

# Business-incubation Process and Business Development in Kenya: Challenges and Recommendations

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## Abstract

Since Kenya's independence, an array of business assistance programmes ranging from sheltered estates to export-processing zones, not forgetting the numerous financial-assistance schemes, have been introduced with the objective of empowering budding indigenous entrepreneurs and promoting economic development. Business incubation is one such instrument. In this article, we use a cross-sectional research design to find that there are disparities between how respondents rated the importance of business-incubation process with actual services received. Surprisingly, they received fewer services than anticipated and yet most of the suggestions made on how to promote business incubation in Kenya revolve around how to harness the business-incubation process. As the incubation concept is relatively new, clear macro policy guidelines would be necessary if the full potential of business incubation is to be exploited for the benefit of the nation. We suggest some guidelines that could help to identify pertinent elements of the incubation process, and how the different stakeholders can be connected effectively with incubation activities, while generating some measurable outcomes. Future research based on longitudinal studies may provide an in-depth analysis of the business situation in Kenya.

## Keywords

Business assistance, entrepreneurship, business incubator, business development, business-incubation process

## Introduction

The importance of small and medium enterprises (SMEs) is critical for developing countries in an era of liberalisation and globalisation (Mahemba and Lundström, 2005). New business incubators and enterprise support systems have emerged globally as effective instruments for enhancing decentralised

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economic growth both in developed and transition and newly industrialised economies (Lalkaka and Abetti, 1999, p. 197), including the development of local (Oh, 2014) specific communities or regions in a country (Salem, 2014).

Different perspectives on the role of incubators are based on whether the domain for the provision of relevant facilities is the public sector, academic institutions or the private sector. Within the public domain, incubators have been used as mechanisms for direct public intervention for new business creation (Atherton and Hannon, 2006, p. 50), and as a solution to the problem of exclusion of highly skilled immigrants to Israel (Kahane and Raz, 2005, p. 94). In Denmark, incubators have been established to support and develop high-tech-oriented SMEs (Centre for Strategy and Evaluation Services [CSES], 2002), while in the Kingdom of Saudi Arabia they have been created to support SMEs with low financial capacity (Salem, 2014). In China, business incubators in different regions have been designed to counter market failure in innovation and to generate a capacity for globally competitive technological capability (Chandra and Chao, 2011, p. 55).

In developed countries and in emerging markets, business incubators are being increasingly used to support and attract foreign firms in a variety of different ways. For instance, in the United States of America, as part of the soft landings programme, the National Business Incubation Association (NBIA) has designated close to 13 local and 11 foreign incubators (in Australia, Hong Kong, Taiwan, Spain, France, UK and Netherlands) as incubators with specialised programmes/facilities for helping firms destined for new markets (NBIA, 2014).

International Business Incubators (IBI) began in 1996 in China through the support of United Nations with the twin strategic aim of helping Chinese SMEs enter international markets and offering international firms' an opportunity to tap the vast Chinese market (Chandra and Chao, 2011, p. 65). Lalkaka (2002, p. 173) provides the case of Government of India's Advanced Materials Technology Business Incubator set-up to commercialise materials technology research and produce high-end products for Indian and international markets. Lalkaka further explains that in India software technology parks and some export processing zones are used to develop and export software.

In South Africa, a demonstration and training incubator was used to 'enhance entrepreneurial capacity in disadvantaged rural communities' (Atherton and Hannon, 2006, p. 50). CSES's (2002) study ascertains that in Italy, incubators are viewed as a useful economic development instrument for the promotion of new business creation, the encouragement of innovation in SMEs and promoting an entrepreneurial environment for the creation of new firms and new jobs.

Academic institutions and private sector incubators may be described as providers of 'outlets for student ideas', 'commercialising research', 'survival' and 'increasing shareholder value for the future' (Ryker, 2001, p. 5). They are also seen as the natural hotbed of the incubation industry (Zuo, You and Liu, 2014). In Sweden, these incubators take care of spin-offs from the university and corporate research and development (CSES, 2002). Boter and Lundström (2005) explain how societies in Sweden create support for SMEs to develop competences and skills among individuals working in these companies and describe how different types of business environments influence the propensity to start new businesses and develop existing ones. They further observe that the institutional framework for business development is mostly created by entrepreneurial and business skills together with macroeconomic measures such as government policy, socio-economic factors, financial and non-financial assistance.

New economy incubators are started with a view to 'rip off' from the Internet wave or probably to advance future media and services technology (Ryker, 2001, p. 5). Autio and Klosften (1998, p. 32) assert that all SME assistance arrangements are localised in terms of local or regional industries. The

local business environmental settings differ in terms of regulatory framework, financial and institutional requirements. In common with many developing countries, Kenya has a range of industrial estates which were established to foster industrial development, largely by indigenous communities.

In Kenya, the history of business incubation dated back to 1967 when the Kenya Industrial Estate (KIE) was established as a subsidiary of the Industrial and Commercial Development Corporation (ICDC) and was modelled after the Indian concept of industrial estates. The first mandate of the KIE was the development of industrial estates with all necessary infrastructures countrywide, linked with the provision of financial assistance and business development services. The KIE is a type of business incubator known as sheltered estate services (Ikiara, 1988).

It is clear from the brief background picture above that business incubation plays an important role in economic development. However, there is little, if any research, to ascertain their viability and to assess how business incubation has influenced business development.

## **Problem Investigated**

Tornatzky, Sherman and Adkins's (2003) research on technology business incubators using incubator managers as the exclusive respondents yielded no strong statistical relationships between incubator business assistance practices and primary outcomes (e.g., sales and revenue growth). However, the study noted that individual skills of the incubator manager were great predictors of performance rather than whether the incubator provided mentoring relationships.

Remedios and Cornelius (2003, p. 11) observe that though the number of incubators is on the upward trend, it is still not clear whether incubators achieve their goals or if there is any measurable impact on the tenant of the function of the incubator. We know little about how organisations develop in the protected incubated environment and the impact of diverse stakeholders. Given the brief background of business incubation and the lack of research into business-incubation process and business development in Kenya, the problem statement of this research was formulated in terms of one key consideration, namely, what is the impact of the business-incubation process and of business development on the tenants, the region and on economic development?

## **Research Objectives**

The primary objective of the research paper was to assess the impact of business incubation on the business development in Kenya. Two secondary objectives complement the main objective and they include the need to:

- explore the literature on the impact of business incubation on the phases of business development; and
- analyse the impact of the business-incubation process (training, business support, financial, technology support, facilities and infrastructure, networking and mentoring and after-care services) on the business development.

## Research Questions

The research objectives cover three critical issues pertaining to the incubation process:

1. the incubator and the incubation process—from the role of the incubator and its manager as the provider of specific services;
2. the perceptions and realities that affect the entrepreneur operating in the incubators; and
3. the profile of entrepreneurial activity in different stages of business development, the impact of incubation on business development.

Based on these research objectives, we sought to answer the following questions:

1. What is the role of the incubator manager in the business-incubation process (training, business support, financial, and technology support, facilities and infrastructure, networking and mentoring and after-care services)?
2. What is the entrepreneurial profile in the various phases of business development (start-up, development and maturity) in Kenya?
3. What is the impact of the business-incubation process (training, business support, financial, and technology support, facilities and infrastructure, networking and mentoring and after-care services) on the phases of business development (start-up, development and maturity) in Kenya?
4. Are there any discrepancies (‘gaps’) between the entrepreneurs’ perceptions of the importance of the business-incubation process (training, business support, financial and technology support, facilities and infrastructure, networking and mentoring and after-care services) and how they perceive the services to be rendered?
5. What aspect of the business-incubation process (training, business support, financial and technology support, facilities and infrastructure, networking and mentoring and after-care services) needs to be addressed further to help promote business development in Kenya?

## An Overview of the Literature

### *What is a Business Incubator?*

Most of the literature on incubator research focuses on the incubator facilities viewed in terms of multi-tenant buildings (Hurley, 2002, p. 53; Weinberg, Allen and Schermerhorn, 1991, p. 149) and managed workspaces (Lalkaka, 1997, p. 9); incubator buildings, speculative buildings and flex space (Hurley, 2002, p. 53); greenhouse business facilities and business centres (Plosila and Allen, 1985, p. 1); concentrates on business incubator profiles (Hackett and Dilts, 2004b, p. 57); or regional innovation systems (Kim, 2014) but overlooks the underlying importance of incubation process.

Both academic and practitioner literature use the term incubator synonymously with *hatcher* and *catalyst* (Aerts, Matthyssens and Vandembemt, 2005, p. 1; Chinsomboon, 2000, p. 24). Hannon (2004, p. 277) uses *germinator* and *accelerator* even though the meanings are quite distinct. In a biological sense, an incubator is a hatcher, as defined by *The Chambers Dictionary New Edition* (2003, p. 814).

Hacket and Dilts (2004a, p. 41) define the incubator mechanism as:

... a strategic, value adding intervention system (business incubation) of monitoring and business assistance.

Hannon (2004, p. 276) observes that, in business and enterprise descriptions, gardening analogies on business incubators are common such as growing strong businesses (or plants), new opportunities (hybrid seeds or seedlings) or new ventures (germinate) are frequently used to explain the processes and policies of incubation. Aerts et al. (2005, p. 1) compare business incubators with an environment designed to hatch enterprises and Udell (1990, p. 108) suggests that the main purpose of the first incubator is to help train entrepreneurs in a way similar to what was used to train new doctors in medical schools. This notion is supported in several parts of the world. In France, the term *incubateur* denotes support programmes for entrepreneurs before formation of the business, whereas the term *pepiniere* (meaning nursery) refers to programmes that serve start-up businesses. *Pepiniere* is more preferred above others in use, like *nurserie*, *ruche* and *couveuse* (Albert, Bernasconi and Gaynor, 2004, p. 5).

The dominant definitions of a business incubator comes from the European Business Incubation Association (EBIA) and the NBIA, but they are mere descriptions of what incubators do rather than definitions (Ryker, 2001, p. 7). CSES's (2002, p. 3) broad definition of the term, incubator, also embraces technology centres, science parks, business and innovation centres and organisations which have no single physical location—*incubators without walls*, so-called *new economy incubators* and a variety of other models.

For Lalkaka (1997, p. 9), the incubator combines a variety of small enterprise support elements in comprehensive affordable package. CSES (2002, p. 10) further summarises the definition of a business incubator as:

An organisation that accelerates and systematises the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including space, business support services, and clustering and networking opportunities....

Chinsomboon (2000, p. 24) offers a more succinct definition of a business incubator as:

An incubator is a controlled environment that fosters the care, growth, and protection of a new venture at early stage before it is ready for traditional means of self-sustaining operation....

Aranha (2003) observes that the common purpose of business incubators is to assist 'the growth and survival of new businesses through support or help'. In the true sense, a business incubator is a facility for housing new and continuing businesses, giving them a favourably controlled environment that provides benefits that would enable them to reach their objectives of provision of product and services, profits and create employment (Hurley, 2002, p. 53).

Whatever the definition, it would be reasonable to expect that a common shared understanding of the term incubator would include notions of protection, nurturing the fragile and weak, accelerating growth and enhanced survival (Hannon, 2004, p. 275).

Yet another variation is offered by Adkins (2002) whose definition of a business incubator does not consider a building as essential to incubation: business incubator is defined as:

...comprehensive business-assistance programme targeted to help start-up and early-stage firms, with the goal of improving their chances to grow into healthy, sustainable companies. (Adkins, 2002, p. 10)

For the purpose of this article, a business incubator is defined as a nurturing environment for start-ups that provide business-support programmes and networking including physical infrastructure (in some cases) that enables businesses to develop within a controlled environment. We use the generic term for an incubator as a mechanism for promoting enterprise development within a fully or partially controlled business environment as a strategy for economic development.

### *Objectives and Services*

The goals and services being provided by business incubators, though closely related to their roles, can be seen to be geared towards creating employment, stimulating economic activity through creation of businesses, profit maximisation, promoting technology transfer and commercialisation, revitalising less privileged areas, diversifying regions industries, promoting business clusters or promoting certain population groups (Albert et al., 2004, p. 9) and lately international trade. On the other hand, the type of service offered could be real estate, basic office services, advisory and support services, training and contact building. The financial models revolve around rental and external services, subsidies, sponsorships and deferred revenue, for example, royalties. Finally, the context may be rural or urban, and range from mixed use incubators to high-tech, corporate incubators and special-interest incubators.

Hannon (2003, p. 453) underpins the necessity of understanding the pillars that make up the incubation process, mainly the transfers of ideas, knowledge or research to the marketplace. Hacket and Dilts (2004b, p. 57) observe that just as a business is not merely an office in a building, a business incubator should also be understood from the view point of myriads of networks that operate within and outside of it, which is what business incubation is per se. The United Nations Economic Commission of Europe (2002, pp. 2–3) explains that business incubation also means the development of a supportive and stimulating environment for entrepreneurship. U.S. Department of Commerce, Technology Administration's (2003, p. 8) report based on a study of 17 'best in class' technology business incubators using a qualitative research design found out that there is a predictive relationship between incubators business assistance programmes and the secondary business outcomes of an incubated enterprise.

For the purpose of this article, the business-incubation process encompasses the provision of the following services; training, business support, financial support, technology support, facilities and infrastructure, networking and mentoring and after-care services. The essence of business development support is to help grow businesses from scratch to start-up to maturity through the provision of business development services with a view to improve the social-economic development of an area. Business development as explained by Uittenbogaard, Broens and Groen (2005, p. 259) involves:

...the actual development of product-market combinations, which involves the 'execution of the innovation processes' and could be organised as dispersed processes....

Salem (2014) describes the incubator concept as the mainstay of economic development and Udell (1990, p. 110) further explains that the growth could be a result of the ubiquitous nature of the incubator's

primary ingredients, mainly simplicity in terms of the provision of space and support services needed to create jobs.

Our understanding of business incubation can probably explain only one part of the overall entrepreneurial development programme. Like all other economic-development initiatives, it needs to explain and justify the programme (Lee and Osteryoung, 2004, p. 419) taking into consideration the influence of concentration on process, outcomes and/or impacts (Molnar et al., 1997, p. 11).

The Information for Development Programme (2006, p. 14) workshop report stresses the idea that business development services that operate at a microeconomic level may have an impact on local communities. However, to be sustainable and scalable, they must be accompanied by effective macroeconomic policies. As their impact is often small and incremental, it takes time to show tangible results.

Hannon (2005, p. 63) distinguishes between pre-start, launch, early start and growth phases of a new venture opportunity. Hannon (2003, p. 453) explains that the incubation process may include support for the process of business development, which starts with idea formulation, followed by opportunity recognition, pre-start planning and preparation, entry and launch and finally, post-entry development.

Based on the reviewed literature on business development, we contextualise a successive progression of incubated businesses from start-up through development and eventually to maturity. To assess business development, the incubating business/entrepreneur/graduate serves as the unit of analysis. Both hard and soft measures are utilised.

## Research Methodology

Cross-sectional research design was employed to investigate the business-incubation process and business development in Kenya. The population of study included all types of business-incubation programmes in Kenya that target SMEs. The sample for the survey was drawn from a list of incubators obtained from the Business Incubation Association of Kenya that showed that close to 25 institutions in Kenya operated some form of business-incubation services or another, but only 12 could be confirmed as business incubators per se. The list of 12 business incubators obtained from the association was used to draw a random sample comprising of 200 entrepreneur businesses/incubatees and 12 business incubator managers.

Two sets of survey questionnaires, one for the incubator manager and one for the entrepreneur (client businesses tenant and graduate businesses) were administered. Four research assistants were hired and trained on how to administer the research instruments for half a day. As a rule in sample surveys, a pre-test was carried out in selected incubators mainly to test the applicability of the questionnaires, among eight incubating businesses and two incubator managers. The pre-test results were relied on to finalise the questionnaire. In this way, content validity was ensured.

## Results and Findings

A total of 132 respondents returned the survey questionnaire, of which 124 were entrepreneurs and eight incubator managers. This gave a response rate of 62.3 per cent. The majority of the respondent entrepreneurs, 69.4 per cent ( $n = 86$ ) were males, while females constituted 30.6 per cent ( $n = 38$ ) of the sample size. The number of male managers was seven, with only one female. The age range of the entrepreneurs varied between 22 and 62 years with a mean age of 32.7 years.



### *Profiles of Incubator Tenants*

The results from the analysis of the biographic information of the respondent entrepreneurs and the managers' level of education showed that 49.2 per cent ( $n = 61$ ) of the entrepreneurs had bachelor's degrees, while 12.1 per cent ( $n = 15$ ) had postgraduate degree qualifications. About 19.4 per cent ( $n = 24$ ) held national diplomas, 8.1 per cent ( $n = 10$ ) were certificate holders and 5.6 per cent ( $n = 7$ ) were secondary school leavers. On the other hand, four incubator managers had obtained postgraduate degrees and three others bachelor's degrees. Therefore, 61.3 per cent ( $n = 76$ ) of the entrepreneurs and 87.5 per cent ( $n = 7$ ) of the incubator managers held bachelor degrees and above, respectively.

A little over 70 per cent (78.2 per cent [ $n = 97$ ]) sampled entrepreneurs, indicated that they had started their businesses between year 2004 and 2008; 12.1 per cent ( $n = 15$ ) had started between 1999 and 2003; 5.7 per cent ( $n = 7$ ) between year 1994 and 1998 and 2.97 per cent ( $n = 2$ ) before 1993. In all, 87.9 per cent ( $n = 109$ ) of the entrepreneurs had commenced their businesses from year 2003. Most of the entrepreneur respondents, 47.6 per cent ( $n = 59$ ) were in the service industry, 29.0 per cent ( $n = 36$ ) were information and communication technology (ICT)-based businesses, 13.7 per cent ( $n = 17$ ) were in the retailing business, while 5.6 per cent ( $n = 7$ ) were in the manufacturing industry.

### *Incubator Types*

Results on the type of business incubators showed that 37.5 per cent ( $n = 3$ ) of incubators were incubators known as incubators without walls. One incubator was a sheltered estate, and 50 per cent ( $n = 4$ ) were incubators with walls. The oldest incubator was founded in 1967, while 37.5 per cent ( $n = 3$ ) of these incubators were started in 2006. The number of government owned was 25 per cent ( $n = 2$ ); one was under trust; private companies numbered 25 per cent ( $n = 2$ ); while two were owned by non-governmental organisations (NGOs) and one by the International Finance Corporation.

### *Incubator Businesses*

Most of the incubating businesses or 53.2 per cent ( $n = 66$ ) had started from outside the incubator; 36.3 per cent ( $n = 45$ ) had begun as start-ups in the incubator; and another 8.9 per cent ( $n = 11$ ) as pre-start-up in the incubator. Only 13 (10.5 per cent) of the incubating businesses had other business located outside of the incubator, whereas the majority or 51.6 per cent ( $n = 64$ ) of the incubating businesses had no other businesses elsewhere. At the time of the field study, 79 per cent ( $n = 98$ ) of the businesses were residing in the incubator, 7.3 per cent ( $n = 9$ ) had graduated from the incubator, 4.0 per cent ( $n = 5$ ) were anchor tenants, another 4.0 per cent ( $n = 5$ ) were unsuccessful former tenants while 1.6 per cent ( $n = 2$ ) belonged to other categories.

Depending on the size of the incubator, the number of businesses that have benefited from incubation process were less than 10 in 25 per cent ( $n = 2$ ) of the incubators, between 10 and 19 in one of the incubator; between 20 and 49 of businesses had benefited from 37.5 per cent ( $n = 3$ ) of the incubators, whereas more than 100 businesses had gained from one of the incubator. The result contrasts sharply with the number of businesses that had failed. Less than 10 businesses had failed from one of the incubators and between 10 and 19 had failed from another. However, 75 per cent ( $n = 6$ ) of the managers did not specify those that had failed. Further, the research analysed data on the status of the businesses at the



time of joining the incubators; 87.5 per cent ( $n = 7$ ) of the managers revealed that the majority of incubating businesses/entrepreneurs had joined incubators as start-ups businesses.

## Responses to the Research Questions

The study sought to answer five research questions. The responses to each of the research questions are discussed in the ensuing paragraphs.

### *Research Question 1: What is the role of the incubator manager in the business-incubation process?*

The first research question sought to find out whether there is any relationship between the role of the incubator manager and the business-incubation process. We note from the responses that incubator managers see their main role as one of providing strategic directions. Selecting client business was ranked second and providing advice on a daily basis was third. Providing business development services was ranked fourth and enhancing networking with stakeholders was the least important of all the functions.

Similarly, the entrepreneurs' respondents rated most highly to the value of providing strategic direction 63.8 per cent ( $n = 79$ ), provision of business development services followed at 55.6 per cent ( $n = 69$ ), then advocacy and networking with other stakeholders at 43.5 per cent ( $n = 54$ ). From the responses, it can be deduced that both incubator managers and entrepreneurs appreciate the role of incubator managers in providing strategic direction.

On the issue of key strengths of the incubator managers, the respondents ranked proven ability to provide technical support as first. Second in rank was the capacity to mentor and network incubating businesses. This was followed by the ability to provide advice and recruit businesses. Previous experience in business-incubation industry was ranked the least among their strengths.

Based on their responses on the importance of services that an incubator can provide and the rating of how the services were received from their respective incubators a paired t-test was administered to find out whether the sample means were equal at 0.05 level of significance as presented in Table 1.

We note from Table 1 that the paired *t*-test results for seven items, namely, entrepreneurship development (0.045), back-up office support (0.008), business advice regularly (0.041), access to finance (0.003), technology transfer (0.019), patent and copyrights protection (0.038) and mentorship programme (0.033) are significantly different at the 0.05 level while the others are not.

The issue of how incubator managers ensure that all incubated businesses receive business support services was also analysed. Eighty-seven per cent ( $n = 7$ ) of the managers indicated that the services are highly subsidised and 50 per cent ( $n = 4$ ) noted that services are part of rental fees. It is important to note that 50 per cent ( $n = 4$ ) of the managers observed that services are not compulsory.

In conclusion, therefore, we observe that providing strategic direction and selection of client businesses are important roles of incubator managers as well as the managers' proven ability to provide technical support, their capacity to mentor and network incubating businesses, together with the ability to provide advice and recruit businesses. Provision of training ranked high among services received from the incubator coupled with the availability of subsidised services and entrepreneurial development services.

**Table 1.** Paired T-Test Sample Statistics on the Importance of Services That an Incubator Can Provide and Rating of Business Incubation Services Received from Incubator Manager Respondents (N=8)

Business-incubation Services	Importance of Services an Incubator Can Provide (Means)	Rating of Services Received from an Incubator (Means)	Means Difference	t-value	Significance (2 -tailed) P-value
Training regularly	4.50	4.13	0.38	1.000	0.351
Entrepreneurial development	4.86	4.00	0.86	2.521	0.045*
Management training	4.33	3.33	1.00	1.936	0.111
Start-up business creation services	3.57	2.71	0.86	1.867	0.111
Back-up office support	4.00	2.63	1.38	3.667	0.008*
Legal services	3.00	2.13	0.88	2.198	0.064
Business advice regularly	4.50	3.63	0.88	2.497	0.041*
Marketing and sales services	3.50	2.75	0.75	1.655	0.142
Working space	4.13	3.63	0.50	1.871	0.104
Office furniture and equipment	4.00	3.25	0.75	1.821	0.111
Physical safety and security	3.88	3.38	0.50	0.935	0.381
Enhanced visibility	3.75	2.88	0.88	1.698	0.133
Industry linkages	3.88	3.13	0.75	2.049	0.080
Business collaboration within the incubator	4.25	3.50	0.75	1.426	0.197
International shows and exhibitions	3.13	2.38	0.75	1.158	0.285
Subsidised services	4.00	4.00	0.00	0.000	1.000
Access to finance	4.13	2.63	1.50	4.583	0.003*
Bookkeeping services	3.63	2.75	0.88	1.594	0.155
Equity participation	3.38	2.63	0.75	1.655	0.142
Internet services	4.00	3.63	0.38	0.814	0.442
Technology transfer	4.25	3.00	1.25	3.035	0.019*
Patent and copyright protection	3.88	2.63	1.25	2.546	0.038*
Production/operations equipment	3.25	2.25	1.00	2.366	0.050
Expansion facilities	2.86	2.14	0.71	1.179	0.283
Post-incubation business services	2.63	2.38	0.25	0.475	0.649
Mentorship programme	4.75	3.75	1.00	2.646	0.033*
Counselling services	3.63	3.13	0.50	1.323	0.227

**Note:** \*Significant at  $p < 0.05$ .

**Research Question 2: What is the entrepreneurial profile in the various phases of business development (start-up, development and maturity) in Kenya?**

The results from cross-tabulations of the responses from entrepreneurs indicate that 42.6 per cent ( $n = 52$ ) of men and 19 per cent ( $n = 23$ ) of women-owned businesses were at the development phase. This was followed by the start-up phase, with a few in the maturity stage at 31.6 per cent ( $n = 37$ ), of whom all had bachelor's degrees. In the development phase, 36.5 per cent ( $n = 53$ ) had a formal education which included subjects appropriate for entrepreneurial futures, and 58 per cent ( $n = 65$ ) were the owners and owners-cum-active managers.

The majority, namely, 53.8 per cent ( $n = 63$ ) of the businesses in the development phase and 20.5 per cent ( $n = 24$ ) of those in start-up phases resided in the incubator. Surprisingly, among those in the development phase, 22.3 per cent ( $n = 27$ ) were partnerships, 21 per cent ( $n = 25$ ) were private companies and 16.6 per cent ( $n = 20$ ) were sole proprietorships. Start-ups followed and there were few private and sole-proprietorship businesses. The majority of those in the development phase, 41.3 per cent ( $n = 50$ ), had employed fewer than three employees, with 16.5 per cent ( $n = 20$ ) in start-ups employing a similar number.

There were 30 (31.6 per cent) service sector businesses in the development phase followed by ICT sector firms at 18.3 per cent ( $n = 22$ ), while only 12.5 per cent ( $n = 15$ ) of those in the start-up phase were in the services sector.

**Research Question 3: What is the impact of the business-incubation process (training, business support, financial, and technology support, facilities and infrastructure, networking and mentoring and after-care services) on the phases of business development (start-up, development and maturity) in Kenya?**

Entrepreneur respondents rated services received from the incubator for 27 items from seven dimensions using a five-level scale (5 = well above average, 4 = above average, 3 = average, 2 = below average, 1 = poor) as follows: facilities and infrastructure (72.6 per cent), training (66.9 per cent), business support (58 per cent), technology support (55.6 per cent), networking and mentoring (54.8 per cent), financial (41.9 per cent) and after-care services (41 per cent).

It is evident that financial and after-care services were rated below average. This could be true to some extent because most of the incubators were not initiated by the government, which would have limited early and easy access to business finance. The majority of the incubating businesses resided in the incubator.

In response to the question of how important the business-incubation process had been to the development of business businesses, 66.9 per cent ( $n = 83$ ) of the entrepreneur respondents observed that business-incubation process was very important. This was very close to what 62.5 per cent ( $n = 5$ ) of the managers had observed.

On the issue on whether they attributed the development of their businesses wholly or partially to the incubator, 75.8 per cent ( $n = 94$ ) noted that they attributed the development partially to the incubator. This meant that besides business incubation, other key factors played a role in the development of incubated businesses.

Entrepreneur respondents ranked subsidised office space at 41.9 per cent ( $n = 52$ ) as the main reason for locating their business in the incubator. This was followed by business support with 33 per

cent ( $n = 33$ ), followed by established business networks, infrastructure, technology support each at 17 per cent ( $n = 22$ ) and finally favourable location and image at 21 per cent ( $n = 21$ ).

The incubated business were at different stages of business development, as noted earlier 24 per cent, approximately (24.2 per cent;  $n = 30$ ), were at the start-up phase, 60.5 per cent ( $n = 75$ ) at development phase, while 13.7 per cent ( $n = 17$ ) were at the maturity phase. Given the different phases of business development, the researcher sought to find out the extent to which business development services were being extended to the incubated businesses. It was found out that the approximate percentage of business development services received from the incubator at start-up ranged from 41 per cent to 60 per cent among 30.3 per cent ( $n = 23$ ) of the entrepreneur respondents and up to 61 per cent to 80 per cent to another 22.4 per cent ( $n = 17$ ).

At the development phase, 23.2 per cent ( $n = 16$ ) of the respondents had received between 0 per cent and 20 per cent of business development services, another 31.9 per cent ( $n = 22$ ) had received services ranging from 21 per cent to 40 per cent, while 33.3 per cent ( $n = 23$ ) had received from 41 per cent to 60 per cent.

Only 11.6 per cent ( $n = 8$ ) of the respondents had received services below 61 per cent, even though most businesses as discussed earlier were at the development phase. This somewhat confounds the rate at which business development services were purported to have been offered.

Finally, at the maturity phase, 36.7 per cent ( $n = 18$ ) of the respondents had received between 0 per cent and 20 per cent of business development services, 32.7 per cent ( $n = 16$ ) had received between 21 per cent and 40 per cent of the same set of services and only 22.4 per cent ( $n = 11$ ) had received between 41 per cent and 60 per cent of the same. It is clear from that only four (8.2 per cent) of the respondents received business development services exceeding 61 per cent, and this probably explains why most of businesses had not reached this phase of development. This could also explain why most of the incubated businesses will struggle even more to attain this status.

Most entrepreneurs, 71.0 per cent ( $n = 88$ ), indicated that the start-up phase was the most difficult, followed by 25.0 per cent ( $n = 31$ ) identifying the development phase. Three respondent entrepreneurs noted that maturity was the least difficult phase.

There is also ample indication from respondent entrepreneurs that their ability to mobilise resources 58.1 per cent ( $n = 72$ ), manage business 67.7 per cent ( $n = 84$ ), take risk 50.0 per cent ( $n = 62$ ), perceive opportunity 53.2 per cent ( $n = 66$ ) and survive in business 57.3 per cent ( $n = 71$ ) had increased as a result of business incubation.

In addition, since joining the incubator, the number of products developed there increased by 129.6 per cent, employees moved up by 114.3 per cent, copyright by 50 per cent, trademarks by 27.3 per cent and patents by 20 per cent by the year 2008.

It is clear that the business-incubation process had some positive outcomes on the businesses that were started in the incubator and changed the attitude of entrepreneurs on the way business was done. Incubating businesses/entrepreneurs were operating at different phases of business development with most at the development phase and a handful at the maturity phase. Facilities and infrastructure, business and technology support services received were rated above average, whereas financial and after-care services were below average. The start-up phase was the most difficult followed by development and maturity phases.

**Research Question 4:** *Are there any discrepancies ('gaps') between the entrepreneurs' perceptions of the importance of the business-incubation process (training, business support, financial, and technology support, facilities and infrastructure, networking and mentoring and after-care services) and how they perceive the services to be rendered?*

Results from Table 2 show that the mean scores for the importance of services of business-incubation process are higher than the rating of how actually these services were received. This implies that service delivery fell short of the entrepreneurs' perceptions. On the other hand, the mean differences among incubator managers were smaller (though the sample sizes were different), meaning that the difference between perception and the actual delivery of services is very small.

It is evident that the highest mean rating on the importance of services that an incubator can provide for entrepreneurs is for training, followed by facilities and infrastructure, then business support and networking and mentoring. Similarly, the respondent incubator managers also rated training, networking and mentoring to be most important. In terms of how entrepreneurs' rated the services they received, facilities and infrastructure were rated highest followed by training, then technology support and then business support.

**Table 2.** Comparative Mean Difference of Importance and Actual Delivery of Services by the Entrepreneurs and Managers Combined

Business-incubation Services	Entrepreneurs' Rating			Managers' Rating		
	Importance of Services an Incubator Can Provide (Means)	Rating of Services Received from an Incubator (Means)	Mean Difference	Importance of Services an Incubator Can Provide (Means)	Rating of Services Received from an Incubator (Means)	Mean Difference
Training	4.22	2.96	1.26	4.56	3.82	0.74
Facilities and infrastructure	4.07	3.35	0.72	3.72	3.06	0.66
Business support	3.92	2.80	1.12	3.70	2.83	0.87
Networking and mentoring	3.90	2.72	1.18	4.00	3.24	0.76
Technology support	3.82	2.82	1.00	3.85	2.89	0.96
Financial support	3.77	2.52	1.25	3.79	3.00	0.79
After-care services	3.69	2.51	1.18	2.63	2.38	0.25

**Research Question 5:** *What aspect of the business-incubation process needs to be addressed further to help promote business development in Kenya?*

Table 3 summarises what needs to be done to improve business incubation in Kenya. Both managers and entrepreneurs provided distinctive recommendations on how to improve business incubation in Kenya.

**Table 3.** Respondents' Recommendations on How to Promote Business Incubation In Kenya

<b>a) Managers recommendations on how to promote business incubation in Kenya</b>	
<ul style="list-style-type: none"> <li>➤ Provide business-incubation facilities.</li> <li>➤ Enact incubation policy.</li> <li>➤ Adapt incubator to micro enterprise development.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Promote a conducive environment.</li> <li>➤ Direct government support.</li> <li>➤ Strengthen the business incubator associations</li> <li>➤ Offer subsidised internet.</li> <li>➤ Provide fiscal incentive for establishment of incubators.</li> </ul>
<b>b) Entrepreneurs recommendations on how to promote business incubation in Kenya</b>	
<b>Government intervention strategies</b>	<b>Training</b>
<ul style="list-style-type: none"> <li>➤ Ensure government backing and intervention mechanism.</li> <li>➤ Ensure government is actively involved in formation and funding of incubation.</li> <li>➤ Enhance development in the rural area.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide quality training of entrepreneurs.</li> <li>➤ Training top entrepreneurs.</li> <li>➤ Provide training on incubation and entrepreneurship.</li> <li>➤ Provide establishment of comprehensive learning activity.</li> <li>➤ Provide short courses offered to potential entrepreneurs.</li> </ul>
<b>Markets and marketing strategies</b>	<b>Finances support</b>
<ul style="list-style-type: none"> <li>➤ Have industrial linkages that create markets.</li> <li>➤ Impose affordable prices in the market (price controls).</li> <li>➤ Market goods in local and foreign markets.</li> <li>➤ Make marketing of goods and services easier.</li> <li>➤ Control imports.</li> <li>➤ Enhance marketing and research for product development.</li> <li>➤ Provide greater advertising of the concept of business incubation.</li> <li>➤ Provide assistance in marketing strategies.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Easy access to funding.</li> <li>➤ Create financial support fund for SMEs.</li> <li>➤ Sufficient working capital.</li> <li>➤ Good bookkeeping.</li> <li>➤ Increase funding from donors.</li> <li>➤ Low interest finances for start-up.</li> <li>➤ Provide minimum start-up capital for young people to access finance.</li> <li>➤ Finance and educate youth on entrepreneurial activities.</li> <li>➤ More financial support to upcoming SMEs.</li> <li>➤ Financial support from lenders (private and public, bank).</li> <li>➤ Linkages with financial providers.</li> </ul>
<b>Business advice</b>	<b>Facilities and infrastructure</b>
<ul style="list-style-type: none"> <li>➤ Increase mentorship programme.</li> <li>➤ Review business progress monthly.</li> <li>➤ Provide regular checkups and advice.</li> <li>➤ Increase assistance to staff and managers for growth.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Improve infrastructure.</li> <li>➤ Increase working space (large office space).</li> <li>➤ Provide more office space and faster Internet services.</li> <li>➤ Provide necessary infrastructure.</li> </ul>
<b>Legal services</b>	<b>Technology</b>
<ul style="list-style-type: none"> <li>➤ Increase legal services.</li> <li>➤ Provide legal Service.</li> <li>➤ Have product protection programmes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Improved technology.</li> <li>➤ Improve internet services.</li> <li>➤ Technology transfer.</li> <li>➤ KEBS and patenting assistance.</li> </ul>



## Conclusions

Although entrepreneurs attach great importance to the business-incubation process, actual services received fall short of their expectations. All the same, 66.9 per cent of the entrepreneurs indicated that business incubation is important to the development of businesses. Though the practice of business incubation has been accepted, the modalities of incubation do not seem to compare with those found in the rest of the world (Salem, 2014) where the new economy, high-tech incubators are the norm. In fact, the comparison may not be warranted at all because the development trajectories for different countries follow specific economic conditions. What matters is how incubators respond to local needs and how they shape local structures and institutions for new business creation and economic development. Disparities, in service delivered, may be the result of most incubators being driven by the need for profit and thus neglecting to focus on excellent service delivery which can be best provided by a network of appropriate institutions. Zuo et al.'s (2014) study on incubators in developing economies (China in their case) indicated that incubation programmes need the help of universities, scientific research institutions and governments.

## Policy Recommendations

Our examination of incubators in Kenya suggests that the starting point for incubation for economic development is the development and implementation of adequate public policy. Government should spearhead the incubation process, first by enacting an incubation policy, to guide the stakeholders on incubator goals, roles and outcomes. Second, this policy should address the financing aspect as most activities in incubators are funded by governments in other countries. Since 49.2 per cent of incubatees are educated and trained (with most holding a bachelor's degree) nurturing such talent could help to develop high impact and value-added firms which can help to earn early gains for economic development.

## Future Research

Future research should attempt to assess the impact of business incubation on business development in Kenya based on longitudinal studies. Other areas that may be investigated are in-depth analyses of the nature, scope and type of interactions between the incubator and the incubatees. Future research can also focus on the role of stakeholders especially communities, suppliers and the customers in business-incubation process. A stakeholder approach could help us to understand better how well incubators are embedded in the local economy making a contribution to economic development a question of relevant access and worthwhile outcomes.

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## References

- Adkins, D. (2002). *A brief history of business incubation in the United States*. Athens, OH: National Business Incubation Association.
- Aerts, K., Matthyssens, P., & Vandenbempt, K. (2005). *Critical role and screening practices of European business incubators*. A research paper submitted to Technovation for publication, pp. 1–26.
- Albert, P., Bernasconi, M., & Gaynor, L. (2004). *Incubation in evolution: Strategies and lessons learned in four countries, France, Germany, United Kingdom and United States of America*. Athens, OH: National Business Incubation Association.
- Aranha, J. A. S. (2003). *Incubator models*. Retrieved 8 September 2007, from [http://www.bii.ge/eng/studies and papers 5B9/5D.BI.Models.PDF](http://www.bii.ge/eng/studies_and_papers/5B9/5D.BI.Models.PDF)
- Atherton, A., & Hannon, P. D. (2006). Localised strategies for supporting incubation: Strategies arising from a case of rural enterprise development. *Journal of Small Business and Enterprise Development*, 13(1), 48–61.
- Autio, E., & Klofsten, M. (1998). A comparative study of two European business incubators. *Journal of Small Business Management*, 36(1), 30–43.
- Boter, H., & Lundström, A. (2005). SME perspectives on business support services: The role of company size, industry and location. *Journal of Small Business and Enterprise Development*, 12(2), 244–258.
- Centre for Strategy and Evaluation Services (CSES). (2002). *Benchmarking of business incubators: Final report*. European Commission Enterprise Directorate, Brussels: CSES.
- Chandra, A., & Chao, Chia-An. (2011). Growth and evolution of high technology business incubation in China. *Human Systems Management*, 30(2011), 55–69.
- Chinsomboon, O. M. (2000). *Incubators in the new economy* (Unpublished Master of Business Administration Thesis). Sloan School of Management, Massachusetts Institute of Technology.
- Hackett, S. M., & Dilts, M. (2004a). A real options-driven theory of business incubation. *Journal of Technology Transfer*, 29(1), 41–54.
- . (2004b). A systematic review of business incubation research. *The Journal of Technology Transfer*, 29(1), 55–82.
- Hannon, P. (2003). A conceptual development framework for management and leadership learning in the UK incubator sector. *Education and Training*, 45(8/9), 449–460.
- . (2004). A qualitative sense-making classification of business incubation environments. *Qualitative Market Research: An International Journal*, 7(4), 274–283.
- . (2005). Incubation policy and practice: Building practitioner and professional capability. *Journal of Small Business and Enterprise Development*, 12(1), 57–75.
- Hurley, K. (2002). Incubator building. *Economic Development Journal*, 1(2), 53–56.
- Ikiara, K. (1988). The role of government institutions in Kenya's industrialization in Kenya. In P. Coughlin, & G. K. Ikiara (Eds), *Industrialization in Kenya: In search of a strategy* (pp. 231–235). Nairobi: East African Educational Publishers Ltd.
- Information for Development Programme. (2006). *Promoting innovation and entrepreneurship in Africa: Africa regional workshop: infoDev incubator initiative*, 3–5 May, Accra, Ghana.
- Kim, H. M. (2014). Science and technology park as regional innovation platform: A case of Chungnam Techno Park, Korea. In *Technopolis* (pp. 387–404). London: Springer.
- Lalkaka, R. (1997). *Lessons from international experience for the promotion of business incubation systems in emerging economies*. Vienna: UNIDO.
- . (2002). Technology business incubators to help build an innovation-based economy. *Journal of Change Management*, 3(2), 167–176.
- Lalkaka, R., & Abetti, P. (1999). Business incubation and enterprise support systems in restructuring countries. *Creativity and Innovation Management*, 8(3), 197–209.
- Lee, S. S., & Osteryoung, S. (2004). A comparison of critical success factors for effective operations of university business incubators in the United States and Korea. *Journal of Small Business Management*, 42(4), 418–426.

- Mahemba, C. M., & Lundström, A. (2005). SMEs perspectives on business support perspectives on business support services: The role of company size, industry and location. *Journal of Small Business Enterprise Development*, 12(2), 244–258.
- Molnar, L. A., Grimes, D. R., Edelstein, J. Pietro, R. D., Sherman, H., Adkins, D., et al. (1997). *Business incubation works: The results of the impact of incubator investment study*. Athens, OH: National Business Incubation Association.
- National Business Incubation Association (NBIA). (2014). *Soft landings international incubator designation*. Retrieved 14 May 2014, from [http://www.nbia.org/member\\_services/soft\\_landings/](http://www.nbia.org/member_services/soft_landings/)
- Oh, D. S. (2014). Business incubation strategy of high-tech venture firms in a science park. In *Technopolis* (pp. 145–167). London: Springer.
- Plosila, W., & Allen, D. N. (1985). Small business incubators and public policy: Implications for states and local development strategies. *Policy Studies Journal*, 13, 729–734.
- Remedios, R. K. B., & Cornelius, B. (2003). *Cracks in the egg: Improving performance in business incubation research*. A paper for the Small Enterprise Association of Australia and New Zealand, 16th Annual Conference, 28 September–1 October, University of Ballarat, Ballarat.
- Ryker, V. (2001). *A guide to the status of the incubator industry in Norway* (Unpublished paper presented for Master of Management Programme). Norwegian School of Management.
- Salem, M. I. (2014). The role of business incubators in the economic development of Saudi Arabia. *International Business & Economics Research Journal (IBER)*, 13(4), 853–860.
- The Chambers Dictionary New Edition*. (2003). New Delhi: Allied Publishers Private Limited.
- Tornatzky, L., Sherman, H., & Adkins, D. (2003). *Incubating technology businesses: A national benchmarking study*. Athens, OH: National Business Incubation Association.
- Udell, G. G. (1990). Are business incubators really creating new jobs by creating new businesses and new products. *Journal of Product Innovation and Management*, 7, 108–122.
- Uittenbogaard, B., Broens, L., & Groen, A. (2005). Towards a guideline for design of corporate entrepreneurship function for business development in medium-sized technology-based companies. *Creativity and Innovation Management*, 14(3), 258–271.
- United Nations Economic Commission for Europe (UN/ECE). (2002). *Best practises in business incubation in countries in transition: Prepared for the European forum on business incubation: Accelerating, connecting, enabling*. Paris, Cite' des Sciences et de l'industrie, 21–22 March.
- US Department of Commerce, Technology Administration. (2003). *Report on a national benchmarking analysis of technology business incubator performance and practices*. Athens, OH: National Business Incubation Association.
- Weinberg, M. L., Allen, D. N., & Schermerhorn, J. R., Jr. (1991). Interorganizational challenges in the design and management of business incubators. *Policy Studies Review*, 10(2/3), 149–160.
- Zuo, L., You, K. J., & Liu, S. (2014, June). *Research on incubation of characteristic industry in nationalities university*. In 2014 International Conference on Management Science and Management Innovation (MSMI 2014), Atlantis Press.