels.

Basically, there are two ways to make progress towards this goal: (i) provide incentives for public officials to comply with laws and guidelines and (ii) increase monitoring of public officials and sanctions for non-compliance.

First, the government should provide incentives for government officials to comply with existing laws and regulations, for example by providing monthly awards for the officials who are most responsive to citizens' demands. It could also use the revenues that accrue from letting go redundant state employees to raise the salaries of exemplary officials.

Second, the government should raise the accountability of public officials by improving the mechanisms for monitoring. This could start by publishing or otherwise making accessible the relevant laws, decrees and guidelines so that citizens can evaluate the public administration's practice. The Ministry of Communications and Information Technology should increase its efforts to introduce elements of e-government and to expand ICT solutions to all public services. E-procurement and e-tendering should be promoted to help eliminate the need for bribes and the effectiveness of *wasţa.*

At the same time, independent bodies should assess the performance of all government departments, thereby increasing transparency in decision-making and finally, whistle-blowing should be encouraged as a means of identifying individuals in the public administration who are corrupt or frequently violate the rules.

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List of interviewed experts

Interlocutors are listed in alphabetical order by their last name and with their affiliation at the time of the interview with them

Abbas, Mohamed, Projects Operations Supervisor, Industrial Council for Technology & Innovation Council, Ministry of Industry and Foreign Trade. Cairo, 20 February 2012

Abd El Hady, Hisham, Senior Merchandiser, Bishara Textile and Garments Manufacturing. 10th of Ramadan City, 13 March 2012

Abdel Aziz, Dina, Deputy Executive Director Operations, Expolink. Cairo, 12 March 2012

Abdel Hameed, Mohammed, Planning and Development Manager, Associate Director for Strategic Planning, Textile and Clothing Business Center. Cairo, 22 February 2012

Abdel Hameed, Safa Mostafa, Senior Economic Researcher, International Organizations Unit, Ministry of Communications and Information Technology. Smart Village, 04 March 2012

Abdel Malak, Hani, Programme Director Egypt, Friedrich Naumann Stiftung. Cairo, 28 February 2012

Abdel-Rahim, Walid, Deputy Director, KfW Office Cairo. Cairo, 18 September 2011

Abo El Wafa, Mohamed, Program Manager Agriculture and Agrobusiness, United States Agency for International Development (USAID). Cairo, 21 February 2012

Abou Iiana, Mohamed, Managing Director, Textile and Clothing Business Center. Cairo, 22 February 2012

Abouesh, Amro, Executive Chairman, Tanmeyah Microenterprise Services. Cairo, 14 February 2012

Abouleish, Helmy, Managing Director, Sekem Group. Giza, 05 March 2012

Abulata, Nermine, Lead Economist and Technical Assistant to the Minister, Ministry for Industry and Foreign Trade. Cairo, 22 February 2012

Ahmed, Mahmoud Mohammed, Chairman, Forum for Training and Education (FORTE), DEinternational, German-Arab Chamber of Commerce. Giza, 23 February 2012

Ahmed, Yossef Zakria, Chairman, Egyptian Small Enterprise Development Foundation. Cairo, 13 March 2012

Allam, Shereen, Chief Executive Officer, Association for Women's Total Advancement & Development. Cairo, 28 February 2012

Aly, Azmy Moustafa, Chief Director, Technical Office, Social Fund for Development. Giza, 17 June 2009 and 19 February 2012

Assaad, Ragui, Professor, Humphrey School of Public Affairs, University of Minnesota. Giza, 18 April 2012

Asfour, Amany, President, Egyptian Business Women Association. Giza, 15 March 2012

Aziz, Fatma, Chief External Relations Officer, Egyptian Small Enterprise Development Foundation. Cairo, 13 March 2012

Badawy, Lina, Research Assistant, The World Bank. Cairo, 21 February 2012

Berkshire, Dan, Financial Sector Results Lead, Egypt's Competitiveness Programme, Chemonics. Cairo, 22 February 2012

Bishara, Louis, Chairman, Bishara Textile and Garments Manufacturing; Marie Louis Company for Fashionable Garments. 10th of Ramadan City, 13 March 2012

Boldracchi, Raffaele, Senior Operations Manager, Donor Relations, Advisory Services, Middle East and North Africa, International Finance Corporation (IFC). Cairo, 21 February 2012

Bremer, Jennifer, Associate Professor of Public Policy, Chair of Department of Public Policy Administration, School of Global Affairs and Public Policy, The American University in Cairo. Cairo, 14 February 2012

Ceglie, Giovanna, Country Representative and Director Regional Office, United Nations Industrial Development Organization (UNIDO). Cairo, 15 February 2012

Dayem, Hesham Wagdy, Director, technical assistance and national programmes, policy support and national quality, Industrial Modernization Centre (IMC). Cairo, 27 April 2010

Dowidar, Ashraf, Head of Central Department for Planning, Marketing and Information, Industrial Development Authority. Cairo, 21 June 2009

Eikenberg, Felix, Country Representative, Friedrich Ebert Foundation. Cairo, 02 April 2012

Eissa, Heba, Manager for Public Relations and Communications, The Egyptian Exchange (NILEX). Cairo, 22 February 2012

El Bedawy, Ahmed, Managing Director, Endeavour. Cairo, 26 February 2012

El Behairy, Khaled, Executive Director, Egyptian Chamber of Textile Industries. Cairo, 19 February 2012

El-Gazawi, Khaled, Chief Executive Officer, The First Microfinance Foundation. Cairo, 22 February 2012

El Ghareni, Khaled, Statistician, Egyptian Stock Exchange. Cairo, 19 February 2012

El Hadary, Hanan, Chairman, Industrial Council for Technology & Innovation, Ministry of Industry and Foreign Trade. Cairo, 20 February 2012

El-Haddad, Amirah, Assistant Professor, faculty of economics and political science, Cairo University. Cairo, 23 February 2012

El-Hage, Natalija, Programme Manager, German Technical Co-operation (GTZ). Cairo, 28 April 2010

El-Hawari, Anwar, Chief Editor, Al Ahram Al Iqtisadi. 6th of October City, 05 April 2012

El Mahdi, Alia, Professor of Economics, Cairo University. Giza, 20 February 2012

El-Meehy, Tamer, Managing Director, Entrust. Giza, 28 April 2010 and 08 April 2012

El Megharbel, Nihal, Director of Decentralization Support Unit, Ministry for Local of Development. Cairo, 19 February 2012

El Mohandes, Muhamed, Vice Chairman, Chamber of Engineering Industries. Cairo, 12 March 2012

El Salamony, Hany, Quality and Food Safety Consultant, Agriculture and Agro-Industries Technology Center (UNIDO / ETRACE). Cairo, 22 February 2012

El Shenawy, Heba, Managing Director, Femina. Cairo, 18 March 2012

El Sheridy, Yomna, President, Business Women of Egypt21. Cairo, 29 February 2012

El Tobgui, Mona, Senior Advisor, Fraunhofer Office Cairo. Cairo, 18 June 2009

El-Okdah, Nahla, Finance and Private Sector Development Analyst, The World Bank. Cairo, 21 February 2012

Elsaady, Reem, Executive Director, Bedaya Center for Entrepreneurship and SME's Development, General Authority for Investment and Free Zones. Cairo, 16 February 2012

Elsayed, Ahmed M., Head of Research and Development Section, The Egyptian Exchange (NILEX). Cairo, 28 February 2012

El-Sherbini, Adham, Project Manager, Egypt Enterprise Development Project (EEDP). Cairo, 22 February 2012

Ezz El Din, Noha, Research Assistant, Social Research Center, American University in Cairo. Cairo, 13 March 2012

Fahmy, Alaa, National Program Director, Agriculture and Agro-Industries Technology Center (UNIDO / ETRACE). Cairo, 22 February 2012

Fahmy, Omnia, Vice-President, Egyptian Business Women Association. Giza, 15 March 2012

Farag, Mohammad, Senior Project Manager, Industrial Modernization Centre (IMC). Cairo, 27 February 2012

Fawzi Abdel Gawad, Sherif, Executive Director, Egyptian Regulatory Reform & Development Authority. Giza, 07 March 2012

Fritz, Heiko, Associate Professor, Economics Department, German University in Cairo. Cairo, 20 September 2011

Gadalla, May, Assistant Professor, Statistics Department, School of Economics and Political Science, Cairo University. Cairo, 23 February 2012

Gamal, Dalia, Senior Projects Manager, Technology Innovation and Entrepreneurship Center (TIEC). Smart Village, 04 March 2012

Garf, Mona, Full Professor, Faculty of Economics and Political Science, Cairo University. Giza, 19 February 2012

Geneidi, Ahmed, Head of programme "enterprise and social development", Cairo office, Friedrich Ebert Foundation. Cairo, 15 June 2009 and 27 February 2012

Ghali, Marianne, Chairman and Managing Director, Sphinx Private Equity Management / Grandview. Cairo, 20 February 2012

Ghanem, Amina, Secretary General, Egyptian National Competition Council. Giza, 07 March 2012

Giesel, Frank, Senior Expert, Chamber of Food Industries. Cairo, 10 May 2010 and 15 February 2012

Hamman, Hans, First Counsellor, development co-operation, German Embassy in Cairo. Cairo, 13 February 2012

Handoussa, Heba, Advisory Committee Member, Economic Research Forum. Giza, 29 February 2012

Hassan, Ahmed Elshahat, Projects Manager, Industrial Training Council (ITC). Cairo, 21 February 2012

Heermann, Lisa, Programme Manager, Global Project Partners. Cairo, 27 February 2012

Ismail, Moshir, Executive Director, Enterprise TVET Partnership (ETP) for Ready Made Garment/ Traintex. Cairo, 23 February 2012

Johannes Majewski, Financial System Development, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 29 February 2012

Kamal. Ashraf, Deputy Sector Head, The Egyptian Exchange (NILEX). Cairo, 28 February 2012

Kassem, Mohamed, Chairman, World Trading Company Egypt. Cairo, 22 February 2012

Kipper, Regina, Advisor, Cities and Climate Change, Participatory Development Programme in Urban Areas, Egypt, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 20 February 2012

Kreibaum, Merle, Intern, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 20 February 2012

Lee, Steven, Consultant. Cairo/ Dublin via Skype, 17 February 2012

Lewandowski, Jens, Regional Security Management Officer, Chief Inspector, German Embassy in Cairo. Cairo, 13 February 2012

Lotfi, Ingi, Senior Economist, Policy and Private Sector Office, United States Agency for International Development (USAID). Cairo, 22 February 2012

Lotfy, Abdel Moaty, Vice Chairman, Federation of Economical Development Organisations. Cairo, 16 June 2010 and 21 February 2012

Louis, Mohsen, Director, Hatshepsut Women Business Development Center of the Egyptian Business Women Association. Giza, 15 March 2012

Mabrouk, Mohamed, President, Small and Medium Industry Association in Gharbiyya. Cairo, 12 March 2012

Mackensen, Jens, Director, KfW Office Cairo. Cairo, 19 September 2011

Maher, Ahmed, Senior Business Advisor, Egypt Enterprise Development Project (EEDP). Cairo, 22 February 2012

Mandour, Ahmed Fouad, Executive Director, Food Technology Centre. Giza, 22 June 2009

Metwally, Sally, Innovation Support Director, Technology Innovation and Entrepreneurship Center (TIEC). Smart Village, 04 March 2012

Meyer, Günter, Director, Centre for Research on the Arab World, University of Mainz. Bonn/ Mainz by telephone, 25 January 2012

Mohamed Sultan, Abd El Salam, Chairman, Chamber of Commerce Sharqeya Governorate. Zagazig, 08 March 2012

Mohamed, Ramadan Hamed, Research Professor, Social Research Center, The American University of Cairo. Cairo, 18 September 2011

Morin, Steven, Supervisory Program Economist, United States Agency for International Development (USAID). Cairo, 21 February 2012

Musalla, Samir, Quality Assurance and Quality Control Manager, Juhayna. 6th of October City, 08 March 2012

Nader, Mohamed, Board Member, Egyptian Junior Business Association (EJBA). Cairo, 22 February 2012

Naseem, Kaiser, Programme Manager, Bank Advisory Services, Middle East and North Africa, International Finance Corporation (IFC). Cairo, 21 February 2012

Nasrallah, Khali, Chief Agrofood Sector, Wadi Food. Cairo, 27 February 2012

Nazier, Hanan, Assistant Professor, Department of Economics, Cairo University. Cairo, 23 February 2012

Omar, Hassan, QIZ unit, minister's office, Ministry for Trade and Industry. Cairo, 17 June 2009

Omran, Emran, Team Leader, SME Programme, Canadian International Development Agency (CIDA). Cairo, 09 June 2009 and 16 February 2012

Radke, Detlef, Consultant. Cairo, 15 February 2012

Ramadan, Racha, Assistant Professor, Faculty of Economics and Political Sciences, Cairo University. Cairo, 23 February 2012

Reil, Florian, Senior Advisor, REEF Component, Egyptian-German Private Sector Development Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 16 February 2012

Rezk, Mohamed Mahmoud, Director General, General Co-operative Productive Association for Metal and Engineering Industries. Cairo, 12 March 2012

Rolf, Thomas, Programme Co-ordinator, Egyptian-German Private Sector Development Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 27 February 2012

Sadaamy, Khali, Director, Enterprise TVET Partnership (ETP) for Food. Cairo, 21 February 2012

Said, Mona, Assistant Professor, Department of Economics, American University in Cairo. Giza, 18 April 2012

Sebour, Omr, Chairman and Managing Director, Egyptian Junior Business Association (EJBA). Cairo, 22 February 2012

Sewelam, Khaled, Director, Research and Publications Department, American Chamber of Commerce in Egypt. Giza, 07 March 2012

Shaat, Khalil, Advisor on Informal Areas to Cairo Governorate, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 22 March 2012

Shelsby, Kim, Deputy Programme Director, streamlined business processes result lead, Egypt's Competitiveness Programme, Chemonics. Cairo, 22 February 2012

Soliman, Kholoud, Export Development Manager, Social Fund for Development. Giza, 06 March 2012

Steurer, Roland, Country Director, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 18 September 2011

Stone, Andrew, Lead Private Sector Development Specialist, The World Bank. Cairo, 21 February 2012

Sturies, Seija, Programme Coordinator, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 02 April 2012

Tanatar, Selçuk, Programme Manager, industry development, advisory services PEP-MENA, International Finance Corporation. Cairo, 21 June 2009

Thebet, Fouad, Chairman, Small and Medium Industry Association in Port Said. Cairo, 12 March 2012

Tinawy, Yousri, General Manager, Chamber of Food Industries. Cairo, 25 June 2009

Tolba, Magdy, Chairman and Managing Director, Cairo Cotton Center. Cairo, 27 February 2012

Valenza, Matteo, Programme Officer, United Nations Industrial Development Organization (UNIDO). Cairo, 20 September 2011

Vennewald, Magnus, Head of Department "economic services", German-Arab Chamber of Industry and Commerce. Cairo. Cairo, 10 June 2009

Wasmuth, Nele, Programme Coordinator, Economic Integration of Women in MENA, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 20 February 2012

Weber, Paul, Irrigation Agronomist, water resources management programme of the Ministry for Agriculture and Land Reclamation, German Technical Co-operation (GTZ). Giza, 05 May 2010

Winter, Laura, Technical Advisor, Economic Integration of Women in MENA, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Cairo, 20 February 2012

Yousef, Magued, Consultant. Cairo, 19 February 2012

Youssef, Heba, Deputy Head of Economic Research Department, Ministry of Communications and Information Technology. Smart Village, 04 March 2012

Youssef, Mohamed, Assistant to Deputy Minister, Ministry of Finance. Cairo, 16 February 2012

Youssef, Mohamed, Executive Director, Egyptian Businessmen's Association. Giza, 14 March 2012

Annexes

Annex A

Results of interviews with SMEs

Table A1: Sampling method				
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders
Non-selection-biased lists	**23**	**19**	**6**	**13**
Chambers' registries	20	16	3	13
Yellow pages	2	2	2	0
Other	1	1	1	0
Selection-biased lists	**30**	**25**	**17**	**8**
ECES enterprise sample	6	4	3	1
ITIDA enterprise list	8	8	5	3
Telephone book	11	10	6	4
Other	5	3	3	0
Experts recommendations	**30**	**21**	**6**	**15**
NILEX	3	1	0	1
GACC	4	2	1	1
Various SME associations	6	5	2	3
Other	17	13	3	10
Field (walking the street)	**19**	**15**	**11**	**4**
Total	**102**	**80**	**41**	**39**

Table A2: Location of companies – by geographical region

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Greater Cairo	66	57	33	24	12	12	*83%*	*60%*
Satellite cities (10th of Ramadan, 6th of October)	10	5	0	5	3	2	*0%*	*10%*
Delta (Gharbiyya, Sharqiyya)	25	18	7	11	5	6	*18%*	*30%*
Total	**102**	**80**	**40**	**40**	**20**	**20**	***100%***	***100%***

Table A3: Location of companies – by governorate, town and urban district						
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Cairo Governorate	**46**	**38**	**23**	**15**	**9**	**6**
Nasr City	10	8	5	3	1	2
Az-Zaytun	6	4	4	0	0	0
Manshiat Nasr and Harafin	5	5	4	1	1	0
Maadi	5	5	2	3	2	1
10th of Ramadan City	5	2	1	1	0	1
Matariyya and surroundings	4	4	1	3	3	0
Heliopolis	4	3	2	1	0	1
Abbasiyya and Gurrya	2	2	2	0	0	0
Garden City and Manyal	2	2	0	2	1	1
Downtown, Ramsis and Bulaq	1	1	1	0	0	0
New Cairo	1	1	0	1	1	0
Shubra	1	1	1	0	0	0
Giza Governorate	**19**	**16**	**5**	**11**	**6**	**5**
Imbaba and Warraq	6	6	4	2	1	1

Table A3 (cont.): Location of companies – by governorate, town and urban district						
	All companies	Companies with <50 employees (2007)	Non-up-graders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Muhandisin, Giza, Aguza and Duqqi	6	5	1	4	2	2
6th of October City	5	3	0	3	2	1
Saqqara	1	1	0	1	0	1
Smart Village	1	1	0	1	1	0
Sharqiyya Governorate	**13**	**9**	**6**	**3**	**0**	**3**
Shubra al Khayma	13	9	6	3	0	3
Gharbiyya Governorate	**18**	**12**	**4**	**8**	**4**	**4**
Tanta	8	6	2	4	1	3
Mahalla	8	5	2	3	3	0
Nawaq	1	1	0	1	0	1
Samanud	1	0	0	0	0	0
Qalyubiyya Governorate	**6**	**5**	**2**	**3**	**1**	**2**
Zagazig	2	2	0	2	0	2
Bilbis	2	1	1	0	0	0
Minya Al-Qamh	1	1	0	1	1	0
Garb Nagm	1	1	1	0	0	0

Table A4: Economic sector of companies						
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Textiles & garments	**53**	**42**	**25**	**17**	**9**	**8**
Clothes	46	37	23	14	7	7
Other textiles & garments	7	5	2	3	2	1
Food-processing (%)	**34**	**26**	**9**	**17**	**10**	**7**
Sweets	14	10	5	5	2	3
Processed vegetables	7	7	2	5	3	2
Other food	13	9	2	7	5	2
ICT	**14**	**11**	**5**	**6**	**1**	**5**
Others	**1**	**1**	**1**	**0**	**0**	**0**
Total	**102**	**80**	**40**	**40**	**20**	**20**

Table A5: Owner's gender						
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Female	16	15	4	11	6	5
Male	82	64	35	29	14	15
Unclear because the interviewee was not the owner	4	1	1	0	0	0
Total	**102**	**80**	**40**	**40**	**20**	**20**

Table A6: Company size						
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Small (<50 employees)	73	69	39	30	18	12
Medium (50–99 employees)	18	7	1	6	2	4
Large (100 employees or more)	11	4	0	4	0	4
Total	**102**	**80**	**40**	**40**	**20**	**20**

Table A7: Number of growing and contracting companies

		2007 – 2012		2000 – 2007	
		All companies	Not including companies recommended by an expert	All companies	Not including companies recommended by an expert
Number of companies that had grown and crossed the threshold(s) of:	5 employees	8	4	9	5
	10 employees	11	7	15	9
	20 employees	15	9	11	8
	30 employees	16	9	12	8
	50 employees	12	7	9	6
	100 employees	10	3	3	3
	5 and 10 employees	4	1	8	4
	10 and 20 employees	5	3	9	6
	20 and 30 employees	10	5	9	7
	30 and 50 employees	6	2	8	5
	50 and 100 employees	4	1	3	3
	5 and 20 employees	1	0	4	3
	10 and 30 employees	3	1	7	5
	20 and 50 employees	4	1	7	5
	30 and 100 employees	2	0	3	3
	5 and 30 employees	1	0	3	2

Table A7 (cont.): Number of growing and contracting companies

		2007 – 2012		2000 – 2007	
		All companies	Not including companies recommended by an expert	All companies	Not including companies recommended by an expert
Number of companies that had grown and crossed the threshold(s) of (cont.):	10 and 50 employees	1	0	0	0
	20 and 100 employees	1	0	3	3
	5 and 50 employees	1	0	2	1
	10 and 100 employees	0	0	3	3
	5 and 100 employees	0	0	1	1
Number of companies that had grown in relative terms by at least:	25%	52	31	13	8
	50%	48	29	11	6
	75%	36	23	11	6
	100%	28	17	11	6
	200%	20	11	10	5
	600%	6	3	3	2
	1000%	2	1	2	1
Number of companies that had grown in absolute terms by at least:	10 employees	35	18	7	5
	20 employees	23	11	4	3
	30 employees	18	8	4	3
	50 employees	8	1	4	3
	75 employees	6	1	2	2
	100 employees	3	1	1	1

Table A8: Some averages

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders
Average number of employees (2012)	45	28	15	42	23	61
Average number of employees (2007)	34	15	14	15	19	12
Average number of employees in the founding year	10	8	8	8	10	7
Average relative change in number of employees (2007–2012)	17%	87%	7%	180%	21%	408%
Average year of founding	1996	1998	1994	2001	1999	2004
Average company age (years)	16	14	18	11	13	8

Table A9: Number of companies that introduced tangible innovation(s) during the previous five years		
	All companies	Companies with <50 employees (2007)
New product(s)	39	28
Improved product(s)	38	27
Reduction in number of products	1	1
Outsourcing	0	0
Improved production process	15	13
New marketing strategy	6	6
New labelling or packaging	10	7
New export markets	6	7
Other new markets	6	5
Downstreaming	1	1
Upstreaming	0	0
New sector	1	1
New certification or quality standard	5	4
Other	1	3

Table A9 (cont): Number of companies that introduced tangible innovation(s) during the previous five years

	All companies	Companies with <50 employees (2007)
Introduced at least one of these innovations (= 'innovator')	**73**	**55**
Innovator plus grew by >50% between 2007 and 2012	52[1]	42
Innovator plus grew faster than competitors	52[2]	42
Innovator plus grew by >50% between 2007 and 2012 and faster than competitors (= 'upgrader')	46[3]	40
Innovator but did not grow by >50% between 2007 and 2012 or faster than competitors	15[4]	11
Did not introduce any kind of innovation (= 'non-innovator')	**29**	**25**
Non-innovator but grew by >50% between 2007 and 2012	10[5]	9
Non-innovator but grew faster than competitors	2[6]	2
Non-innovator but grew by >50% between 2007 and 2012 and faster than competitors	1[7]	1
Non-innovator and did not grow by >50% between 2007 and 2012 nor faster than competitors	18[8]	15

1 Innovated and grew by more than 50% by any criteria, but not necessarily faster than competitors; did NOT grow faster than competitors
2 Innovated and grew faster than competitors, but not necessarily by more than 50%; grew by less than 50% by all of the above criteria
3 Fulfil all three criteria and are therefore termed 'upgraders'
4 Innovated but neither grew faster than competitors nor by at least 50% by either of the above criteria
5 Grew by more than 50% by any criteria but not necessarily faster than competitors; did not grow faster than competitors
6 Innovated and grew faster than competitors, but not necessarily by more than 50%; did not grow by more than 50% by any criteria
7 Grew by more than 50% by any criteria and faster than competitors, but did not innovate
8 Did not innovate and neither grew faster than competitors nor by at least 50% by either of the above criteria

Table A10: Initial number of company employees			
	Companies with <50 employees (2007)	Companies with >50 employees (2007)	**Total**
Non-upgrading companies	40	16	**56**
Contracted (%)	*11*	*6*	***17***
Unchanged (%)	*15*	*5*	***20***
Grew (%)	*14*	*5*	***19***
Upgrading companies	40	6	**46**
Gazelles (%)	*20*	*1*	***21***
Non-gazelles (%)	*20*	*21*	***41***
Total	**80**	**22**	**102**

Table A11a: Main obstacles to upgrading (open question)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Upgraders	
Lack of skilled labour	45	*46%*	35	*45%*	17	*43%*	18	*47%*	7	*37%*
Access to finance	26	*27%*	23	*29%*	9	*23%*	14	*37%*	9	*47%*
Economic downturn after revolution	21	*21%*	17	*22%*	13	*33%*	4	*11%*	1	*5%*
High price of inputs	19	*19%*	14	*18%*	8	*20%*	6	*16%*	3	*16%*
Regulation	16	*16%*	12	*15%*	5	*13%*	7	*18%*	3	*16%*
Satisfied/loyal workers	18	*18%*	11	*15%*	5	*13%*	6	*16%*	5	*26%*
Access to land	8	*8%*	8	*10%*	2	*5%*	6	*16%*	4	*21%*
Unfair competition from big or influential companies	10	*10%*	7	*9%*	2	*5%*	5	*13%*	4	*21%*
Taxation	9	*9%*	6	*8%*	4	*10%*	2	*5%*	1	*5%*
Cheap imported products	6	*6%*	6	*8%*	3	*8%*	3	*8%*	0	*0%*
Petty corruption	7	*7%*	5	*6%*	2	*5%*	4	*11%*	1	*5%*
Lack of marketing strategy	5	*5%*	5	*6%*	1	*3%*	4	*11%*	2	*11%*
Trade regime	4	*4%*	4	*5%*	1	*3%*	3	*8%*	1	*5%*
Quality of inputs	4	*4%*	4	*5%*	2	*5%*	2	*5%*	2	*11%*
Transportation infrastructure	6	*6%*	3	*4%*	1	*3%*	2	*5%*	2	*11%*

Table A11a (cont.): Main obstacles to upgrading (open question)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only non-gazelle upgraders	
Heavy market competition	4	*4%*	3	*4%*	3	*8%*	0	*0%*	0	*0%*
Unfair competition from informal companies	3	*3%*	3	*4%*	1	*3%*	2	*5%*	0	*0%*
Entrepreneur's education	3	*3%*	3	*4%*	3	*8%*	0	*0%*	0	*0%*
Employees' work ethics	5	*5%*	2	*3%*	1	*3%*	1	*3%*	1	*5%*
Access to markets	3	*3%*	2	*3%*	2	*5%*	0	*0%*	0	*0%*
Worker insurance	2	*2%*	2	*3%*	2	*5%*	0	*0%*	0	*0%*
Location	2	*2%*	2	*3%*	2	*5%*	0	*0%*	0	*0%*
Lack of corporate law	3	*3%*	1	*1%*	0	*0%*	1	*3%*	0	*0%*
Formality status	1	*1%*	1	*1%*	1	*3%*	0	*0%*	0	*0%*
Exchange rate	2	*2%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*
Other	21	*21%*	15	*19%*	7	*18%*	8	*21%*	5	*26%*
Total responding companies	**98**		**78**		**40**		**38**		**19**	
Total answers (multiple answers per interviewee possible)	**433**		**340**		**174**		**168**		**87**	

Table A11b: Main obstacles for companies with <50 employees in 2007 – by sector, size and age (open question)

	By sector						By size				By age			
	Food (total: 26)		Textiles & garments (total: 42)		Software (total: 11)		10 or fewer employees (2007) (total: 32)		20 or more employees (2007) (total: 31)		<10 years old (total: 28)		15 years old or more (total: 25)	
Lack of skilled labour	11	*42%*	19	*45%*	5	*45%*	10	*31%*	22	*71%*	9	*32%*	13	*52%*
Access to finance	7	*27%*	13	*31%*	3	*27%*	11	*34%*	4	*13%*	10	*36%*	7	*28%*
Economic downturn after revolution	3	*12%*	13	*31%*	1	*9%*	7	*22%*	5	*16%*	8	*29%*	5	*20%*
High price of inputs	4	*15%*	10	*24%*	0	*0%*	4	*13%*	6	*19%*	6	*21%*	6	*24%*
Regulation	9	*35%*	3	*7%*	0	*0%*	6	*19%*	5	*16%*	5	*18%*	2	*8%*
Satisfied/loyal workers	4	*15%*	5	*12%*	2	*18%*	1	*3%*	8	*26%*	3	*11%*	4	*16%*
Access to land	4	*15%*	3	*7%*	1	*9%*	1	*3%*	4	*13%*	3	*11%*	1	*4%*
Unfair competition with big or influential companies	3	*12%*	2	*5%*	2	*18%*	3	*9%*	1	*3%*	2	*7%*	2	*8%*
Taxation	2	*8%*	4	*10%*	0	*0%*	4	*13%*	1	*3%*	2	*7%*	4	*16%*
Cheap import products	1	*4%*	5	*12%*	0	*0%*	0	*0%*	5	*16%*	1	*4%*	4	*16%*
Petty corruption	3	*12%*	0	*0%*	2	*18%*	3	*9%*	2	*6%*	2	*7%*	2	*8%*
Lack of marketing strategy	2	*8%*	1	*2%*	2	*18%*	3	*9%*	2	*6%*	3	*11%*	0	*0%*

Table A11b (cont.): Main obstacles for companies with <50 employees in 2007 – by sector, size and age (open question)

	By sector						By size				By age			
	Food (total: 26)		Textiles & garments (total: 42)		Software (total: 11)		10 or fewer employees (2007) (total: 32)		20 or more employees (2007) (total: 31)		<10 years old (total: 28)		15 years old or more (total: 25)	
Trade regime	0	*0%*	3	*7%*	1	*9%*	1	*3%*	2	*6%*	2	*7%*	2	*8%*
Quality of inputs	1	*4%*	3	*7%*	0	*0%*	1	*3%*	2	*6%*	2	*7%*	1	*4%*
Transportation infrastructure	1	*4%*	2	*5%*	0	*0%*	2	*6%*	1	*3%*	2	*7%*	0	*0%*
Heavy market competition	1	*4%*	2	*5%*	0	*0%*	1	*3%*	2	*6%*	0	*0%*	3	*12%*
Unfair competition from informal companies	1	*4%*	2	*5%*	0	*0%*	0	*0%*	0	*0%*	1	*4%*	1	*4%*
Entrepreneur's education	0	*0%*	3	*7%*	0	*0%*	3	*9%*	0	*0%*	0	*0%*	2	*8%*
Employee work ethics	0	*0%*	2	*5%*	0	*0%*	0	*0%*	2	*6%*	1	*4%*	0	*0%*
Access to markets	0	*0%*	2	*5%*	0	*0%*	2	*6%*	0	*0%*	0	*0%*	0	*0%*
Worker insurance	1	*4%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*
Lack of corporate law	1	*4%*	0	*0%*	0	*0%*	1	*3%*	1	*3%*	1	*4%*	0	*0%*
Formality status	1	*4%*	0	*0%*	0	*0%*	1	*3%*	0	*0%*	0	*0%*	0	*0%*
Exchange rate	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*
Other	4	*15%*	8	*19%*	3	*27%*	8	*25%*	5	*16%*	7	*25%*	3	*12%*

Table A12: Most negative factors for company development (closed list)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Economic downturn after revolution	37	*38%*	28	*35%*	17	*43%*	11	*28%*	4	*21%*
Skilled labour	39	*40%*	27	*34%*	13	*33%*	14	*36%*	5	*26%*
Bribery and *wasta*	31	*32%*	23	*29%*	15	*38%*	10	*26%*	6	*32%*
Regulation	22	*22%*	19	*24%*	7	*18%*	12	*31%*	6	*32%*
Size of company	21	*21%*	19	*24%*	9	*23%*	10	*26%*	4	*21%*
Entrepreneur characteristics	21	*21%*	18	*23%*	8	*20%*	10	*26%*	5	*26%*
BDSs	21	*21%*	17	*22%*	10	*25%*	7	*18%*	6	*32%*
Access to finance	18	*18%*	16	*20%*	6	*15%*	10	*26%*	5	*26%*
Tax system	13	*13%*	12	*15%*	8	*20%*	4	*10%*	3	*16%*
Co-operation with other firms	13	*13%*	11	*14%*	4	*10%*	7	*18%*	3	*16%*
Competition	13	*13%*	10	*13%*	3	*8%*	7	*18%*	4	*21%*
Use of technology and market information	11	*11%*	10	*13%*	5	*13%*	5	*13%*	2	*11%*
Inflation	8	*8%*	8	*10%*	3	*8%*	5	*13%*	2	*11%*
Infrastructure	8	*8%*	7	*9%*	1	*3%*	6	*15%*	6	*32%*
Entrepreneur's education	8	*8%*	7	*9%*	2	*5%*	5	*13%*	3	*16%*

Table A12 (cont.): Most negative factors for company development (closed list)										
	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Formality status	7	*7%*	6	*8%*	4	*10%*	2	*5%*	1	*5%*
Exchange rate	4	*4%*	4	*5%*	4	*10%*	0	*0%*	0	*0%*
Entrepreneur's personal relations	6	*6%*	4	*5%*	3	*8%*	1	*3%*	0	*0%*
Trade system	4	*4%*	3	*4%*	2	*5%*	1	*3%*	1	*5%*
Entrepreneur's work experience	3	*3%*	3	*4%*	1	*3%*	2	*5%*	2	*11%*
Entrepreneur's risk acceptance	2	*2%*	2	*3%*	1	*3%*	1	*3%*	0	*0%*
Insurance	1	*1%*	1	*1%*	0	*0%*	1	*3%*	1	*5%*
Entrepreneur's ambition	1	*1%*	1	*1%*	1	*3%*	0	*0%*	0	*0%*
Entrepreneur's gender	1	*1%*	1	*1%*	0	*0%*	1	*3%*	0	*0%*
Sector of company	0	*0%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*
Total responding companies	**98**		**79**		**40**		**39**		**19**	
Total answers	**352**		**292**		**145**		**149**		**76**	

Table A13a: Main success factors for upgraders (open question)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Improved quality of product	24	*29%*	17	*26%*	5	*17%*	12	*32%*	4	*21%*
Owner's ambition/dedication	17	*21%*	13	*20%*	3	*10%*	10	*27%*	6	*32%*
Access to finance	14	*17%*	13	*20%*	7	*24%*	6	*16%*	5	*26%*
Skilled labour	9	*11%*	6	*9%*	2	*7%*	4	*11%*	1	*5%*
Satisfied/loyal workers	9	*11%*	6	*9%*	2	*7%*	4	*11%*	3	*16%*
Bribery and *wasta*	6	*7%*	6	*9%*	4	*14%*	2	*5%*	1	*5%*
Owner's risk readiness	5	*6%*	5	*8%*	1	*3%*	4	*11%*	2	*11%*
Market information	5	*6%*	5	*8%*	2	*7%*	3	*8%*	1	*5%*
Good organisation of labour (esp. teamwork)	9	*11%*	5	*8%*	0	*0%*	5	*14%*	4	*21%*
Specialisation	7	*9%*	4	*6%*	1	*3%*	3	*8%*	0	*0%*
Owner's work experience and education	4	*5%*	4	*6%*	1	*3%*	3	*8%*	0	*0%*
Good marketing	6	*7%*	4	*6%*	1	*3%*	3	*8%*	2	*11%*
Automation/purchase of machines	5	*6%*	4	*6%*	1	*3%*	3	*8%*	2	*11%*
Adaptation to customer needs	5	*6%*	4	*6%*	2	*7%*	2	*5%*	1	*5%*
Resilience	3	*4%*	3	*5%*	0	*0%*	3	*8%*	1	*5%*

Table A13a (cont.): Main success factors for upgraders (open question)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Large size	3	*4%*	3	*5%*	3	*10%*	0	*0%*	0	*0%*
Owner's exposure to foreign ideas	3	*4%*	2	*3%*	0	*0%*	2	*5%*	0	*0%*
Good price	3	*4%*	2	*3%*	0	*0%*	2	*5%*	1	*5%*
Good ideas/niche markets	3	*4%*	2	*3%*	0	*0%*	2	*5%*	1	*5%*
Bribery	2	*2%*	2	*3%*	2	*7%*	0	*0%*	0	*0%*
Government contracts	2	*2%*	2	*3%*	2	*7%*	0	*0%*	0	*0%*
Formality status	1	*1%*	1	*2%*	1	*3%*	0	*0%*	0	*0%*
Exporting	3	*4%*	1	*2%*	1	*3%*	0	*0%*	0	*0%*
Use of new technologies	1	*1%*	0	*0%*	0	*0%*	0	*0%*	0	*0%*
Other	13	*16%*	11	*17%*	7	*24%*	4	*11%*	3	*16%*
Total responding companies	**82**		**66**		**29**		**37**		**18**	
Total answers (multiple answers were possible)	**275**		**208**		**78**		**130**		**64**	

Table A13b: Main success factors for upgraders with < 50 employees in 2007 – by sector, size and age (open question)

	By sector						By size				By age			
	Food (total: 26)		Textiles & garments (total: 42)		Software (total: 11)		10 or fewer employees (2007) (total: 32)		20 or more employees (2007) (total: 31)		<10 years old (total: 28)		15 years old or more (total: 25)	
High quality	8	*31%*	7	*17%*	1	*9%*	7	*22%*	5	*16%*	7	*25%*	4	*16%*
Ambition	4	*15%*	8	*19%*	0	*0%*	5	*16%*	6	*19%*	6	*21%*	3	*12%*
Access to finance	3	*12%*	7	*17%*	1	*9%*	5	*16%*	4	*13%*	4	*14%*	2	*8%*
Skilled labour	3	*12%*	2	*5%*	1	*9%*	3	*9%*	2	*6%*	2	*7%*	2	*8%*
Satisfied/loyal workers, high work ethics	2	*8%*	4	*10%*	0	*0%*	2	*6%*	3	*10%*	1	*4%*	3	*12%*
Petty corruption	1	*4%*	2	*5%*	3	*27%*	3	*9%*	2	*6%*	0	*0%*	3	*12%*
Risk readiness	2	*8%*	2	*5%*	1	*9%*	2	*6%*	2	*6%*	1	*4%*	2	*8%*
Market information	0	*0%*	4	*10%*	0	*0%*	2	*6%*	2	*6%*	2	*7%*	2	*8%*
Good organisation of labour (esp. teamwork)	2	*8%*	2	*5%*	1	*9%*	2	*6%*	2	*6%*	1	*4%*	1	*4%*
Specialisation	3	*12%*	1	*2%*	1	*9%*	2	*6%*	1	*3%*	2	*7%*	2	*8%*

Table A13b (cont.): Main success factors for upgraders with < 50 employees in 2007 – by sector, size and age (open question)

	By sector						By size				By age			
	Food (total: 26)		Textiles & garments (total: 42)		Software (total: 11)		10 or fewer employees (2007) (total: 32)		20 or more employees (2007) (total: 31)		<10 years old (total: 28)		15 years old or more (total: 25)	
Owner's work experience and education	3	*12%*	1	*2%*	0	*0%*	0	*0%*	4	*13%*	2	*7%*	2	*8%*
Good marketing	0	*0%*	2	*5%*	2	*18%*	1	*3%*	2	*6%*	1	*4%*	1	*4%*
Automation/purchase of machines	2	*8%*	1	*2%*	1	*9%*	1	*3%*	1	*3%*	1	*4%*	2	*8%*
Did adapt to customer needs	2	*8%*	2	*5%*	0	*0%*	3	*9%*	0	*0%*	1	*4%*	2	*8%*
Resilience	2	*8%*	1	*2%*	0	*0%*	1	*3%*	1	*3%*	2	*7%*	1	*4%*
Large size	0	*0%*	3	*7%*	0	*0%*	2	*6%*	0	*0%*	0	*0%*	1	*4%*
Exposure to foreign ideas	2	*8%*	0	*0%*	0	*0%*	0	*0%*	1	*3%*	1	*4%*	1	*4%*

Table A14a: Most positive factors for company development (closed list)

	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Work experience	44	*46%*	34	*45%*	17	*44%*	17	*46%*	8	*40%*
Owner's ambition	43	*45%*	34	*45%*	15	*38%*	19	*51%*	11	*55%*
Competition: incentive to improve	32	*33%*	26	*34%*	12	*31%*	14	*38%*	6	*30%*
Use of technology and market information	26	*27%*	20	*26%*	10	*26%*	10	*27%*	5	*25%*
Risk acceptance	25	*25%*	19	*25%*	10	*26%*	9	*24%*	7	*35%*
Infrastructure	21	*22%*	17	*22%*	11	*28%*	6	*16%*	6	*30%*
Skilled labour	20	*21%*	16	*21%*	7	*18%*	9	*24%*	8	*40%*
Personal relations/ *wasța*	16	*17%*	15	*20%*	5	*13%*	10	*27%*	6	*30%*
Owner's education	14	*15%*	13	*17%*	7	*18%*	6	*16%*	2	*10%*
Access to finance	9	*9%*	7	*9%*	3	*8%*	4	*11%*	4	*20%*
Company size	7	*7%*	7	*9%*	5	*13%*	2	*5%*	2	*10%*
Co-operation with other firms	6	*6%*	5	*7%*	2	*5%*	3	*8%*	1	*5%*
Formality status of company	7	*7%*	5	*7%*	1	*3%*	4	*11%*	0	*0%*
Gender of owner	7	*7%*	5	*7%*	5	*13%*	0	*0%*	0	*0%*
Exchange rate	6	*6%*	4	*5%*	1	*3%*	3	*8%*	1	*5%*

Table A14a (cont.): Most positive factors for company development (closed list)										
	All companies		Companies with <50 employees (2007)		Non-upgraders		Upgraders		Only gazelle upgraders	
Insurance	3	*3%*	3	*4%*	1	*3%*	2	*5%*	1	*5%*
Tax system	5	*5%*	2	*3%*	0	*0%*	2	*5%*	0	*0%*
Political stability	3	*3%*	2	*3%*	0	*0%*	2	*5%*	1	*5%*
Inflation	1	*1%*	1	*1%*	0	*0%*	1	*3%*	1	*5%*
Trade system	1	*1%*	1	*1%*	0	*0%*	1	*3%*	0	*0%*
Regulation	1	*1%*	1	*1%*	1	*3%*	0	*0%*	0	*0%*
Total responding companies	**96**		**76**		**39**		**37**		**20**	
Total answers (up to four answers were possible)	**400**		**325**		**158**		**167**		**87**	

Table A14b: Single positive factor for company development (closed list)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Business environment	**22**	**16**	**11**	**5**	**2**	***28%***	***10%***
Competition: incentive to improve	7	7	5	2	1	*13%*	*5%*
Infrastructure	3	2	2	0	0	*5%*	*0%*
Skilled labour	6	4	3	1	1	*8%*	*5%*
Access to finance	2	1	1	0	0	*3%*	*0%*
BDSs	1	0	0	0	0	*0%*	*0%*
Tax system	1	1	0	1	0	*0%*	*0%*
Political stability	1	0	0	0	0	*0%*	*0%*
Exchange rate	0	0	0	0	0	*0%*	*0%*
Insurance	0	0	0	0	0	*0%*	*0%*
Inflation	0	0	0	0	0	*0%*	*0%*
Trade system	1	1	0	1	0	*0%*	*0%*
Bureaucracy	0	0	0	0	0	*0%*	*0%*
Business linkages	**8**	**8**	**3**	**5**	**1**	***8%***	***5%***
Personal relations/ *wasṭa*	6	6	2	4	1	*5%*	*5%*
Co-operation with other firms	2	2	1	1	0	*3%*	*0%*

Table A14b (cont.): Single positive factor for company development (closed list)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Enterprise characteristics	**14**	**10**	**5**	**5**	**1**	***13%***	***5%***
Use of technology and market information	7	5	3	2	0	*8%*	*0%*
Location	3	3	1	2	0	*3%*	*0%*
Size	1	1	0	1	1	*0%*	*5%*
Sector	3	1	1	0	0	*3%*	*0%*
Formality status	0	0	0	0	0	*0%*	*0%*
Entrepreneur characteristics	**50**	**42**	**18**	**24**	**16**	***46%***	***80%***
Work experience	20	16	7	9	6	*18%*	*30%*
Ambition	19	17	7	10	7	*18%*	*35%*
Risk acceptance	6	5	2	3	1	*5%*	*5%*
Education	3	2	2	0	0	*5%*	*0%*
Gender	2	2	0	2	2	*0%*	*10%*
None of the suggested factors	**8**	**4**	**3**	**1**	**0**	***8%***	***0%***
Total companies	**102**	**80**	**40**	**40**	**20**	***100%***	***100%***

Table A15: Companies' view of support needed to grow (open question)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Workers	**26**	**18**	**8**	**10**	**3**		
Train workers	21	15	6	9	3	*16%*	*19%*
Change employment law	3	2	2	0	0	*5%*	*0%*
Help find workers	2	1	0	1	0	*0%*	*0%*
Ease access to credit/ reduce interest rate	**17**	**17**	**9**	**8**	**4**	*24%*	*25%*
Other BDSs	**41**	**33**	**8**	**25**	**10**		
Support purchase of machines	12	9	3	6	2	*8%*	*13%*
Consultancy (business administration)	10	10	3	7	3	*8%*	*19%*
Financial support for trade fairs/export support	9	5	1	4	2	*3%*	*13%*
Provision of technical know-how	5	4	1	3	1	*3%*	*6%*
Access to information	3	3	0	3	0	*0%*	*0%*
Help with registration and licensing	2	2	0	2	2	*0%*	*13%*

Table A15 (cont.): Companies' view of support needed to grow (open question)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Deregulation	**38**	**29**	**17**	**12**	**9**		
Lower taxes/change tax system	17	13	9	4	3	*24%*	*19%*
Simplify/reduce bureaucracy	16	11	6	5	3	*16%*	*19%*
Lower cost of worker insurance	3	3	1	2	2	*3%*	*13%*
Access to markets	2	2	1	1	1	*3%*	*6%*
More regulation	**25**	**20**	**15**	**5**	**1**		
Reduce input costs (esp. on imports)	16	12	8	4	1	*21%*	*6%*
Restrict import of foreign products	5	5	5	0	0	*13%*	*0%*
Introduce/enforce quality standards	4	3	2	1	0	*5%*	*0%*
Improve transportation	**7**	**4**	**0**	**4**	**3**	*0%*	*19%*
Access to land/industrial zones	**15**	**14**	**4**	**10**	**7**	*11%*	*44%*
Other	**26**	**20**	**10**	**10**	**5**	*26%*	*31%*
Total answers (Multiple answers possible)	**299**	**237**	**111**	**126**	**62**		
Nothing from the government – it can't help	12	8	2	6	4		
Total companies	**102**	**80**	**40**	**40**	**20**		

Table A16: Most helpful BDSs (closed list)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Access to credit	40	30	19	11	4	*61%*	*27%*
Access to markets	33	27	20	7	3	*65%*	*20%*
Train workers	29	21	10	11	5	*32%*	*33%*
Help find workers	22	18	11	7	2	*35%*	*13%*
Help in co-operation with other firms	13	11	4	7	6	*13%*	*40%*
Consultancy (managerial)	9	9	5	4	3	*16%*	*20%*
Consultancy (technical)	9	9	2	7	2	*6%*	*13%*
Help with registration and licensing	9	8	3	5	3	*10%*	*20%*
Other	10	10	4	6	5	*13%*	*33%*
Total answers (Multiple answers possible)	**174**	**143**	**78**	**65**	**33**		
None of these	27	19	9	10	5		
Total companies	**102**	**80**	**40**	**40**	**20**		

Table A17: Owner's reasons to start the business

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Inherited family business	22	18	11	7	4	3	*27%*	*15%*
Relatives active in same field	13	10	5	5	3	2	*12%*	*10%*
Friends active in same field	1	1	0	1	0	1	*0%*	*5%*
Worked before in lead firm (same sector)	25	21	5	16	10	6	*12%*	*30%*
Work experience in other field	26	20	12	8	3	5	*29%*	*25%*
Passion and vision	16	13	5	8	6	2	*12%*	*10%*
Necessity	6	6	3	3	2	1	*7%*	*5%*
Perceived demand by customers	10	7	3	4	1	3	*7%*	*15%*
Recommended by friend(s)	6	5	2	3	1	2	*5%*	*10%*
Cheap material	1	1	0	1	0	1	*0%*	*5%*
All inputs easily available at location	3	3	1	2	1	1	*2%*	*5%*
Equipment already on-site	4	3	0	3	2	1	*0%*	*5%*
Other reason(s)	9	6	3	3	2	1	*7%*	*5%*
Mentioned at least one reason	**95**	**77**	**37**	**40**	**20**	**20**	***90%***	***100%***
No answer	**6**	**3**	**3**	**0**	**0**	**0**	***7%***	***0%***
Total	**102**	**80**	**41**	**39**	**20**	**20**	***100%***	***100%***

Table A18a: Owner's educational level

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Primary or less	5	5	3	2	2	0	*8%*	*0%*
Secondary	20	17	11	6	2	4	*28%*	*20%*
BA or equivalent	57	48	24	24	14	10	*60%*	*50%*
MA or above	13*	9*	1	8*	2	6*	*3%*	*30%*
No answer	7	1	1	0	0	0	*3%*	*0%*
Total	102	80	40	40	20	20	*100%*	*100%*

* Only 1 gazelle upgrader declared that he had upgraded his formal education during the previous 5 years. Any correlation is hence probably not predominantly due to reverse causality.

Table A18b: Owner's educational level (food sector)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Primary or less	1	1	0	1	1	0	*0%*	*0%*
Secondary	7	7	5	2	0	2	*56%*	*29%*
BA or equivalent	19	15	3	12	7	5	*33%*	*71%*
MA or above	3	1	0	1	1	0	*0%*	*0%*
No answer	4	1	1	0	0	0	*11%*	*0%*
Total	**34**	**25**	**9**	**16**	**9**	**7**	***100%***	***100%***

Table A18c: Owner's educational level (textiles & garments sector)

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Primary or less	4	4	3	1	1	0	*12%*	*0%*
Secondary	13	10	6	4	2	2	*24%*	*25%*
BA or equivalent	31	26	16	10	6	4	*64%*	*50%*
MA or above	3	2	0	2	0	2	*0%*	*25%*
No answer	2	0	0	0	0	0	*0%*	*0%*
Total	**53**	**42**	**25**	**17**	**9**	**8**	***100%***	***100%***

Table A19a: Owner's international exposure								
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	58	47	19	28	15	13	*48%*	*65%*
No	17	15	7	8	2	6	*18%*	*30%*
No answer	27	18	14	4	3	1	*35%*	*5%*
Total	**102**	**80**	**40**	**40**	**20**	**20**	***100%***	***100%***

Table A19b: Owner's international exposure (textiles & garments sector)								
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	27	22	13	9	7	2	*33%*	*25%*
No	10	9	3	6	1	5	*8%*	*63%*
No answer	16	11	9	2	1	1	*23%*	*13%*
Total	**53**	**42**	**25**	**17**	**9**	**8**	***63%***	***100%***
Comment: This table shows that the overall effect of international exposure on upgrading documented in Table 19 is mainly concentrated on the food and ICT sectors.								

Table A19c: Owner's international exposure (food sector)								
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	20	15	2	13	7	6	*5%*	*75%*
No	5	4	2	2	1	1	*5%*	*13%*
No answer	9	7	5	2	2	0	*13%*	*0%*
Total	**34**	**26**	**9**	**17**	**10**	**7**	***23%***	***88%***

Table A20: Influence on business of owner's international exposure								
	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes – for business contacts	6	6	2	4	1	3	*11%*	*23%*
Yes – for ideas	26	21	9	12	7	5	*47%*	*38%*
No	22	16	8	8	3	5	*42%*	*38%*
No answer	4	4	1	4	4	0	*5%*	*0%*
Total	**58**	**47**	**19**	**28**	**15**	**13**	***100%***	***100%***

Table A21: Company tax IDs

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Had tax ID 5 years ago (only up-graders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	89	67	30	37*	29	19	18	*75%*	*90%*
No	13	13	10	3	7	1	2	*25%*	*10%*
No answer	0	0	0	0	4	0	0	*0%*	*0%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

* Four companies did not have a tax ID 4 years ago but do today. All were upgraders.

Table A22: Company social security registration

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Had also registered employees with social security 5 years ago (only up-graders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	69	53	23	30*	20	16	14	*58%*	*70%*
No	9	8	6	2	4	0	2	*15%*	*10%*
No answer	24	19	11	8	16	4	4	*28%*	*20%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

* Only two upgraders have just recently registered their employees with social security. Reverse causality is thus unlikely to play a major role.

Table A23: Share of trained workers

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Share of trained workers 5 years ago (only upgraders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
100%	13	9	1	8	4	4	4	*3%*	*20%*
50–90%	3	3	1	2	0	1	1	*3%*	*5%*
<10%	12	12	5	7	2	2	5	*13%*	*25%*
0	50	41	23	18	17	12	6	*58%*	*30%*
No answer	22	15	10	5	14	1	4	*25%*	*20%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

Table A24: Companies integrated in global production networks

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Cooperated 5 years ago (only upgraders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	20	13	6	7	7	2	5	*15%*	*25%*
Yes – but only on supply side	4	4	3	1	1	1	0	*8%*	*0%*
No	62	52	26	26	18	14	12	*65%*	*60%*
No answer	16	11	5	6	13	3	3	*13%*	*15%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	*100%*	*100%*

Table A25: Company co-operates with others in same geographical area

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Co-operated 5 years ago (only up-graders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	**49**	**32**	**13**	**19**	**9**	**10**	**9**	***33%***	***45%***
Supply of inputs	6	6	2	4		2	2	*5%*	*10%*
Help out with materials	8	6	4	2		0	2	*10%*	*10%*
Help with machinery	3	2	1	1		0	1	*3%*	*5%*
Information exchange	2	2	1	1		1	0	*3%*	*0%*
Outsource/ help with large orders	10	10	5	5		2	3	*13%*	*15%*
Suborders	3	2	0	2		1	1	*0%*	*5%*
Joint business activity	3	1	1	0		0	0	*3%*	*0%*
Other	4	3	0	3		3	0	*0%*	*0%*
No	**53**	**42**	**24**	**18**	**16**	**10**	**8**	***60%***	***40%***
No answer	**10**	**6**	**3**	**3**	**15**	**0**	**3**	***8%***	***15%***
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

Table A26: Business association membership

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Member-ship 5 years earlier (only up-graders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Yes	26	18	7	11*	4*	6	5	*18%*	*25%*
No	68	57	32	25	19	13	12	*80%*	*60%*
No answer	8	5	1	4	17	1	3	*3%*	*15%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

* This correlation may thus be partly due to reverse causality.

Table A27: BDSs received during previous 5 years

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Got BDSs 5 years earlier (only up-graders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Financial and technical	2	1	0	1	0	1	0	*0%*	*0%*
Only financial	11	6	1	5*	5*	1	4	*3%*	*20%*
Only technical	11	8	1	7	0	4	3	*3%*	*15%*
No	71	61	35	26	17	14	12	*88%*	*60%*
No answer	7	4	3	1	18	0	1	*8%*	*5%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

* Reverse causality is improbable for financial BDSs, but not for technical BDSs.

Table A28: Main sources of finance

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Main source of finance 5 years earlier (only upgraders)	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Own funds	95	76	39	39	23	22	17	*98%*	*85%*
Friends/ relatives	1	1	1	0	1	0	0	*3%*	*0%*
Banks	9	6	1	5*	0*	2	3	*3%*	*15%*
Non-bank institution	7	7	3	4*	0*	2	2	*8%*	*10%*
Supplier	3	3	3	0	1	0	0	*8%*	*0%*
Other	2	2	1	1	2	0	1	*3%*	*5%*
No answer	5	2	0	2	13	0	2	*0%*	*10%*
Total	**102**	**80**	**40**	**40**	**40**	**20**	**20**	***100%***	***100%***

* Reverse causality is probable here.

Table A29: Reasons for not taking a bank loan

	All companies	Companies with <50 employees (2007)	Non-upgraders	Upgraders	Only non-gazelle upgraders	Only gazelle upgraders	*Share non-upgraders*	*Share gazelle upgraders*
Refused	7	7	4	3	2	1	*10%*	*6%*
Insufficient collateral	5	5	3	2	1	1	*8%*	*6%*
Interest rates too high	14	12	6	6	2	4	*15%*	*24%*
Fear of credit default	16	13	6	7	3	4	*15%*	*24%*
Too complicated/ too much paperwork	3	3	2	1	0	1	*5%*	*6%*
Religion	10	9	5	4	3	1	*13%*	*6%*
Not needed	9	8	4	4	2	2	*10%*	*12%*
Other	10	7	3	4	3	1	*8%*	*6%*
No answer	30	20	13	7	2	5	*33%*	*29%*
Total	**93**	**76**	**39**	**35**	**57**	**17**	***100%***	***100%***

Annex B

Questionnaire used for interviews with SMEs

Annex B: Questionnaire used for interviews with SMEs			
General information			
Sector:		No. of interview:	
Name of company:		Interviewer:	
Name of interviewee:		Minute taker:	
Position (interviewee):		Date:	
Gender (interviewee):		English/Arabic interview:	
Urban/rural/industrial:		Name of translator:	
Geographic cluster:		Source of company (from which list?, who told us about it?):	**Very important!**
Name of town:			
Name of neighbourhood:		Selection mode:	
Observations: (made during the interview)			
Categorisation (to be filled in immediately after the interview)			
Upgrader:	( ) yes ( ) no	Tax ID:	( ) yes ( ) no
Grower:	( ) yes ( ) no	Number of employees::	

Annex B (cont.): Questionnaire used for interviews with SMEs

Introduction

1: In which year did your company start operating?

_____ (Age of business):_____

2: Where have you started your business?

to be ticked by minute taker: ( ) same place as today ( ) family house ( ) somewhere in town ( ) other town

( ) other, specify: _____

2a: If elsewhere: Why have you moved? _____

2b: Where is the administration of your firm? This place here ( ),

Somewhere else, specify_____

2c: Where is the factory/production? This place here ( ),

Somewhere else, specify_____

Verification of growth (quantitative aspect of upgrading)

3: What products / services do you offer?

(a) _____ (c) _____

(b) _____ (d) _____

4: Did you introduce new products over the last 5 years?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

4a: If yes: what exactly is new about the product(s)?

(a) _____

(b) _____

(c) _____

5: How many regular (unlimited term) employees do you have?

( ) more than 20 ( ) less than 20 number: _____

6: How many regular (unlimited term) employees did you have 5 years ago?

number: _____

6a: (answered by minute taker): Was this a growth by at least 50 per cent?

( ) yes ( ) no

6b: How many employees did you have when you started your business? _____

7: How much were approximately your total sales in 2011?

Amount: _____ EGP per _____

8: Did your sales grow by at least half over the last 5 years?

( ) yes ( ) no Comment: _____

9: Did the size of your production area (storage, administration) increase by at least half over the last 5 years?

( ) yes ( ) no

10: Did your assets grow by at least half over the last 5 years?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

11: Did your profits grow by at least half over the last 5 years?

( ) yes ( ) no

12. Conclusion to be drawn by minute taker:

( ) grower, if ANY of the Questions 6a, 8, 9, 10, 11 are affirmed

( ) non-grower, if NONE of the Questions 6a, 8, 9, 10, 11 are affirmed => continue with question 19

Qualitative upgrading/Innovation

13: Would you say that you have grown faster than your competitors?

(in terms of number of employees, sales, area of storage and production, assets, profits)

( ) yes ( ) no

14: What did you do to grow faster than your competitors?

to be ticked by minute taker: ( ) new product ( ) improved product ( ) improvement of process

( ) change in marketing strategy ( ) change in labelling or packaging ( ) entering new markets

( ) downstreaming ( ) upstreaming ( ) new sector

( ) certification or quality standards for product ( ) none of these

If question is not well understood or answered:

14a: Is this growth the result of improvement in products?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

14b: Is this growth the result of improvement in process?
( ) yes ( ) no

14c: Is this growth the result of a change in marketing strategy?
( ) yes ( ) no

14d: Is this growth the result of a change in labelling or packaging?
( ) yes ( ) no

14e: Is this growth the result of the fact that you now produce inputs on your own that you bought before?
( ) yes ( ) no

14f: Is this growth the result of obtaining some kind of certification or quality standard for your products?
( ) yes ( ) no

14g: Is this growth the result of entering (a) new market(s) (domestic new ones or abroad)?
( ) yes ( ) no

14h: Is this growth the result of the fact that you are now selling to other/additional sectors?
( ) yes ( ) no

15. Conclusion to be drawn by minute taker:

( ) upgrader

( ) non-grower

16. Only upgraders: Where did the idea for this innovation come from?

_____

_____

Annex B (cont.): Questionnaire used for interviews with SMEs

Constraints

19: Now, regarding your situation:

Why did you start your business?

_____

19a: Have you been abroad?

( ) yes ( ) no

19b: If yes: How has this influenced your business?

_____

20: Would you like to expand business and employ more people?

( ) yes ( ) no

20a: If no: Why not?

_____

21: Only non-upgraders: Have you ever considered to do your business differently?

( ) yes ( ) no

21a: If yes: What has been your experience?

_____

21b: If no: Why not?

_____

Annex B (cont.): Questionnaire used for interviews with SMEs

21c: All: Have you ever considered to out-source part of your production?

( ) yes ( ) no

21d: If no: Why not?

_____

21d: All: Have you ever made efforts to sell your products to another company?

( ) yes ( ) no

21e: If no: Why not?

_____

22: What are the obstacles for companies of your type to grow?

_____

23: Only non-upgrader: If the mentioned constraints would be resolved / absent would you manage to grow?

_____

Success factors

Non-upgraders	**Upgraders**
24: Others have succeeded to grow. Why?	24: You have succeeded to grow. Why?
_____	_____
_____	_____

Annex B (cont.): Questionnaire used for interviews with SMEs

25: Which are the most important success factors?

_____

_____

25: Which are the most important success factors?

_____

_____

25a: If these factors had been absent, would you still have managed to be as successful as you are now?

_____

_____

Closed list

26a: Which of all the following factors influence the growth of your firm positively? –

Please select up to three of the following options: [round one – positive]

	+ or –	Rank		+ or –	Rank
Inflation			Bribery and wasța		
Exchange rate			Availability of skilled labour		
Political stability			Your access to finance		
Competition			Infrastructure (electricity, water,		
Trade regulations			internet, transport)		

Annex B (cont.): Questionnaire used for interviews with SMEs

26b: Which of these factors influence the growth of your firm negatively? –

Please select up to three of them! [round one – negative]

26c: Which of the following factors influence the growth of your firm positively? –

Please select up to three of them! [round two – positive]

Your education			Size of your firm		
Your work experience			Sector of your firm		
Your personal relations			Your location (urban, rural)		
Your readiness to accept risk			Formality/informality		
Your ambition			Use of technology & market info		
Your gender			Your co-operation with other firms		

26d: Which of these factors influence the growth of your firm negatively?

Please select up to three of them! [round two – negative]

26e: Please prioritise the positive factors selected in Round 1 and Round 2.

26f: Please prioritise the negative factors selected in Round 1 and Round 2.

Annex B (cont.): Questionnaire used for interviews with SMEs

Causal chain/impact channels

27: Please explain why these factors affect the development of your business:

How do they affect the development of your business?

_____

Recommendations

28a: What kind of support from the government would help you to overcome the constraints?

_____

28b: Which of the following BDSs would help you most?

	Rank		Rank
Credit		Training of workers	
Consultancy		Help in registration and licensing:	
Provision of technical know-how:		Help in co-operation with other firms:	
Assistance in access to markets:		Other:	
Help in finding workers:		_____	

Formality

29: Do you have a tax ID?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

29a: *Only upgraders:* Did you have a tax ID 5 years ago?

( ) yes ( ) no

29b: If not, why not? _____

Independent variables:

30: What is your highest level of education?

To be ticked by minute-taker: ( ) less than primary; ( ) primary; ( ) secondary; ( ) vocational; ( ) BA; ( ) MA; ( ) phD; ( ) other, specify: _____

30a: *Only upgraders:* Did you improve your education level in the last 5 years?

( ) yes ( ) no

31: What share of your employees has enjoyed technical training from outside the firm?

_____

31a: *Only upgraders:* What share of your employees had enjoyed technical training from outside the company 5 years ago?

_____

32: How much do you spend on the training of your workers (as % of total sales)?

_____

32a: *Only upgraders:* And how much did you spend on it 5 years ago?

_____

Annex B (cont.): Questionnaire used for interviews with SMEs

33: How much do you spend on research & product development (as % of total sales)?

_____

33a: *Only upgraders:* And what was your expenditure on research & development 5 years ago?

_____

34: Are you directly exporting?

( ) yes ( ) no

34a: *Only upgraders*: Have you been exporting 5 years ago?

( ) yes ( ) no

35: Do you sell your products to someone who is exporting your products?

( ) yes, to a broker( ) yes, as an intermediate product ( ) no

35a: *Only upgraders*: Have you been selling your products to someone who is exporting 5 years ago?

( ) yes, to a broker ( ) yes, as an intermediate product ( ) no

36: Do you suffer from unfair competition? If so: from whom?

( ) yes, people with connections ( ) yes, informal companies ( ) yes, other: specify:

_____

36a: *Only upgraders*: Did you suffer from the same 5 years ago?

( ) yes ( ) no, did not suffer ( ) no, did suffer, ( ) other:

37: Do you co-operate with other companies in the same geographical zone?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

37a: *If yes:* How do you do that?

_____

37b: *Only upgraders*: Did you co-operate with other companies in the same zone 5 years ago?

( ) yes ( ) no

38: Are you member of a business association?

( ) yes ( ) no

39: Have you received support from government programmes during the last 5 years?

( ) yes ( ) no

39a: *If yes:* Was it financial or non-financial support?

( ) financial ( ) non-financial

39b: *Only upgraders*: Have you received such support 5 years ago?

( ) yes ( ) no

40: Which are <u>your sources</u> of finance?

to be ticked by minute taker:

( ) Returns from the firm ( ) Use personal or family savings ( ) Borrowing from relatives / friends
( ) Borrowing from banks ( ) Borrowing from non-bank institutions
( ) Others, please specify: _____

40a: *If not "from banks":* Why not?

_____

Annex B (cont.): Questionnaire used for interviews with SMEs

40b: *Only upgraders*: Which were <u>your sources</u> of finance 5 years ago?

to be ticked by minute taker:
( ) Returns from the firm ( ) Use personal or family savings
( ) Borrowing from relatives / friends
( ) Borrowing from banks ( ) Borrowing from non-bank institutions
( ) Others, please specify: _____

41: Do you have any insurance (*ta'min*)?

( ) yes ( ) no

41a: *If yes*: What kind of?

( ) social and public medical / health insurance of workers;

( ) also <u>private</u> medical / health insurance for workers;

( ) fire insurance ( ) theft insurance ( ) private life insurance

( ) other, specify: _____

41b: *Only upgraders*: Did you have insurance 5 years ago?

( ) yes ( ) no

42: Do you regularly use your *wasṭa* in order to operate your business?

( ) yes ( ) no

42a: *Only upgraders*: Did you have to use your *wasṭa* regularly 5 years ago?

( ) yes ( ) no

Annex B (cont.): Questionnaire used for interviews with SMEs

43: Do you regularly have to bribe in order to operate your business?

( ) yes ( ) no

43a: *Only upgraders*: Did you regularly have to bribe 5 years ago?

( ) yes ( ) no

44: Would you sometimes invest into a new project even though you are not sure it will be successful?

( ) yes ( ) no

44a: *Only upgraders*: Have you sometimes invested into such projects 5 years ago?

( ) yes ( ) no

45: Do you suffer from bottle-necks in transportation?

( ) yes ( ) no

46: Do you suffer from bottle-necks in power supply?

( ) yes ( ) no

Conclusion/outlook

47: What are your plans for the future?

How do you see the future of your company in terms of growth and innovation?

_____

_____

Annex C

Results of the logit estimations with the EICS panel data

Table C1: Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables				
	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Size	-0.000266		-0.00142	
	(0.000690)		(0.00134)	
Training index	0.702**		0.669*	
	(0.302)		(0.391)	
Domestic sales	-0.0170***		-0.0200***	
	(0.00442)		(0.00548)	
Use foreign technology	0.257		-0.158	
	(0.392)		(0.572)	
Industrial zone	0.336		0.828**	
	(0.306)		(0.383)	
External finance	0.624*		-0.177	
	(0.330)		(0.498)	
Female owner	0.225		0.626	
	(0.324)		(0.398)	
Insurance	-0.115		-0.160	
	(0.306)		(0.386)	

Table C1 (cont.): Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Specialised R&D department		0.646**		0.801**
		(0.310)		(0.386)
Single shareholder		-0.00426		-0.00792
		(0.00448)		(0.00586)
Years of top manager experience		0.00516		0.0157
		(0.0116)		(0.0146)
Constant	-1.159**	-2.261***	-1.485***	-2.895***
	(0.454)	(0.383)	(0.560)	(0.497)
Observations	625	610	625	610

Note: Standard errors are in parentheses.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Table C2: Logit estimations for t 'upgrader' and 'gazelle' dummies as dependent variables: governorate results				
	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Training index	0.581* (0.307)		0.510 (0.394)	
Domestic sales	-0.0177*** (0.00462)		-0.0208*** (0.00565)	
Use foreign technology	0.405 (0.409)		-0.0280 (0.587)	
Industrial zone	-0.0265 (0.408)		0.0303 (0.505)	
External finance	0.594* (0.329)		-0.287 (0.490)	
Specialised R&D department		0.659** (0.313)		0.605 (0.401)
Alexandria	-0.512 (0.655)	-0.449 (0.636)	0.498 (0.718)	0.507 (0.694)
Bahaira	****	****	****	****
Dakhiliyya	0.438 (0.786)	0.124 (0.773)	0.636 (1.097)	0.344 (1.084)

Table C2 (cont.): Logit estimations for t 'upgrader' and 'gazelle' dummies as dependent variables: governorate results

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Damietta	0.299	0.500	1.250	1.464
	(1.181)	(1.091)	(1.269)	(1.124)
Gharbiyya	0.847*	0.958**	0.820	1.002
	(0.450)	(0.434)	(0.653)	(0.632)
Kafr-al-Shaykh	1.231	0.895	2.270*	1.866
	(1.142)	(1.129)	(1.184)	(1.160)
Minufiyya	1.027*	1.048**	1.158	1.210*
	(0.541)	(0.508)	(0.747)	(0.704)
Al-Minya	1.568**	1.371**	2.068**	1.832**
	(0.707)	(0.693)	(0.868)	(0.850)
Port Said	1.557*	1.906**	0.799	1.464
	(0.868)	(0.751)	(1.256)	(1.124)
Sharqiyya	0.860*	0.853**	1.645***	1.539***
	(0.476)	(0.377)	(0.609)	(0.486)
Constant	-1.396***	-2.757***	-1.897***	-3.704***
Observations	602	604	602	604

Note: Standard errors are in parentheses.

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level. **** Too few cases

Table C3: Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables: sector results

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Training index	0.613**		0.524	
	(0.302)		(0.390)	
Domestic sales	-0.0154***		-0.0176***	
	(0.00439)		(0.00547)	
Use foreign technology	0.254		-0.0466	
	(0.394)		(0.568)	
Industrial zone	0.492		0.948**	
	(0.322)		(0.399)	
External finance	0.590*		-0.268	
	(0.321)		(0.483)	
Specialised R&D department		0.675**		0.596
		(0.304)		(0.387)
Garments	-1.023	-0.804	-2.594**	-2.410**
	(0.927)	(0.883)	(1.164)	(1.080)
Textile	-0.777	-0.492	-1.062	-1.072
	(0.905)	(0.857)	(0.972)	(0.881)

Table C3 (cont.): Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables: sector results

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Other	-1.475*	-1.285	-2.007**	-1.928**
	(0.879)	(0.838)	(0.941)	(0.859)
Constant	-0.208	-1.424*	-0.126	-1.402*
	(0.922)	(0.813)	(1.000)	(0.814)
Observations	624	627	624	627

Note: Meat is the reference category for the sectors. Standard errors are in parentheses.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table C4: Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables: constraints results

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Training index	0.703**		0.588	
	(0.301)		(0.388)	
Domestic sales	-0.0164***		-0.0176***	
	(0.00445)		(0.00539)	
Use foreign technology	0.190		-0.164	
	(0.400)		(0.587)	
Industrial zone	0.209		0.626	
	(0.312)		(0.384)	
External finance	0.555*		-0.203	
	(0.322)		(0.482)	
Specialised R&D department		0.576*		0.535
		(0.306)		(0.393)
Infrastructure	0.372	0.182	0.705	0.455
	(0.488)	(0.478)	(0.655)	(0.645)
Labour	0.0125	0.0738	0.164	0.207
	(0.810)	(0.785)	(1.112)	(1.094)

Table C4 (cont.): Logit estimations for 'upgrader' and 'gazelle' dummies as dependent variables: constraints results

	Upgrader (40% growth + innovation)		Gazelle (80% growth + innovation)	
Variables	(1)	(2)	(3)	(4)
Finance	0.217	0.513	-0.0882	0.194
	(0.542)	(0.510)	(0.850)	(0.820)
Illegal competition	-0.627	-0.592	-0.475	-0.433
	(0.780)	(0.771)	(1.091)	(1.083)
Macro-uncertainty	0.544	0.612*	0.921*	1.029**
	(0.379)	(0.367)	(0.504)	(0.493)
Corruption	-0.0830	0.0296	-0.0160	0.168
	(0.601)	(0.587)	(0.836)	(0.821)
Business licensing	1.487**	1.498**	1.897**	1.985***
	(0.698)	(0.662)	(0.810)	(0.770)
Other	-0.556	-0.551	0.279	0.323
	(0.663)	(0.648)	(0.729)	(0.708)
Constant	-1.361***	-2.545***	-2.038***	-3.413***
	(0.485)	(0.273)	(0.625)	(0.399)
Observations	625	628	625	628

Note: Meat is the reference category for the sectors. Standard errors are in parentheses.

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

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