

The impact of business incubation on post-incubation performance of small and medium enterprises in South Africa

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ABSTRACT

Unemployment is a serious and widespread problem in South Africa. Small and medium enterprises (SMEs) have been identified as having a vital role to play in the fight against unemployment in the country. The high failure rate of small and medium enterprises (SMEs) in South Africa, particularly during the first year of their incubation, is therefore of great concern. Business failure is caused by various market failures. Business incubators exist to help SMEs overcome market failures and reach their economic potential.

Policymakers inform their business incubator resource allocation decision-making based on SME performance data produced during incubation. Evidence in literature suggests that post-incubation data may better inform their perspectives. This study seeks to identify the post-incubation impact that business incubators have on job creation, survival and sales performance of graduate SMEs. This is done with a view to informing decision making of policymakers.

The data for the study was collected through an online survey administered to 119 graduates from the SAB Kickstart programme's classes of 2012 and 2013.

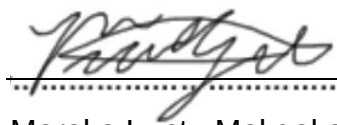
From the findings of the study, the author was able to determine that over 68 percent of the business incubator graduate SMEs survived longer than 42 months. The respondents in the study meet the job creation expectations of the majority of youth entrepreneurs in South Africa. Sales turnover distributions of graduates improve post-incubation.

It is important to note that the results are a clear reflection of the theory of economic development through entrepreneurship. 68.75 percent of the graduate SMEs survived longer than 42 months. Based on the theory, this would have a positive knock-on effect of increased job creation and an improved tax base. The data presented shows an improved level of average job creation rates and a positive change in the distribution of

turnover/sales over time. We can conclude that not only are business incubators effective in helping SMEs fulfil their economic potential, but also using post-incubation performance data of small and medium enterprises (SMEs) is a reliable source of information which can inform policymakers in their decision making.

DECLARATION

I, Moroka Luntu Mokgoko, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

A handwritten signature in dark ink, appearing to read 'Moroka Luntu Mokgoko', is positioned above a horizontal line. The signature is fluid and cursive.

Moroka Luntu Mokgoko

Signed at Toronto, Canada

On the 3rd day of March 2015

DEDICATION

Dedicated to the memory of my father Eric Muntu Mokgoko from whom I learned ambition; my grandpa Christopher Moemise Mokgoko who instilled in me the discipline required to pursue my ambitions; and my grandma Daisy Thandiwe Matee who taught me the patience I needed for this journey.

I took the time to do the workload of elephants and will achieve feats just as great – Mokgoko wa dira.

ACKNOWLEDGEMENTS

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The Lord, for the wisdom, strength and good fortune.

My Mom, for everything.

Zo, for your patience and believing in my far-fetched dreams. Aunt Keke, for being a pillar of support during this process.

My siblings, for being avenues to escape the stress.

Katlego for making sure I didn't have to worry about cooking or cleaning for a whole year.

Wori and Zikode, for checking up on me.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the Study

The purpose of this research is to assess the effectiveness of business incubation programmes in fostering small and medium enterprise (SME) growth in South Africa. The study measures the impact of business incubators on SME post-incubation performance, utilising expected performance outcomes based on an adapted version of the Mian (1997) framework. The results of the study are assessed with a view to informing the perspective of policymakers as stakeholders.

1.2 Context of the Study

Key terms include: (i) *SME*; (ii) *tenants*; (iii) *start-ups*; (iv) *business incubator*; (v) *incubator outcomes*; (vi) *post-incubation*; (vii) *discontinuance*; (viii) *graduates*; (ix) *tenant and graduate perspective*; (x) *incubator programme perspective*; (xi) *job creation*; and (xii) *survival rates*.

Unemployment is a serious and widespread problem in South Africa. According to Statistics South Africa (2014), the number of unemployed South Africans stands at 25.2 percent of the population. The unemployment problem in the country is further emphasised by its chronic nature. 40 Percent of unemployed individuals have been unemployed for a period exceeding three years (Lam, Leibbrandt & Mlatsheni, 2007). Statistics South Africa (2014) found that the unemployment rate is highest amongst women, youth, the Black/African population group, and individuals with an educational attainment of less than matric. In the South African context, youth unemployment remains a particularly entrenched problem drawn from political instability and consequent interruptions in education during the apartheid era (Lam *et al.*, 2007). Small and medium enterprises (SMEs) have been identified as having a vital role to play in the fight against unemployment in the country.

Small businesses in the South African context refers to firms with 1-49 employees; a maximum of R13 million in turnover and a balance sheet not exceeding R5 million (RSA, 2003). Medium enterprises are defined as firms with 51-200 employees; a maximum of R51 million in turnover and a balance sheet not exceeding R19 million (RSA, 2003). Small and medium enterprises (SMEs) are a major source of employment creation and economic growth in South Africa. SMEs contribute 56 percent of private sector employment and 36 percent of the gross domestic product (Olawale & Garwe, 2010). It is for this reason that leveraging the employment creation potential of small businesses and promoting small business development are key to combating unemployment (FinMarkTrust, 2006).

The high failure rate of small and medium enterprises (SMEs) in South Africa is of great concern. According to Olawale and Garwe (2010), 72 percent of all SMEs fail within 42 months of creation. The role played by SMEs in employment creation and economic growth is undermined thus by high business failure rates. According to Herrington (2013), personal reasons, problems obtaining finance, and lack of business profitability are the three main causes given for small business discontinuance in South Africa. These three causes accounted for 87.5 percent of all small business discontinuance in 2013. Business failure can be influenced by a combination of internal and external factors. Business failure does not always occur because of problems inside the business, but can occur as a result of actions taken by other businesses, suppliers and customers (Ropega, 2011). Some of the external factors influencing the success of small businesses in the South African context include lack of education, health, crime and corruption (Herrington, 2013). SMEs are particularly susceptible to failure in comparison to larger companies because of a lack of resources (and limited access) to combat business problems (Ropega, 2011). SMEs have unique needs that have to be tended to in order to ensure business survival. The biggest problem for many SMEs lies not in their concept, the product offering or the customers, but in taking care of business needs (Moraru & Rusei, 2012). The needs of SMEs translate to business development services. The success of SMEs hinges on access to market information; mentorship; business skills development; equipped operating facilities, access to markets; access to finance;

technological support; financial management; business appraisal; exhibition services; human resource services; and networking with other businesses (Smallbone, Xiao & Xu, 2008).

The support services needed by SMEs in order to survive and grow are consistent with definitions referring to the role of business incubators. According to Scaramuzzi (2002), business incubation can be defined as the process of nurturing start-ups, training entrepreneurs and providing them with access to networks and tools they need to make their businesses successful. Start-ups can be viewed as companies that have not been in operation for a period longer than 42 months (Olawale & Garwe, 2010). Over time, a distinction has been made between different types of incubators. Grimaldi and Grandi (2005) identified four incubator types, including: Business Incubation Centres (BICs); University Business Incubators (UBIs); Independent Private Incubators (IPIs) and Corporate Private Incubators (CPIs). These incubators are classified based on characterising variables, including institutional mission; sources of revenue; industrial sector; market; location; origin of ideas; phase of intervention; incubation period; services offered; and management teams (Grimaldi & Grandi, 2005).

The general consensus is – regardless of classification – that the role of an incubator is to create a supportive environment that is conducive for the development of firms in the start-up phase with a view to moulding them into established enterprises. This implies that incubators have two major roles to play in a start-up's life; (i) ensuring business survival throughout the start-up phase; (ii) fostering business growth and equipping a business with the means to do so post-incubation (Grimaldi & Grandi, 2005; Moraru & Rusei, 2012). Once a firm has successfully existed for 42 months, it is considered an established firm (Olawale & Garwe, 2010).

Incubators develop small and medium enterprises (SMEs) by remedying disadvantages that they encounter by providing numerous business support services (Mutambi, Byaruhanga, Trojer, & Buhwed, 2010). Incubators do not necessarily have to offer commercial space to SMEs; so, for purposes of this study, a definition drawn from inputs by Hackett and Dilts (2004); (Mian, 1997); Scaramuzzi (2002); Mutambi *et al.* (2010); and

Virtanen and Kiuru (2013) will be constructed: An incubator is an organisation that seeks to provide business support services to SMEs, with a view to equipping them with the necessary skills and tools required to survive and grow into established businesses that create jobs.

In the existing literature, there are opposing views on whether incubators actually affect SME performance. According to Rothaermel and Thursby (2005), incubated firms are significantly less likely to experience outright failure. An opposing sentiment was voiced by Amezcua (2010) who suggested that incubated firms fail at almost the same rate as companies that were not supported by incubators. This is in agreement with findings by (Chen, 2009) who believed that incubators have no direct effect on new venture performance. A source of confusion as to the impact of incubators on SME performance can be drawn from the fact that there is no generally accepted framework for measuring incubator performance (Dee, Livesey & Minshall, 2011).

Two general perspectives that shape models on incubator performance have emerged in the literature. One perspective derives performance measures by referring to the incubation programme itself which focuses on occupancy rates, graduation rates, incubation space, and levels and sources of funding (Dee *et al.*, 2011). The other perspective informs its performance measures by referring to the tenants and graduates, drawing a focus on financial performance, survival rates, tax rates, export rates, employment creation and innovation rates (Dee *et al.*, 2011). Incubator performance measurement models tend to use a combination of both perspectives.

The (Mian, 1997) framework, which was developed to measure performance outcomes of university technology business incubators (UTBIs), accounts for programme growth and sustainability; tenant firm's survival and growth; community-related impacts; contribution to sponsoring the university's cause; goals structure and governance; financing and capitalisation; operational policies; target market; services and their value-add; and university-related services.

Voisey, Gornall, Jones and Thomas (2006) made a distinction between soft and hard measures that may be utilised to measure outcomes of the components of the

framework. The more subjective measures such as perceptions on the degree of usefulness of a service are soft issues. The more objective measures such as gross profit growth are considered hard measures.

This paper focuses on three core hard measures, including job creation, survival rates and financial performance in the form of sales growth. Though substantial research has been done on incubator activities and the tenants of incubators, there is limited emphasis in the literature on the performance of SMEs post-incubation (Hackett & Dilts, 2004; Virtanen & Kiuru, 2013). The gap in the literature means that the extent to which incubators have an impact on SMEs eventually fulfilling their economic destinies of job and wealth creation is not well documented. Cornelius and Bhabra-Remedios (2003) noted that to develop a comprehensive performance evaluation model for an incubator, the performance of new ventures entering and graduating from that incubator must be tracked. This has an impact on the quality of incubator performance data.

Incubator performance data is of relevance to various stakeholders because it guides decision making: Incubator managers use performance data to influence incubation model development and for reporting purposes; sponsors and investors use performance data to aid decision making as to which incubators to finance; and entrepreneurs use performance data to influence the decision as to which incubators to apply to (Bergek & Norrman, 2008; Dee *et al.*, 2011).

This study will specifically focus on policymakers as stakeholders. The majority of incubators are public funded, operating for the cause of job creation and wealth creation. Hence it is important that policymakers receive accurate performance data to inform policy and resource allocation (Bergek & Norrman, 2008; Dee *et al.*, 2011).

Considering the large amounts of money invested in incubators by governments, universities, research institutions and other stakeholders, the question of what return society gets on these investments has been raised (Bergek & Norrman, 2008). Policymakers tend to be concerned with data that is indicative of the positive impact SMEs have on society. According to Amezcua (2010) and Dee *et al.* (2011), the primary focus is on employment creation; SME survival; and contribution to tax and export rates

in relation to the goals, structure and governance; financing and capitalisation; and the operational policies of the incubator. The results of self-reporting mechanisms on the performance of incubators are often used in policymaking (Amezcuca, 2010; Bergek & Norrman, 2008; Knopp & Association, 2007). This presents problems in accuracy because incubators tend to exaggerate figures to attract favourable resource allocation, particularly in the form of funding (Hackett & Dilts, 2004). If evidence-based policy is to be utilised effectively, improving the quality of incubator performance data is necessary (Smallbone *et al.*, 2008).

The business problem lies in the uncertainty surrounding the effectiveness of business incubators and the extent to which they develop SMEs into job and wealth creators (Amezcuca, 2010). Current methods for obtaining performance data focus on SME performance during the course of incubation and serve as incomplete indicators as to whether firms will in fact fulfil their economic post-incubation potential. The impact of incubators may take many years to become apparent as graduate companies develop their markets and scale production (Hackett & Dilts, 2004; Dee *et al.*, 2011). This means that policymakers are under-informed as to the effectiveness and efficiency of incubators, which in turn leads to inaccurate resource allocation. This can be evidenced by job creation as a popular metric used to evaluate the impact of incubation. The metric is generally not considered a useful performance measure during the course of incubation because an incubator may have limited space to house a new employee, thereby retarding the job creation process. Job creation is also contradictory to advice often given to tenants on expenditure control, which often means deliberately delaying recruitment (Dee *et al.*, 2011; Hackett & Dilts, 2004). Graduates are typically not bound by the same constraints with regard to the metric.

It is on this basis that the study sought to utilise an adapted version of the Mian (1997) framework to measure post-incubation impact of business incubators on SME performance. This was utilised to ascertain the effectiveness of business incubators in helping SMEs fulfil their economic obligations. The post incubation performance results were compared to performance results during incubation. This was done with a view to informing policy on resource allocation for entrepreneurial development through business

incubators. The study paves the way for future research on benchmarking incubator performance to ascertain acceptable standards of effectiveness and efficiency.

1.3 Problem Statement

1.3.1 Main problem

Incubator performance data used to inform evidence-based policy focuses on SME performance during the course of the incubation period. Policy may be better informed with a holistic view based on SME performance during and after incubation because the impact of business incubators can sometimes take years to manifest (Dee *et al.*, 2011; Hackett & Dilts, 2004). Policymakers are potentially under-informed in their policy development and resource allocation to business incubators.

The main problem remained that policymakers needed to identify the post-incubation impact that business incubators have on job creation, survival and financial performance of graduate SMEs.

1.4 Significance of the Study

According to Hacket and Dilts (2004), business incubation research typically has five primary research orientations: incubator development studies; incubator configuration studies; incubatee development studies; incubator-incubation impact studies and theoretical studies about incubator incubation. The study will seek to supplement existing literature on incubator-incubation impact studies. This study seeks to identify an outlook on business incubator performance that may provide guidance to policymakers with decisions pertaining to policy development and resource allocation to incubators. Current incubator performance measurement models utilised rely on SME performance during incubation which tends to skew data (Amezcuca, 2010; Bergek & Norrman, 2008; Knopp & Association, 2007). The study utilised post-incubation measures to measure incubator performance with regard to SME development. Using the incubator performance data gathered during and post-incubation may aid policymakers to make better informed decisions aimed at helping SMEs fulfil their economic potential of employment creation and economic growth.

1.5 Delimitations of the Study

- The study only focused on the relevance of incubator performance data to policymakers as stakeholders. For stakeholders the relevance of business incubator performance and post-incubation performance of SMEs to policymakers lies in that it informs policy development and resource allocation (Dee *et al.*, 2011; Hackett & Dilts, 2004).
- The study did not account for the growth that firms may have achieved without the assistance of incubation. It is difficult to estimate firm performance had incubation been absent (Garnsey & Heffernan, 2005).
- Incubator performance was only measured from the perspective of tenants and graduates as opposed to the incubator programme perspective or a combination of both. The tenants' perspective provides data relevant to policymakers as stakeholders, including financial performance, survival rates, tax rates, export rates, employment creation and innovation rates (Dee *et al.*, 2011).
- The direct result of taking the tenants' and graduates' perspective is that the incubator and the actual activities of which its value-adding programmes are comprised of were discounted from the study (Cornelius & Bhabra-Remedios, 2003).
- The impact of selection on incubator performance was discounted. The literature shows that incubatee selection increases the chances of success as the firms chosen tend to have shown higher potential than their counterparts (Hackett & Dilts, 2004; Lumpkin & Ireland, 1988). Incubatee selection is representative of the incubator programme perspective measure, and it is for this purpose that the influence of selection must be discounted from outcomes.
- The influence of levels of development of the business incubator on SME performance was also delimited in this study. The literature shows that incubators with higher levels of development experience more success in improving SME performance (Dee *et al.*, 2011).

1.6 Definition of terms

Business Incubator – A business incubator, for purposes of this study, is assumed to be an organisation that seeks to provide business support services to SMEs, with a view to equipping them with the necessary skills and tools required to survive and grow into established businesses that create jobs (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013)

Discontinuance – Business failure, for purposes of this paper, can be defined as the discontinuance of a business for any reason (Ropega, 2011).

Enterprise development programme – Enterprise development programmes are structured interventions carried out by business incubators. In some cases, a single business incubator can run multiple enterprise development programmes targeted at different entrepreneurship groups. For purposes of this study, because the incubator in question only has one enterprise development programme, the terms business incubator and enterprise development programme will be utilised interchangeably.

Graduate – A graduate is a firm that has completed an incubation programme. Upon completion of the programme tenants become graduates (Virtanen & Kiuru, 2013).

In situ – A Latin word which means on-site or in position. In the context of this paper, this refers to on-site assessments (Bergek & Norrman, 2008; Grimaldi & Grandi, 2005).

Incubator outcomes – For this study, we assume incubator outcomes to refer to performance metrics related to the tenant perspective such as job creation, survival and sales growth (Dee *et al.*, 2011).

Incubator programme perspective – The incubation programme perspective stresses an inward focus on the incubation process outcomes such as occupancy rates, graduation rates, incubation space, and levels and sources of funding (Dee *et al.*, 2011).

Job creation – The provision of new opportunities for paid employment, especially for those who are unemployed. The literature recognises direct and indirect job creation. For

purposes of this study, direct job creation will be the focus because it is easier to account for (Lalkaka, 2003).

Post-incubation – A period in a firm's life that begins on the day it graduates from an incubation programme.

SME – Acronym referring to small and medium enterprises (Dee *et al.*, 2011).

Start-ups – Firms that have not been in operation for a period exceeding 42 months are considered start-ups (Olawale & Garwe, 2010).

Survival rates – The state or fact of continuing to live or exist, typically in spite of an accident, ordeal or difficult circumstances. In the context of this paper, this refers to the extent to which graduate firms continue to exist beyond incubation.

Tenant and graduate perspective – This perspective draws a focus on financial performance, survival rates, tax rates, export rates, employment creation and innovation rates as metrics for measuring incubator outcomes (Dee *et al.*, 2011).

Tenants – In the context of this paper, tenants refers to participants of an incubator programme. They can also be referred to as incubatees (Amezcu, 2010; Hackett & Dilts, 2004; Mian, 1997).

1.7 Assumptions

- During the study, it was assumed that the intention of all business incubators and their respective enterprise development programmes is to improve the survival and growth rates of its tenants. This assumption is important because in the literature, a distinction is made between the goals of for-profit incubators which are aligned with generating a return on investment; and the goals of non-profit incubators aligned with job and wealth creation (Amezcuca, 2010). The literature further states that a holistic approach should be taken when measuring incubator performance by taking into account the goals and its business (Bergek & Norrman, 2008). For purposes of the study, the assumption is that business incubators, regardless of business models, share a common goal and expected outcome of developing start-ups into established enterprises that contribute to job and wealth creation (Allen & Rahman, 1985) during incubation and post-incubation.
- The study assumes that performance measures used to measure tenant and graduate performance are sensitive to time and thus can differ during incubation and post-incubation. This is a fair assumption because the growth path of a graduate firm can assume one of three outcomes post-incubation: it can decrease; it can increase; or it can increase temporarily and taper off (Dee *et al.*, 2011) . Regardless of the outcome, the performance measures will change over time.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This section of the paper covers debates from different scholars on business incubator outcomes and measures. The literature review provides a background on field-defining incubator-incubation studies conducted since 1984. In response to the main problem of policymakers needing to identify the post-incubation impact that business incubators have on job creation, survival and financial performance of graduate SMEs; the literature around arguments for and against the performance metrics proposed by the Mian (1997) framework is discussed. The performance metrics, discussed with regard to their potential relevance to policymakers in measuring the impact of business incubators on post-incubation performance of SMEs include; graduation, employment creation, survival rates and sales growth. Arguments are drawn towards the timing aspect of measuring to identify the impact that potentially could be unveiled by post-incubation data in comparison to data collected during incubation. The problem is borne from findings that performance data that is used to inform evidence-based policy focuses on SME performance during the course of the incubation period (Amezcuca, 2010; Knopp & Association, 2007; Löfsten & Lindelöf, 2002). Policy may be better informed with a holistic view based on SME performance during and after incubation because the impact of business incubators can sometimes take years to manifest (Dee *et al.*, 2011; Hackett & Dilts, 2004). Policymakers are potentially under-informed in their policy development and resource allocation to business incubators.

A business incubator, for purposes of this study, is assumed to be an organisation that seeks to provide business support services to SMEs, with a view to equipping them with the necessary skills and tools required to survive and grow into established businesses that create jobs (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013). This definition is utilised because it encompasses both the “bricks and mortar” of a physical incubator and the lack of “bricks and mortar”

associated with virtual incubators. Another key term is incubator outcomes which can be measured from two perspectives: the tenant and graduate perspective; and the incubator programme perspective (Dee *et al.*, 2011). For this study, we assume incubator outcomes to refer to performance metrics related to the tenant perspective such as job creation, survival and sales growth. A participant in an incubation programme is referred to as a tenant or incubatee (Amezcuca, 2010; Hackett & Dilts, 2004; Mian, 1997). Upon completion of the programme, tenants become graduates (Virtanen & Kiuru, 2013). The distinction is of particular importance to this study because we assume the performance measures used to measure tenant and graduate performance are sensitive to time and thus can differ during incubation and post-incubation.

2.2 Background Discussion

The first recognised instance of a business incubator was a for-profit establishment based in Batavia, New York, founded in 1959 (Adkins, 2001; Amezcua, 2010; Dee *et al.*, 2011; Hackett & Dilts, 2004; Lewis & Edward, 2001). A local real estate developer, having acquired a vacant 850,000 foot building, found that he was struggling to find a tenant with the capacity to lease the entire building (Adkins, 2001). The developer decided to let sub-divided partitions of the building to a variety of tenants, some of whom requested business advice and assistance in raising capital (Adkins, 2001). This gave birth to the concept of the incubator.

2.2.1 *Incubator development studies*

As the concept of incubators diffused into business culture, the need to understand how to measure and report incubation outcomes grew. The establishment of the United States National Business Incubation Association (NBIA) in 1984 led to an increased interest in measuring and reporting incubator outcomes (Hackett & Dilts, 2004). This led to the publication of the *Business Incubator Profiles: A national survey*, the first literature on incubator-incubation studies by Temali and Campbell (1984), according to Hackett and Dilts (2004). The period between 1984 and 1988 was categorised by research on incubators that centred around the theme of incubator development (Dee *et al.*, 2011; Hackett & Dilts, 2004). This was characterised by papers focusing on definitions, taxonomies and policy prescriptions, including research questions such as, what is an incubator; how to develop an incubator; what life cycle can be extracted; and the formal analysis of business incubators (Dee *et al.*, 2011; Hackett & Dilts, 2004). A key definition as to what the expected outcomes of incubation are emerges in the literature. Most research assumes that incubators are economic development tools for job creation whose contribution to the cause lies in ensuring that fewer start-ups fail (Campbell & Allen, 1987; Fry, 1987; Kuratko & LaFollette, 1987; Temali & Campbell, 1984). The paper assumes this definition for expected incubator outcomes. The definition for the term business incubator showed inconsistencies in the literature. According to Hackett and

Dilts (2004), the ambiguity is sourced from the adaptation of the original business incubator concept to fit varying local needs and conditions (Kuratko & LaFollette, 1987); the interchangeable manner in which the terms “research park”, “technology innovation centre”, and “business incubator” are used in the literature (Swierczek, 1992); and the emergence of virtual business incubators which caused a need for a definition that discounts the need for an incubator to physically house a tenant. As defined earlier in the paper, the definition of a business incubator is as follows: An incubator is an organisation that seeks to provide business support services to SMEs, with a view to equipping them with the necessary skills and tools required to survive and grow into established businesses that create jobs (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013).

2.2.2 *Incubator configuration studies*

The literature in the period between 1987 and 1990 is characterised by the emergence of a new theme centred on incubator configuration studies (Hackett & Dilts, 2004). The authors during this period focused on developing conceptual frameworks and incubatee selection models (Hackett & Dilts, 2004). Research questions included, what are the critical success factors of incubator-incubation; how does the incubator-incubation concept work in practice; and how do incubators select incubatees (Dee *et al.*, 2011). The key findings in the literature define the incubation process with the identification of four value creation areas, including the diagnosis of business needs; the selection and monitored application of business services; the provision of financing; and the provision of access to the incubator network (Campbell, Kendrick & Samuelson, 1985). This paper will not consider the value-adding activities of the incubation process as highlighted in the framework developed by Campbell *et al.* (1985). While the Campbell *et al.* (1985) framework was focused on the internal aspects of incubator success factors, the framework presented by Smilor (1987) offered an external view of incubator success factors which fall in line with the tenant perspective and the outcomes expected of incubators. Smilor (1987) identified economic development; job creation; technology development; profits; viable firms; and successful products. For purposes of this paper, a

particular focus will be placed on firm viability in terms of survival, job creation and profit drawn from sales growth as key outcomes and measures of incubation success. In understanding the incubatee selection process, Lumpkin and Ireland (1988) identified a variety of configurations in incubatee selection criteria, but they did not highlight the impact selection has on incubator outcomes (Hackett & Dilts, 2004). For purposes of this paper, the impact of selection on incubator performance is discounted.

2.2.3 *Incubatee development studies*

From 1987 to 1988, the literature was briefly drawn towards incubatee development studies which involved understanding new venture development and the impact of planning on development (Dee *et al.*, 2011; Hackett & Dilts, 2004). The literature leads on research questions which include, what is the process of new venture development in the incubator context; and what is the role of planning and the business incubator manager (Dee *et al.*, 2011; Hackett & Dilts, 2004). The theme of incubatee development studies remains under-developed, owing to the difficulty in obtaining business information from early stage start-ups (Dee *et al.*, 2011; Hackett & Dilts, 2004). If start-up business information is difficult to obtain, it suggests that measuring incubator outcomes during the course of incubation may be a steep process which in turn offers policymakers minimal information to draw policies from.

2.2.4 *Incubator-incubation impact studies*

The literature developed between 1990 and 1999 is centred on incubator-incubation impact studies. This paper is primarily focused on this theme which is centred on outcomes and measures of success; and levels and units of analysis in deriving incubator performance (Dee *et al.*, 2011; Hackett & Dilts, 2004). Early studies on this theme show that incubators that have been in operation for longer tend to achieve better outcomes, suggesting that organisational learning of the incubator plays a role in improving SME performance (Hackett & Dilts, 2004). Udell (1990) identified a number/rate of start-ups created; number/rate of corporate start-ups; and number/rate of

jobs created as metrics for incubator performance. Job creation is an important measure of incubator-incubation impact tied to the expected outcomes and definition of incubators drawn in this paper. Campbell and Allen (1987) offered a set of milestones for measuring incubator performance, including the creation of a responsive business consulting network; achieving participation of financial intermediaries in tenant capitalisation; reaching a point at which the majority of tenants are start-up firms as opposed to previously existing small businesses; and reaching levels of synergy when tenants develop trade relations with one another such as subcontracting and joint purchasing. The term tenant in this context refers to the incubatee (Hackett & Dilts, 2004). It can be noted that the criteria set out by Campbell and Allen (1987) are the same measures that can be utilised to determine a business incubator's level of development which, as the literature suggests, is a good determinant of the ability to improve SME performance (Hackett & Dilts, 2004). Bearse (1998) suggested that if incubator performance data could be collected regularly, then it could be possible to compare performance of different incubators and establish an industry baseline. Hackett and Dilts (2004) also noted that collecting incubator performance data regularly is a difficult task which even large incubators such as the NBIA struggle to manage. The literature suggests that Bearse's (1998) argument can be refuted by the notion that incubators cannot be compared to one another based on outcome because of differences in goals and levels of development (Dee *et al.*, 2011). Another measure of incubator success identified in the literature is the graduation of the tenant (Hackett & Dilts, 2004). Graduation criteria may differ from incubator to incubator, but the literature suggests that once a firm reaches that stage, it should be structurally stable and have overcome its resource gaps (Hackett & Dilts, 2004). Allen and Weinberg (1988) offered a ratio as a measure based on graduation which compares the number of firms exiting the incubator to the number of firms that discontinued operations while they were still tenants. Additional measures are drawn in the literature that focus on growth with regard to job creation and financial performance (Bearse, 1998; Hackett & Dilts, 2004; Mian, 1997; Udell, 1990). The literature on survival rates has varied with some papers showing high survival rates and other papers reporting low survival rates (Amezcuca, 2010; Bearse, 1998; Hackett & Dilts, 2004). Attempts in the literature to compare non-incubated firms with incubated firms

have to discount the influence of incubatee selection criteria which offers a bias in favour of incubators (Amezcu, 2010; Hackett & Dilts, 2004). The research conducted by Campbell and Allen (1987) showed that incubators are not good drivers of job creation. This may be realised as a result of using job creation as a measure during the process of incubation whereby a firm has limited space to house a new employee and has limited resources to afford a new employee, thereby decelerating employment creation (Dee *et al.*, 2011). Virtanen and Kiuru (2013) found that job creation by small and medium enterprises is driven by high growth enterprises, and that incubators that foster fast growth are typically drivers of job creation. The literature offers few empirical results for research on measures of performance. The key areas that this paper will focus on are how incubator performance can be measured and the impact that incubators have around the performance measures of survival rates, job creation rates and sales growth rates. “Most impact studies that measure these items do so by tabulating simple running counts for each metric” (Hackett & Dilts, 2004).

2.2.5 *Studies theorising about incubator-incubation*

From 1996 to 2000, literature theorising about incubator-incubation has been developed, focusing on the explicit and implicit use of formal theories such as economic development through entrepreneurship (Dee *et al.*, 2011; Hackett & Dilts, 2004). Research questions that have been drawn from the literature focus on theorising the significance of relationships and how they influence entrepreneurship; and the critical factors of success for incubation (Dee *et al.*, 2011; Hackett & Dilts, 2004). The theories in early literature speak to expected outcomes of incubation. The theory of economic development through entrepreneurship posits that the process of conceptualising an entrepreneurial endeavour and getting the entrepreneurial endeavour to fulfil its potential is the basis of economic growth (Hackett & Dilts, 2004). Through this theory, Brooks (1986) held that an incubator exists to bridge the gap between concept and realisation. This is a particularly relevant theory in the context of this paper. The theories in the literature tend to point out market failures and the need for incubators to help start-ups in addressing them (Hackett & Dilts, 2004). Key findings in the literature show that

incubators address market failures by controlling resources and reducing costs for start-ups; for success, incubator configuration must meet local needs; the incubation process is a collaborative effort between the incubator manager and incubatees; the time duration and intensity of the incubation intervention impacts success; and networking also plays a vital role in success (Hackett & Dilts, 2004). This paper does not explore these success factors and will solely focus on measures and outcomes. The structural contingency theory holds that the configuration of an organisation and its external environment must be aligned for that organisation to achieve success (Hackett & Dilts, 2004). The underpinning concept is that business incubators need to be aligned to local needs and norms to be effective. While this paper will not explore the actual interventions imposed by the incubator, the study recognises that the theory in the South African context extends from incubatee selection criteria to the actual interventions which address market failures faced by entrepreneurs.

2.3 Problem Discussion: Measuring Business Incubation Outcomes

The main problem lies in that policymakers need to identify the post-incubation impact that business incubators have on job creation, survival and financial performance of graduate SMEs. The impact of business incubation during and after incubation need to be compared to each other to determine which set of performance results best informs policy and resource allocation. In the literature, we recognise two perspectives for measuring incubator outcomes; the tenant and graduate perspective, and the incubation programme perspective. For purposes of this paper, we disregard the incubation programme perspective which stresses an inward focus on the incubation process outcomes such as occupancy rates, graduation rates, incubation space, and levels and sources of funding (Dee *et al.*, 2011). These metrics speak to the following Mian (1997) framework sections: programme growth and sustainability; contribution to the sponsoring university's cause; goals structure and governance; financing and capitalisation; operational policies; target market; services and their value add; and university-related services. These portions of the framework will not be utilised in this paper.

The study informs its performance measures on the tenant and graduate perspective. By referring to the tenants and graduates, the perspective draws a focus on financial performance, survival rates, tax rates, export rates, employment creation and innovation rates (Dee *et al.*, 2011). These measures are consistent with the tenant firm's survival and growth and the community-related impacts portion of the Mian (1997) framework which is of relevance to this study. Innovation rates, graduation and export rates as a metric will be discounted from the framework. The focus will be on the metrics of employment creation numbers/rates, survival rates and financial performance.

The Mian (1997) framework includes graduation number/rates as a metric which will be visited briefly in the discussion. The approach is depicted in the following figure:

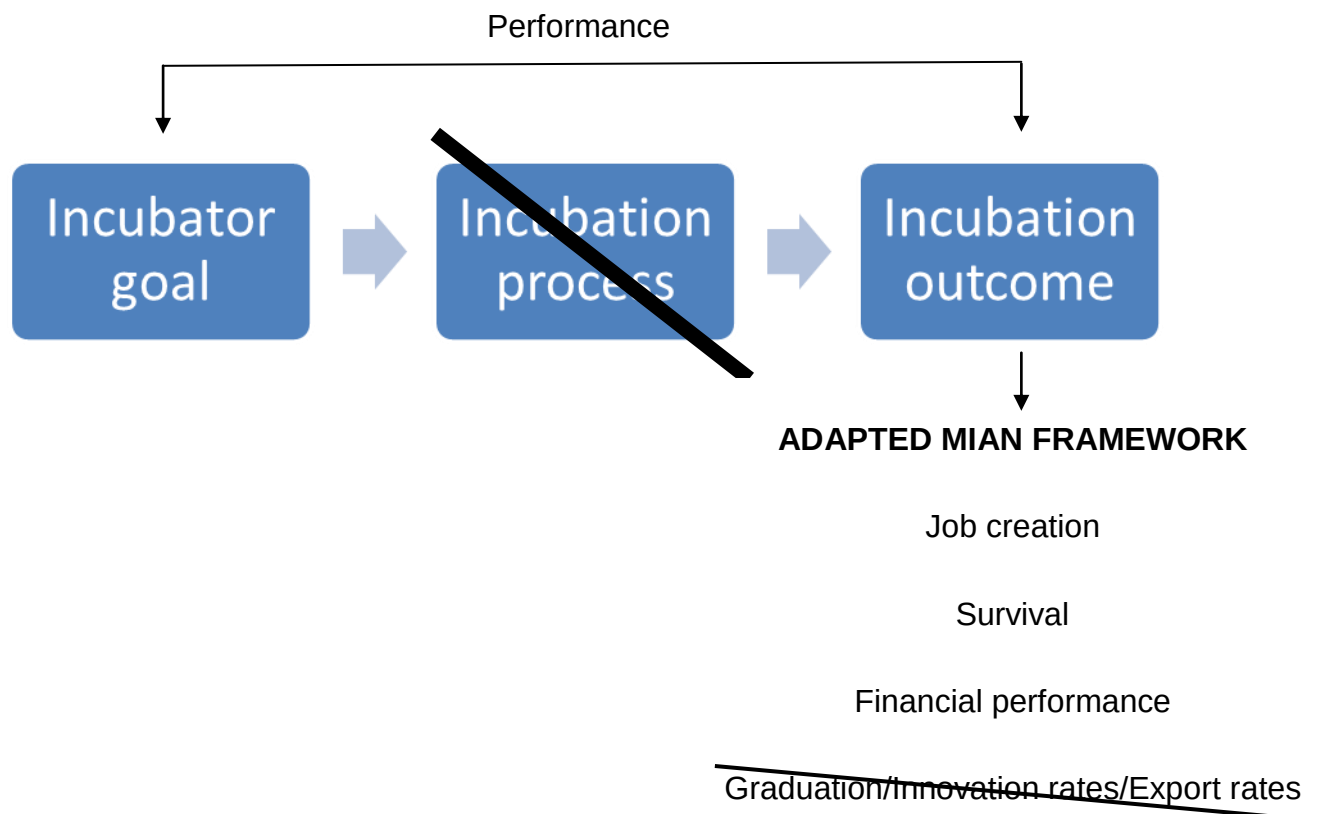


Figure 1: Measuring performance based on outcomes (Author's own interpretation)

The figure depicts how performance can be measured based on incubator goals; the incubator model or incubation process; or incubation outcomes. In this study, we delimit the incubation process and make the assumption that all incubators have the same goals that can be tied to expected incubation outcomes. Incubator outcomes can be measured during incubation or post-incubation utilising the adapted Mian (1997) framework which excludes graduation, innovation and exports.

2.3.1 *Survival*

The Oxford dictionary defines survival as “the state or fact of continuing to live or exist, typically in spite of an accident, ordeal or difficult circumstances”. In the context of businesses and this paper, it can be said that survival is the opposite of discontinuance (Herrington & Jacqui, 2013). Survival rates are a commonly applied metric because this speaks to the portion of the definition of an incubator’s purpose of warding off business failure (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013). Business failure – for purposes of this paper – can be defined as the discontinuance of a business for any reason (Ropega, 2011). Herrington and Jacqui (2013) identified the following causes for discontinuance of businesses in South Africa, opportunity to sell; business not profitable; personal reasons; incident; retirement; exit was planned in advance; and problems getting finance. A differentiation can be drawn between positive reasons for discontinuance and negative reasons for discontinuance (Herrington & Jacqui, 2013). For purposes of this paper, the focus will be on the negative, business-related causes of discontinuance. Based on Herrington’s theory (2013), problems getting finance and lack of business profitability are the key issues accounting for over 50 percent of all business discontinuance. According to Allen and Rahman (1985), an incubator’s primary function is to increase the chances of a tenant surviving its formative years. This definition excludes the role of an incubator in ensuring post-incubation survival. Dee *et al.* (2011) stated that survivability as a performance measure is limited in that it is a necessary, but insufficient condition for success. The author defines success as the achievement of something desired, planned or attempted and argues that if the desired outcome was business growth, then survival without growth can be considered a failure. This outlook suggests that survival can be associated with negative growth trends. Amezcua (2010) shared a negative outlook on survivability rates as a measure during the course of incubation, stating that the incubation process can shield tenants from external forces and market failures, thereby achieving survival in the short term, but in the long term, it weakens a firm’s ability to handle adversity during the post-incubation period. This suggests that post-incubation survival could be a better indicator of incubator outcomes. This is supported by studies

performed by Schwartz (2009) which suggest that the incubation period may act as a life-support delaying the inevitable demise of some firms; based on findings that 20 percent of incubated firms did not survive post-incubation. The “life-support” theory can be illustrated through the following figure:

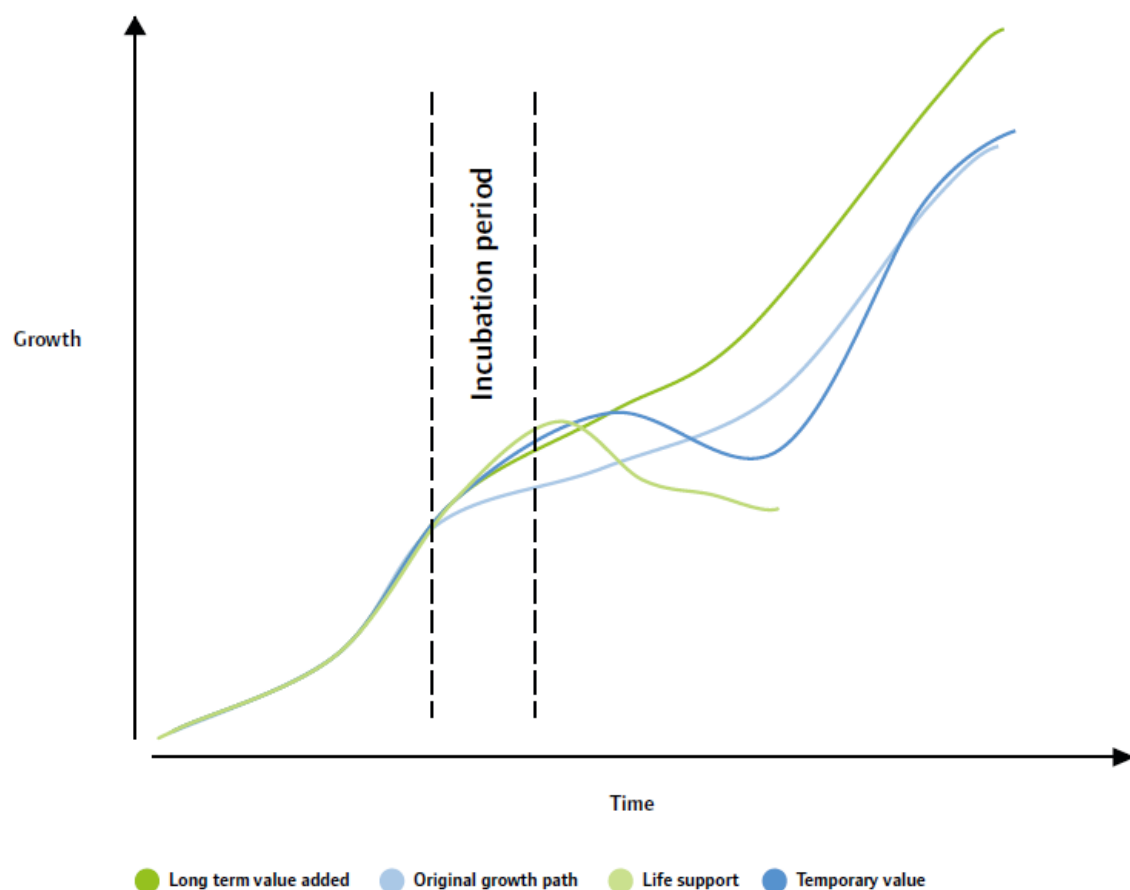


Figure 2: Potential growth scenarios for incubatees (Dee, Gill, Livesey & Minshall, 2011)

Schwartz and Göthner (2009) continued to argue that improvements such as increased competition and accelerated structural changes last beyond the survivability of a firm, meaning that using survival rates may discount from an incubator’s performance unfairly. Allen and McCluskey (1990) found that survival rates correlated with the level of development of an incubator. From this perspective, survival rates could be considered a

good metric to inform decision making of entrepreneurs as stakeholders. Hackett and Dilts (2004) stated that incubatee survival rates cannot be used to compare with non-incubated firms' survival rates because of the bias induced by selection criteria. Amezcua (2010) found, however, that while incubated firms outperform their peers in terms of employment and sales growth, they still tend to fail sooner. Brooks (1986) hypothesised that once external factors that lead to early-stage failure for start-ups are controlled or eliminated, then the resulting increase in survival rate should lead to improved job creation rates and an increased tax base. This hypothesis hinges on the theory of economic development through entrepreneurship which is used to address the gap that occurs between conceiving the business concept and having the business reach its economic potential. Based on this theory, it holds that if business incubators improve the survival rates of incubates, then they can be considered as a bridge between the gaps of conceptualisation and fruition. Increased employment and turnover rates should follow on increased survival rates.

2.3.2 *Job Creation*

The Oxford dictionary defines job creation as “the provision of new opportunities for paid employment, especially for those who are unemployed”. The literature recognises direct and indirect job creation. For purposes of this study, direct job creation will be the focus because it is easier to account for (Lalkaka, 2003). The popularity of the metric in measuring incubator outcomes may be sourced from how literature often identifies aiding job creation within SMEs as one of the purposes of an incubator (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013). (Dee *et al.*, 2011) argued that it may not be the best measure of incubator performance during the course of incubation. The argument is that increasing levels of employment within a start-up firm goes against the advice they receive, which is to keep expenditure as low as possible. This means that start-up firms often delay recruitment, making the metric an unreliable source (Dee *et al.*, 2011). This is line with previous findings by Lalkaka (2003) who stated that start-up entrepreneurs initially aim to create jobs for themselves and conserve their limited funds; and only once they graduate from the incubator do some

grow, enabling them to create employment. This finding highlights the importance of post-incubation measurement of job creation which gives a different view of employment creation. Other key findings in incubator-incubation impact studies state that reducing risk and improving growth rates of incubatees is a more common outcome than job creation (Hackett & Dilts, 2004). This finding suggests that there is no correlation in business growth and employment creation. This is in contradiction with findings by Virtanen and Kiuru (2013), who found in their longitudinal study that firms with the highest growth rates (gazelles) contributed to 30 percent of overall employment within a given period. This is in line with the argument presented by Autio (2009) who found that job creation is usually driven by a small cohort of high growth firms. This is further supported by Acs (2011), whose study showed that high growth firms contribute to 70 percent of employment creation. In the South African context, small and medium enterprises are recognised as the primary source of private sector employment, but the literature fails to reveal what are the job creation expectations of the State. Herrington & Jacqui (2013) found that 58 percent of youth entrepreneurs expect to create one to five jobs within the next 5 years. This is an expectation they have set upon themselves and is perhaps the most suitable benchmark because not all entrepreneurs may necessarily feel obligated to create jobs.

2.3.3 Sales

The Oxford dictionary defines growth as “the process of increasing in amount, value or importance”. Sales growth refers to an increase in the amount or value of sales. It is difficult to distinguish between firm growth that may have occurred in the absence of incubation and growth that occurred as a result of incubation (Dee *et al.*, 2011). This usually poses a challenge on economic analysis of incubation outcomes (Dee *et al.*, 2011). According to Chen (2009), Taiwanese incubators found no direct effect on incubatee performance as a result of incubation. This suggests that accounting for sales growth percentages may be a poor measure. This is in opposition to findings by Löfsten and Lindelöf (2002), who acknowledged that there is no difference between incubated and non-incubated firms with regard to profitability, but a visible difference lies in growth

of sales turnover being significantly lower for non-incubated firms. This suggests sales growth is a viable measure. The study conducted by Amezcua (2010) found that sales growth in non-profit incubators was significantly higher than in for-profit incubators. This comparison between two different typologies could serve as a useful measure informing policymakers. Mian (1997) agreed with sales growth as a measure, realising a correlation in sales and employment creation. Virtanen and Kiuru (2013) stated that the literature concludes that sales measures growth well and that it has even been nominated as the most preferred growth measure. It can be argued that if sales growth serves as a viable measure, then other financial performance data should serve as viable measures too as evidenced in the study by Virtanen and Kiuru (2013).

2.3.4 *Graduation*

Graduation can be defined as the completion of an incubation programme by a tenant. This definition can be assumed because upon completion of an incubation programme tenants become graduates (Virtanen & Kiuru, 2013). Graduation as a performance metric is subjective because criteria may differ from incubator to incubator. Schwartz (2013) stated that graduation is easy, alluding to the simple conditions for graduation that incubators hold. The literature suggests that once a firm reaches that stage, it should be structurally stable and have overcome its resource gaps (Hackett & Dilts, 2004). This would then assume that no graduate firm should experience business failure post-incubation. Schwartz and Göthner (2009) found that 20 percent of graduate firms experience business failure and discontinuance. Graduation cannot be measured post-incubation. It is for this reason that graduation is discounted as a reasonable measure of incubator performance in relation to post-incubation performance of SMEs.

2.3.5 *Innovation*

Innovation rates refer to the extent that a tenant or graduate introduces and diffuses technology in their business (Virtanen & Kiuru, 2013). The Mian (1997) framework suggested this measure because the framework was intended for university technology

business incubators which often seek to drive innovations as key outcomes. This suggests that as a measure it is limited because it cannot be applied to all types of incubators. Based on the resource-based view, a company with strong innovation capabilities can lead to superior competence, particularly with regard to technology commercialisation (Chen, 2009). The measure may be a good foundation for establishing technologically-oriented competitive advantages which ultimately may drive business survival and growth. For purposes of this study, the measure is discounted from the framework.

2.3.6 *Exports*

According to the Oxford dictionary, export rates refer to the extent that a tenant or graduate engages in business activities which results in them sending products or services abroad, thereby resulting in the acquisition of foreign exchange. Though export rates serve as a good measure as to how much foreign capital a firm attracts into a country, it is a measure that cannot be applied to all firms because not all firms engage in international business due to varying perception of barriers to exporting (Arteaga-Ortiz & Fernández-Ortiz, 2010). In the study by Guan and Ma (2003), it was found that export rates are strongly related to innovative capabilities. Due to its lack of general applicability, export measures are discounted from the framework applied in this study.

2.3.7 *Research Questions*

A review of the literature suggests that no single measure should be used in isolation to explain incubator performance, but it is best to utilise multiple metrics (Amezcuca, 2010; Dee *et al.*, 2011; Schwartz & Göthner, 2009). The literature exposes that measuring outcomes remains problematic because few studies have uncovered meaningful categorisation processes, linking relevant metrics to specific contexts. This has affected the generalisability of findings, thus impacting the use of data in informing policy (Dee *et al.*, 2011). In the literature, we identified survival, job creation and sales growth as measures of performance.

From a survival perspective, the literature suggests that the longer a firm survives, the higher the probability that it will contribute to increased job creation and economic growth (Hackett & Dilts, 2004). 42 Months is considered to be the average period it takes a business to reach a point of being stable and established (Olawale & Garwe, 2010) which makes it a good point of reference for measuring survival. Youth entrepreneurs' expectations of job creation are accounted for by Herrington & Jacqui (2013). This provides a basis for measuring expected versus actual job creation rates. It is of interest to note that the literature does not reveal what the South African State expects of small and medium enterprises in terms of job creation. The literature shows that sales growth is a preferred measure (Virtanen & Kiuru, 2013). Based on the findings by Mian (1997) that sales and employment creation have a correlation, it can be deduced that all three measure used in the study are in fact inter-related.

The measures are usually applied on tenants during the course of incubation. This poses various challenges with regard to applicability and accuracy (Dee *et al.*, 2011). In an effort to measure performance from a post-incubation perspective, we used the adapted Mian (1997) framework and focused on finding answers to the following research questions:

Research Question 1

Do business incubator graduate SMEs tend to survive longer than 42 months?

Research Question 2

Do business incubator graduate SMEs meet employment creation expectations of youth entrepreneurs in South Africa?

Research Question 3

Do business incubator graduate SMEs' sales turnover distributions improve post-incubation?

2.4 Conclusion of Literature Review

The discussion of the literature started with a focus on the themes that have defined incubator-incubation studies. Incubation development studies as a theme were reviewed where the main topics were definitions, taxonomies and policy prescriptions (Dee *et al.*, 2011; Hackett & Dilts, 2004). Research questions drawn from this theme included, what is an incubator; how do we develop an incubator; and what life cycle model can be extracted from business incubators. Key findings included the definition of a business incubator and the expected outcomes of incubator interventions.

The theme around incubator configuration was discussed with topics revolving around conceptual frameworks and incubatee selection. Research questions drawn from this included, what are the critical success factors of incubator-incubation; how does the incubator-incubation concept work in practice; and how do incubators select incubatees (Dee *et al.*, 2011). The key findings in the literature defined the incubation process with the identification of four value-creation areas including the diagnosis of business needs; the selection and monitored application of business services; the provision of financing; and the provision of access to the incubator network (Campbell *et al.*, 1985).

The theme of incubatee development was then discussed with topics around new venture development and the impact of planning on development. Research questions that emerged from the literature included, what is the process of new venture development in the incubator context; and what is the role of planning and the business incubator manager (Dee *et al.*, 2011; Hackett & Dilts, 2004). Research around this theme was found to be limited and offered few key findings due to the difficulty experienced in collecting firm data.

The theme of incubator-incubation impact was then visited. An emphasis was placed on this theme because the study seeks to contribute to the literature surrounding it. Topics were centred on levels and units of analysis; and outcomes and measures of success (Dee *et al.*, 2011; Hackett & Dilts, 2004). Key findings were made into various performance metrics identified in the literature, including job creation, graduation,

survival and sales growth (Mian, 1997). The literature focused on the tenant and graduate perspective.

The final theme that was discussed was on theorising about incubator-incubation. Key topics included the explicit and implicit use of formal theories such as economic development through entrepreneurship (Dee *et al.*, 2011; Hackett & Dilts, 2004).

The problem discussion was then pursued with the recognition of two perspectives on incubation performance. It was stated that the paper would focus on the tenant and graduate perspective which used similar performance measures to the Mian (1997) framework including, graduation, job creation, survival, exports, innovation and sales growth. These variables were defined and discussed with arguments presented on their viability as post-incubation measures. Graduation as a measure was discounted because it cannot be applied as a post-incubation measure. Exports and innovation were discounted because of their lack of generalisation as measures. The resulting research questions were as follows:

2.4.1 *Research Question 1:*

Do business incubator graduate SMEs tend to survive longer than 42 months?

2.4.2 *Research Question 2:*

Do business incubator graduate SMEs meet employment creation expectations of youth entrepreneurs in South Africa?

2.4.3 *Research Question 3:*

Do business incubator graduate SMEs' sales turnover distributions improve post-incubation?

CHAPTER 3. RESEARCH METHODOLOGY

This section of the paper explains how the research was conducted, including the research paradigm; research design; population and sampling; the research instrument; data collection, analyses and presentation; limitations; validity and reliability.

3.1 Research Methodology/Paradigm

The research is a descriptive study which according to the definition offered by Swanepoel (2009) allows one to answer the questions of who, what, where and when. This appeals to policymakers who are concerned with planning, monitoring and evaluating. The study provides answers around efficiency, effectiveness and adequacy.

A quantitative approach was adopted for the research. Quantitative research allowed for measurement of the metrics from the Mian (1997) framework (Bryman, 2012). The quantitative approach allowed for the relationship between the measurable variables to be explained, thus leaving room for replication of the study which may be adapted to focus on causality (Bryman, 2012). Causality can be drawn by highlighting the influence of independent variables such as the impact of specific interventions during incubation on post-incubation performance of graduate firms. The approach also allowed for the generalisability of the results beyond the current context (Bryman, 2012). This means that policymakers can utilise the framework together with the approach beyond the current scope to test for the impact all types of business incubators have on post-incubation performance.

The approach chosen is in contrast to the qualitative study on measuring incubator outcomes by Stephens and Onofrei (2012). The difference can be accounted for in that their study included hard and soft measures which necessitated an analysis of the data which could not be quantified. The paradigm assumed is the same as that of Virtanen and Kiuru (2013) who measured post-incubation performance with a focus on financial data, but with no framework applied.

3.2 Research Design

A cross-sectional research design was adopted for the study. A cross-sectional design entails the collection of data on more than one case, at a single point in time, with a view to collecting quantifiable data in connection with two or more variables (Bryman, 2012). The dependant variables in the study are the performance metrics including job creation, survival and sales growth rates. The paper drew results from two groups of graduates, class of 2012 and 2013 from the same enterprise development programme. The design also presents quantifiable data (Bryman, 2012) which was helpful in gauging variations in performance. The data collection employed was at a single point and time, January 2015, to ensure that consistency is achieved with regard to performance data which can vary over a period of time.

3.3 Population and Sample

A population is any precisely-defined set of people, while a sample is a subset of a population which represents the interest of the study (Bryman, 2012).

3.3.1 *Population*

The population for the study are the graduates of South African Breweries' (SAB) Kickstart enterprise development programme. According to Swanepoel (2009), SAB Kickstart is one of SAB's corporate social investment (CSI) projects. The programme is hosted annually as a nationwide competition developed to assist previously disadvantaged youth entrepreneurs in developing their businesses. The incubation period runs from between two weeks up to eighteen months, depending on how an entrepreneur advances in the competition. The programme has been in existence since 1995, but the population is drawn from graduates since 2001, coinciding with the year when the programme was re-engineered. According to Swanepoel (2009), between 2001 and 2006 the total number of graduates from the programme were 502 entrepreneurs. The programme has been streamlined to take in 60 new entrepreneurs per annum, meaning that between 2007 and 2013, 420 entrepreneurs were added to the population. The total population therefore stands at 922 graduate entrepreneurs.

3.3.2 *Sample and sampling method*

A convenience sample was chosen because of limited access to the population. After approaching personnel involved with the SAB Kickstart enterprise development programme, access was granted to their database of graduates from the classes of 2012 and 2013. The researcher was informed that these classes contained 119 graduate entrepreneurs collectively. It was explained that one of the entrepreneurs selected in 2013 was unable to attend the programme. The non-probability sampling technique employed had the potential to impact on the representativeness of the sample to the population and also limit the external validity of the findings (Bryman, 2012).

Being able to choose two specific classes offered the advantage of being able to draw and compare performance with SMEs which exited incubation during a similar period, meaning they were exposed to the same external factors which may impact business performance such as an economic downturn. This is of particular relevance because a two-year period of post-incubation results constrains the variations between each respondent (Stephens & Onofrei, 2012).

3.4 The Research Instrument

After conducting a review of the literature, a questionnaire comprising of three sections was drawn:

Section 1: Questions related to the demographics of the entrepreneurs, including gender, age, education level and race. Nominal and ordinal data was drawn from these questions.

Section 2: Questions related to the business' incubation, including the last incubator it entered; when it started incubation; and when it exited incubation. Nominal and interval data was drawn from these questions.

Section 3: Questions related to the business, including the year it was founded, industry sector; number of owners; form of ownership and business survival. Nominal and ratio data was obtained from these questions.

Section 4: Questions related to the business performance with regard to sales growth and job creation as metrics. These questions obtained ratio data.

The majority of the questions were close-ended. It was decided that an online questionnaire compiled, using Qualtrics software, would be the most effective medium for reaching the respondents. This was within reason because the SAB Kickstart competition is entered into online and every participant submits an email address (Swanepoel, 2009). It was therefore a fair assumption that all respondents had access to the internet and were computer literate.

The respondents are all entrepreneurs, so the questionnaire was also designed to be succinct so as to accommodate their schedules as business people. Based on suggestions from Bryman (2012), questions and instructions were clearly formulated and unambiguous because the survey was self-administered. A professional tone and layout was utilised. The respondents' tasks were kept simple in that they had to click on multiple-choice question options; type in text boxes; or drag sliders to indicate answers.

3.5 Procedure for Data Collection

The questionnaire was made available to respondents via a link sent to their email addresses. The email contained a letter from the University of Witwatersrand requesting the co-operation of the respondents and providing context around the research. A general template was used for all the emails. The data was held on a Qualtrics online database and downloaded once the survey period was concluded.

To encourage participation, the respondents were offered access to the final research report which will be presented as part of the contents of a webinar to be hosted during Global Entrepreneurship Week (GEW) in November 2015.

All responses received were captured anonymously and respondents were assured of data confidentiality. No personal interviews were conducted, allowing respondents to answer freely.

3.6 Data Analysis and Interpretation

The Mathworks Statistical Tool Package was used for statistical analysis. Statistics can be used by researchers to describe and draw inferences from data (Bryman, 2012). For this study, descriptive statistics were the most prevalent allowing for an understanding of the nature of the data.

Dee *et al.* (2011) identified three methods for analysing incubation performance data including: the control group method advocated by Amezcua (2010), Löfsten and Lindelöf (2002) which drew comparisons in performances of incubated firms in relation to their un-incubated peers; Benchmarking advocated by Knopp and Association (2007) by way of survey or self-reporting mechanisms compared to an example of industry best practice; and *in situ* assessments advocated by Bergek and Norrman (2008), Grimaldi and Grandi (2005) which compared performance during incubation vs performance post-incubation. The study assumed the use of an *in situ* assessment style of analysis, whereby the performance of tenants on the year of graduation was compared to performance in the year of 2014.

The following analyses were performed:

3.6.1 Demographic data analysis

One-way Frequency tables were drawn on the demographic data, including gender, age, level of education and race. The means, variances and standard deviation on the data were also calculated. In the study, the one-way frequency tables were used to compare the actual data with expected data based on the population to establish representativeness.

3.6.2 Research Question 1 data analysis – Survival

Data collected from questions 5 – 11 was analysed for answering research question 1. For attribution purposes, a cross tabulation was drawn comparing the incubation

programme entered to rates of discontinuation and continuation. A one-way frequency table was drawn on data relating to how many of the graduates are still running the same businesses they entered into incubation. This data is compared to statistics from the literature to establish the impact business incubation may have had on survival rates. A cross tabulation was drawn on the ages of the businesses and survival rates to look at the relationship the age of business has with survival rates. This also allowed for the research question to be addressed with regard to businesses surviving longer than 42 months. Another cross tabulation was drawn to compare graduation to discontinuation data. This would allow for an understanding to be drawn on the growth paths firms experienced as a result of incubation.

3.6.3 *Research Question 2 data analysis – Job creation*

Data collected from questions 13 and 14 was analysed for answering research question 2. Tables summarising information on running counts of job creation data were drawn. Data based on job creation during incubation is compared to job creation post incubation and aligned with the literature on job creation expectations of youth entrepreneurs.

3.6.4 *Research Question 3 data analysis – Sales growth*

Data collected from questions 15 and 16 was analysed for answering research question 3. Tables summarising information on running counts of sales growth data were drawn. From the running counts, the impact of incubation on sales turnover growth during and after incubation was assessed. A cross tabulation comparing gender and sales performance was also calculated. A Chi-Square test was performed on the gender and turnover rates for 2014.

3.7 Limitations of the Study

- Current levels of internet access could not be accounted for and may have played a role in affecting the number of responses. To counter this, and to allow every potential respondent an equal chance to complete the questionnaire, the link to the survey was left open from 15 December 2014 until 15 January 2015.
- It became apparent that some graduate entrepreneurs have been involved in other incubation programmes since graduating from the SAB Kickstart programme. This presents challenges in attributing performance exclusively to the Kickstart programme. For graduates who went on to attend other programmes, it was impossible to separate the impact that different incubators had on them.
- The impact of external factors that could potentially impact the performance of graduates could not be accounted for. The graduates operate in different business environments and in different industries throughout South Africa.
- The graduates were in incubation for different periods. Some graduates only graduated in late 2014. This means that in some cases, firms have not have been sufficiently exposed to the post-incubation period to present data that can be attributed to the impact of business incubation.
- The respondents selected to participate were referred to the researcher through his network by using the snowballing technique, hence removing the likelihood that everyone in the population has an equal chance of being chosen.
- The study was subject to poor recollection of performance figures which may have limited the quality of responses. This could be sourced from a variety of issues, including poor accounting and administrative practices, and fear of breach in confidentiality.

3.8 Validity and Reliability

“The validity and reliability of the measurement instrument influence the extent to which one can learn from the phenomenon being studied” (Swanepoel, 2009).

3.8.1 *External validity*

The external validity of a research paper refers to the extent to which the results of the paper can apply to situations beyond the study (Bryman, 2012). The sampling technique had a strong impact on representativeness. It is a reasonable assumption that the sample shares uniform characteristics to the population based on the selection criteria for the SAB Kickstart programme. The programme selects South African youth entrepreneurs aged 18 – 35 years old. The youth entrepreneurs must be of an ethnicity that is considered to have been previously disadvantaged in the South African context (Swanepoel, 2009). The SAB Kickstart selection process also entails choosing entrepreneurs from a variety of industries for each class. This population shows a gender distribution of 70:30 in favour of males (Swanepoel, 2009). The responses received for the study showed a gender distribution of 75:25 in favour of males. This speaks to how similar the demographics of respondents from the sample characteristics are to the rest of the specific population.

The findings are, therefore, generalisable in the context of SAB Kickstart, provided the conditions remain the same. However, it must be acknowledged that validity does not apply to diverse contexts beyond the Kickstart programme. The study can be replicated with a few adaptations depending on the context.

3.8.2 *Internal validity*

The internal validity of a research study refers to the extent to which the design and the data drawn allow the researcher to make accurate conclusions about relationships within the data (Bryman, 2012). The study was subject to a few risks that could impact the degree of internal reliability.

The survey questionnaires were self-administered, leaving no room for influence in answers. This also left room for misinterpretation of questions which could be influenced by literacy levels of graduates. The responses from the graduates were also subject to personal biases and their perspective of how incubation impacted their businesses. There was also a risk of memory lapses playing a role in affecting the internal validity, which some of the graduates may be more prone to, having graduated from incubation as long as three years ago. The incentive of having access to the research via a webinar conference is not likely to illicit bias because it is guaranteed regardless of responses.

3.8.3 *Reliability*

“Reliability refers to the consistency with which a measuring instrument yields a specific result, provided that the entity being measured remains the same” (Bryman, 2012). Reliability errors were managed through the use of the same research instrument, the online survey. During the survey period, a feature was used to lock and prevent the survey questions from being edited.

In using the Mian (1997) framework, job creation, survival and sales performance are the key measures relating to the incubation performance concept. These measures are stable because the definition of job creation, business discontinuance and sales remained constant. The internal reliability of the measures is relatively consistent. Sales increases can be associated with employment creation because higher levels of profitability follow on the ability to afford more employees. The measures also hold a great deal of inter-rater consistency since only one researcher conducted all components of the research. The measuring instrument therefore holds a high level of reliability.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

In this chapter, the results of the study are presented and described. A brief report on how many questionnaires were administered and the response rate is given. Results pertaining to demographics of the sample; and research questions 1, 2 and 3 are then presented. A conclusion on the results for each question is drawn. A summary of the results is presented to conclude the chapter.

119 Survey questionnaires were sent out to the 119 graduates of the SAB Kickstart programme's class of 2012 and 2013. Six of the 119 emails returned an error. 61 responses were ultimately received from the 119 graduate entrepreneurs, representing 51.2 percent of the sample and 6.62 percent of the population. Of all the responses, 54 of the graduates completed the survey correctly and fully, making the final percentage of representation 45.38 percent of the sample and 5.86 percent of the population.

4.2 Results Pertaining to Demographics

Distribution of gender of respondents		
Gender	Respondents	
	Frequency	%
Male	39	72,22
Female	15	27,78
Total	54	100

Table 1: Distribution of gender of respondents

Distribution of age of respondents		
Age	Respondents	
	Frequency	%
18-23	10	18,52
24-29	16	29,63
30-35	23	42,59
36+	5	9.26
Total	54	100

Table 2: Distribution of age of respondents

Distribution of race of respondents		
Race	Respondents	
	Frequency	%
Black	46	85,20
Coloured	2	3,70
Asian	3	5,55
Other	3	5,55
Total	54	100

Table 3: Distribution of race of respondents

Distribution of education level of respondents		
Education	Respondents	
	Frequency	%
Lower than matric	0	0
Matric	8	14,81
Certificate/Diploma	20	37,04
Bachelors degree	13	24,07
Honours degree	6	11,11
Masters	6	11,11
Doctorate	0	0
Other	1	1,85
Total	54	100

Table 4: Distribution of education level of respondents

From the pool of 54 respondents, three distinct classes were identified. SAB Kickstart class of 2012 consisted of 22 respondents. SAB Kickstart class of 2013 consisted of 18 respondents. The third class consisted of 14 graduates who had been enrolled in other enterprise development programmes since graduating from the SAB Kickstart programme.

4.3 Results Pertaining to Research Question 1

4.3.1 *Research Question 1:*

Do business incubator graduate SMEs tend to survive longer than 42 months?

Distribution of business discontinuance/continuance of respondents		
Business continuance	Respondents	
	Frequency	%
Yes	42	77,78
No	12	22,22
Total	54	100

Table 5: Discontinuation versus continuation

Distribution of reasons for business discontinuance		
Reasons for business discontinuance	Respondents	
	Frequency	%
Closed the business	6	50,00
Sold the business	0	0,00
Other	6	50,00
Total	12	100

Table 6: Reasons for business discontinuance

	Incubation programme to business survival rates		
	Yes	No	Total
SAB Kickstart '12	17	5	22
SAB Kickstart '13	11	7	18
Other '14 –'15	14	0	14
Total	42	12	54

Table 7: Incubation programme and survival rates

It can be deduced from these figures that business incubator graduates tend to survive longer than 42 months.

4.4 Results pertaining to Research Question 2

4.4.1 Research Question 2:

Do business incubator graduates meet employment creation expectations of youth entrepreneurs in South Africa?

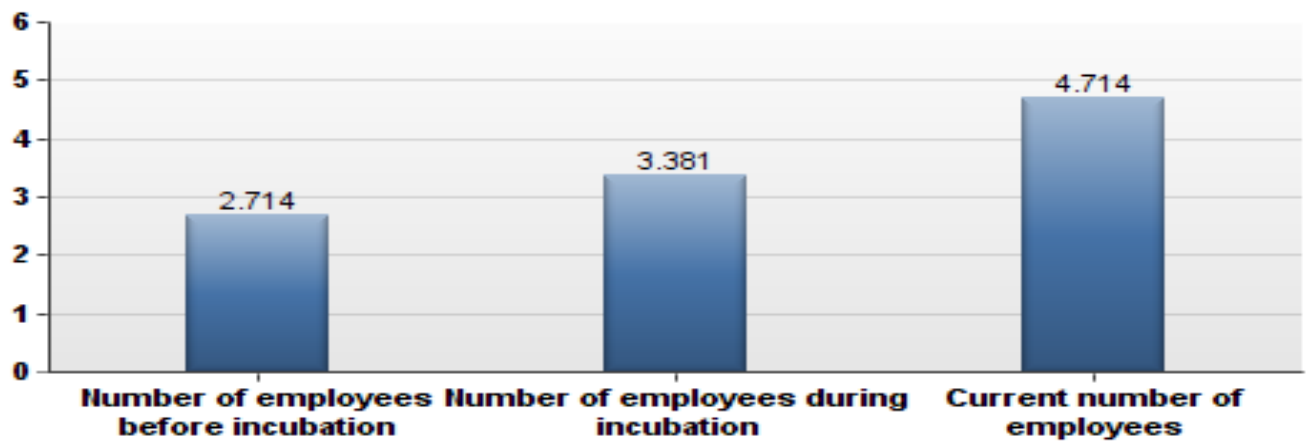


Figure 3: Average number of full-time employees before, during and after incubation

		When was your business founded?										
		2013	2012	2011	2010	2009	2008	2007	2006	2005	Before 2005	
	Yes	6	10	3	7	6	5	2	0	3	0	42
Are you still involved with the same business?	No											
		2	3	4	1	0	2	0	0	0	0	12
	Total	8	13	7	8	6	6	2	0	4	0	54

Table 6: Business age to survival rates



Figure 4: Average number of part-time employees before, during and after incubation

Statistic	Number of employees before incubation	Number of employees during incubation	Current number of employees
in Value	0	0	0
Max Value	32	32	60
Mean	2,71	3,38	4,71
Variance	24,94	24,68	83,67
Standard Deviation	4,99	4,97	9,15
Total Responses	42	42	42

Table 9: Statistics on full-time employees before, during and after incubation

Statistic	Number of employees before incubation	Number of employees during incubation	Current number of employees
Min Value	0	0	0
Max Value	16	17	21
Mean	1,76	2,26	3,17
Variance	11,45	12,00	20,53
Standard Deviation	3,38	3,46	4,53
Total Responses	42	42	42

Table 10: Statistics on part-time employees before, during and after incubation

0 jobs	1 - 5 jobs	6 -19 jobs	20 jobs and more
10.9%	58.8%	15.8%	14.5%

Table 11: 5 year Job creation expectations of youth entrepreneurs in South Africa (Herrington, 2013)

It can be deduced from these figures that business incubator graduates meet the job creation expectations of the majority of youth entrepreneurs in South Africa.

4.5 Results Pertaining to Research Question 3

4.5.1 Research Question 3:

Do business incubator graduate SMEs' sales turnover distributions improve post-incubation?

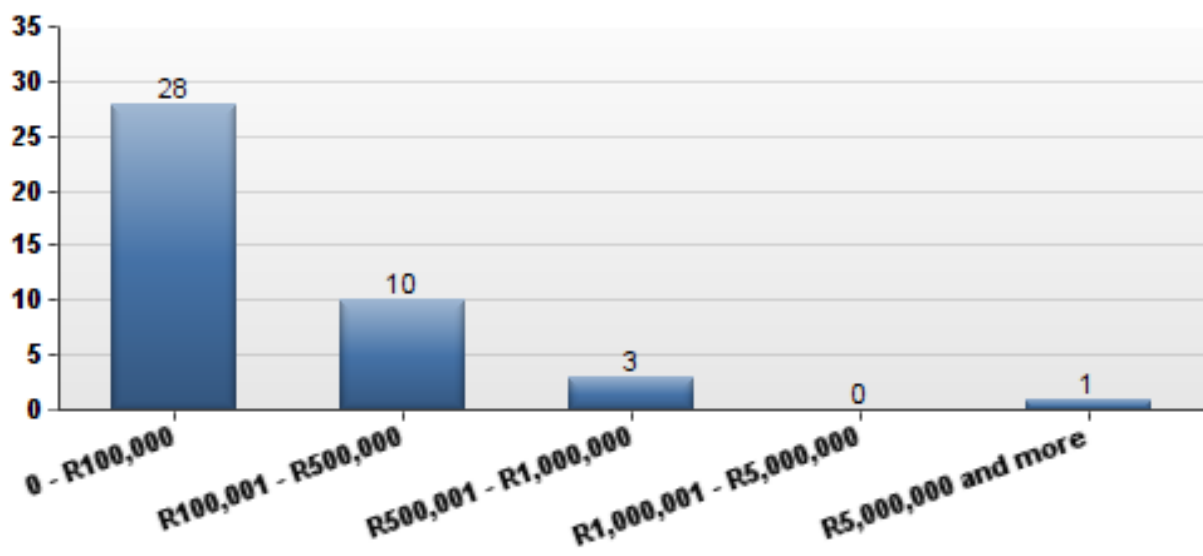


Figure 5: Sales growth figures in year of completion of incubation

Min Value	Max Value	Average Value	Variance	Standard Deviation	Total Responses
1	5	1,476190476	0,694541231	0,833391403	42

Table 12: Statistics of sales growth in year of completion

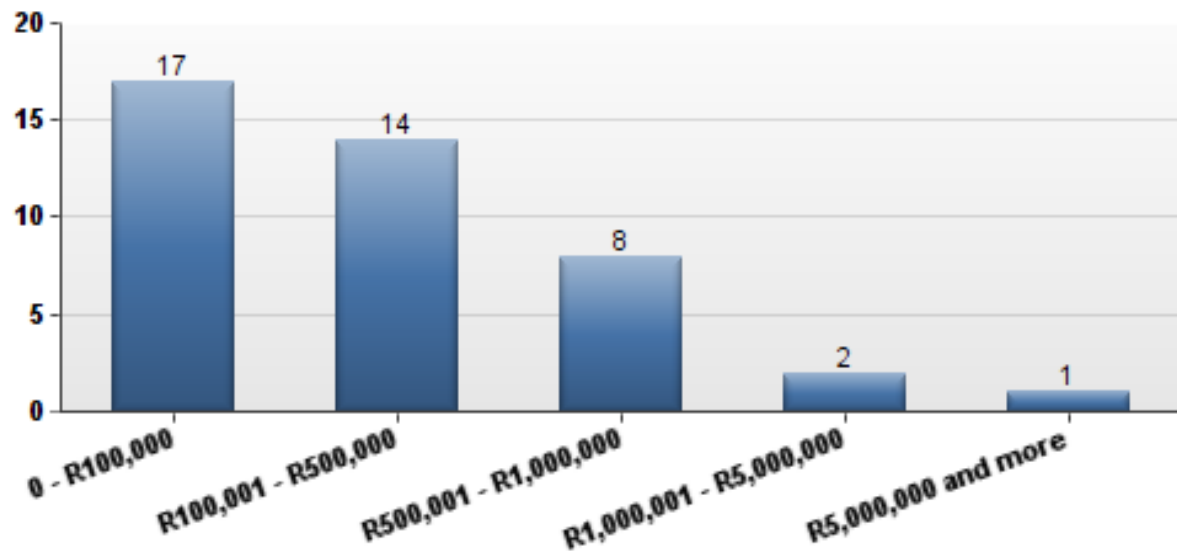


Figure 6: Sales performance in 2014

Min Value	Max Value	Average Value	Variance	Standard Deviation	Total Responses
1	5	1,952380952	1,022067364	1,010973473	42

Table 13: Statistics of sales performance in 2014

		What was the range of your turnover (total sales) on the year of graduation from the incubator					Total
		0 - R100,000	R100,001 - R500,000	R500,001 - R1,000,000	R1,000,001 - R5,000,000	R5,000,001 and more	
	Male	21	5	3	0	1	30
What is your gender ?	Female	7	5	0	0	0	12
	Total	28	10	3	0	1	42

Table 14: Gender to turnover in year of graduation

Chi- Square	Degrees of freedom	p-value
4.03	4	0.40

Table 15: Chi-square test for significance of gender on sales performance in year of graduation

		What was the range of your turnover (total sales) in 2014?					
		0 - R100,000	R100,001 - R500,000	R500,001 - R1,000,000	R1,000,001 - R5,000,000	R5,000,000 and more	Total
	Male	14	9	5	1	1	30
What is your gender?	Female						
		3	5	3	1	0	12
	Total	17	14	8	2	1	42

Table 16: Gender to turnovers in 2014

Chi- Square	Degrees of freedom	p-value
2.51	4	0.64

Table 17: Chi-Square test for significance of gender on sales performance in 2014

It can be concluded from the tables and figures that business incubator graduate SMEs' sales turnover distributions improve post-incubation.

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

In this chapter, the results of the study are discussed and explained with specific reference to the literature. The discussion follows the results pertaining to demographics of the sample; and results pertaining to research questions 1, 2 and 3. A conclusion on the results for each question is drawn. A summary of the results is presented to conclude the chapter.

5.2 Discussion Pertaining to Demographic Data

5.2.1 *Gender*

The results in Table 1 show that of the 54 respondents, 72.22 percent are males and 27.78 percent are females. This figure is similar to the SAB Kickstart population observed by Swanepoel (2009). According to the findings, the Kickstart population holds a 70:30 gender distribution in favour of males. The imbalance is in line with findings by Herrington (2013) that males are significantly more likely to pursue entrepreneurship.

5.2.2 *Age*

The respondents' age distribution is summarised in Table 2. The SAB Kickstart programme is open to youth entrepreneurs. In the context of South Africa, youth are considered to be individuals aged 18-35 (Lam *et al.*, 2007). The options for age distribution were representative of the youth age range with allowance made for graduates who may have aged beyond 35 years since the completion of the incubation programme. More than 72 percent of respondents were aged between 24 and 35 at the time of starting incubation. According to Herrington (2013), individuals within this age

range are the most prevalent source of early-stage entrepreneurial activity, owing to their level of education; level of work experience and minimal responsibilities.

5.2.3 *Race*

Only youth belonging to previously disadvantaged groups are allowed to participate in the SAB Kickstart programme. In the study, Table 3 displays representation of previously disadvantaged groups including Blacks, Coloureds, Asians and Other groups. Blacks account for 85.20 percent of the respondents. This figure is representative of the SAB Kickstart and South African population distribution which shows that 88 percent of the population is Black. Race has proven to be an important factor in monitoring early stage entrepreneurship. Whites and Asians are more likely to start businesses than are Blacks and Coloureds (Herrington & Jacqui, 2013). This has proven not to be the case amongst individuals with post-secondary qualifications.

5.2.4 *Education*

Studying Table 4 shows that of the entrepreneurs who responded to the survey, more than 85 percent have a post-matric qualification. Only an insignificant group of people without qualifications start businesses (Herrington & Jacqui, 2013). Almost 15 percent of the respondents had no secondary qualifications. This figure can potentially be attributed to South Africa's past. Since more than 50 percent of the entrepreneurs are aged 30 and above, they belong to a unique group who were faced with high levels of political instability and consequent interruptions in education during the apartheid era (Lam *et al.*, 2007).

5.2.5 *Conclusion*

Overall, it can be stated that the demographics show a high level of representativeness of the SAB Kickstart population. The demographic figures are naturally different from the ones presented by Herrington & Jacqui (2013), mostly because findings in the study exclude the race group of Whites who contribute significantly to early-stage

entrepreneurship. This exclusion of a specific race group gives rise to the structural contingency theory. The selection criteria for the SAB Kickstart programme defines the population of the study, as it is open to race groups considered to have been previously disadvantaged (Swanepoel, 2009). As such, it would be expected that the interventions in the programme address market failures which have a particularly heavy impact on this group.

5.3 Discussion pertaining to Research Question 1

Do business incubator graduate SMEs tend to survive longer than 42 months?

5.3.1 *Graduation as a measure of survival*

In the study, it is tacitly implied that by virtue of graduating from the enterprise development programme, all 54 respondents are considered to have met the conditions for survival during incubation. The measure of graduation as survival during incubation seems easy to achieve, considering that graduation in the context of this study could have occurred anytime between two weeks up until 18 months of incubation. In the literature, Schwartz (2013) stated that graduation is easy alluding to the simple conditions for graduation that incubators hold. This exposes graduation as a poor measure of business incubator performance because it is a function of time in this context. The literature explains that graduation usually occurs once a firm reaches a stage of being structurally stable and has overcome its resource gaps (Hackett & Dilts, 2004).

5.3.2 *Continuance versus discontinuance*

Table 5 reflects a frequency table which shows how many of the graduates are still involved with the businesses they entered into incubation and how many are no longer running their businesses. The results show that 77.78 percent of the respondents are still running the same business. The discontinuation rate observed is therefore 22.22 percent. This is in line with findings by Schwartz (2009) that at least 20 percent of incubated firms do not survive post-incubation. At first glance, the 77.78 percent survival rate seems like a polar opposite in comparison to Olawale and Garwe's (2010) observation of 72 percent failure rate over a 42-month period. This figure is misleading and cannot be attributed solely to the interventions of the incubation programme. Table 7 gives a more intimate look at the survival data and indicates that the class of 2012 had 17 surviving businesses and 5 discontinuances. Class of 2013 had 11 successes and 7 discontinuances. The classes of 2014 and 2015 are SAB Kickstart graduates who have

moved into other enterprise development programmes. The 14 respondents from that group showed a perfect survival record at the time the study was conducted. The group fundamentally revealed a new statistic which shows that 25.92 percent of the graduates from 2012 and 2013 entered incubation again. The reason for their 100 percent survival rate can be attributed more to their relatively recent graduation. From the results, a question can be raised as to which group performed better with regard to survival rates, between the class of 2012 and 2013. Allen and McCluskey (1990) stated that the level of development of an incubator correlates positively with the survival rates of its graduates. It is a fair assumption that the SAB Kickstart class of 2013 intervention programme should be considered to be more developed than the SAB Kickstart class of 2012 intervention because of experience gained. Logically, one would then expect the 2013 class to outperform the 2012 class with regard to survival. 73.91 percent of the businesses in the class of 2012 were still in operation. 61.11 percent of the businesses in the class of 2013 were still in operation. The result goes against the literature and may be the result of a response bias. 22 respondents were drawn from the 2012 group while 18 respondents were drawn from the 2013 group.

5.3.3 *Reasons for discontinuance*

Table 6 is a frequency table that delves deeper into the matter of discontinuance. From the table, an understanding is drawn that 50 percent of the 12 respondents discontinued their operations and had to close their business. This represents a negative reason for discontinuance and points to underlying problems the business may have been facing such as lack profitability or funding. None of these respondents sold their businesses. These results are similar to those given by Herrington & Jacqui (2013) who stated that problems getting finance and lack of business profitability account for over 50 percent of all business discontinuance. 50 Percent of respondents gave 'other' reasons. Herrington (2013) recognised the following as other reasons for discontinuance: business (not personal) reasons; incident; retirement; and that an exit was planned in advance.

5.3.4 *Post-incubation growth paths*

Table 8 is a cross tabulation showing the relationship between the business age and survival rates. From the table, it can be derived that the youngest businesses showed the highest failure rates. This confirms stated facts that 72 percent of all small businesses fail within 42 months (Olawale & Garwe, 2010). Age cannot be assumed as causality, but more the lack of experience that would only be achieved with growing business age. Networks, profitability and other factors all play a role in making age a function that impacts positively on performance. Table 9 takes the comparisons a step further and compares the year of graduation with the year of discontinuance. These statistics allow us to study the phenomenon of post-incubation growth paths for discontinued businesses. From the data, we can derive that four businesses failed in the same year they graduated. The life support phenomenon as described by Schwartz (2009) is exhibited here. The incubation period may have acted as a life-support, delaying the inevitable demise of these firms. The other eight businesses failed within a 24-month period after graduation which speaks to the temporary impact of the business incubation phenomenon as depicted in Figure 2.

Studying this data closer reveals the answer to our research question about survival rates. From Table 8, it emerges that 18 of the businesses that participated in incubation programmes had already been in existence for close to or longer than 42 months. If a business is supposed already to be stable/established at this stage, it raises the question of why they would then pursue incubation? Of the 36 other businesses, 10 discontinued their operations and 26 had surviving businesses. Of the 26 businesses still in operation, four were founded in 2013, meaning that at the time of completing this study, these businesses were at most 24 months old. If we base survival rates on the businesses that were less than 42 months old when they entered incubation, and in 2014 were older than 42 months, then we have 10 businesses that discontinued operations and 22 businesses that survived. A 68.75 percent survival rate is identified.

5.3.5 Conclusion

Survival rates remain an important metric because they are core to the purpose of an incubator (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013). Businesses that were launched and failed within a short period owed it to graduation being a function of time instead of being a function of readiness to weather the market. The respondents reflect a 68.75 percent survival rate which shows that business incubation had a positive impact on the survival rates of firms post-incubation. We can conclude that business incubator graduate SMEs tend to last longer than 42 months.

5.4 Discussion Pertaining to Research Question 2

Do business incubator graduate SMEs meet employment creation expectations of youth entrepreneurs in South Africa?

5.4.1 *Full-time job creation before, during and after*

Figure 3 tracks the average growth of full-time job creation by graduates from before, during and after incubation. The graphical presentation shows an average job creation of 2.71 prior to incubation rise to an average of 3.38 during incubation. 4.71 is the average job creation rate post incubation, which shows a significantly higher level of job creation after incubation compared to during incubation. This result is accounted for in the literature which states that start-ups intuitively delay recruitment as a cost saving measure (Dee *et al.*, 2011; Herrington & Jacqui, 2013; Lalkaka, 2003). The difference can also be potentially accounted for by the limited space an incubation environment may offer. Once firms are out of the incubation environment, control over office space is left to their own discretion. According to Herrington (2013), 58 percent of youth entrepreneurs in South Africa expect to produce between one and five jobs in the next five years. This is in line with the average figures posted in the results of the study.

5.4.2 *Part-time job creation before, during and after*

Figure 4 tracks the average growth of part-time job creation from before, during and after incubation. The data drawn from this figure was of particular relevance to prevent the inflation of full-time job creation statistics. The graphical presentation shows that the graduate SMEs went from creating an average 1.76 jobs prior to incubation to 2.26 jobs on average during incubation. Post-incubation growth is almost 1.5 more jobs on average compared to part-time jobs created during incubation. The value of a part-time job in the South African economy is not to be understated because it carries the potential to become a full-time job.

5.4.3 *Job creation and expectations*

Table 12 shows the job creation expectations of youth entrepreneurs in South Africa. 10.9 percent of youth entrepreneurs expected to create no jobs, while the majority of these entrepreneurs – representing 58.8 percent – expected to create 1 to 5 jobs within the next 5 years. 15.8 Percent of the entrepreneurs expected to create 6 to 19 jobs and the rest – representing 14.5 percent – expected to create 20 jobs or more. What is evident from the findings is that the average expected part-time job creation is 3,17 jobs and the average expected full-time job creation is 4.71 jobs. This falls within the range the expectations of 58.8 percent of youth entrepreneurs. It can be concluded that while the data presented does not offer sufficient information to measure all the job creation expectations of youth entrepreneurs, it does however prove that the majority of youth entrepreneurs' job creation expectations are met.

5.4.4 *Conclusion*

Job creation is an important metric, especially to policymakers in the government context. The results of this study offer a panoramic view of job creation rates over three distinct stages of a graduate's entrepreneurial journey. Based on the evidence presented from the results, it is clear that graduate SMEs' ability to create employment has improved post-incubation. It can be said that business incubation has had a positive impact on graduate firms' job creation rates post-incubation. With the average of additional job creation ranging between 1 to 5 jobs, we conclude that these results are representative of 58.8 percent of the youth entrepreneurs' expectations.

5.5 Discussion Pertaining to Research Question 3

Do business incubator graduate SMEs' sales turnover distributions improve post-incubation?

5.5.1 *Turnover in the year of graduation*

Figure 5 shows a graphic representation of how turnover figures were distributed in the year of graduation. From the findings, we can deduce that a little more than 66 percent of the surviving graduate SMEs generated between R0.00 and R100,000 annual income. 23.81 Percent of the surviving graduate SMEs generated between R100,001 and R500,000. 7.14 Percent of the surviving graduates generated between R500,001 and R1,000,000. The remainder of income generated was between R5,000,001 and more. The data leans to the lowest range, which can be attributed to the post-incubation market conditions graduate SMEs are initially faced with once they leave the supportive incubation environment. Amezcua (2010) found that though the incubation process can shield tenants from external forces and market failures, it has the side effect of weakening a firm's ability to handle adversity during the post-incubation period. It must be noted that data may have been diluted because 22 respondents graduated in 2014. This means that turnover in the year of graduation and turnover in the year of 2014 essentially produces the same data from the respondents.

5.5.2 *Turnover in the year of 2014*

Figure 6 shows a graphic representation of turnover figures for the year 2014. In this graph, a healthier distribution of income brackets is exhibited. The majority are still weighted in the R0.00 to R100,000 range, but the percentage is lower, standing at 40.47 percent. This means that there has been a positive shift in earnings. 33.33 Percent of the surviving graduates earned in the R100,001 to R500,000 range. 19.04 Percent of the surviving graduates earned in the range of R500,001 to R1,000,000. 4.76 Percent of the surviving graduates earned between R1,000,001 and R5,000,001. One surviving graduate SME, representing 2.38 percent, earned within the range of 5,000,001 and

more. The data was collected in ranges as opposed to specific figures. The assumption was that not all entrepreneurs would have precise financial data at their disposal as experienced by Dee *et al.* (2011) and Swanepoel (2009). Based on the turnover ranges, it can be assumed that all the businesses in the study can be classified as small businesses by definition because of a turnover not exceeding R13 million (RSA, 2003). There is only one entrepreneur who may potentially have achieved an annual turnover in that region. This anomaly is a picture of exceptional sales growth for a business that needed incubation approximately three years ago. This speaks to the nature of some entrepreneurs going against the norm and diverging from the crowd (Swanepoel, 2009).

5.5.3 *Turnover and job creation*

Turnover figures as displayed in Figure 6 show a considerable improvement in sales growth in 2014. This coincides with the improved average job rates in 2014 as measured in Figure 3 and Figure 4. Mian (1997) stated that there is a positive correlation between sales and employment creation. From the results of this study, it can be deduced that such a positive relationship exists between turnover and job creation.

5.5.4 *Gender and turnover*

A question not central to the study, but still worth being examined is the relationship turnover has with gender. Table 15 shows a cross tabulation of gender and turnover performance in 2014. To test for the significance of gender to turnover, a Chi-Square test was run. The null hypothesis assumed that there is no difference in turnover performance between males and females. It was found that the p-values are greater than the significance level of 0.05. A value of 0.40 was measured based on total sales in the year of graduation and 0.64 was measured as a p-value in 2014. This means that we can accept the null hypothesis that gender has no impact on turnover performance.

5.5.5 *Conclusion*

Sales measure growth well and this makes it one of the most preferred growth measure (Virtanen & Kiuru, 2013). The data of this study offers a look at sales turnover performance in the year of graduation compared to the year of 2014 when the study was carried out. The distribution of turnover ranges has shown a positive change from those during this period. In summation, it can be said that incubation has had a positive overall impact on sales growth for graduates post-incubation. We can conclude this because business incubator graduate SMEs' sales turnover distributions have improved post incubation.

5.6 Conclusion

In Chapter 5, we discussed results pertaining to the demographic data; research question 1 focused on survival; research question 2 focused on job creation rate, and research question 3 focused on turnover rates.

The demographic data was discussed with regard to gender, age, race and education. It was found that 72.22 percent of the respondents were males and 27.78 percent of the respondents were females. This was similar to findings by Swanepoel (2009) that the SAB Kickstart population stands at a 70:30 divide. 72 Percent of the respondents were aged between 24 and 35 years; this resembled the figures for the age distribution for the population of entrepreneurs in South Africa (Herrington & Jacqui, 2013). In terms of race, 85.02 percent of the respondents were Blacks which was also similar to both the SAB Kickstart and national youth entrepreneur race distribution (Herrington & Jacqui, 2013; Swanepoel, 2009). Overall, it was found that the demographic data showed that the respondents from the sample carried a high level of representativeness of the characteristics of the population.

A discussion around question 1 was explored. It was pointed out that using graduation as a measure of survival during incubation proved to be a relatively easy milestone to achieve because graduation in this study is a function of time as opposed to being a function of achieving a certain level of readiness to enter the market. Continuance versus discontinuance was discussed, and it was revealed that the respondents showed a 77.78 percent survival rate. This is in complete contrast to the findings by Olawale and Garwe (2010), where 72 percent of all small and medium businesses fail within 42 months. The remarkable difference was attributed to a number of factors. Time was a major factor and it was revealed that some firms had only recently graduated and had not been in existence for a full 42 month. Another source of survival revealed was the high levels of re-incubation. Though this is the case, a certain portion of the survival levels could be attributed to business incubation by studying the classes of 2012 and 2013 closely. A dip in the survival of firms was noticed between 2012 and 2013. This was possibly due to the response bias between the two classes. The post-incubation growth paths for firms that

discontinued operations were discussed. It was found that four of the respondents discontinued operation in the same year of graduation, exhibiting the life support effect of incubation (Dee *et al.*, 2011). Eight of the discontinued businesses did so within a 24-month period, showing the temporary impact of the incubation phenomenon. The respondents reflect a 68.75 percent survival rate which shows that business incubation had a positive impact on the survival rates of firms post-incubation. We can conclude that business incubator graduate SMEs tend to last longer than 42 months.

A discussion around research question 2 was pursued to understand the job creation rates. It was observed that the higher job creation growth rates occurred in the post-incubation period. This agreed with literature that established that start-ups often delay recruitment to defray costs (Dee *et al.*, 2011; Lalkaka, 2003). The job creation data matches the expectation of 58 percent of South African youth entrepreneurs that they will create 1 to 5 jobs in 5 years (Herrington & Jacqui, 2013). Part-time jobs have the potential to become full-time jobs and in this regard, both job types showed a similar growth pattern. With the averages of expected job creation ranging between 1 to 5 jobs, we conclude these results are representative of 58.8 percent of the youth entrepreneurs' expectations. It can therefore be concluded that business incubator graduate SMEs' job creation rates match the expectation of the majority of youth entrepreneurs.

Research question 3 was discussed with regard to achieved turnover results. It was explained that the majority of turnover in the year of graduation tended to the R0.00 to R100,000 range. A shift was noted in the distribution of the turnover in 2013. 40 Percent of the respondents still earned in the lowest range, but the majority had shifted to a turnover range of R100,001 and higher. Based on the turnover range, it was noted that all of the businesses – with the exception of one – could be classified as small businesses based on official definitions (RSA, 2003). A positive correlation in turnover rates and job creation rates was noted. Based on a Chi-Square test for significance, it was deduced that gender has no impact on turnover. Overall, it could be said that business incubation had a positive impact on the turnover rates of SMEs' post-incubation.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

In Chapter 1, the context for the study was set with a rationale provided and the business problem identified. In Chapter 2, a comprehensive literature review was drawn, highlighting this paper as an incubation-impact study. In the chapter, the question of how incubation impact can be measured was thoroughly explored, resulting in three performance metrics being identified, namely survival, job creation and turnover rates. From these three metrics, research questions were drawn in a post-incubation context. In Chapter 3, the methodology for conducting the study was offered with special consideration given to the sampling method which had a potential shortcoming regarding its lack of representativeness and response bias. In Chapter 4 and 5, the results were presented and discussed with regard to demographics and the research questions. Similarities and differences in findings compared to the literature were identified and conclusions were drawn with regard to the research questions. Chapter 6 is the final chapter in this study. A summary of the findings and conclusions drawn will be presented with consideration to the context and literature presented in the study. Recommendations will be offered based on the findings with a particular focus to policymakers as stakeholders. The chapter will be completed with suggestions for future research that can be pursued because of questions this study has produced.

6.2 Conclusions of the Study

6.2.1 *Demographics*

From the study's results, it was apparent that the gender distribution of 72.22 percent for males and 27.78 percent females, reflects a high level of similarity to the Kickstart population which holds a 70:30 gender distribution in favour of males (Swanepoel, 2009).

The respondents' age distribution showed that the entrepreneurs are youth entrepreneurs. More than 72 percent of respondents were aged between 24 and 35 at the time of starting incubation. This is in line with the expectations of Herrington & Jacqui (2013) who stated that this age range is the most prevalent source of early stage entrepreneurial activity in South Africa.

The Black/African group accounted for 85.20 percent of all the respondents. This figure is representative of the SAB Kickstart and South African population distribution which shows that 88 percent of the population is Black.

Of the entrepreneurs who responded to the survey, more than 85 percent have a post-matric qualification. Almost 15 percent of the respondents had no secondary qualifications.

Based on the structural contingency theory, the selection criteria of the incubator are modelled according to the South African context to incubate previously disadvantaged individuals. It is also interesting to note that though Statistics South Africa (2014) found that the unemployment rate is highest amongst women, youth, the Black/African population group and individuals with an educational attainment of less than matric, there is a mixed set of results within these groups with regard to early stage entrepreneurial activity.

From the findings of the study, the author concludes that though the study provides some insights, it cannot provide a solid quantifiable conclusion around the likelihood of the high unemployment risk groups participating in entrepreneurship. Based on the study findings,

people with a low educational attainment also seem to be less likely to participate in formal entrepreneurial activities. Only an insignificant group of people without qualifications start official or formal businesses, according to Herrington & Jacqui (2013). In South Africa, however, there are also thousands of “survivalist” micro businesses formed by hawkers, food sellers, waste collectors, etc., most of whom have no or low education levels. Overall findings of this study show that the demographics depict a high level of representativeness of the SAB Kickstart population. The demographic figures are naturally different from the ones presented by Herrington & Jacqui (2013) in literature, mostly because findings in the study exclude the race group of Whites who contribute significantly to early-stage entrepreneurship.

6.2.2 *Research question 1*

By graduating from the enterprise development programme, all 54 respondents are considered to have met the conditions for survival during incubation. Graduation was identified to be a function of time in the context of the study. Graduation criteria may differ from incubator to incubator, but the literature suggests that once a firm reaches that stage, it should be structurally stable and have overcome its resource gaps (Hackett & Dilts, 2004). If this is done, then the measure offered by Allen and Weinberg (1988) can be applied as a ratio which compares the number of firms exiting the incubator to the number of firms that discontinued operations while they were still tenants.

The results showed that 77.78 percent of the respondents are still running the same business post incubation. The discontinuation rate observed was 22.22 percent which is in line with findings by Schwartz (2009) that at least 20 percent of incubated firms do not survive post-incubation. The findings were in stark contrast to those by Olawale and Garwe (2010) who found that 72 percent of all SMEs fail within 42 months of creation.

The survival data indicates that the class of 2012 had 17 surviving businesses and 5 discontinuances. Class of 2013 had 11 successes and 7 discontinuances. The classes of 2014 and 2015 are SAB Kickstart graduates who have moved into other enterprise

development programmes. The 14 respondents from that group showed a perfect survival record at the time the study was conducted.

73.91 Percent of the businesses in the class of 2012 were still in operation. 61.11 Percent of the businesses in the class of 2013 were still in operation. The result goes against the literature about incubator development and may be the result of a response bias.

50 Percent of the 12 respondents who discontinued their operations had to close their business. This represented a negative reason for discontinuance. None of the respondents sold their businesses. 50 Percent of respondents opted for 'other' as a response. The results were similar to those stated by Herrington & Jacqui (2013) who found that problems were mostly blamed on being unable to get finance and lack of business profitability, a problem faced by over 50 percent of all business discontinuances.

In this study, the youngest businesses showed the highest failure rates. Comparisons were made with the year of graduation and the related year of discontinuance. It was derived that four businesses failed in the same year they graduated. According to Rothaermel and Thursby (2005), incubated firms are significantly less likely to experience outright failure. However, a third of all businesses that discontinued operations did so in an outright manner. The other eight businesses which discontinued operations did so within a 24-month period of graduation.

Survival rates remain an important metric because they are core to the purpose of an incubator (Hackett & Dilts, 2004; Mian, 1997; Mutambi *et al.*, 2010; Scaramuzzi, 2002; Virtanen & Kiuru, 2013). Businesses that graduated and failed within a short period owe it to graduation being a function of time instead of being a function of readiness to weather the market. Through this, the life support phenomenon was observed as four businesses closed down within the same year of graduation (Schwartz, 2009). The phenomenon of re-incubation, as observed in over 25 percent of the graduates, may be a function of businesses being released into the market too soon. From Table 8, the

author established that 18 of the businesses that participated in incubation programmes had already been in existence for close to or longer than 42 months. Of the 36 other businesses, 10 discontinued their operations and 26 had surviving businesses. Of the 26 businesses still in operation, four were founded in 2013, meaning that at the time of completing this study these businesses were at most 24 months old. Basing the survival rates on the businesses that were less than 42 months old when they entered incubation, and in 2014 were older than 42 months, 10 businesses had discontinued operations and 22 businesses survived. A 68.75 percent survival rate is identified. Therefore, it can be concluded that business incubator graduate SMEs tend to survive longer than 42 months.

6.2.3 *Research question 2*

Average job creation of 2.71 prior to incubation rose to an average of 3.38 during incubation. 4.71 is the average post-incubation job creation rate, which shows a significantly higher level of job creation after incubation compared to during incubation. These results are promising, but if these results are the norm across all incubators then the 25.2 percent and ever increasing unemployment rate as observed by Statistics South Africa (2014) should be curbed or at least growing at a slower rate. It is worth exploring what kind of employees graduate SMEs tend to employ.

Graduate SMEs went from averaging 1.76 jobs being created prior to incubation to 2.26 jobs on average being created during incubation. Post-incubation growth is almost 1.5 more jobs on average compared to part-time jobs created during incubation.

The research conducted by Campbell and Allen (1987) showed that incubators are not good drivers of job creation, but over the years incubation programmes have developed to have a special focus on the outputs of this metric. According to Herrington & Jacqui (2013), 58 percent of youth entrepreneurs in South Africa expect to produce between one and five extra jobs in the next five years. They stay true to their expectation as reflected by the figures in the study. In light of how youth unemployment remains a particularly entrenched problem drawn from political instability and consequent

interruptions in education during the apartheid era (Lam *et al.*, 2007), it is interesting to see that the youth are the biggest force tackling the problem. Job creation remains important, especially to policymakers in this context. The results of this study offer a panoramic view of job creation rates over three distinct stages of a graduate SME's entrepreneurial journey.

Based on the evidence presented from the results, it is clear that graduate SMEs' ability to create employment has improved post-incubation. The average part-time job creation is 3,17 extra jobs and the average full-time job creation is 4.71 jobs. This falls within the range of expectations of 58.8 percent of youth entrepreneurs. It can be concluded that the majority of youth entrepreneurs' job creation expectations are met by business incubator graduate SMEs.

6.2.4 *Research question 3*

A little more than 66 percent of the surviving graduate SMEs generated between R0.00 and R100,000 annual income. 23.81 Percent of the surviving graduate SMEs generated between R100,001 and R500,000. 7.14 Percent of the surviving graduate SMEs generated between R500,001 and R1,000,000. The remainder of income generated was between R5,000,001 and more. The data leans to the lowest range which can be attributed by the post-incubation market conditions graduates are initially faced with once they leave the programme.

For the 2014 turnover figures, the majority are still weighted in the R0.00 to R100,000 range, but the percentage is lower, standing at 40.47 percent. There was a positive shift observed. 33.33 Percent of the surviving graduates earned in the R100,001 to R500,000 range. 19.04 Percent of the surviving graduates earned in the range of R500,001 to R1,000,000. 4.76 Percent of the surviving graduates earned between R1,000,001 and R5,000,001. One surviving graduate representing 2.38 percent earned within the range of 5,000,001 and more.

Turnover figures, as displayed in Figure 6, show a considerable improvement in sales growth in 2014. This coincides with the improved average job rates in 2014 as measured in Figure 3 and Figure 4. Mian (1997) stated that there is a correlation in sales and employment creation. From the results, it can be deduced that a positive relationship exists between turnover and job creation.

In running the Chi-Square test, a null hypothesis assumed that there is no difference in turnover performance between males and females. It was found that the p-values are greater than the significance level of 0.05. A value of 0.40 was measured based on total sales in the year of graduation and 0.64 was measured as a p-value in 2014. The null hypothesis was accepted.

Based on the turnover ranges, it can be assumed that all the businesses in the study can be classified as small businesses by definition because of a turnover not exceeding R13 million (RSA, 2003). Is enough being done by incubators to outgrow the small business cycle? Small and medium enterprises (SMEs) are a major source of economic growth and an increase in turnover may result in increased taxes and the ability to employ more individuals. This allows the small business to fulfil its economic destiny of job and wealth creation. The distribution of turnover ranges has shown a positive change from during incubation to post-incubation. In summation, it can be said that incubation has had a positive overall impact on sales growth for graduate SMEs post incubation.

6.2.5 Conclusion

The definition of a business incubator, in the context of the study, derived at from inputs by Hackett and Dilts (2004); (Mian, 1997); Scaramuzzi (2002); Mutambi *et al.* (2010); and Virtanen and Kiuru (2013), was said to be;

“An organisation that seeks to provide business support services to SMEs, with a view to equipping them with the necessary skills and tools required to survive and grow into established businesses that create jobs.”

In the study, the business incubator exhibits this behaviour across three different metrics: survival, jobs and sales rates. The author dubbed these metrics the adapted Mian (1997) framework. The incubator studied can be considered a Corporate Private Incubator (CPI) as per the classification of Grimaldi and Grandi (2005). The study exposes the gap left by solely exploring tenant performance during incubation and ignoring post-incubation performance of graduate SMEs. Cornelius and Bhabra-Remedios (2003) noted that in order to develop a comprehensive performance evaluation model for an incubator, the performance of new ventures entering and graduating from that incubator must be tracked. This is particularly relevant as it may take years for the impact of the incubator to be realised (Hackett & Dilts, 2004; Dee *et al.*, 2011). The researcher questioned whether policymakers could possibly be under-informed in their decision making. Could post-incubation results inform their perspective? The main problem was the need to identify the post-incubation impact that business incubators have on job creation, survival and financial performance of graduate SMEs. Through this, the researcher aimed to gain knowledge on the effectiveness of business incubators in helping small and medium enterprises fulfil their economic obligations.

It is important to note how the results are a clear reflection of the theory of economic development through entrepreneurship, despite some contradictions. 68.75 Percent of the graduate SMEs survived longer than 42 months. Based on the theory, this would have a knock-on effect of increased job creation and an improved tax base. The data presented shows an improved level of average job creation rates and a positive change in the distribution of sales over time. We can conclude that not only are business incubators effective in helping SMEs fulfil their economic potential, but also in the application of post-incubation performance data of small and medium enterprises (SMEs) as a reliable source of information which can inform policymakers in their decision making.

6.3 Recommendations

The study sought to supplement existing literature on incubator-incubation impact studies. The recommendations drawn are of relevance to policymakers as stakeholders. The perspective offered from the findings may provide guidance with decisions pertaining to policy development and resource allocation to incubators.

From the study, the author established a positive correlation between turnover and job creation. These two metrics are tied to combating unemployment and improving economic growth. Improved turnover of graduate SMEs is the key. Virtanen and Kiuru (2013) stated that job creation from small and medium enterprises is driven by high growth enterprises, and that incubators that foster fast growth, are typically drivers of job creation. These gazelles account for 70 percent of all new job creation (Acs, 2011).

To enhance the economic agenda, policymakers firstly need to identify better methods for collecting incubation performance data from its beneficiaries. Self-reporting, which is the typical method, is not effective to retain data integrity (Dee *et al.*, 2011).

The responsibility for incubator data collection must be shared between business incubators and policymakers. Hackett and Dilts (2004) noted that collecting incubator performance data regularly is a difficult task which even large incubators struggle to manage. Business incubators need to be equipped with the tools and ability to produce quality, untainted performance data timeously. The use of electronic accounting software which draws data directly from business accounts can be utilised to ensure financial data integrity for instance.

The results drawn should be pooled and developed into an average for each metric so that it can be used as a benchmarking tool to set national standards of performance. The moving average will allow policymakers to track improvements or deteriorations in business incubator performance. Bearse (1998) suggested that if incubator performance data could be regularly collected, then it could be possible to compare performance of different incubators and establish an industry baseline.

Based on the averages, a scorecard or calculator could be developed for assessing an incubator's propensity to improve business performance with regard to a number of metrics. These metrics would speak to the level of development of the business incubator. Level of development is a good determinant of the ability to improve SME performance (Hackett & Dilts, 2004).

Resource allocation centred on performance should be based on two perspectives; performance of SMEs during and post incubation. Business incubators could be held accountable for their graduate SMEs' future performance. Current incubator performance measurement models utilised rely on SME performance during incubation, which tends to skew data (Amezcu, 2010; Bergek & Norrman, 2008; Knopp & Association, 2007).

Incubators must be incentivised to take in more women-led start-ups.

Incubators must be incentivised to use a combination of time and the degree of readiness of a firm as criteria for graduation. It must be noted, however, that it is recommended that graduation should be avoided as a measure.

Performance data must be studied to reconcile various perspectives and performance rates in a bid to identify new ways of improving the ability of business incubators to impact sales growth.

6.4 Suggestions for Further Research

The study has raised a few questions and provided a glimpse into new knowledge waiting to be further explored under the banner of incubation-impact studies.

The opportunity to conduct a longitudinal study on the sample and future generations of Kickstarters is worth considering. Tracking the performance data during and after incubation more intimately, over a longer period of time, may yield more definitive results with regard to the impact of business incubation on performance.

A study can be carried out to better understand the economic and fiscal impact of incubation. Some of the metrics that were overlooked earlier on in the study such as exports and innovation rates can be considered as variables in the study.

The revelation of the statistic which shows that 25.92 percent of the graduate SMEs from 2012 and 2013 entered incubation again could be worth studying. The phenomenon of re-incubation could be an interesting topic to explore to try to understand why entrepreneurs re-incubate and what the impact of re-incubation is.

Another revelation was how 33.33 percent of the respondents were running enterprises that were older than 42 months at the time of incubation. This raised a question as to why businesses that are supposed to be established/stable would pursue incubation. One reason possibly may be because the time for a business to reach stability may differ from country to country and industry to industry. A study around this topic may establish ideal incubation periods based on country and industry.

Attempts in the literature to compare non-incubated firms with incubated firms have to discount the influence of incubatee selection criteria which offer a bias in favour of incubators (Amezcu, 2010; Hackett & Dilts, 2004). According to Amezcu (2010), incubated firms fail at almost the same rate as companies that were not supported by incubators. There is room to carry out a study to that effect. This is regressive by nature, however, because the study again would seek to ask whether incubators have an impact on business performance.

There is potential in carrying out a comparative study between incubators which share the same typology. Differences in levels of development can be observed and compared to actual performance and typology as listed by Grimaldi and Grandi (2005); institutional mission; sources of revenue; industrial sector; market; location; origin of ideas; phase of intervention; incubation period; services offered; and management teams.

The study primarily focuses on the theory of economic development through entrepreneurship. Other theories could best be explored in a study that focuses on the actual interventions of business incubators and the resulting outcomes in financial performance. The specific theories to be highlighted would be transaction economics, network and structural contingency theories.

The same study could be carried out with the adoption of a different perspective. The author identified two general perspectives, in the literature, that shape models on incubator performance. One perspective derives performance measures by referring to the incubation programme itself which focuses on occupancy rates, graduation rates, incubation space, and levels and sources of funding (Dee *et al.*, 2011). The other perspective informs its performance measures by referring to the tenants and graduates drawing a focus on financial performance, survival rates, tax rates, export rates, employment creation and innovation rates (Dee *et al.*, 2011). The former could be pursued to reconcile the latter.

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Appendices

6.5 Cover Letter for Study

Dear Entrepreneur,

I would like to kindly request your assistance in completing a survey for research that I am conducting. The study is focused on the impact of business incubation and enterprise development programmes on post-incubation job creation, business survival and financial performance of graduate small and medium enterprises.

Your contribution will be of particular value to determine how policymakers can measure incubator outcomes to better inform resource allocation. You will have access to the findings of the research which will be presented at a web-based conference during 2015.

All information collected for this research will be treated with the utmost confidentiality and responses will be recorded anonymously.

Follow this link to the Survey:

(link inserted here)

Or copy and paste the URL below into your internet browser:

(url inserted here)

I would like to thank you in advance for contributing some of your time, experience and expertise to this study.

Kind regards,

Mr. M.L. Mokgoko - MBA Candidate (WBS)

Cell no: 076 543 3234

E-mail address: moroka.mokgoko@gmail.com

6.6 Research Instrument

The aim of this study is to measure the impact of business incubation on post-incubation performance of small and medium enterprises in South Africa. The respondents to this questionnaire should be graduates of an incubator or enterprise development programme. All responses will be kept anonymous and confidential. The final research report will be made available to respondents on request as from April 2015. INSTRUCTIONS: Please answer all questions truthfully. Most of the questions simply require you to type in a response or to click on an option. It would be highly appreciated if the questionnaire is completed within 2 days of you receiving it. There are only 16 questions in this survey. It will take you approximately 5 -12 minutes to complete the survey. Thank you for your participation.

Q1 What is your gender?

- ☐ Male (1)
- ☐ Female (2)

Q2 How old are you? (In completed years)

- ☐ 18-23 (1)
- ☐ 24-29 (2)
- ☐ 30-35 (3)
- ☐ 36 and older (4)

Q3 What is your race?

- ☐ Black (1)
- ☐ Indian/ Asian (2)
- ☐ Coloured (4)
- ☐ Other (5)

Q4 What is your current level of education?

- ☐ Lower than matric (1)
- ☐ Matric (2)
- ☐ Certificate/ Diploma (3)
- ☐ Bachelors Degree (4)
- ☐ Honours Degree (5)
- ☐ Masters Degree (6)
- ☐ Doctorate (7)
- ☐ Other (8)

Q5 Which incubator or enterprise development programme was your business enrolled in? If your business was enrolled in more than one, choose the most recent.

Q6 In which year did you enter the incubator or enterprise development programme?

- ☐ 2015 (1)
- ☐ 2014 (2)
- ☐ 2013 (3)
- ☐ 2012 (4)

Q7 In which year did you graduate from the incubator or enterprise development programme?

- ☐ 2015 (4)
- ☐ 2014 (1)
- ☐ 2013 (2)
- ☐ 2012 (3)

Q8 When was your business founded?

- ☐ 2014 (1)
- ☐ 2013 (2)
- ☐ 2012 (3)
- ☐ 2011 (4)
- ☐ 2010 (5)
- ☐ 2009 (6)
- ☐ 2008 (7)
- ☐ 2007 (8)
- ☐ 2006 (9)
- ☐ 2005 (10)
- ☐ Before 2005 (11)

Q9 Are you still involved with the same business?

- ☐ Yes (1)
- ☐ No (2)

If Yes Is Selected, Then Skip To “In which industry does your business operate?”

Q10 What happened to the business?

- ☐ I closed the business (1)
- ☐ I sold the business (2)
- ☐ Other (3)

Q11 In which year did this occur?

If In which year did this occur? Is Not Empty, Then Skip To End of Survey

Q10 In which industry does your business operate?

- ☐ Agriculture, Forestry, Hunting and Fishing (1)
- ☐ Mining and Construction (2)
- ☐ Manufacturing (3)
- ☐ Transport and Communication Utilities (4)
- ☐ Wholesale, Motor Vehicle Repairs and Sales (5)
- ☐ Retail, Hotels and Restaurants (6)
- ☐ Business Services (7)
- ☐ Healthcare, Education and Social Services (8)
- ☐ Other (9)

Q11 How many owners (shareholders) does your business have?

Q12 What form of ownership does your business operate under?

- ☐ Sole trader (1)
- ☐ Partnership (2)
- ☐ CC (Close Corporation) (3)
- ☐ Private Company (4)
- ☐ Other (5)

Q13 How many "full-time" employees did you have during the following periods?

_____ Number of employees before incubation (1)

_____ Number of employees during incubation (2)

_____ Current number of employees (3)

Q14 How many "part-time" employees did you have during the following periods?

_____ Number of employees before incubation (1)

_____ Number of employees during incubation (2)

_____ Current number of employees (3)

Q15 What was the range of your turnover (total sales) on the year of graduation from the incubator or enterprise development programme?

- ☐ 0 - R100,000 (1)
- ☐ R100,001 - R500,000 (2)
- ☐ R500,001 - R1,000,000 (3)
- ☐ R1,000,001 - R5,000,000 (4)
- ☐ R5,000,001 and more (5)

Q16 What was the range of your turnover (total sales) in 2014?

- ☐ 0 - R100,000 (1)
- ☐ R100,001 - R500,000 (2)
- ☐ R500,001 - R1,000,000 (3)
- ☐ R1,000,001 - R5,000,000 (4)
- ☐ R5,000,001 and more (5)