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Literature Review on the Impact of Business Incubation, Mentoring, Investment and Training on Start-up Companies

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1 Introduction

The focus of this review is on the impact of financial and non-financial support on start-up business growth. What types of start-ups benefit most from this support and how their subsequent 'success' has been defined.

The development community has for long supported the idea that a prosperous private sector is essential for economic growth. Enterprises have been praised as the engine of economic growth, playing a critical role at the heart of entrepreneurship, especially in developing countries. Enterprise development has been hailed as the source of most new employment and productive investment, and the basis for growth and poverty reduction. But despite their enormous potential, enterprises face several challenges related to access to resources, finances and services, which limit their potential for growth. Financial and non-financial services to support enterprises in their start-up and growth stage are being provided by governments, NGOs, microfinance organisations and business centres. While these services are common and widespread out, the measuring of the impact of business incubation, investment, training and mentoring is limited, mainly due to the challenges of doing so.

This paper reviews the existing literature on the impact of business incubation, investment, training and mentoring, discusses the challenges of measuring impact in these areas and presents the findings.

2 Methodology

The literature review covers academic literature, research and technical papers, government reports and working papers; all of which are considered to be useful to answer the main research question.

The existing evidence on the impact of business incubation, mentoring, investment and training on start-up companies is discussed below, including several programme evaluations and impact assessments looking at these issues from both, a quantitative and a qualitative perspective.

3 Literature Review

3.1 Business Incubation

Business incubators have proliferated since their emergence more than 50 years ago, evolving to include a range of incubation practices that deliver critical value to enterprises. Khalil and Olafsen (2010) defined business incubation as the “process aimed at supporting the development and scaling of growth-oriented, early-staged enterprises.” According to the authors, the process provides entrepreneurs with an enabling environment in the start-up stage, helps reduce the costs associated with launching an enterprise, increases the confidence of the entrepreneur and helps link them to the resources and networks required to scale their enterprise. In other words, business incubation accelerates enterprise growth, saving time and money and generating social and economic benefits than would otherwise be the case.

Challenges in measuring the impact of business incubation

There is no standard methodology for measuring incubator performance, which makes comparison between studies challenging (Dee et al., 2011). Academic studies on business incubators reveal the difficulty in answering what seems a very direct question – do business incubators have a positive impact? There is limited data available to measure the impact of business incubation, which could be explained by a number of reasons. Incubation can be difficult to assess as the outcomes may take years to materialise, basically, the time it takes an enterprise to develop its market and scale its production. On average it takes about three to four years to incubate a successful enterprise, and if one would like to measure the viability and growth rate of the incubated firms one would have to wait at least another three or four years after graduation. Few studies capture the full impact of business incubation, for example taking a measure of incubation impact over the incubation period rather than longer term, ignoring entrepreneurial learning and subsequent activity as a result of business failure (Dee et al., 2011). Studies conducted in New Zealand seem to indicate that real growth rate in revenues and job creation does not happen until the fourth and seventh year after graduation (Ministry of Economic Development New Zealand, 2008). Measurement becomes even more complicated in developing countries where, with the exemption of Brazil and India, business incubation is still a relatively new concept (Khalil and Olafsen, 2010).

Another difficulty is identifying a control group. Ideally the growth rate of enterprises would be measured against an industry benchmark, but is often difficult to identify a control group against which one can test how the incubatees performed. Furthermore, business ideas accepted by incubators often have an innovation component which makes it even harder to find other cases against which to compare the outcomes.

Lack of data is also due to the fact that many business incubators do not track their results beyond the number of enterprises they graduate. For those incubators that do track results, many times the data is not reliable. Associations of the business incubator industry assess regularly the impact of business incubators, offering estimates of aggregate performance, but the data offered should be treated carefully. The US National Business Incubation Association (NBIA), a member based organisation, incentivises the inclusion of as many members as possible, which often times translated in the lack of screening of new members. This has undermined the confidence in the reliability of their data sets. The competition for funds has also forced many incubators to constantly ‘demonstrate success’ which can lead to over-reporting successes and under-reporting failures especially when self-reporting (Dee et al., 2011).

‘Success’ can also have many interpretations in business incubation, from whether incubated ventures survive longer or have significant growth whilst being incubated, to

their revenue growth rate and employment growth. Though business incubators seem to have a wide variety of objectives, several incubator studies indicate that an incubator's ultimate goal should be incubatee survival and growth. The incubator should be organized in such a way that firm survival and growth are enhanced. However, there does not seem to exist consensus on how to measure firm growth, with some academics using growth measures such as sales growth, cash flow growth, assets growth and growth in the number of employees. Which measure is most relevant, is unclear (Vanderstraeten and Matthysens, 2010).

Second, the definition of "success" and "failure" is also not clear. Probably the best developed measurement scale is the one by Hackett and Dilts (2008). These authors measure business incubation performance in terms of both tenant growth and financial performance at the time of incubatee exit. Hackett and Dilts (2008) indicate that categories one, two and four were indicated as being "successes", while categories three and five were "failures". After analysis, Hackett and Dilts (2004b), however, conclude that outcome three should be considered as being a "success story", and outcome five as a "failure".

Business incubation performance (Hackett and Dilts 2008)

Category	Success/failure	Incubatee outcome state
1	Success	The incubatee is surviving and growing profitably
2	Success	The incubatee is surviving and growing and is on a path toward profitability
3	Success	Incubatee operations were terminated while still in the incubator, but losses were minimized
4	Failure	The incubatee is surviving but is not growing and is not profitable or is only marginally profitable
5	Failure	Incubatee operations were terminated while still in the incubator, and the losses were large

Another constrain in measuring the impact of business incubation is that few studies have applied a robust evaluative approach to assessing the economic contributions of incubators. Many quantitative academic studies aim at assessing the impact of incubators on enterprises have more conservative results than industry studies, and their findings are often contradictory. Dee et al., (2011) argues that taken together these studies are indicative of the approaches that might work, but **given the relatively small number of studies and the lack of comparability between them, any conclusions should be treated as indicative at best.**

Do business incubators have a positive impact? - The evidence

Positive outcomes have been identified around survival and higher employment growth (Rothaermel and Thursby 2005). Empirical evidence suggests that incubatees who interact with the incubator have stronger learning, while incubators who screen applicants against a balanced set of criteria will have lower failure rates. It's important to highlight that job creation, while a popular metric used to evaluate incubation, is not generally considered a useful measure of enterprise growth. An emphasis on job creation contradicts the advice of investors who put a lot of pressure on the need to control spending by investee firms, which often means delaying recruitment. (Dee et al., 2011)

NBIA estimates that in 2011 alone, North American incubators assisted about 49,000 start-up companies that provided full-time employment for nearly 200,000 workers and generated annual revenue of almost \$15 billion. CSES (2002), estimated that business

incubators in the EU, approximately 900, help create 40,000 new (net) jobs. The UK has a well-established network of approximately 300 business incubators that support over 12,000 high-growth technology businesses in sectors such as biomedical, IT and the creative industries. The range reported is between 25-40 supported businesses per incubator, and between 44-91 jobs created per year per incubator. But these figures typically include a mix of technology and other types of incubators (UKBI, 2010).

Statistics compiled by AusIndustry show that Australian incubators have graduated 3,500 businesses, facilitating more than \$785 million in SME sales and created a minimum of more than 10,500 jobs. The New Zealand Trade and Enterprise Incubator Support Programme, regarded as one of the best incubation programmes, reported that over the past 10 years, more than 250 ventures graduated from an incubator; 69 percent of these have raised external investment, 71 percent are still trading, and 57 percent are exporting. Along the way over 1100 high value jobs were created.

The World Bank Information for Development Program (infoDev's) Business Incubation Network consists of nearly 300 incubators in over 80 developing countries assisting 20,000 enterprises, which have created more than 220,000 jobs. In 2010, 150 business incubators in infoDev's Business Incubation Network reported that they were assisting 12,500 early-staged enterprises, and 92 business incubators reported they had graduated 4,200 enterprises. According to the Monitoring and Impact Assessment Report (MEIA), which assessed over 49 incubators, one third of the incubators helped to start more than 50 new businesses. Three incubators in Costa Rica, Panama and Uruguay, have together graduated 63 companies with an annual turnover of \$90,000. These enterprises had no, or less than \$15,000 annual turnover at the start of the incubation process and on average were incubated for three years. A collection of infoDev success stories showcase enterprises that have graduated from developing country business incubators and reached their break-even point. In all the cases, the enterprises were start-ups when they entered the incubator, having not yet or barely, making their first sale. By 2010, these enterprises had reached annual revenues ranging from \$70,000 to \$2.8 million and employing between six and 32 employees. Success stories included biogas stoves in Rwanda, beeswax production technology in Ukraine, crop boosters in India and mobile-based electricity vouchers in South Africa. (Khalil and Olafsen, 2010).

According to a study conducted in 2011 by Anprotec, in partnership with the Ministry of Science, Technology and Innovation (MCTI), Brazil has 384 incubators in operation, home to 2,640 companies, generating 16,394 jobs. These incubators have graduated 2,509 enterprises, with revenues of \$2.1 billion and employing 29,205 people. The same study revealed another important fact: 98% of incubated companies innovate, 28 of them at the local level, 55% at the national level and 15% at the global level. The Tianjin Women's Business Incubator (TWBI) specialises in assisting women entrepreneurs and fostering growth in the employment of women made redundant through economic reform and restructuring. It currently has 48 on-site tenants and 7 off-site tenants and, to date, has graduated 8 enterprises. Directly and indirectly it has been responsible for providing employment opportunities for an estimated 4,000 people, a ratio far higher than developed country incubators. Clients of Incoval in Ecuador employ an average of three to six people directly (more indirectly) in an environment where unemployment is prevalent, with 11% of the population unemployed and an estimated 50% underemployed.

Impact of business incubation on new ventures

Dee et al. (2011) argues that the impact of an incubator overall will depend on the portfolio of the incubates and the impact of the incubator across the portfolio. How much an incubator can impact new ventures depends on the incubation tools available, in addition to characteristics of the new venture.

Measuring the performance of new ventures remains a challenge for the industry. Businesses are usually assessed based on their share-value or gross profit, new ventures

rarely have either. Therefore assessing the impact of incubators is complicated by the lack of consensus on how to measure the performance of early-stage firms. Furthermore, the incubation period is typically shorter than the life cycle of a firm, so assessing firm performance during the incubation period misses longer-term effects (Dee et al., 2011). Supporters of incubation assert that the process can help protect incubatees from competitive forces of the external environment and increase the likelihood of short-term survival, others dispute that this same process can weaken a firm's ability to compete and survive when graduating out of the incubator (Amezcuca 2010).

Studies from different countries and different sectors reveal that more than 50% of new firms exit the market within the first five years of existence. A recent US study has found that incubated firms outperform their peers in terms of employment and sales growth, but fail sooner (Amezcuca 2010). Few studies explore post-incubator performance, and yet 'graduation is easy, post-graduation survival may not be' (Schwartz, 2010). A study of German incubators found a period of high risk confronts graduates within their first three years after graduation where around 20 per cent of graduates do not survive. On the other hand, business incubators in the infoDev's network reported that 75 percent of graduated enterprises are still in operation three years after graduation. In Brazil, the survival rate of incubatees is about 80 percent, compared to 50 percent of all start-up companies that do not survive the first year.

3.2 Investment

Access to finance is a key component to create an economic environment in which enterprises can grow and flourish. Imperfections in the credit and financial markets, credit constraints and a lack of capital in general have been identified as restrains for enterprise growth. Particularly in developing countries, enterprises, especially SMEs, face significant constraints to access to finance, such as high cost of capital, high collateral requirements and lack of experience with financial intermediaries.

The impact of finance on enterprises

Evidence shows that financing obstacles affect small businesses twice as much as large ones. Small businesses not only report higher financing obstacles, but they are also more adversely affected by these obstacles. Specifically, Beck, Demirgüç-Kunt, and Maksimovic (2005) find that financing constraints reduce enterprise growth by six percentage points, on average, for large firms but by 10 percentage points in the case of small firms. In addition, the lack of access to specific forms of financing such as export, leasing, and long-term finance is significantly more constraining for small firms (Beck et al., 2005). To the extent that small firms embody much of an economy's latent dynamism, a weaker financial system, by constraining such firms, may take a country to a much slower growth path. Goedhuys and Sleuwaegen (2010), in a study investigating 947 small and medium entrepreneurial firms in eleven Sub-Saharan African countries, report that financial limitations are singled out as the major obstacle (from between eleven alternatives) to a firm's growth in five countries out of 11. Consistently, Goedhuys and Sleuwaegen (2000) find that a lack of collateral significantly hampers firms' growth.

The availability of external finance has been positively associated with the number of start-ups, as well as with firms' dynamism and innovation. The size distribution of firms can be affected by the availability of external finance: financial development aids entry of small firms much more than that of large ones, but small firms usually struggle more to get finance when the environment is weak (World Bank, 2008).

The Investment Climate Surveys of the World Bank showed that access to finance improves firm performance. It does not only facilitate market entry, growth of companies and risk reduction but also promotes innovation and entrepreneurial activity. Furthermore, firms with greater access to capital are more able to exploit growth and

investment opportunities. In other words, aggregate economic performance will be improved by increasing the access to capital (Dalbergh, 2011).

Rajan and Zingales (1998) and Beck *et al.* (2008) clearly show that firms in financially dependent industries grow much faster in financially developed countries. In contrast, new small firms in developing countries are credit and equity rationed in the vast majority of cases because their financial markets are underdeveloped (Vivarelli, 2012). While lack of financial access tends to hurt small firms the most in countries with underlying weaknesses in their institutional environment, evidence also suggests that small firms benefit disproportionately, in terms of seeing their constraints relaxed, as financial systems develop (Beck *et al.*, 2005). Studies show the positive effect that financial development has on firms' growth, as seen in the study conducted by Banerjee and Duflo (2004). They studied detailed loan information on 253 small and medium-size borrowers from an Indian bank before and after they became eligible for a directed credit program. The finding that these firms expanded after becoming eligible suggests that they had previously been credit constrained. The authors also argued that production technologies follow a step-function, and that credit might be needed for SMEs to make the jump to the next step (e.g. move from manual to automatic production) (Dalbergh, 2011).

Access to finance favourably affects firm performance along a number of channels. Research using enterprise surveys has shown that improvements in the functioning of the formal financial sector reduce financing constraints more for small firms (Beck *et al.* 2008). Research also indicates that access to finance promotes more start-ups and that smaller firms are often the most dynamic and innovative (Vivarelli, 2012). Better access to the financial system also enables enterprises to reach a larger equilibrium size by enabling them to exploit growth and investment opportunities (Beck *et al.* 2005).

A study conducted by Small Enterprise Assistance Fund (SEAF), highlights the importance of SME access to finance. The research studied five firms in Central and Eastern Europe and five in Latin America and it found that for every dollar invested by SEAF in an SME, it generates an additional twelve dollars in the local economy, 72% of new jobs generated go to unskilled or semi-skilled employees. SEAF companies sustained an average annual employment growth rate of 26 percent and a wage growth rate of 25 percent in US dollar terms, surpassing national growth rates for each country (Dalbergh, 2011).

Credit constraints and lack of financial capital limit the rate of entry of new businesses, their likelihood of survival and rate of growth. However, recent studies have shown that the role of credit rationing has been somewhat over-emphasised and that entrepreneurial saving plans can help overcome borrowing constraints. The risk of overstating the obstructing role of credit constraints is particularly high in questionnaire analyses where nascent or new-born entrepreneurs are asked to list their main difficulties in starting and/or running a new firm; in fact, they have the self-indulgent tendency to indicate a lack of external financial support as the main cause of their problems, while in most cases this is just a symptom of more fundamental deficiencies internal to the firm (Vivarelli, 2012). An evaluation of the IFC programme SME Solutions Center in Kenya indicates the same, stating that a large injection of capital is not necessarily a panacea for SME growing pains at a start-up, early-stage or growth phases (Maina *et al.*, 2012).

3.3 Business Training

Training is one of the most common strategies of support offered to small enterprises worldwide. Training services are being provided by governments, NGOs, microfinance organisations and business centres. While training services are common and widely spread out, the measuring of the impact of business training is not, mainly due to the challenges of doing so.

The challenges of measuring the impact of business training

One of the main challenges in measuring business training impact is that business training varies in what is offered and how it is offered across different locations and organisations, introducing high levels of heterogeneity that make it hard to compare across programmes. Another challenge is that the impact of training will most likely vary depending on who receives the training, so that even if we compare the same training content in different locations, differences in the individuals receiving the training might result in different measured impacts. Usually, studies differ on how they selected participants and in what content was provided to those selected. Hence, when making comparisons between programmes it is important to analyse who participated and what was offered (McKenzie et al., 2012).

Training programmes are being delivered in different ways and through different channels. One of the most popular methods is classroom-based training offered by microfinance organisations or banks to their clients. This has been mostly used to train female microenterprise owners, given that the majority of microfinance clients are women. The training can be offered to all clients as part of the regular group meetings microfinance participants are expected to attend, or as an additional service provided by the microfinance organisation or bank. An alternative delivery method is to offer training to firms in a particular industry or industrial cluster. Another strategy is to have individuals apply to take part in the training as part of a competition, as is done by Technoserve, be screened on interest in participating, or to have students apply to take part in an entrepreneurship course (McKenzie et al., 2012).

The impact of business training

To date most of the evaluations focus on existing businesses, mainly due to the approaches used to select participants and on urban businesses, reflecting the greater density of businesses and training providers in urban areas.

Impacts on Start-up and Survivorship

In a study conducted by Mano et al. (2012) they found a 9 percent increase in the likelihood of survival 12 months after training. They also found that training alone increases the rate of business ownership among a group of women out of the labour force by 9 percent within 4 months of the training. However, by 16 and 25 months after training, the control group had caught up. Giné and Mansuri (2011) found a 6 percent increase in the likelihood of survival 18 to 22 months after training for male owners in their sample but no change for female owners. On the other hand, Valdivia (2011), concluded that training actually leads to a marginally significant reduction in the likelihood of survival for female firm owners. He attributed this to the training teaching owners to close down losing firms.

The studies which focus on training specifically tailored at starting new businesses have found some impacts. Klinger and Schündeln (2007) found very large point estimates for entry one year after taking part in the second phase of Technoserve's business plan competition in which training occurs.

Premaud et al. (2012) have found that taking part in an entrepreneurship track instead of academic track in the final year of university lead to a 6 percent increase in self-employment rates for males and 3 percent for females one year later in a sample of 1500 youth. Goedhuys and Sleuwaegen (2000) in a study conducted in Cote d'Ivoire

found that the probability of becoming an entrepreneur was strongly motivated by apprenticeship and formal education, with the positive effect of education steadily increasing from lower to higher levels of education. Their study found evidence that the education of the entrepreneur positively affects the enterprise growth performance. In Botswana and Zimbabwe business owners who have completed secondary education run faster-growing firms than those with no schooling (Vivarelli, 2012).

Few studies have researched how training affects the selectivity of who starts up a business or of which businesses survive. The evidence gathered seems to suggest that training may enable less analytically able and poorer individuals to start businesses, and may prop up the survivorship of less profitable businesses (McKenzie et al., 2012).

Impact on Business Practices

Almost all studies have found a positive effect of business training on business practices, but the evidence is not conclusive once the sample is divided by gender.

Giné and Mansuri (2011) described that only 18 percent of enterprises at baseline recorded money taken from business and only 18 percent recorded sales. After training, research found a 6.6 percent increase in recording sales and 7.6 percent increase in recording money taken for household needs. Drexler et al. (2012) found that the use of rule-of-thumb training leads to an increase in individuals reporting that they separate personal and business expenses, keep accounting records, and calculate revenues formally, with each of these measures increasing 6 to 12 percentage points relative to the control group.

In its *"Industrial Clusters and Micro and Small Enterprises in Africa: From Survival to Growth"*, the World Bank (2010) argues that training programmes had a visible, immediate impact on enterprises; with participants changing business routines immediately after training, which lead to improved business performance. The study assesses the impact of training programmes provided to small enterprises members of two industrial clusters. In terms of business routines, those who participated in the training programmes showed a stronger tendency to adopt new business routines in financial management (bookkeeping), production management (organization of workshops), and marketing.

The International Centre for Research on Women (ICRW) conducted an evaluation of the Goldman Sachs' *10,000 Women* initiative in India to identify results of the programme on women entrepreneurs' business skills, practices and growth. The research found that graduates successfully adopted or improved many of the skills taught such as business planning, accounting, marketing and computer skills to advance their businesses. Nearly 100 percent of the graduates interviewed expressed that the programme had strengthened their business skills and helped improved performance.

Impact on Business Profits and Sales

Evidence seems to suggest that business training has a positive impact in terms of business profits or sales. The World Bank (2010) compared two key indicators of business performance, value added and gross profit, before and after training programmes. Participants who took part in the training recorded higher rates of growth in business performance after the training than non-participants. The net effect of the training was equivalent to about 160 percent growth in gross profits over one year in both clusters. ICRW data shows that half of the graduates who reported data saw revenues at least double in an 18-month period.

Berge et al. (2011) found that training increased profits by 24 percent and sales by 29 percent for males in the short-run (5-7 months post-training), but the impact on profits was statistically insignificant in the longer-term (30 months post-training), with sales continuing to have a larger and marginally significant impact. Valdivia (2011), found a 20 percent increase of the treatment group that got both training and intensive one-on-one technical assistance, but no significant increase from the training alone.

De Mel et al. (2012) found no impact of training alone on profits of existing firms over either the short or medium run, but did find significant impact on the combination of training and a grant on short term profits, with these gains dissipating over time. In a separate sample of women who were out of the labour force at baseline, training is found to significantly increase profits and sales of start-up businesses by approximately 40 percent.

Impact on Employment

Most of the studies looking at microenterprises do not demonstrate impact of employment of other workers. According to the (McKenzie et al., 2012) estimates suggest that no more than one in twenty micro-enterprises taking business training will hire an additional worker. Add to this the fact that the worker may leave another job (including exiting self-employment) to take this job, and the net employment creation impact of these training programmes on people other than the worker trained is extremely minimal.

3.4 Mentoring

While mentoring has increased in popularity and the literature consistently reports on its benefits as a valuable tool both in business and personal development, there are extremely few articles citing specific measurable benefits and impacts. This is probably due to mentoring being essentially a qualitative in nature, not prone to more quantitative research; or to the lack of longitudinal studies, or the fact that mentoring is often packed into more complex support programmes and is not evaluated on its own.

However, research has highlighted several positive impacts from the mentoring relationship, for both the mentee and the mentor. Garvey and Garrett-Harris (2008) carried out a systematic review of over 100 studies and evaluations of mentoring schemes across a range of industry sectors, they compiled a list of the most regularly quoted benefits for mentors and mentees.

- Benefits for the mentee include improved performance and productivity; improved knowledge and skills; greater confidence, empowerment and well-being; improved job satisfaction and motivation; faster learning and enhanced decision-making skills; improved understanding of the business; improved creativity and innovation; encouragement of positive risk-taking; development of leadership abilities
- Benefits to the mentors include improved performance through enhanced understanding and knowledge; increased business activity, sales and networking; increased ideas' generation and knowledge enhancement; enhanced confidence and job satisfaction; new knowledge and skills; leadership development; fulfilment of human psycho-social needs; rejuvenation and improved motivation; positive attitude to change
- Benefits to the enterprise included strategic change, facilitation of partnerships, innovation and change, problem solving and better project management.

On the other hand, Noe (1998) argues for caution in assessing the impact of mentoring. He found that mentors tend to overestimate the value and impact of their support and attributed a greater proportion of the business success to the mentoring, than protégés did.

4 Conclusion

The literature review assessed studies conducted to measure the impact of incubation, investment, training and mentoring on business. All these areas face serious challenges in the measurement of impact, often related to lack of data, reliability of existing data, quality of evidence, high levels of heterogeneity and issues of comparability between studies. Overall there is little evidence of long-term sustainable impact across sectors with results of few credible studies suggesting that support to start-ups in a developing country context as a whole, have limited effectiveness.

The strongest evidence is found in the impact access to finance can play for enterprises growth and development. Financing constrains reduce enterprise growth, hurting SMEs disproportionately, which in the cases of developing countries can lead to a slower growth path. On the other hand, access to finance has been positively correlated with the market entry and growth of enterprises, firm performance, and the promotion of innovation and entrepreneurial activity. Better access to the financial system also enables enterprises to reach a larger equilibrium size by enabling them to exploit growth and investment opportunities. Overall, overtime it has become clearer that access to finance is not the silver bullet solution for enterprises, but increasing the access to capital can potentially improve aggregate economic performance.

Regarding business incubation, the evidence found seems to indicate quite strong evidence of the benefits of business incubation in the short term – but that these benefits are not sustained. Business incubation has positive outcome in terms of enterprise survival and higher employment growth. Incubatees overall have increased likelihood of short-term survival, lower failure rate and stronger learning. Despite the promising results presented, the literature also warns about the importance of treating conclusions as indicative at best, considering the relatively small number of existing studies and the lack of comparability between them. While not specifically mentioned, the data revised seems to indicate that incubators that focus on IT, high-growth enterprises tend to have more positive outcomes than the rest. It is important to highlight that none of the studies assessed the impact of the different business incubation models.

In terms of business training, the main challenge lays in the variety of what is offered and how it is offered across different locations and organisations. Evidence demonstrates that training has no significant impact on enterprise start-up and survivorship, but formal education does have an impact in this regard. Almost all studies have found a positive effect of business training on business practices, as well as a positive impact in terms of business profits or sales. No significant impact on employment generation was found.

Concerning business mentoring impact on the business positive outcomes were found related to strategic management, improved project management, partnerships and innovation, as well as positive outcomes for the mentor. Sustained benefits for the mentee do not appear to be significant.

While the evidence is not conclusive in many of these areas, but merely indicative, it is important to remember that enterprises, in order to grow and survive, need a comprehensive support system, where each of these components is implemented not in isolation but as part of a greater scheme.

References

Amezcu, A. S. (2010) Boon or Boondoggle? Business Incubation as Entrepreneurship Policy. Unpublished manuscript. Martin J. Whitman School of Management.

Associação Nacional de Entidades Promotoras de Empreendimentos Inovadores (Anprotec) (<http://anprotec.org.br/site/incubadoras-e-parques/>)

Banerjee, A. V., Duflo, E. (2008) Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program. MIT Department of Economics Working Paper No. 02-25.

Beck, T., Demirguc-Kunt, A., Maksimovic, V. (2005) 'Financial and Legal Constraints to Growth: Does Firm Size Matter?' *The Journal of Finance* 9(1): 137-177.

Beck, T., Demirguc-Kunt, A. (2008) 'Access to Finance: An Unfinished Agenda' *The World Bank Economic Review* 22(3): 282-296.

Beneki, C., Papastathopoulos, A. (2009) *The Impact of Structured, Unstructured and Integrated Decision Support Systems on SME Economic Performance. An Empirical Study*. CIT'09 Proceedings of the 3rd International Conference on Communications and information technology. Stevens Point: World Scientific and Engineering Academy and Society.

Berge, L. et al (2011) *Business training in Tanzania: From research driven experiment to local implementation*. CMI Working Paper.

Brown, J.D., Earle, J.S., Lup, D. (2005) 'What Makes Small Firms Grow? Finance, Human Capital, Technical Assistance, and the Business Environment in Romania'. *Economic Development and Cultural Change* 54(1): 33-70.

Business Innovation & Incubation Australia (2008) *Submission to the Review of the National Innovation System. Leveraging the Stock of Business Incubators in Australia: Developing Innovation - A New Approach*. Alphington: BIIA.

Cook, P. (2000) 'Support Mechanisms for Interfirm Linkages Among SMEs: Impact and Assessment', Finance and Development Working Papers. Manchester: Institute for Development Policy and Management.

CSES (2002) *Benchmarking of Business Incubators*. Sevenoaks: Centre for Strategy and Evaluation Services.

D'Costa, V. (2007) Business Incubation as a Tool of Promotion of Entrepreneurship and Innovation. Presentation prepared for Advancing Innovation in ECA 2007 Regional Conference of ECAbit, Yerevan, Armenia. Washington, DC: infoDev.

Dalberg (2011) Report on Support to SMEs in Developing Countries Through Financial Intermediaries. (http://www.eib.org/attachments/dalberg_sme-briefing-paper.pdf)

Dalberg (2012) *The Small and Medium Enterprise (SME) Sector –Catalyst for Growth in South Africa*.
http://dalberg.com/sites/dalberg.com/files/pdf/SME_Catalyst_for_Growth.pdf

Dee, N.J. et al. (2011) *Incubation for Growth. A review of the impact of business incubation on new ventures with high growth potential*. London: NESTA.

De Mel, S., McKenzie, D., Woodruff, C. (2009) 'Measuring microenterprise profits: Must we ask how the sausage is made?' *Journal of Development Economics* 88(1): 19-31.

Directions in Development (2010) *Industrial Clusters and Micro and Small Enterprises in Africa: From Survival to Growth*. Washington, DC: World Bank.

European Commission (1999). Evaluation Methodology, in European Commission *Thematic Evaluation of Structural Fund Impacts on SMEs*. Women Initiative

Garvey, B. and Garrett-Harris, R. (2008) *The Benefits of Mentoring: A literature review for East Mentor's Forum*. Sheffield: Sheffield Hallam University.

Giné, X., Ghazala, M. (2011) Money or Ideas? A field experiment on constraints to entrepreneurship in rural Pakistan. Mimeo. Washington, DC: World Bank.

Goedhuys, M., Sleuwaegen, L. (2000) 'Entrepreneurship and Growth of Entrepreneurial Firms in Côte d'Ivoire'. *The Journal of Development Studies* 36: 123-45.

Goedhuys, M., Sleuwaegen, L. (2010) *High-growth Entrepreneurial Firms in Africa: A Quantile Regression Approach*. Helsinki: World Institute for Development Economics Research.

Hackett, S.M., and D.M. Dilts (2008). "Inside the Black Box of Business Incubation: Study B – Scale Assessment, Model Refinement, and Incubation Outcomes," *The Journal of Technology Transfer*, 33, 439-471

Herriot, W., Kingham, D. (2009) Business Support - Should it be Simpler, Cheaper...or Just Better? Oxford Innovation Viewpoint Series. (http://www.sqw.co.uk/file_download/181)

Information for Development Program (2006) *Scaling up Innovation and Entrepreneurship in Developing Countries: The Role of Private Sector Finance. Summary of Preliminary Findings & Recommendations*. Washington, DC: The World Bank.

Information for Development Program (2008) *Financing Technology Entrepreneurs & SMEs in Developing Countries: Challenges and Opportunities*. Washington, DC: World Bank.

Information for Development Program (2010) Wider Business Environment for SMEs, in World Bank *Global Practice in Incubation Policy Development and Implementation*. Washington, DC: World Bank.

International Center for Research on Women (2012) *Catalyzing Growth in the Women-Run Small and Medium Enterprises Sector (SMEs) Evaluating the Goldman Sachs 10,000*. Washington, DC: ICRW.

International Finance Corporation (2012) *Why Banks in Emerging Markets Are Increasingly Providing Non-financial Services to Small and Medium Enterprises*. Washington, DC: IFC.

Khalil, M.A., Olafsen, E. (2009) Enabling Innovative Entrepreneurship through Business Incubation, in Lopez-Claros, A. (Ed.) *The Innovation for Development Report 2009-2010. Strengthening Innovation for the Prosperity of Nations*.

Klinger, B., Schündeln, M. (2007) *Can entrepreneurial activity be taught? Quasiexperimental evidence from Central America*. CID Working Paper No. 153. Cambridge, MA: Harvard University.

Noe, R. (1988). *An Investigation of the Determinants of Successful Assigned Mentoring Relationships*. Industrial Relations Center, University of Minnesota. *Personnel Psychology*, 41.

Maina, K., Butoyi, S., Michira, N. (2010) *Scaling-Up SME Access to Financial Services in the Developing World*. International Finance Corporation. Washington, DC: World Bank.

Maina, K., Butoyi, S., Michira, N. (2010). *SME Solutions Center—Kenya : Developing Alternative Financing Solutions for Small and Medium Enterprises*. Washington, DC: World Bank.

McKenzie, D., Woodruff, C. (2012) *What Are We Learning from Business Training and Entrepreneurship Evaluations around the Developing World?* Washington, DC: World Bank

Meager, N., Bates, P., Cowling, M. (2003) *Business Start-Up Support for Young People, Delivered by The Prince's Trust A Comparative Study of Labour Market Outcomes*. Department for Work and Pensions Research Reports. Leeds: Corporate Document Services.

Mehralizadeh, Y., Sajady, S.H. (2006) *A Study of Factors Related to Successful and Failure of Entrepreneurs of Small Industrial Business with Emphasis on Their Level of Education and Training*. (<http://ssrn.com/abstract=902045>)

Ministry of Economic Development New Zealand (2008) *Incubator Support Programme Evaluation Report*. Wellington: Ministry of Economic Development. (<http://www.med.govt.nz/about-us/publications/publications-by-topic/evaluation-of-government-programmes/archive/report-incubator.pdf>)

New Zealand Trade & Enterprise (2011) *Celebrating 10 years of business incubation*. (<http://www.nzte.govt.nz/press-room/NZTE-Press-Releases/Pages/Celebrating-10-years-of-business-incubation.aspx>)

National Business Incubation Association (<http://www.nbia.org/>)

OECD, UNIDO (2004) *Effective Policies for Small Business. A guide for the Policy Review Process and Strategic Plans for Micro, Small and Medium Enterprise Development*. (http://www.unido.org/fileadmin/media/documents/pdf/Business_Environment/I5hvhghso.pdf.pdf)

Premand, P. et al (2012) *Entrepreneurship training and self-employment among university graduates: Evidence from a randomized trial in Tunisia*. Washington, DC: World Bank.

Rajan, R.G., Zingales, L. (1998) 'Financial Dependence and Growth'. *American Economic Review* 88: 559-86.

Reynolds, P. D. (2010) 'Informal and Early Formal Financial Support in the Business Creation Process: Exploration with PSED II Data Set'. *Journal of Small Business Management* 49(1): 27-54.

Rotger, G.P., Gortz, M. (2009) *Evaluating the Effect of Soft Business Support to Entrepreneurs in North Jutland*. Copenhagen: AKF, Danish Institute of Governmental Research.

Rothaermel, F. T., Thursby, M. (2005) 'Incubator firm failure or graduation? The role of university linkages'. *Research policy* 34: 1076-1090.

SEAF (2007) *From Poverty to Prosperity: Understanding the impact of Investing in Small and Medium Enterprises. Data Survey and Case Study Analysis of SEAF Investments*. Washington, DC: SEAF.

SQWconsulting (2009) A review of mentoring literature and best practice. Creative business mentor pilot for NESTA. (<http://www.nesta.org.uk/library/documents/Creative-Business-Mentor-Review.pdf>)

Tianjin Women's Business Incubator (<http://www.tjwbi.com/english/>)

Tonin, C. et al. (1998) *Financial Services for Small Enterprises in Namibia*. Windhoek: Joint Consultative Committee.

Triodos Facet (2011) *Lessons on Virtual Business Incubation Services*. Washington, DC: infoDev.

UK Business Incubation (<http://www.ukbi.co.uk/>)

Valdivia, M. (2011) Training or technical assistance for female entrepreneurship? Evidence from a field experiment in Peru. Lima: GRADE.

Vanderstraeten, Johanna; Matthyssens, Paul (2010) - Measuring the performance of business incubators: a critical analysis of effectiveness approaches and performance measurement systems - ICSB Conference, Cincinnati, US, June . - 2010 . - (<http://hdl.handle.net/10067/829070151162165141>)

Vivarelli, M. (2012) Drivers of Entrepreneurship and Post-Entry Performance Microeconomic Evidence from Advanced and Developing Countries. Policy Research Working Paper 6245. Washington, DC: World Bank.

Webb, J. (2008) Monitoring Evaluation and Impact Assessment (MEIA). Lessons Learned from infoDev's Global Network of Business Incubators. Presentation prepared for AABI Conference Kuala Lumpur. Washington, DC: infoDev.

World Bank (2008) Firms' Access to Finance: Entry, Growth, and Productivity, in World Bank *Finance for all? Policies and Pitfalls in Expanding Access*. Washington, DC: World Bank.

Yukichi, M. et al (2012) *How Can Micro and Small Enterprises in Sub-Saharan Africa Become More Productive? The Impacts of Experimental Basic Managerial Training*. Policy Research Working Paper 5755. Washington, DC: World Bank.