FULL COLOUR THINKING

GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

Business Incubators in Zambia: A study of the Impact on the Growth of Small Businesses

A Research Report presented to
The Graduate School of Business
University of Cape Town

In partial fulfilment
of the requirements for the
MCOM in Development Finance Degree

by
William K. Kasase

Supervised by: Dr. Mlenga Jere

University of Cape Town

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

University of Cape Town

Plagiarism Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.
2. I have used the American Psychological Association 6th Edition convention for citation and referencing. Each contribution to, and quotation in, this Thesis Research from the work(s) of other people has been attributed, and has been cited and referenced.
3. I certify that this Thesis Research is my own work.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.
5. I acknowledge that copying someone else's assignment or essay, or part of it, is wrong, and declare that this is my own work.

   Name: William Kasase

   Date: 16th February 2017

   Place: Graduate School of Business- University of Cape Town

ACKNOWLEDGEMENTS

I would like to acknowledge God almighty and the Winners Family for inspiring this work, without which this research report would not have been possible.

I have dedicated this work to my late father Willie Kasase for his contribution to human development through the promotion and education of workers' rights.

To my professor, Dr. Mlenge Jere, words fail me; for your patience and wisdom in guiding this work. Thank you.

To Mwenya, Zoey and Shalom, I thank you for your understanding.

My research assistant Elizabeth Nyondo, I thank you for your hard work.

ABSTRACT

This study tested the impact of Business Incubators (BI) in stimulating the growth of small to medium businesses in a Southern African country, Zambia. The study explores the existence, awareness, beliefs and experience in a sub Saharan context, identifying the key impact factors.

The study was aimed at understanding whether the operation of business incubators would result in stimulating small to medium business enterprises the same way it does in the west. To achieve this, the study reviewed the existing literature on the subject matter and analysed the collected data using a questionnaire was analysed.

The collected data was analysed using SSPS. The results of the analysis revealed that 64% of the respondents had heard about Business Incubators. This was done through a scientific research by a well selected set of interview questionnaires, from a sample size of 300 small to medium businesses. Only 19% confirmed receiving business assistance from a support initiative. 95% of the total respondents confirmed that a business incubator program would impact the growth of their businesses in many areas.

The study further found that there were a few challenges with access to a Business Incubator. Prominent amount them was the restricted access to SMEs located in the cities. Secondly, the respondents bemoaned that the application procedure was complicated and needed to be simplified and translated into local languages.

The research makes the conclusion that Business Incubators have a positive impact on the growth of small businesses in Zambia, based on the empirical evidence obtained during the study. The study revealed 32% of incubated businesses had reduced their operation costs. Contrary to available research, entrepreneurs who had received support from Business Incubators employed fewer employees than those that did not. The study therefore, questioned how business incubators increased the probability of the long term survival of the enterprise.

Table of Contents

CHAPTER ONE 1
INTRODUCTION 1
1.1 Background of the Study 1
1.2 Problem Statement 6
1.3 Purpose and Significance of Research 7
1.4 General objectives 7
1.5 Specific objectives 8
1.6 Research questions 8
CHAPTER TWO 9
LITERATURE REVIEW 9
2.1 Introduction 9
2.2 Observational studies 9
2.2.1 The Role of Small Businesses to the World Economy 10
2.2.2 Lessons learned from this case study were that, human capital factors were the key success factors. 11
2.2.3 Drivers of Employment 12
2.2.4 Challenges in measuring the impact of business incubation 13
2.3 Case Studies 16
2.3.1 Academic incubators in India 16
2.3.2 Case Study of Israel 18
Business Incubator in Jerusalem 18
2.3.3 Case study of Hungary (2007) 19
2.3.4 Research on the influence of BIs on Enterprises in America (2008) 20
2.3.5 Zambian Perspective 20
2.3.6 World View 21
2.3.7 Emerging Issues 22
2.4 Theoretical framework 23
2.4.1 Real Options Driven Theory 23
2.4.2 Network Theory 25
2.5 Conclusion 27
CHAPTER THREE 29

METHODOLOGY 29
3.1 Introduction 29
3.2 Study design 29
3.3 Characteristics of the Study Population 29
3.4 Geographical Coverage 30
3.5 Sampling Procedures 30
3.6 Data Collection 31
3.7 Data Processing and Analysis 32
3.8 Ethical Considerations 32
3.9 Study Limitations 32
CHAPTER FOUR 34
RESEARCH FINDINGS AND ANALYSIS 34
4.1 Introduction 34
4.2 Characteristics of respondents 34
4.2.1 Age 34
4.2.2 Sex and Ownership 35
4.2.3 Legal structure and how long business has been in existence 35
4.2.4 Level of education obtained 36
4.3 Knowledge about BIs 37
4.3.1 Services offered by business incubators 37
4.4 Effect of business incubators on SMEs 38
4.4.1 How many are Incubated businesses 38
4.4.2 Stage at which assistance was obtained from business incubators 38
4.4.3 Growth Factor: Employment Creation 39
4.4.3 Level of importance of BIs to the growth of the business 40
4.4.4 The impact of business incubators on the growth of businesses 40
4.4.5 Why SMEs do not receive assistance from business incubators 42
4.4.6 Availability of business incubators in Zambia 43
4.4.7 Services needed by SMEs to grow 43
4.5 How to encourage SMEs to benefit from business incubators 44
4.6 Hypothesis testing 44
4.6.1 Awareness of SMEs about business incubators and being incubated 45
4.6.2 Awareness and effect of business incubators on SMEs 47
CHAPTER FIVE 49
CONCLUSION AND RECOMMENDATIONS 49
5.1 Introduction 49

5.2 Conclusions 49
5.2 Key Findings 49
5.3 Research Limitation 51
5.4 Conclusion 51
5.4.1 Savings on Start-up Costs 51
5.4.2 At what stage of the Business Cycle are BIs necessary? 52
5.4.3 Growth Factor: Employment Creation 52
5.5 Recommendations 53
5.6 Future Research Directions 54
REFERENCES 55
APPENDIX 61
Appendix 1: Sample of Questionnaire 61
Appendix 2: Useful Information 67

Table of Figures

Figure 1: Number of Business Incubators 3
Figure 2: Top 10 Challenges Facing SMEs 6
Figure 3: Geographic Distribution of SMEs 2004 30
Figure 4: Services Offered by BIs 37
Figure 5: Count and Percentages 38
Figure 6: Pie Chart on Enrolments 39
Figure 7: Importance of Business Incubators 40
Figure 8: Impact on Business Growth 41
Figure 9: Reasons 42
Figure 10: Availability of BIs in Zambia 43
Figure 11: Services Required by SMEs from BIs 44
Figure 12: How to Encourage SMEs to Benefit from BIs 44
Figure 13: Awareness of SMEs about BIs 46
Figure 14: Awareness Responses 46
Figure 15: Chi-Square Test 47
Figure 16: Major Donor Private Finance Projects in Agriculture 2000-2010 67
Figure 17: Ease of Doing Business Rank in Zambia 2014-2015 68
Figure 18: Real GDP Growth in the Manufacturing Industry 68
Figure 19: Rank of Unemployment among Most Important Problems 69
Figure 20: Population Growth will put more pressure on Unemployment 69

List of Tables

Table 1: Assessing the Impact of Business Incubators Lt. Review 13
Table 2: Motivating Factors 31
Table 3: Age Group Analysis 35
Table 4: Ownership Analysis 35
Table 5: How long the Business has been in Existence 36
Table 6: Education Level 36
Table 7: Awareness Analysis 37
Table 8: Services Provided by Business Incubators 37
Table 9: Stage of Business Assistance from BIs 39
Table 10: Reasons why Some SMEs do not enrol in BI program 42

ACRONYMS

CEEC	Citizens' Economic Empowerment Commission
CSO	Central Statistical Office
CSOs	Civil Society Organisations
EAZ	Economics Association of Zambia
EIA	Environmental Impact Assessment
EPAs	Economic Partnership Agreements
FDI	Foreign Direct Investment
FIs	Financial Institutions
FNDP	Fifth National Development Plan
FTA	Free Trade Area
FTAs	Free Trade Agreements
FTCs	Farmer Training Centres
FTI	Farmer Training Institute
FSDP	Financial Sector Development Programme
GDP	Gross Domestic Product
GNI	Gross National Income
GRZ	Government of the Republic of Zambia
HIV	Human Immune-Deficiency Virus
HQ	Headquarters
HRC	Human Rights Commission
ICT	Information and Communications Technology
IDPs	Integrated Development Plans
ITCP	Inter-Agency Technical Committee on Population
KPIs	Key Performance Indicators
LAs	Local Authorities
M & E	Monitoring and Evaluation
MCDSS	Ministry of Community Development and Social Security
MCT	Ministry of Communication and Transport

MCTI	Ministry of Commerce, Trade and Industry
MDGs	Millennium Development Goals
MFEZ	Multi-Facility Economic Zone
MHA	Ministry of Home Affairs
MIBS	Ministry Of Information and Broadcasting Services
MIS	Management Information Systems
MLGH	Ministry of Local Government and Housing
MLSS	Ministry of Labour and Social Security
MMMD	Ministry of Mines and Minerals Development
MOE	Ministry of Education
MoFNP	Ministry of Finance and National Planning
MoH	Ministry of Health
MoJ	Ministry of Justice
MPs	Members of Parliament
MSME	Micro, Small and Medium-scale Enterprises
MSYCD	Ministry of Sport, Youth and Child Development
MTEF	Medium-Term Expenditure Framework
NDP	National Development Plan
NDP	National Decentralisation Policy
NDPs	National Development Plans
NEPAD	New Economic Partnership for African Development
NGOs	Non–Governmental Organisations
NGOCC	Non-Governmental Organisation Coordinating Council
NHA	National Housing Authority
PFM	Public Financial Management
PhD	Doctor of Philosophy
PPPs	Public Private Partnerships
PRSP	Poverty Reduction Strategy Paper
PSDRP	Private Sector Development Reform Programme
R & D	Research and Development
RDP	Research Development Programme
RDI	Research, Development and Innovation
SADC	Southern African Development Community

SCTs	Social Cash Transfers
SMEs	Small and Medium Scale Enterprises
WHO	World Health Organisation
ZABS	Zambia Bureau of Standards
ZACSMBA	Zambia Chambers of Small and Medium Business Association
ZDA	Zambia Development Agency

INTRODUCTION

It is generally accepted in the academia that the private sector is the main driver of most developed economies. To harness on this fact, supporting the private sector to self-sustenance is important. This research report explores the concept of business incubation as a tool to stimulating the private sector. In Zambia and the Sub-Saharan as a whole, stimulating the private sector is cardinal in order to diversify the economies from dependency on commodities and mining precious minerals.

This report answers the most important question of what impact will business incubation have on the Zambian entrepreneurs. Zambia being Africa's second largest producer of copper has a huge potential of growing the private sector for a more sustainable economic growth path.

The recent technological advancement has also created opportunities for new and efficient enterprises that rides on the benefits of the computer age. The internet is able to connect entrepreneurs to the global market without the need for large warehouses. New forms of financial transactions have recently emerged with the development of the mobile technology. This has made business more efficient and Zambia and the Sub-Saharan can capitalize on.

The study using scientific methods of research determines the impact of business incubation on the amount of jobs created. It further looks into the comparison of the operations costs of incubated businesses and those that are not. In conclusion, the report determines the most suitable stage of business development is ideal for enrolment into an incubator program.

The study is valuable to the academia field as it sets the pace for successful business incubators in the Sub-Saharan region.

Chapter One

Background of the Study

"But unless a new venture develops into a new business and makes sure of being 'managed', it will not survive no matter how brilliant the entrepreneurial idea, how much money it attracts, how good its products, nor even how great the demand for them.

Refusal to accept these facts destroyed every single venture started by the nineteenth century's greatest inventor, Thomas Edison". Peter. F. Drucker (2002, pii.)(Ballot, 2011)

As put by one of the world's greatest entrepreneurs Thomas Edison, the ability to nurture a new business idea is key to its survival. Business incubation is one such avenue for nurturing businesses.

The Organisation for Economic Business Co-operation and Development (OECD), on the other hand, defines Business Incubators (BIs) as Technology incubators which are a specific type of business incubator: property-based ventures which provide a range of services to

entrepreneurs and start-ups, including physical infrastructure (office space, laboratories), management support (business planning, training, marketing), technical support (researchers, data bases), access to financing (venture capital funds, business angel networks), legal assistance (licensing, intellectual property) and networking (with other incubators and government services).(Bruneel, Ratinho, Clarysse, & Groen, 2012).

Business incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by helping them to strive and grow through the difficult and vulnerable early stages of development. Ozdemir believes that there is no one definition or type of Business Incubator (Özdemir & Şehitoğlu, 2013,p.283). Business Incubator programs are normally sponsored by private companies or municipal entities and public institutions, such as colleges and universities. BIs vary in terminology from place to place. In North America they are sometimes referred to as Accelerator programs (Jessica Kim, 2003). In Germany they are known as Innovation centres (DFG, 2016). In emerging nations, they are referred to as industrial/science/Tech parks, hubs or economic zones (Anna Bergek & Norrman, 2008; Farley, 2013; MINISTRY OF COMMERCE, 2008; Ratinho & Henriques, 2010).

The aim of BIs is to assist in creating and growing immature businesses by giving them the necessary support required during the start-up stage. They are used as a support tool for entrepreneurship and innovation. BI policies are generally instruments for promoting entrepreneurship, innovation and the development of new technology focused firms (Schwartz & Hornych, 2010 p485). As Mian would put it, when used in University set ups, they act as catalysts for the transfer of knowledge and technology (Mian, 1996). Mian further reported that the National Business Incubators Association reported in 1992 that more than 50 universities set up tech BI facilities in their campuses as depicted in Figure 1 below.

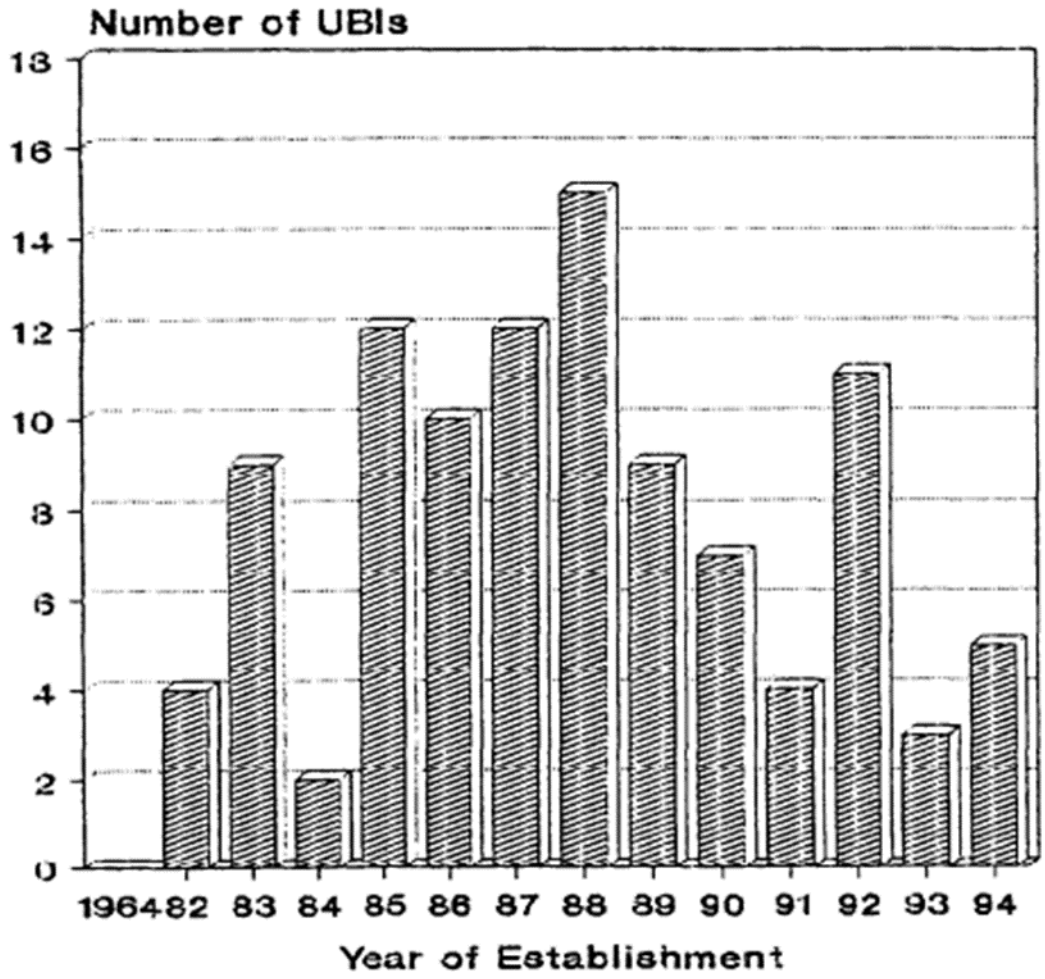


Figure 1: Number of Business Incubators

BIs are widely believed to provide a nurturing environment for new start-up businesses. Most young innovative ventures are characterized by considerable deficiencies in key resources that are crucial to the long term survival of the enterprise. These prominently include managerial skills, infrastructure, business networks, financing and marketing. Therefore the BI takes the position of an intermediary, helping start-ups in establishing both formal and informal contacts to access the required business resources.

Business Incubators (BI) started in 1959 in Batavia in New York, USA. (Crease, 2016). For more than 50 years, BIs have played a role in improving economies, creating jobs and encouraging innovation in countries like India, United States of America, Brazil and the Euro zone (Al-Mubaraki, Al-Karaghouli, & Busler, 2010; Fonseca & Chiappetta Jabbour, 2012;

Thillairajan & Jain, 2013; Udell, 1990). However, it is increasingly questionable whether BIs are as effective as they are generally viewed to be. Empirical research both in support and against the effectiveness of BIs has been conducted by many scholars. Globally, BIs have been used as a tool for economic development.(Business Incubators: From Theory to Practice, 2006).

Research shows that BIs can either take the form of a diversified BI (DBI) or specialized BI (SBI) (Zhang, Wu, & Zhao, 2016). DBIs obtain values from both firms within the incubator, and externally while SBIs are restricted to the incubator flows. Schwartz proved that neither form is superior to the other (Schwartz & Hornych, 2010, p491).

In Sub Saharan countries, the economic patterns often have common ailments, such as high unemployment levels, especially among the youth, poor infrastructure development and illiteracy. Africa can invest in youth entrepreneurship, as it has been shown to be the key to sustained economic growth for productive ages between 19 to 40 years (Albort-Morant & Oghazi, 2016). The Zambian government invests public funds in programs that assist small to medium-sized enterprises (SMEs) in order to create a variety of outcomes, such as job creation and technology advancement. The Zambian government has set up empowerment funds for its citizens and minority groups such as women and youths, with the help of development institutions. There are also funds set aside for college students to engage in small business using their acquired skills. Through the Financial Sector Development (FSDP), commercial banks and micro finance institutions have formulated products suitable for small businesses. It is worth noting that small enterprises remain within family lines, employing only a few individuals, with weak management systems such as book keeping, risk management, etc (Nuwagaba, 2015,p151). In the 2017 Budget address, The Minister of Finance reported that government had accessed US$50 Million for lending to SMEs. (National Assembly of Zambia, 2016)

The Zambian government, through the Ministry of Commerce and Industry, has used some form of BI as one of the tools in supporting SMEs. Examples of government's programs include; The Youth Empowerment Fund (YEF) (Youth Empowerment Programme of the Ministry of Youth and Sports, 2015) and the Citizens Empowerment Commission (CEEC) (Ministry of commerce trade and industry, 2015). The government has also set up industrial zones/clusters known as Multi Facility Economic Zones (MFEZ) as a form of BI (ZDA, 2015). The overall objective of these interventions is to stimulate business enterprises via value chain linkages in these economic cluster areas. The Micro, Small and Medium

Enterprise Development Policy targets to set up five (5) BI and five (5) Industrial Parks in identified locations by the year 2018(MINISTRY OF COMMERCE, 2008,p1). Further intervention by the Zambian government, was the setup of a Small Industries Development (SIDO) in 1981, which unfortunately had little access to capital and foreign exchange, thus failing ultimately (Hyman, Strauss, & Crayne, 1993).

In recent times, private firms offering different forms of business incubation have emerged since the liberalization of the economy in 1992 (Goma, 2007). The likes of Kukula Capital Venture, Awesome Foundation Lusaka, African Women Development Fund, Bongo Hive, Agribusiness Incubation Trust, The Nokia Accelerator Program and Nyamuka Zambia are the formidable ones ("BongoHive | Supporting the Zambian Startup and Tech Communities," 2016, "Kukula Capital," 2016; Foundation, 2016; Nyamuka, 2016; Techtrends, 2016).

The Zambia, the Common Market for Eastern and Southern Africa(COMESA) SME Tool Kit is another example of a project that offers the public an opportunity for all entrepreneurs without their own office accommodation and staff to manage or run an office or site as a virtual office, and to advertise their products respectively. The business incubator program acts as their office managers for delegated contractual and financial transactions only to be handled by the office manager or the business development assistants (Elif Business Solutions, 2014).

The Agribusiness Incubation Trust, another example, has so far incubated six (6) agro incubates; Farmers Link, Ronipam, Golmarth Enterprise, Green Patch Enviro Services, Mpumpu Agro Enterprise and Pinacle Fresh Foods. No academic work exists on the impact and effectiveness of these models of BIs.("AgBIT | Agribusiness Incubation Trust," n.d.)

In this environment, investigating the roles and rationale for business incubation is appropriate. Many countries have already investigated this method of stimulus and have rolled out better accommodative government-funded business incubator programs, so it is timely for Zambia to have an investigation that examines this economic development tool in a local context. Academic research has struggled to define and develop a theory to explain the workings and performance of business incubation (Hackett & Dilts, 2008). Many studies have focused on a singular business incubator operation and investigated the performance of an incubator in terms of the tenants that are assisted. For example Scilitoe and Chakrabarti present empirical evidence which supports the view that BIs create jobs that add to the survival of new and small business ventures (Scillitoe & Chakrabarti, 2010). The study to investigate business incubators operating in a number of different countries reveals incredible

aspects in the operation of BI. These findings may conclude the need to develop a model to determine practices in an individual incubator to achieve utmost success.

This paper investigated using empirical evidence on how Business Incubators (BI) can be used as a tool for growing the SMEs in Zambia, a sub-Saharan country.

1.2 Problem Statement

Small business are facing numerous constraints as can be seen in Figure 2 below, arising from access to finance, electricity shortages and a declining GDP growth arising from declining copper prices (Adegbite, 2001). Zambia is no exception. Through the Financial Sector Development (FSDP), commercial banks and micro finance institutions have formulated products suitable for the SMEs. However, small businesses in Zambia still face challenges, from access to finance to corruption. Small enterprises still remain within family lines, employing only a few individuals with weak management systems such as book keeping.

There is still a lack of research on BIs in Zambia, including their impact and whether they can be linked to the universities or not. Inadequate understanding of the operations and form could lead to Policy Strategies failing in the long run. Therefore, to evaluate the impact and operation of BIs in Zambia, an empirical examination of small businesses regarding BIs is essential in order to get the same effects used in countries like India and other parts of Europe (Thillairajan & Jain, 2013; European Commission, 2002). This paper addresses this problem by exploring the needs and requirements needed from small businesses in order to run an effective BI that will leave a lasting impact.

Source: Zambia Institute for Policy Analysis & Research

Figure 2: Top 10 Challenges Facing SMEs

Hyman et al bemoan the lack of scientific study to determine whether business incubators have stimulated business activities in Zambia (Hyman et al., 1993). This study seeks to cover this gap in the academic world. If empirical evidence shows a high impact, then it can be

concluded that BIs are the solution to growing small business and stimulating business activities in Zambia.

1.3 Purpose and Significance of Research

Research into factors that impact small business is available. However, what it lacks is the localized research which could give different results, because economic conditions and cultures are different across nations/countries. Arguments both for and against BIs are available on the subject of job creation, economic growth, stimulating business activities, networking etc (Adegbite, 2001; Committee et al., 2003; Mas-Verdú, Ribeiro-Soriano, & Roig-Tierno, 2014; Pompa, 2013; Ratinho, 2011; Udell, 1990). In order to effectively run and implement an effective BI program or policy, investigating the potential client needs and requirements is needed to avoid repeated failures.

Zambia's informal sector will be the main driver of economic growth till the year 2030, as indicated in many policy documents, such as the Sixth National Development Plan.(ZAMBIA, 2011) Stimulating small enterprises through various clusters and parks should be major part of actualizing the national development plan. Furthermore, the development of the ICT sector requires maximization for efficient business operations. This can be achieved faster by setting up Tech hubs to hive innovative ideas until they mature into viable businesses.

Zambia's demography averages between 19-23 years, which is also the productive and creative group. If this group is nurtured to develop ideas into business enterprises, poverty and unemployment would reduce significantly.

The research is valuable, firstly because it adds to the clear understanding of BIs within an emerging market context, which is sparse. Secondly, it adds to the evidence base and supports policy decisions on the formulation of industrial parks. Lastly, it adds nuanced, theoretical perspective which explores new models of BIs in a developing nation's context.

1.4 General objectives

The main objective is to understand the impact of business incubators on the growth of small business and overall stimulation of business activities in Zambia. The impact of BI has been assessed in terms of efficiency in operations costs, the support received at different business development cycle stages, and employment creation.

1.5 Specific objectives

- To assess if small businesses maintain low operational costs based on being part of a support system in a business incubator.
- To understand at what stage of the business development cycle the support of business incubators is most relevant and effective.
- To assess employment created by small businesses that received support from business incubators.

1.6 Research questions

The study focused on the following questions:

1. Have start-ups been able to successfully save on operating costs?
2. At which stage of business development did small businesses receive BI support?
3. How many employees have been employed by businesses that have been supported by any form of BI?

The scope of the study was limited in the following ways: the focus was restricted to 300 participants in Lusaka, the Capital city of Zambia. Therefore, the findings of this study cannot be generalised to a wider population. Furthermore, the study did not go in depth to verify the records of small businesses, as this would be both costly and a violation of the participant's right to privacy. Therefore, the responses have been taken as a true reflection of the business, although variations from responses given are possible.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature relating to the business incubators and small businesses. It looks at observable studies on business incubators that have been conducted in the last 50 years, with specific focus on the role of small businesses in the world economy and employment creation. It is noted here that human capital is a critical success factor, highlighting that an educated society is a recipe for business growth. The chapter also reviews the challenges involved in measuring the impact of an incubator program for entrepreneurs and innovators. In this section, several types of measures are evaluated from literature between from the years 1997-2010. The Chapter further noted the findings from case studies in India, Israel, Hungary and America, and brings the literature down to the Zambian perspective. Finally, The Real Option Driven Theory and Network Theory have been identified to cover the subject matter.

2.2 Observational studies

Business incubators are one option communities use to support business survival and growth. It is a globally well-tested 50-year-old systematic approach, primarily aimed at growth-oriented start-up enterprises to help them grow, with the efficient use of business resources, to become sustainable and competitive companies. The first business incubator was established in the United States in 1959, in Batavia, NY (Hackett and Dilts,2004) (A. Bergek & Norrman, 2008). The European versions, known as Business Innovation Centres, were set up on the initiative of the European Commission; the first one dates back to 1984 (Grimaldi and Grandi, 2005).(Bruneel et al., 2012).

As incubators proliferated, a vast literature on incubators emerged. Hackett and Dilts (2004) review 20 studies on the impact of business incubators, out of the many hundreds available. They concluded that an incubator is an enabling technology, rather than a critical or a strategic technology.(Vasily Ryzhonkov, 2012). They conducted another study in 2008 on what 'Success' really meant for a business Incubator. The results were that, apart from recording the survival of incubates to profitability, the termination of an incubate from the program to minimise losses should also be recorded as a success (Pompa, 2013, p3).This would suggest that Business Incubators are useful as a litmus test on the viability of business ideas, and also to foster the long term survival of new ventures.

First, after job creation became a top policy priority in America and Europe, it was seen that most new jobs came from small and medium-sized enterprises (SMEs). For example, the National Business Incubators Association estimated that in 2011 alone, North America incubators assisted about 49,000 start ups and provided full time employment to nearly 200,000 workers (Pompa, 2013, p3), and it was believed that incubators could foster SMEs (Adegbite, 2001). Increasingly fierce global competition made innovation a top priority for many countries, and incubators, it was felt, could stimulate innovation (Christina, 2006).

The question still remains: do business incubators have a positive impact? Serious challenges when measuring impact arise. This is often due to lack of data, reliability of existing data, and quality of evidence, high levels of heterogeneity and issues of comparability between studies. This is as demonstrated by Pompa (Pompa, 2013, p10). These challenges are not peculiar to developed countries, but to Zambia as well, as can be observed from this study. Researches have added that impact can also be assessed in terms of the number of graduating firms and the number of patents applications per firm, and have emphasized the survival of the firm as the most vital measure (Özdemir & Şehitoğlu, 2013).

2.2.1 The Role of Small Businesses to the World Economy

Small businesses are shown to comprise a substantial and expanding segment of the U.S. economy. They often trade in the service, trade, agri-business and manufacturing sectors. The role of small businesses in the economy is considered from the standpoint of various economic theories of the size distribution of firms. Schumpeter (1912) emphasizes the role of the entrepreneur as a prime cause of economic development. Brock and Evans 1989 demonstrate that economists and researchers have devoted little effort in understanding the economics of small businesses (Brock & Evans, 1989,p8). They argue that most empirical research is focused on large businesses, of which most are in the manufacturing industry. Small businesses record high numbers of employment created, and this has been the driving force of policy makers in promoting small businesses, among other factors. Caution needs to be taken, as these statistics are often overstated. This is because small businesses usually employ part time employees. The labour turnover is also high, because employees in small business can easily get fired and they are paid lower wages. Nerveless, small businesses do contribute to job creation. Schumpeter argues that the larger the firms, the more innovative they become (Wennekers, 2004). Recent studies prove otherwise. Smaller businesses tend to be more innovative than larger ones. Large firms are locked in the bureaucracy of the

organisation, with a central decision point. This limits the speed of innovation. The link between size and innovation has undergone several reviews and it has now been concluded that innovation comes back to the skills of the employees, which vary from one industry to another.

It is also worth noting that small business post higher returns than large ones. Despite the struggles with liquidity and fund raising of that comes with small businesses, they still manage to post a good return.

When it comes to dealing with regulators, small businesses have more flexible regulations. The Accounting standards have been tailored for small businesses, and tax compliance is more user friendly for them.

Small business are said to be more durable in that they can easily adapt to the needs of the market faster and less expensively than larger firms. Larger firms often struggle to adjust their processes, as this comes with huge costs. The dominance of small businesses means an adjustment towards the knowledge, practice and attitudes in many sectors, such as marketing, economics, banking etc (Day & Day, 2006).

In China, the introduction of the 'open door' policy in 1978 shifted the economy from a command to a social market economy (Anderson, Li, Harrison, Robson, & Anderson, 2003). This move saw the creation of 10 million registered small businesses, representing 90 percent of all firms (Chinese Statistics Bureau 1999). State Owned Enterprises (SOE) have since been declining, while Private Owned Enterprises (POE) have been increasing. Clark and Du (1998) note the emerging of an entrepreneur spirit during this era (Clarke, 1998). This resulted in increased industrial output and employment.

2.2.2 Lessons learned from this case study were that, human capital factors were the key success factors.

Unsuccessful projects failed largely because of the personality and lack of skills of the entrepreneur, management team and their teamwork. Therefore, entrepreneurs were helped according to factors that would contribute to the success of their businesses, hence the discovery of the principles that guide what kind of incubation an entrepreneur would need.

We find that there is an interesting paradox that lies at the heart of most business incubators. Incubators have, as one of their common ingredients, the opportunity for new ventures to take shelter for, say, two years, from fierce competitive market forces that might otherwise destroy the infant enterprise before it gains size and strength sufficient to compete. This is inherent in

the term ‘incubator’ itself, which is vividly metaphorical. The fundamental assumption here is one of market failure. Open competitive markets fail to provide conditions that allow many new start-ups to reach a viable size; hence there is need for intervention, in the form of protecting prematurely born businesses from the harsh world during the initial period.

At the same time, case-study research (Meseri and Maital, 2001) shows that when university incubators choose projects, success rates are the highest when the choice is made according to the same criteria that, for instance, venture capitalists use when making their investment choices. In other words, successful incubators both emulate market conditions and shield their ‘infants’ from them. Managing this paradox is fraught with difficulty, not the least because it is often not explicitly recognized. For example, one of the pitfalls of incubators is that by providing a warm, safe environment, it eliminates the vital sense of urgency, the go-to-market pressure that non-incubator start-ups experience from day one. We have seen numerous incubator projects fail for just this reason.

Incubation should include principles that guide identification of the key ‘resonating’ constraints and provide direction towards reducing or eliminating them (Hyman et al., 1993, p111). Alignment is needed with local and national cultures on incubator processes, in order to reinforce those aspects of the culture that act positively to help incubator projects attain success, and mitigate or eliminate those aspects of culture that act negatively, and lead to failure (Carvalho; & Galina, 2013 p256).

2.2.3 Drivers of Employment

Human capital is one of the drivers of city growth. A city with knowledgeable people grows faster in the long run. Simon and Nardinelli (2002) proved that a standard deviation increase in human capital in 1900 was associated with a 38% increase in average annual employment growth of city-aggregates over the period 1900–86 (Nardinelli, 2002). Simon (1998) developed a linear model on employment growth (Simon, 1998). Skills are thereby required for small businesses to emerge and create employment. The skills will range from an accountant who decides to set up a practicing to a plumber who retires from his day’s job to run his own contracting company and employs a few other individuals. Other researchers also agree to the human capital as a driver to the employment growth of small businesses (Andreas Rauch, 2005).

The conventional wisdom is that small businesses create jobs. This, however, creates gaps, as some researches have noted flaws in the use of aggregate data to come up with this

conclusion. This conclusion is normally limited by a lack of knowledge on the activities and operations of small businesses. This ultimately leads to a misleading impact of small businesses on the economy. Armington and Odle noted the high levels of small businesses filing for bankruptcy. They argue, through the analysis of new micro economic data to understand the behaviour of small businesses, that small businesses do not create more jobs than larger firms (Armington and Odle, 1982). They argue that small businesses easily die and easily start, which factors are not incorporated in most research. They concluded that in the period 1978-1980, business expansions of already existing businesses created twice as much as new small enterprises. This brings to the table of discussion that existing businesses can drive employment faster than smaller businesses, due to the firm's financial strength. It is evident that the promotion of small businesses should be beyond focussing on job creation and have broader objectives, such as innovation, efficiency, etc. The Bolton report after assessing small businesses from 184-1991 reported to policy makers that small businesses should create efficiencies, rather than maximise employment (Collin Gray, 1991).

2.2.4 Challenges in measuring the impact of business incubation

There is no standard methodology for measuring incubator performance, which makes comparison between studies challenging. Deed et al conducted a comprehensive analysis on several measures that could be used to assess the impact of business incubators in different regions (Table 1) (Özdemir & Şehitoğlu, 2013, p286).

Table 1: Assessing the Impact of Business Incubators Lt. Review

Measures	Author(s) and Year	Country
Firms' Viability	Allen and McCluskey (1990), Mian (1997), European Commission (2002), Rothaermel and Thursby (2005), Shefer and Frenkel (2002), Abetti (2004) Avnimelech et al. (2007)	USA, EU, Israel, Finland
Firms' Growth Sales	Mian (1997) Lindelof and Lofsten (2002), Amezcua (2010), European Commission (2002), Chen (2009), Philips (2002). Abetti (2004), Ratinho and Henriques (2010) Akcomak and Taymaz (2007) Pena (2004)	Sweden, Finland, Portugal, Turkey, Spain

Employment Growth	Mian (1997), Udell (1990), Colombo et al. (2002), Lindelof and Lofsten (2002), Amezcua (2010), European Commission (2002), Abetti (2004), Ratinho and Henriques (2010) Akcomak and Taymaz (2007), Pena (2004)	Sweden, Finland, Portugal, Turkey, Spain
Firms' Profit growth	Lindelof and Lofsten (2002), Chen (2009) Pena (2004)	Sweden, Spain, Taiwan
Firms' Finances Raised	Colombo et al. (2002)	Italy
Firms Taxes growth	Mian (1997)	USA
Firms' export growth	Mian (1997)	USA
Firms' number of copyrights	Colombo et al. (2002)	Italy

Academic studies on business incubators reveal the difficulty in answering what seems a very direct question – do business incubators have a positive impact? There is limited data available to measure the impact of business incubation, which could be explained by a number of reasons. Incubation can be difficult to assess as the outcomes may take years to materialise (Anna Bergek & Norrman, 2008, p7). Basically, the time it takes an enterprise to develop its market and scale its production is too long. On average it takes about three to four years to incubate a successful enterprise, and if one would like to measure the viability and growth rate of the incubated firms, one would have to wait at least another three to four years after graduation. Few studies capture the full impact of business incubation. For example, taking a measure of incubation impact over the incubation period rather than longer term ignores entrepreneurial learning and subsequent activity as a result of business failure. This is as noted by Dee et al., 2011. Studies conducted in New Zealand seem to indicate that real growth rate in revenue and job creation does not happen until the fourth and seventh year after graduation (Center, 2009). Measurement becomes even more complicated in developing countries where, with the exemption of Brazil and India, business incubation is still a relatively new concept (Khalil and Olafsen, 2010). Another difficulty is identifying a control group. Ideally, the growth rate of enterprises would be measured against an industry

benchmark, but is often difficult to identify a control group against which one can test how the incubates performed. Furthermore, business ideas accepted by incubators often have an innovation component which makes it even harder to find other cases against which to compare the outcomes.

Lack of data is also due to the fact that many business incubators do not track their results beyond the number of enterprises they graduate. For those incubators that do track results, many times the data is not reliable. Associations of the business incubator industry regularly assess the impact of business incubators, offering estimates of aggregate performance, but the data offered should be treated carefully. The US National Business Incubation Association (NBIA), a member-based organisation, incentivises the inclusion of as many members as possible, which oftentimes translated into the lack of screening of new members.(Al-Mubaraki et al., 2010) This has undermined the confidence in the reliability of their data sets. The competition for funds has also forced many incubators to constantly 'demonstrate success' which can lead to over-reporting successes and under-reporting failures, especially when self-reporting (Dee at al., 2011).

'Success' can also have many interpretations in business incubation, from whether incubated ventures survive longer or have significant growth whilst being incubated, to their revenue and employment growth rates. Though business incubators seem to have a wide variety of objectives, several incubator studies indicate that an incubator's ultimate goal should be incubate survival and growth. The incubator should be organized in such a way that firm survival and growth are enhanced. However, there does not seem to be any consensus on how to measure firm growth, with some academics using growth measures such as sales growth, cash flow growth, assets growth and growth in the number of employees as measures. Which measure is most relevant, is unclear (Vanderstraeten and Matthyssens, 2010)(Pompa, 2013).

Second, the definitions of "success" and "failure" are also not clear. Probably the best developed measurement scale is the one by Hackett and Dilts (2008). These authors measure business incubation performance in terms of both tenant growth and financial performance at the time of incubate exit. Hackett and Dilts (2008) indicate that categories one, two and four were indicated as being "successes", while categories three and five were "failures". After analysis, Hackett and Dilts (2004b), however, conclude that outcome three should be considered as being a "success story", and outcome five as a "failure".(Özdemir & Şehitoğlu, 2013).

To have a better understanding on how incubators can impact SMEs in Zambia and the world at large, different case studies will be viewed for different countries some of which are America, India, Hungary, Australia and African countries like Zimbabwe and Zambia.

2.3 Case Studies

2.3.1 Academic incubators in India

The Indian Institute of Technology – Bombay (IIT-Bombay) is known to have pioneered the concept of business incubation in India by establishing the Kanwal Rekhi School of Information and Technology (KReSIT) within the campus in 1999. KReSIT was subsequently modernized into a full-fledged technology business incubator called Society for Innovation and Entrepreneurship (SINE) in 2004, to cover other areas of science and technology.

IIT Bombay is one of India's premier technology institutions, widely acknowledged as a rich source of technology innovation, research excellence, and technology expertise (Thillairajan & Jain, 2013). Encouraged by the phenomenal business ideas and overwhelming interest by entrepreneurial start-up companies to be incubated at SINE, the society is expanding its incubator to accommodate 50 companies.

Since its inception, SINE has been very successful in converting and developing technological ideas into products, processes, and services for business by providing high quality physical, technical, and networking support and services, and a nurturing environment. The incubation programme at SINE primarily supports knowledge-based and technology-based enterprises. However, over the last couple of years, there has been a change in SINE's entrepreneurial focus from IT technologies to other hard-core engineering technologies. The society incubates only product-based ventures. Service based ventures do not get incubated.

Business ideas of the IIT-Bombay alumni and all those linked to the institution are considered for development and commercialization. The incubating venture needs to be a company (preferably incorporated before its admission) and gets a residency for up to three years in the incubator. The start-up company housed in the incubator typically has 10-17 members working on the project. The incubating company is provided access, at highly subsidized rates (at about 75% of the market rate), to quality infrastructure, office facilities (computers, internet, telecom, fully furnished office, etc.), business support services (mentoring support,

interactions with legal/financial/ accounting/industrial experts, interaction with investors and industries), workshops and training programmes, and access to data resources.

Depending on the nature of the business, a company could get seed financing in the range of Rs. 1 million to Rs. 1.2 million (about US$ 30,000) from SINE in corporation with the Government of India. To ensure that businesses continue operating as agreed, periodic reviews and monitoring of matured enterprises is conducted.

Once the business is financed, road show events are organized to help the incubate company showcase its products and solutions. When the incubate company becomes mature, it moves out of the campus and SINE ensures that the changeover is smooth.

SINE has incubated companies in varied domains, including companies providing software in financial services, software for the internet, hardware and software for the retail industry, simulator to analyse fatigue and fracture in machines and their lifespan, robotics that aids education, communication and networking, hardware simulation, data security, power generation, quantitative financial models, and geographical information systems.

As of January 2007, SINE had successfully incubated 28 projects, of which 13 have graduated into companies. Other incubators like Society for Innovation and Development (SID) and Foundation for Innovation and Technology (FITT) also come in with different services for entrepreneurs to help them grow their businesses and contribute to the growth of economy in different ways. From the different studies that have been done about incubators in India, different lessons were learned.

Indian incubators focuses on incubators that are fostered mainly by educational institutions. One of the significant issues of incubators in educational institutions is that most of them do not provide funding for the start-ups, although they arrange networking with angel investors and venture capitalists.

However, obtaining funding from these sources in India for a start-up is an uphill and often a frustrating experience, since the angel investment and venture capital industries in India are nascent and typically very risk-averse. This results in technology entrepreneurs having a very difficult time in convincing these sources of funding. The scarcity of funding in India for start-ups inhibits various service providers from providing their expert services to the start-ups, since these start-ups are unable to pay the market rates for services rendered, and the culture of service providers accepting shares in the start-up ventures in lieu of payments is still not widely accepted because of the perceived high mortality rates of the start-ups, and resulting perceived worthlessness of the shares.

2.3.2 Case Study of Israel

Certain principles were set to guide the incubation processes towards optimal resolution of the market failure-market emulation as illustrated in the following practical example of Jerusalem.

Business Incubator in Jerusalem

A technological incubator, located on the campus of the Hebrew University of Jerusalem, Givat Ram, known as Van Leer Technology Ventures, was studied. About 38 projects that existed within the incubator were studied and characterized as either successes or failures ("Docor International - Van Leer Technology Ventures," n.d.). The variation of "Partial Order of Structural Analysis" by Guttman was applied to identify the critical success factors (Törnblom, Kjell; Kazemi, Ali, 2012). Then detailed individual case studies were conducted for a failed project, and for a successful one, to validate the statistical conclusions; 38 projects were analysed and of these, 20 were defined as "successful" because they continued to operate after leaving the incubator and 18 were defined as "unsuccessful" because they ceased operation.

Each project was rated along three dimensions: (1) technology: quality, innovativeness, and viability of the technology underlying the project; (2) market potential: size and quality of the market in which the product or service would be sold; and (3) people: management skills, leadership capabilities, entrepreneurial teamwork, and entrepreneur personality. A scale of 1 to 4 was used, with 1 indicating "poor" and 4 indicating "excellent."

Each project was first classified as "successful" or "unsuccessful," and then a graph was constructed for the 20 successful projects and 18 unsuccessful ones. Each project was positioned in the graph, where the 'Y'-axis, the joint direction, was the total sum of three scores (technology, market, people), and the 'X'-axis, the lateral direction, represented the three separate dimensions. The higher the total score, the higher the project was placed on the 'Y'-axis. For projects with equal total scores, those scoring lower on the "people" dimension were moved to the left. This method allowed the researchers to compare profiles of entrepreneurship and to see, at a glance, the critical success factors for projects, and compare successful to the unsuccessful ones.

2.3.3 Case study of Hungary (2007)

In the year 2007, in Hungary at the University of Szeged in the department of Economics, a research on the different opportunities of the efficient application of TBI in the less favoured regions of Hungary was conducted (Bajmocy, 2007). This study was conducted because it was observed that in the developed countries more than half of the enterprises leave the market within five years. In Hungary only 53% of the firms that were established in 2000 were still in business by 2004. Some of the research questions that were looked at were: would the survival of some of these small enterprises accelerate the development of new "knowledge-based" industries? Would the support of the "weak but promising" firms recover through the later growth? Although this is theoretically not at all obvious, the answer given by the practical economic policy is fairly spectacular, and can be proven by the fast-rising number of business incubators. Today business incubators have become an integral part of the economic policy toolbar in numerous developed and developing (and in almost all of the European) countries. To make this finding,, an analytical framework was developed consisting of main questions like: why does local economic development choose TBI as a means of development? In order to understand and find solutions to this question, the evolutionary process of the emergence of TBI's market solutions was analysed. Other questions were, for example: what is the role and scope of TBI in the development of new industries? - and how can TBI programmes be designed in such a way that they are able to meet the constantly changing needs of the supported enterprises without hindering or distorting the emergence of the adequate market solution? For this purpose, statistical data and other secondary sources utilized the results of two empirical surveys that were conducted in 2006. One of them surveyed the SMEs of the "knowledge-based" sector of Szeged (on a sample of 401), while the other one surveyed the undergraduate and doctoral students of the University of Szeged (on a sample of 420). The findings showed that the supported enterprises are unable to attract additional income into the region and thus to generate regional multipliers. The innovation activity of the firms in the sample is average or below average. The value-addition of incubation cannot be revealed in the growth of the net returns nor the number of employees.(Bajmocy, 2007).

Furthermore, the strong local orientation of the supported enterprises makes the presence of unintentional market distorting effects probable. These results infer the need for improving the value-adding capacity of Hungarian business incubators.

2.3.4 Research on the influence of BIs on Enterprises in America (2008)

A 2008 study conducted by consulting firm Grant Thornton for the United States Department of Commerce, Economic Development Administration (EDA) told a story about the success of business incubation programs as a means of creating jobs. The report, Construction Grants Program Impact Assessment Report by Arena, Adams, Rhody, Noyes and Noonan (2008), outlined findings which showed that business incubators are an effective public-private approach that produces new jobs at a low cost to the government (Barbero, Casillas, Ramos, & Guitar, 2012a). According to the report, for every US$10,000 in EDA funds invested in business incubation programs, an estimated 47 to 69 local jobs are generated. Incubators provide up to 20 times more jobs than community infrastructure projects at a federal cost per job of between US$126 and US$144, compared with between US$744 and US$6,972 for other infrastructure projects (Arena et al, 2008 p.1).

While the Monkman (2010) and Arena et al's (2008) reports are focused on the outcomes of American incubation programs, they suggest healthy economic development outcomes both for tenants and the business community from similar programs (Barbero et al., 2012a). Unfortunately there is not a similar report that has produced comparable empirical evidence in Australia. However if the international experience was extrapolated, it suggests that business incubation can assist the small business sector in multiple ways, including helping to create economic and social stability.

2.3.5 Zambian Perspective

In Zambia, the aspect of business incubators is gradually increasing, with much concentration on the agriculture sector. Some of the BIs already in operation in Zambia are Agro business incubator programme by ("e – Newsletter Horticulture value chain agribusiness incubator launched," 2014) whose mission is improving wellbeing of the poor through the creation of competitive agri-business enterprises by technology development and commercialization. This is usually achieved through guiding the incubation program activities and development, defining the program's fundamental role in the community, and also defining a program's Purpose, Values, and Goal. So far, ICRISAT has embarked on 3 main activities, not only in Zambia but other African countries Ghana, Uganda, Kenya and Mali. The Villgro incubator initiative from India is an innovation-based rural enterprise to enable innovations to impact the poor through social enterprise. Another initiative is the Timbali Technology incubator, an Enterprise value chain support to start-up farmers to establish and support an enabling

environment to promote predominantly broadly based BEE agri- and related enterprises. UniBRAIN is another initiative which Links university education, research and business to promote agricultural innovation and improving tertiary agribusiness education in Africa.

Following the observation that many potential entrepreneurs and start-ups often face challenges in accessing finance, communication, company registration, land and contracts as well as space, ATDF and have partnered to launch two Business Centres (BC) in Lusaka and Kitwe to expand the pool of firms supported, and enable a few more Zambians to consider entrepreneurship as a viable, secure and exciting career option.

As a strategic partner, ZDA will help ATDF access facilities, while ATDF will offer management and basic office equipment. ZDA would help attract appropriate partners and donors in Zambia, while ATDF will bring in partners from abroad. The Pilot incubators will also help ATDF and ZDA identify key elements that could be used in the design of future incubators outside Lusaka. ATDF has already acquired some experience in managing an incubator in Zambia, established a network of mentors and established relations with key technology developers and business services providers. In addition, ATDF, through its Entrepreneurship Hub, has also learnt how to fund and manage start-ups in non high-tech sectors. Its main objective is to help potential entrepreneurs develop their ideas in firms and products through mentoring and attachments to established institutions and private firms, reduce cost of firm formation through the use of pool resources (e.g. telephones, faxes, internet, and secretarial and managerial services). It also assists research centres, universities and municipalities to establish incubator facilities and programmes to accelerate innovation, delivery to the market, and mobilize financial resources for our participating individuals and institutions, (ATDF Journal vol 5 issue ½).

Smallholder farmers in Zambia can now look forward to better entrepreneurship and agribusiness opportunities with the launch of first ever full-fledged Agribusiness incubator in Lusaka- the Agribusiness Incubation Trust popularly called AgBIT.

2.3.6 World View

The (World Bank's) Incubator Initiative has supported more than 70 business incubators in over 50 developing countries worldwide; providing financial and technical assistance, leading to the establishment of five regional networks in Africa, Asia and the Pacific, East and Central Europe, Latin America and the Caribbean, and the Middle East, as well as a global network of 130 business incubators in 70 developing Countries. InfoDev's incubators focus

on helping these entrepreneurs to build competitive businesses through the early, high-risk stages of development by providing business advisory services, mentoring and coaching, infrastructure, such as offices, electricity, and internet access, and linkages with financiers and other business stakeholders. InfoDev's impact assessment reveals that these incubators have had a tremendous effect on realization of local innovation, SME and job creation, economic empowerment of women and youth, and on creating an enabling environment beyond the walls of the incubator that will benefit generations of entrepreneurs to come. (World Bank; Farley, 2013).

Incubators are now some of the most powerful organisations in the world .When you look at the number of company successes that are attributed to incubators, it quickly becomes clear that they are responsible for billions of dollars of company value. Incubators like y combinatory, ATP, Clean Tech open MaRS and Rocket Internet GmbH are undoubtedly some of the most famous and successful incubators around the globe. These have funded more than a 1000 small businesses in many countries around the world. According to the authors, the idea of incubators provides entrepreneurs with an enabling environment in the start-up stage, helps reduce the costs associated with launching an enterprise, increases the confidence of the entrepreneurs and helps link them to the resources and networks required to scale their enterprise. In other words, business incubation accelerates enterprise growth, saving time and money and generating social and economic benefits that would otherwise not be the case.

2.3.7 Emerging Issues

The world of business has not remained static. Similarly, Business Incubation is evolving rapidly. Emerging countries can adopt progressive practices from the western countries. Dina Williams demonstrates, through assessment of the impact of science parks, that emerging countries can benefit from developing support infrastructure for technology based businesses (Williams, 2013). The Future of Business Incubators is focused in incorporating new technology, such as mobile applications to the business process, away from the traditional physical incubation office.

Home Based Businesses offering freedom and independence are making an impact as an Incubation Model. Internet Home Based Business (HBIBs), as proved by Geldern et al, bring in variety, and it is argued that this brings about economic impact (Gelderen et al, 1994). He argues, using a scientific approach by means of five theoretical perspectives, that because of

the variety HBIBs generate, they contribute to the economy over and above their direct and indirect contributions in terms of revenue and employment. In Iran and places like Australia and South Africa, women are leading in home based businesses. The support programs - a form of business incubator for home business growth, formally started in 2010 with legislation on HBBs' organization and support (Modarresi, Arasti, Talebi, & Farasatkhah, 2016).

Assessing the Impact of a Business Incubators in terms of environmental friendly businesses, as well as energy efficient ones, is taking centre place in both the academic and business research, giving rise to the concept of the 'greening of business incubators' (Fonseca & Chiappetta Jabbour, 2012). The Barclays Bank report concludes that businesses that incorporate Environmental, Social and Governance (ESG) principles are likely to attract investors (Series, 2016). This could be an important factor when evaluating the impact of business incubators by challenging the incubatees on their interactions to the environment they operate in; whether they cause harm or contribute to the overall wellbeing of the global village.

-Emphasis on Education Institutions linkages (Pisano fasone, 2013)

2.4 Theoretical framework

Numerous theories have been advanced to explain the processes and outcomes of incubation; however, many are drawn from outside incubation literature and could equally apply to other economic development activities. There is no true consensus on the theoretical approach that best explains incubation, but the following section considers the major approaches that have been taken, and their strengths and weaknesses against the framework of this particular study.

2.4.1 Real Options Driven Theory

An attempt to develop a theory of business incubation was made by Hackett and Dilts (2004b), who applied real options-driven theory to incubation after abandoning a range of alternative theories that could bear some relationship to business incubation, including the agency theory (Ross, 1973), and the dynamics capability theory (Teece, Pisano, & Shuen, 1997). Hackett and Dilts concluded that real options-driven theory was most applicable to the process of business incubation, utilising Rosenberger's (2003) description that a real option is "created through an initial investment decision followed by subsequent investment decision(s)" (Hackett & Dilts, 2004a, p. 47). The authors further describe the process of

option creation and exercise as being impacted by five factors; uncertainty, asset value, irreversibility, exercise costs and competition. In an incubator context:

"A real options perspective would view incubate selection as the creation of an option, and subsequent resource infusions and monitoring and assistance as option exercises." (Hackett & Dilts, 2004a, p. 47). In simple terms, this theory seeks to predict and explain how business incubators and the process of business incubation increase the likelihood that new ventures will survive the early stages of development. It conceptualizes the incubator as an entrepreneurial firm that sources and macro-manages the innovation process within emerging organizations, infusing these organizations with resources at various development stage-gates while containing the cost of their potential failure. The incubator is the unit of analysis while incubation outcomes-measured in terms of incubate growth and financial performance at the time of incubator exit. "Business incubation performance - measured in terms of incubatee growth and financial performance at the time of the incubator exit - is a function of the incubator's ability, development capabilities and resources, to create options through the selection of weak-but-promising intermediate potential firms for admission to the incubator, and to exercise those options through mentoring and counselling, and the infusion of the resources while containing the cost of potential terminal option failure." (Hackett & Dilts, 2004a, p.48)

They further provide a function that can be expressed as

BIP = (SP+M&BAI+RM)

Where

BIP = business incubation performance

SP = selection performance

M&BAI = monitoring and business assistance intensity and

RM = resource munificence

In other words, the authors argue the performance success of a business incubator is a product of three factors: the selection of the correct tenants, the quality of the incubator assistance and the level of financial resources to deliver services to tenants. The difficulty with this theory is that although arguably applicable to the performance of an individual incubator or organisation, it sheds little light on the performance of a group of incubators on a regional economy or the wider incubation process itself. Hackett (2004) raised questions about the model soon after its development, which also weakens its usefulness in judging performance.

Hackett (2004) tested the real options theory and a model developed from his earlier work against data from 53 United States incubators, but found the model failed to predict incubation outcomes. He argues "the failure of the model to predict outcomes points to the existence of a gap in the theory that has been developed" (Hackett, 2004, p. 7). They then use the options theory to build a specific theory of business incubation, which is described as: 'The influence of business incubation in developing new enterprises in Australia other variables were likely to be at work.' Hackett concludes that questions remain over what accounts for the variation of business incubation outcomes and high incubate survival rates.

2.4.2 Network Theory

An alternative theory of business incubation focuses on the function of networking and social interaction in incubators, using either the term social capital theory or social network theory, with Bollingtoft & Ulhøi (2005) (Özdemir & Şehitoğlu, 2013) noting that 'social capital theory' and 'network theory' are used synonymously. The authors use this theory to describe the performance of business incubation, saying it is: "being composed of individual and collective social networks, ties and structures that help the individual get access to information and know-how." (Bollingtoft & Ulhøi, 2005, p. 273)

They argue that social ties can be considered to be strong or weak, and that weak ties have been associated with idea generation, while strong ties have been associated with problem solving. Their paper ultimately makes the case that the operations and performance of a business incubator can be seen through the lens of this theory, and that the amount of social capital surrounding the incubator tenant is an indicator of success (Bollingtoft & Ulhøi, 2005). Social network theory has the advantage of acknowledging the role of social dimensions within economic relationships (Scott, 2000) and argues that in an incubator, the social networks are fostered through the connections made between entrepreneurial firms and a diverse range of other community resources (Bollingtoft & Ulhøi, 2005).

This theoretical field builds on the work of Aldrich and Zimmer (1986), who apply four aspects of social network theory to the study of entrepreneurship. Firstly, they say that delineating group boundaries and identity fosters social ties within the group that increase entrepreneurialism. Secondly, the better connections developed between individuals and information brokers spread information and resources. Thirdly, developing social networks broadens an individual's opportunities. Finally, they argue that increasing ties with others

who have significant social resources will also boost the impact of business incubation in developing new enterprises in a country.

While social network theory offers a stronger framework for examination of business incubation than Hackett & Dilts' (2004a) real options theory, both are limited in that they tend to be used to examine individual incubator operations, rather than considering incubation as a framework to address economic development. (Aldrich & Zimmer, 1986). Other authors have also found social network theory a useful framework, as it recognises that business incubation does not just occur within the walls of a business incubator, but also outside the incubator in the local community (Hackett & Dilts, 2004b). It also identifies the role of an incubator in developing the entrepreneur's network in respect to gaining access to knowledge and resources in order to support entrepreneurial growth (L. Peters, M. Rice, & M. Sundararajan, 2004).

Other theories have been applied in different researches across the world in order to understand the influence or impact that business incubators have on small businesses. Among other theories used is structural contingency theory, entrepreneurship theory, communities of practice theory and resource advantage theory. Inasmuch as we can have a number of theories, this study will be guided by the Network theory and Real options theory.

As can be seen from this section, numerous theories have been advanced to explain the processes and outcomes of incubation; however, many are drawn from outside incubation literature, and could equally apply to other economic development activities or entrepreneurship (Hackett & Dilts, 2004b; Lish, 2012). The significant number of geographical, political and contextual differences that might be factors in considering incubation on a macro scale has led some researchers to argue that there is no one theoretical model that can be applied to business incubation.

To summarise the literature reviewed for determining the research parameters of this study, it can be seen that small businesses are not just smaller versions of large businesses; they operate in a different manner and within a different context to large businesses. Understanding small businesses is in itself an important research area of business, and would lead to improved economic and social outcomes. Therefore, the importance of small business to an economy also cannot be underestimated, especially with more than 50% of all registered businesses in Zambia considered to be small businesses.

Due to the economic and social importance of small businesses to a country, governments have attempted to find ways to assist their creation, growth and survival. One of tools used to

achieve a variety of economic and social goals has been business incubation. Business incubation is an international practice that has undergone many changes since first created more than 50 years ago. In more than 100 countries, governments have established business incubation programs to assist the creation and development of small businesses.

What has not changed over the past 50 years is the focus of business incubation, which is on developing young businesses and graduating them from the incubator facility. Incubators seek to provide business assistance to early stage companies and bring these tenanted businesses to economic self-sufficiency so that they can graduate from the incubator facility and contribute largely to national development.

2.5 Conclusion

The literature review focused mainly on the assessing whether business incubators make a meaningful contribution to the growth of small businesses. Literature from both developed nations and emerging nations such as Australia, USA and India was used for the relevance of the geographic location upon which this study focuses. This affords the opportunity for policy makers to understand the key drivers to a successful business incubation program. What is alarming is that the Zambian government and the Private sector keep funding small business programs without evaluating the impact made (Hyman et al., 1993). Several observations were made from the literature which forms the backbone of this study.

Business Incubators provide valuable support services to entrepreneurs such as:

i) Financing
ii) Management Training
iii) Networking and marketing opportunities
iv) Shared Services e.g. rent, internet, lighting etc.

Despite the much-needed support rendered, measuring both performance and impact is a daunting task. The Literature noted that Business Incubators offer both economic and social benefits (Al-Mubaraki et al., 2010). Measuring the impact of business incubators is a factor driven process. The Real Option Driven theory can be used to explain the outcomes of a successful incubator. An alternative Network theory also explains the social environment and linkages that are needed for an incubator to affect small businesses positively. The impact of a business incubator can be assessed in the following success factors:

i) Employment
ii) Revenue Growth

iii) Patents registered

iv) Export

v) Survival of the Business after maturity

vi) Education and Industry connections

Parts of these factors have been incorporated in the study to formulate a concept workable within a local environment.

It is important to know the end results and the key drivers that lead to a successful business incubator.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter covers the research strategy that was used in the data collection and analysis. It includes sections on study design, description of study population, sampling procedures, etc.

3.2 Study design

The study was a cross sectional- non-intervention explanatory study. Explanatory in the sense that it sought explanations about what people knew about business incubators, it also allowed for recommendations for services that the businesses would want to see or receive from these incubators; and cross sectional, as it was an observational study that involved the analysis of data collected from a representative subset of a population of entrepreneurs, at one specific point in time. The whole study aimed at gaining insights on the impact that the available business incubators have on small medium business enterprises in Zambia.

The study employed a non-experimental research design. A survey approach was used to solicit information from owners of the businesses or their co-workers of the company in randomly selected business areas.

3.3 Characteristics of the Study Population

The study population consisted of SMEs engaged in manufacturing activities, services and trading. The sampling frame used constituted SMEs membership registers for the Small Enterprises Development Board (SEDB) and the Zambia Chambers of Small and Medium Business Associations (ZACSMBA), and also just those that were registered with PACRA for business names. This approach was adopted with the full understanding that the larger share of membership in these three organizations was constituted by small and medium enterprises. Micro enterprises constituted a small percentage. However, since the survey was also qualitative in its approach and as such focused on establishing the intensity of performance and constraint profiles of SMEs rather than on how widespread the phenomena were, it was felt that the micro enterprises randomly sampled, albeit their small number, would provide sufficient information.

3.4 Geographical Coverage

The study was done in the capital of Lusaka because it is among the provinces that have the largest number of SMEs, owing to its urban setup; aside from Luapula provinces, which have the highest and North Western the lowest (ZAMBIA, 2011,p180). Due to rural urban migration, there has been a shift of the SMEs' geographic spread from since the year 2003/4. The survey conducted in this period indicated that geographically, Luapula province exhibited a very strong culture of entrepreneurship. In spite of the low infrastructural development and a limited market, the province constitutes 16.8 percent of all SMEs in Zambia, thereby capturing a second position from the Copperbelt province. In per capita terms, Luapula province has the highest density of SMEs at 13 per 100 persons (Figure 3) (GRZ Ministry of Commerce Trade and Industry, 2007). Details are in the table below:

Name of Province	Population of SMEs	Number of SMEs/100 Persons
Central	12,4	8
Copperbelt	17.3	7
Eastern	11,0	5
Luapula	16,8	13
Lusaka	13,5	6
Northern	9,7	5
N/Western	0.9	1
Southern	9,4	5
Western	9,0	7
Totals	**100**	

Figure 3: Geographic Distribution of SMEs 2004

3.5 Sampling Procedures

The research planned to capture 300 SMEs who were registered under SEDB, ZACSMBA or PACRA for convenience within the time frame of the research. Another sample of 50 small businesses that went through a formal registered business incubator program was planned. This was with the full realization that the closer the sample was to the total population, the higher the confidence interval level. However, due to a number of factors, the team was only able to capture more of small businesses. The inclusion criteria into the sample were that a respondent should be the owner of the business or one of the managers of the company, and of any age starting from 16.

3.6 Data Collection

A Semi- structured questionnaire with both open and closed ended questions was used as the data collection tool. The questions were formulated from the understanding of assessment tools used to evaluate the impact of Business Incubators, bearing in mind the local restrictions. In addition, the questionnaire was structured to address the gap in academic literature, as highlighted by Hyman et al, on the lack of any assessment on whether business incubators stimulate enterprises in Zambia (Hyman et al., 1993). The open ended responses complemented statistics provided by closed ended questions and were also useful in exploring qualitative aspects of study such as entrepreneurs' knowledge and perceptions regarding issues under examination (Table 2).

Table 2: Motivating Factors

Motivating Factors	
Measuring Impact	
Q1. How many employees do you have?	(Analysis et al., 2011; Özdemir & Şehitoğlu, 2013; Tola & Contini, 2015)
Q19. Have you ever heard of Business incubators in Zambia/?	(Adegbite, 2001; Mas-Verdú et al., 2014)
Q10. What services do business incubators offer in Zambia?	(Anna Bergek & Norrman, 2008; Bruneel et al., 2012)
Q12. Generally, business assistance programmes positively impact the growth of a business?	(Pompa, 2013; Ratinho, 2011)

Data was collected from a total of 300 businesses with the help of 4 research assistants, who administered the questionnaire to the respondent on a one to one basis to ensure privacy and maximum response. Administering the 3-paged questionnaire containing 20 questions took an average of 20 minutes.

It will also involve research in detail books, journals, articles, research papers, etc. on business incubation from credible sources. More emphasis was placed on literature on similar developing countries like Zambia. This approach was ideal, due to the limited number of business incubators and county specific literature on the subject.

3.7 Data Processing and Analysis

Two different types of software were used in principle, and these included the Statistical Package for Social Sciences (SPSS) version 16.0 and MS Excel 2010. Initially, the responses from individual questionnaires were coded and inputted on the SPSS platform and analysed. However, where limitations were observed, data was exported to MS Excel for further analysis.

The data were cleaned before analysis to check for accuracy and consistency.. SPSS and Excel were mainly used to analyse quantitative data and produce graphs and tables for presentation of findings. Frequencies and Cross tabulations were used to answer the research questions that were posed. Univariate and Bi- variate analysis were used in the analysis of objectives. Hypotheses were tested, using Chi-squared test - a non-parametric test that can be used when data are randomly and independently selected, the level of scale of measurement of variables is not known and all categories are mutually exclusive.

Findings from open ended questions were analysed thematically and were presented using narratives. The questionnaires were checked for the most common reasons and explanations, and were summarized into excerpts that have been presented in the report.

3.8 Ethical Considerations

The proposal and questionnaire were scrutinized by the supervisor of the school of business and were cleared for data collection, as they did not present any pertinent ethical issues that would need further scrutiny. Consent was sought from the respondents before the interview, the purpose of the study was explained to the respondents and interviews only took place when a respondent agreed to the interview. The respondents were also given enough leverage to abandon the interview when they felt they were unable to continue. Furthermore, the responses were treated with maximum confidentiality. To ensure maximum confidentiality, the names, address or anything linking the respondents to data were not written on the questionnaires, and reporting was aggregated and not based on individual responses.

3.9 Study Limitations

A key challenge to this approach was the anxiety of entrepreneurs to share their business experiences, due to fear that the data collectors were government officials investigating them for any breach of the law, or just any individual who wanted to set up a business similar to theirs, thereby viewing the research as a competitor’s market research. The researcher ensured that this did not bring out any ethical concern.

The research was carried out only in an urban setup, which limits generalisations of the findings to rural areas.

The research would have liked to have had a larger sample size rather than the 300, to strengthen the confidence interval of the results.

CHAPTER FOUR

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This section presents the findings of the questionnaire which was used for research purposes. Firstly, the demographic characteristics and response rates were initially examined to understand the expanse of the findings. These have been further analysed to understand the level of awareness of Business Incubators in the market place. Secondly, the education level of respondents is assessed as an indicator of business management skills. Finally, the effect of business incubators has been assessed from the sample size in terms of long term sustainability, network benefits and management skills assistance.

4.2 Characteristics of respondents

Demographic and socio-economic characteristics such as age, sex, level of education and how long the business has been in existence can affect people's awareness and attitudes for business incubators. The demographic and socio-economic characteristics of 300 respondents was 123 females (49%) and 177(59%) male.

4.2.1 Age

The ages of the respondents ranged from 19 to 68 years with a mean age of 37 years. 0.33% of respondents were teenagers and larger percentage (22.67%) of respondents was in the age group 25-29, with a frequency of 68. The difference between the largest and the lowest age of respondents was 49, with the oldest being 68 and the youngest being 19, as shown in the Table 3 below.

Table 3: Age Group Analysis

Age groups Analysis		
age group	Frequency	Percentage
15-19	1	0.33
20-24	18	6.00
25-29	68	22.67
30-34	50	16.67
35-39	53	17.67
40-44	48	16.00
45-49	37	12.33
above 50	25	8.33
Total	300	100

4.2.2 Sex and Ownership

75 out of 300 respondents were female and confirmed ownership of the business, and 126 males out of the 300 respondents indicated that they owned the businesses, summing up to 201, and the difference being the summation of males and females who did not own the businesses but added up to the 300 respondents (Table 3).

Table 4: Ownership Analysis

	Ownership		
Gender	**Yes**	**No**	**Total**
Female	75	48	**123**
Male	126	50	**177**
Total	**201**	**98**	**300**

4.2.3 Legal structure and how long business has been in existence

At the time of the study, many companies of different legal structures were reported to have been in existence for a certain period of time since the beginning of operations. Only one sole trader was reported to have been in existence for less than 6 months; 38 had been in existence for 1 to 2 years and 26 for over 2 years. Only 26 businesses in partnership were

reported to have been in existence for 1 to 2 years and 27 for over 2 years. 177 limited companies had been around for at least 1 year as shown in Table 5.

Table 5: How long the Business has been in Existence

	How long the business has been in existence					
Legal structure	less than 6 months	6 months to 1 year	1 to 2 years	over 2 years	Non response	
Sole trader	1	0	38	26	0	65
Partnership	0	0	26	27	0	53
Limited company	0	3	42	134	1	180
Other, specify	0	0	2	0	0	2
Total	1	3	108	187	1	300

4.2.4 Level of education obtained

In terms of the level of education (Table 6) , 67.11% of respondents had been to school, with the highest (56.61%) having had reached tertiary education. 87.5% of the 8 who had been to primary school owned the companies and only 12.5% reported to have been co-workers. Most of the people who owned the SMEs, 189 as shown in table 4.1.4, had attained education as high as tertiary out of which 43.39% (n=82) were not owners of the business. 101 respondents had been to secondary school, of which 85.15% (n=86) owned the businesses and 14(13.86%) were not the owners.

Table 6: Education Level

Education Level				**Business Ownership**
		Yes	**No**	**Total**
Primary		**7**	**1**	**8**
	% within the highest level of education attained	87.5	12.5	100
Secondary		86	14	101
	% within the highest level of education attained	85.15	13.86	100
Tertiary		107	82	189
	% within the highest level of education attained	56.61	43.39	100

		200	99	300
Total		67.11	32.55	100

4.3 Knowledge about BIs

This study sought to find out whether respondents had some knowledge about business incubators; not just the term, but what it was and what services business incubators provided. In this section, 2 main questions were asked. These questions were meant to find out how knowledgeable SMEs were about institutions that would render help in any way possible to help their businesses grow. The results presented in Table 7 show that there was a huge difference between those who knew about business indicators and those who did not know: .64 % (n=192) respondents had an understanding of BIs and 36% (n=108) did not know or seemed not to be sure.

Table 7: Awareness Analysis

	Frequency	Percentage	Cumulative Percent
Yes	192	64	64
No	108	36	100
Total	300	100	

4.3.1 Services offered by business incubators

Different answers were given for this question and among others; the following stood out as dominant and often repeated. The results show that whenever business incubator is mentioned, the first thing that comes to someone's mind is financial aid and nothing else. Over half the percentage of those that knew about business incubators understood incubators as institutions that give loans to small businesses as capital or an addition to grow their businesses. Others thought BIs trained or capacity built individuals on how to do business, and also provided learning material on how to grow a business.(Table 8)

Table 8: Services Provided by Business Incubators

Services offered by business incubators
• *Financial services* • *Give loans* • *Train people on how to run a business* • *Provide reading materials on business*

4.4 Effect of business incubators on SMEs

This section, being the backbone of the whole research, gives more information and answers to the research question. It sought to find out whether the participants had received any assistance of any form from any business assistance programme in Zambia, and if at all, it did what kind of assistance it was and at what stage of the business cycle that was receive. The participants who agreed to have had received some assistance were asked to report what level of importance such assistance was to them. Respondents were also asked to state what effects BIs had on their businesses. Another main area of concern in this section was to find out whether developing countries, specifically Zambia, had enough BIs and what level of importance other services aside from finances were to a business. Suggestions and recommendations on what should be done to encourage SMEs to benefit from BIs were shared.

4.4.1 How many are Incubated businesses

The table below shows that only 19%(n=57) out of the 300 businesses which participated in this study had received some assistance, mostly in form of finances, and a few received training on how to run and manage their businesses. 81% (n=243) of business, based on this study, show that they have not yet had any assistance to grow their businesses (Figure 5).

Figure 5: Count and Percentages

Count and percent distribution of businesses that have received assistance from any assistance program (BIs) in Zambia

		Frequency	Percent	Valid Percent
counts	Yes	57	19	18.46
	No	243	81	81.54
Total		300	100	

4.4.2 Stage at which assistance was obtained from business incubators

The entrepreneurs that reported to have had received assistance from any business incubator were asked to state what kind of assistance they received (Table 9). Out of the 300SMEs, only 42 had received assistance, of which 41 received financial help, and only 1 had received

training on how to run a business. The participants were asked at what stage in business they had received such assistance. The following table shows the results for this;

Table 9: Stage of Business Assistance from BIs

	Stage at which business received assistance				
Business that received assistance	Inception	1 year later	2 years later	missing	Total
Yes	8	7	27	0	42
No	0	0	0	258	258
Total	10	9	27		300

8 businesses received assistance from inception and 7 reported to have received assistance 1 year later, since inception. 27 businesses reported that they had received assistance 2 years later from the time they began running their business. 258 responses are recorded as missing, because they represent those businesses that did not receive any kind of assistance whatsoever. Out of the 42 that had received assistance from business incubators, only 17% were still under the support of business incubators while 83% were no longer doing so (Figure 6).

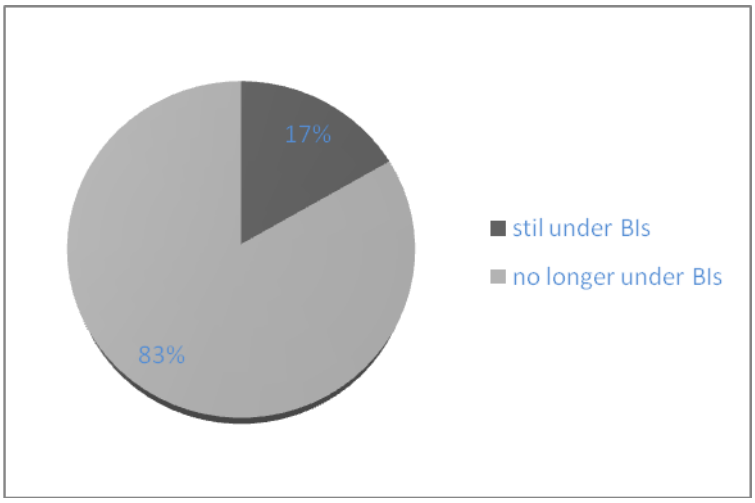


Figure 6: Pie Chart on Enrolments

4.4.3 Growth Factor: Employment Creation

The number of employees in a start-up business is a good indicator of growth. BIs often set a limit on the number of employees, thereby triggering the need to move out of the program (Bøllingtoft & Ulhøi, 2005, p278). Start-ups rarely grow beyond the critical size

of employees (Clarysse, Wright, Lockett, Van de Velde, & Vohora, 2005, p184). This concludes that an increase in the number of employees is a growth indicator. This study revealed that businesses that received support through a BI had less employees, and disagrees with earlier studies (Markley, Mcnamara, Markley, & Mcnamara, 2016, p23).

	Average No. Employees
Received Assistance	11.9
Did not received Assistance	9.8

4.4.3 Level of importance of BIs to the growth of the business

Respondents who agreed to have received some assistance from any business assistance programme were asked to place a level of importance of business incubators to the growth of small businesses and medium enterprises. 21 out of the 42 strongly agreed that such assistance was very vital to the growth a business, especially in its first stages, and only 20 agreed with this statement, as they thought that only to some extent. On average 20 respondents subscribe to the understanding that Business Incubators are important to their Businesses. One respondent strongly asserted that such assistance hadn't been of importance to the growth of his business, specifically because the help that he received came with a lot of stiff conditions that somehow affected the growth of his business. None of the 42 completely disagreed to this statement. (Figure 7)

Figure 7: Importance of Business Incubators

21	Strongly Agreed
20	Agreed
1	Strongly Disagreed
Total-42	

4.4.4 The impact of business incubators on the growth of businesses

A follow up question was asked to find out the general view of business incubators by SMEs: did they have positive or negative effect on the growth of their businesses or any other business. This question was asked of everyone who took part in this research, not only those that had received some assistance from business assistance programmes. Below is a collection of outcomes given by the respondents. Almost all the respondents 95.67% (n=287) agreed that business assistance programmes positively impacted the growth of a business,

compared with a small number (n=13) 4.33% of companies who thought they did not positively impact the growth of a business.

Generally Business Assistance Programs positively Impact the Growth of Businesses

		Frequency	Percent
Valid count	Yes	287	95.67
	No	13	4.33
	Total	300	100

Figure 8: Impact on Business Growth

Those who thought business incubators positively impacted the growth of a business gave the following reasons why they thought so (Figure 9): 32% thought business assistance programmes would help start-ups save on operating costs. Savings from paying rentals for office space or a shop was noted as the highest saving. Other savings included shared electricity, water and internet and marketing costs. In addition, 31% also thought that with the help of business incubators, SMEs would receive guidance on how to run their businesses efficiently, and 18% mentioned incubated SMEs have a high probability of survival compared to the non-incubated ones. Some enterprisers showed lack of understanding in the formal operations of a business, such accounting, regulation and compliance and general strategic planning. This contributed to their believing that a BI would fill this gap. Finally, 19% thought that incubated businesses would have a larger business network as business incubators would make sure businesses under their support worked together and traded amongst themselves to help their businesses grow. Notable key networks required were links to international manufacturing companies, in order to increase the profit margins. Other responses were that if small businesses were helped, it would encourage them to work extra hard to impress the supporters and pay back what was due according to their agreement; this would help add to the capital base of the already existing businesses.

Reasons		
	Count	Percentage
They help start-ups save on operating costs	96	32
Give guidance on how to run businesses	93	31
Give high survival probability than none incubated ones	54	18
Give lager business networks to start ups	57	19
Total		**100**

Figure 9: Reasons

4.4.5 Why SMEs do not receive assistance from business incubators

Another question was asked to find out whether businesses received assistance from business incubators that existed in Zambia, and if they did not, why that was the case. About 89% did not agree that many SMEs received assistance from business assistance programmes, and only 11% thought that many SMEs received the assistance they needed, perhaps because they were part of the group that had at some point received such assistance. The former group of respondents gave the following reasons as to why they thought so: 29% thought many SMEs are not aware of these business incubators, 22% mentioned that many business incubators are located in the city, and therefore very few small business in other areas have access to such information. 28% also contributed that the procedure for accessing these business incubators was so complicated that it put most of them off, and the last reason by 21% of the respondents reported that some SMEs preferred doing it on their own, without help from any one, so that they got all the praise; and also to avoid any problems that might arise if they failed to meet the business incubators' expectations.

Table 10: Reasons why Some SMEs do not enrol in BI program

Reasons why some SMEs do not Enrol	Count	Percentage (%)
Many SMEs are not aware of BIs	87	29
Many BIs are just located in the city	66	22
Complicated procedure for accessing BIs	84	28

Some SMEs feel BIs are not Important	63	21
Total	**300**	**100**

4.4.6 Availability of business incubators in Zambia

Currently, Zambia has a lot of emerging small and medium enterprises which have a great potential to grow if enough support is rendered. A question was asked to find out whether there were enough business incubators to help these SMEs grow their businesses. The above bar chart shows that 65% (n=195) of the respondents said Zambia does not have enough business incubators, and only 35% (n=105) that the available business incubators were enough for the Zambian developing businesses.

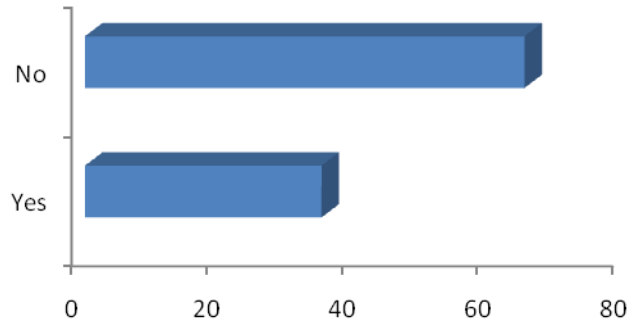


Figure 10: Availability of BIs in Zambia

4.4.7 Services needed by SMEs to grow

To find out the most important services SMEs needed to grow their businesses, the respondents were asked to show the levels of importance of different services that would contribute to the growth of their businesses. 5.1% reported that financial assistance was unimportant, 8.3% said this service was moderately important, 33.3% thought it was important and 54.3% said this was very important. 2.3% of respondents thought marketing and accounting were unimportant, and the highest 60.3% of people thought this service was very essential for the growth of the business. Other skills thought of to be important were managerial skills and leadership skills. 54.3% and 50.2% agreed that both of these services were very important respectively.

	Unimportant	Moderately important	Important	Very Important	%
Financial assistance	5.1	8.3	33.3	54.3	100
Marketing and accounting	2.3	1.7	35.8	60.3	100
Managerial skills	2	1.3	42	54.7	100
Leadership development	6.4	5.3	39.1	50.2	100
Mean	4.0	4.2	37.6	54.9	100

Figure 11: Services Required by SMEs from BIs

4.5 How to encourage SMEs to benefit from business incubators

Different suggestions were brought up on how small medium enterprises should be encouraged to benefit from business incubators, and the following among others were the suggestions made;

What should be done to encourage SMEs benefit from BIs?
• Many business incubators should be established • The procedure for accessing help should not be complicated • A non-threatening environment should be created • Sensitise businesses about these services and educate them about how to do business • Clear conditions/qualifications should be given for businesses that want to be incubated

Figure 12: How to Encourage SMEs to Benefit from BIs

4.6 Hypothesis testing

In this study, we formulated a hypothesis to discover the association between knowledge about business incubators and being part of the programme. It is believed that if people know about business incubators, they may be interested in being part of the programme,

and vice versa. If many businesses are incubated, the possibility of their growing will be greater. The following are the key hypothesis formulated:

1 SMEs that know about Business Incubator Programs are more likely to be part of the support by BIs than those that do not know.

2 The more businesses that are incubated, the greater the possibility of growth of small businesses in Zambia.

The dependent variable in the hypotheses above was the impact of business incubators on small and medium enterprises, and the independent variables were knowledge of SMEs about business incubators in Zambia, and how many are SMEs are actually being incubated. To test the association between the identified variables, Chi-Squared test was used. A Chi-squared test was used because it is a Non–parametric test which can be used when the level of scale of measurement is not known or is irrelevant, the data are randomly and independently selected and all categories are mutually exclusive. A *P*-value less than 0.05 ($P \leq 0.05$) was considered significant.

4.6.1 Awareness of SMEs about business incubators and being incubated

In this study, we investigated the association between the knowledge that businesses have about business incubators and how it would affect them to be part of such programmes. The results (Table 4.5.1) show that 40 people who heard of business incubators had received assistance from them, while 150 had heard about business incubators but refused to have benefited from any of their services. There is a significant association between awareness of business incubators and being part of the services they offer, as shown by the p value obtained using STATA, (P=0.0005). There were a lot of people (150) who had heard about business incubators but had not sought for any assistance from them, not because they did not know about them but because of other reasons.

Figure 13: Awareness of SMEs about BIs

Source	SS	df	MS	Number of obs =	240
				F(1, 238) =	12.58
Model	3.89481671	1	3.89481671	Prob > F =	0.0005
Residual	73.6885166	238	.309615616	R-squared =	0.0502
				Adj R-squared =	0.0462
Total	77.5833333	239	.324616457	Root MSE =	.55643

Q9	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q11	.0067815	.001912	3.55	0.000	.0030148	.0105481
_cons	1.41674	.0377834	37.50	0.000	1.342308	1.491173

		Has your business ever received assistance from any business assistance program in Zambia	
		Yes	No
Have you ever heard of Business incubators	Yes	40	150
	No	0	90
Total		42	240

Figure 14: Awareness Responses

4.6.2 Awareness and effect of business incubators on SMEs

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.945[a]	6	.684
Likelihood Ratio	5.270	6	.510
Linear-by-Linear Association	.419	1	.517
N of Valid Cases	300		

p>0.05

Awareness and Effect of Business Incubators on SMEs

		Generally business assistance programs positively impact the growth of business		Total
		Yes	No	
Have you ever heard of Business incubators	Yes	183	3	186
	No	104	0	104
Total		287	3	290

Figure 15: Chi-Square Test

42 respondents reported to have received assistance from business incubators, and agreed with the fact that business assistance programmes positively impact the growth of a business. 241 reported not to have received assistance from any of the business assistance programme, but agreed that BIs have a positive impact on the growth of small and medium enterprises. A total of 283, made up of both those that had been incubated and not yet incubated, all agreed that business incubators have a positive impact on the growth of a business. A cross tabulation was done to see those that heard about business incubators and what they generally said about whether business incubators positively impacted SMEs or not. The following table shows this association. Over half (n=183) the sample size had heard about business incubators and agreed that they had a positive impact on the growth of small businesses.

Those that had no knowledge about business incubators, after it was explained to them what BIs were, also thought they would impact a business positively. Only 3 said no to this idea. There is no significant association between awareness and agreeing with the idea that they would impact a business positively, as shown by the chi square test with p value greater than 0.05, (p=0.68), hence not rejecting the stated hypothesis. There was a quite a difference between those who knew about business incubators and said yes to the idea, and those who initially did not know but later agreed that business incubators positively impacted the growth of small businesses. It is true that if businesses are aware of business incubators, the chances of their seeking their services would be high, therefore resulting in a positive impact on the growth of SMEs, compared with those that did not know about business incubators.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The overall objective of this study was to investigate the impact that business incubators have on small and medium enterprises in Zambia. A random sample of 300 SMEs in the capital city of Lusaka was selected to achieve this goal. To the best of the investigator's knowledge, there is no study in Zambia that has investigated the impact that business incubators have on both the upcoming and already existing businesses.(Hyman et al., 1993)

This section addresses the research questions which were posed after reviewing the literature examined throughout this research report.

5.2 Conclusions

With the Zambian business operative conditions in mind, the study concludes that small businesses and innovators would lower their operation costs if they enrolled in a business incubator program. This is in agreement to earlier studies conducted by similar study conducted by Akcomak. (Akçomak, 2009, p8).

It was further concluded that ideal stage for small businesses to enrol in a business incubator program is in their second year of operation. This is an added criteria to the current literature which only indicates stages in terms of business development without specifying the years of business operation.(Chan & Lau, 2005)(McAdam, Miller, & McAdam, 2016, p278)

Finally, the study concludes that business incubators in whatever form do not create employment in the Zambian context. This conforms to the arguments put across by Barbero which supports employment growth as a valuable performance measure.(Barbero, Casillas, Ramos, & Guitar, 2012b, p892) In contrast, this goes against the findings of Colombo which supports employment creation as a result of business incubation efforts.(Colombo & Delmastro, 2002). Details about these conclusions are explained in section 5.4 below.

5.2 Key Findings

The following is a summary of the findings in the research report:

- Businesses that have gone through a Business Incubator program reduced their operation costs, adding to the possibility of the long term survival of the incubatee.

- Business Incubators are predominantly used by entrepreneurs in the second year of their business life cycle. A few entrepreneurs enrol into an Incubation program in the first year.
- Business Incubator Programs leads to the growth of businesses, as assessed by the increase in the number of employed staff as the business grows.
- Entrepreneurs and Innovators do not enrol in an incubation program because of complicated application procedures, lack of awareness, location of BIs (restricted to the city) and a general view that BIs are not important.

- **Research Question 1**: Have start-ups been able to successfully save on operating costs?

  There were three (3) main arears of cost saving that emerged from this research that small business could benefit from:

  i) Savings on Office/Shop Rent
  ii) Savings on hiring managers/consultants/skilled labour
  iii) Cheaper and faster financing modes.

- **Research Question 2**: At which stage of business development did small businesses receive BI support?

  The study found that Business Incubators are useful to entrepreneurs and innovators during their first and second years. More business people opted for BI services in the second year of running the business.

- **Research Question 2**: How many employees have been employed by businesses which have been supported by any form of BI?

  It was found that businesses that had been through the Business Incubator programs employed fewer staff members than those that did not. This indicated a lower impact growth rate than those that did not receive any assistance.

The private sector competitiveness has been hampered by focusing on large formal sector enterprises. The World Bank results indicate that 80% of the private sector businesses in Zambia are conducted by enterprises with fewer than 50 employees. Most of these firms are small informal operations, with less than 5 employees; these firms constitute the bulk of private sector employment in Zambia, employing 73% of total labour. However, little is

known about how these firms perform and the constraints under which they operate, rendering it difficult for the policy makers, businesses and donors to design policies, services and programs to help improve their performance. According to SME world, entrepreneurship in SMEs should focus on start-ups and enterprise growth. Most SMEs in Zambia have been at a micro level since inception for some decades. This stagnation is cause by the lack of effective public policy to support SMEs, and the entrepreneur's poor educational backgrounds. Even with the emerging of different initiatives like business incubators in Zambia, many entrepreneurs do not have any knowledge of them. According to the results, the owners of the businesses of whom most had attained the highest level of education, seemed not to have much knowledge about this initiative.

5.3 Research Limitation

The sample population was confined to one demographic location i.e. Lusaka. Therefore conclusions to a broader population beyond this paper could be contended. A larger sample size could have produced a more statistically significant result; however this was restricted by logistical factors such as time, finances etc. during the research process. In addition, limited Business Incubator impact assessment tools have been used due to limitations of reliability and confidentiality of the respondents' financial and sales information.

5.4 Conclusion

This conclusion answers the research questions which were investigated. Recommendations will then be derived, and areas for further research will be suggested.

5.4.1 Savings on Start-up Costs

As observed from the literature review and the respondents, entrepreneurs and innovators reduce their start-up costs by enrolling in a business incubator program (Bøllingtoft & Ulhøi, 2005). However, most incubators limit the length of time a venture can stay in the program, and most limit to start-ups. Fundamental areas where start-ups can make savings through shared services include:

i) Affordable Rental Space

This cost is one of the major costs to a business. The research revealed that free access to affordable or even free space for an office, a shop or a workshop gave most entrepreneurs a competitive edge.

ii) Acquired Skills

Entrepreneurs can leverage on the talent within the BI. This removes the need to hire expensive and talented managers and consultants to get the business going. Entrepreneurs can exploit the synergies of a BI.

iii) Access to Financing

Start-ups struggle to raise capital because they fail to meet the requirements of most financial institutions. Therefore a BIs offer a cheaper and quicker means of financing. The research found that many of the respondents had benefited from group financing and government assistance with fewer requirements, compared to the commercial banks.

5.4.2 At what stage of the Business Cycle are BIs necessary?

There is limited literature on when is the ideal time in the entrepreneurs' business cycle to join a business incubator. Much literature points to start up or the business idea/early stage as the ideal time (Andrews, 2012). New models exist where ailing business are enrolled into a BI to turn them around. Governments also run BIs and turn over the businesses to private hands, as in the case of Israel. The question still remains: when is the ideal stage? The research agrees with the available literature for enrolment during the early stages of the business. However, the study specifies that in Zambia, the ideal time is in the second year of the business cycle. This probably is informed in the economic set up of the country.

5.4.3 Growth Factor: Employment Creation

From this study, it can be concluded that the current set up of Business Incubators in Zambia is unlikely to create the much-needed jobs, contrary to the available literature. Obviously, many factors outside this study could have led to this outcome. However, this provides insight that a suitable environment must exist for Business Incubators to yield the desired outcome. A model for job creating in the Business Incubation context then emerges. Incorporating the Real Options Driven theory (Vasily Ryzhonkov, 2012) and the Network theory (Bøllingtoft & Ulhøi, 2005) is explained in chapter 2. This finding agrees with the Network theory that the success of a Business Incubator is based on the social, economic and other linkage environment in which a business incubator operates. Theory also places emphasis on the skills of the people enrolled in the incubator. Therefore, employment is created in Business incubators by enrolling innovators the right skill set, providing the relevant support while operating in a suitable environment such as Silicon Valley.

EBI= ((S+BA))*m*

Where EBI is the Business Incubator Employment Creation Model

Where S is Skills of innovators enrolled in the incubator

Where BA is the Business Assistance

Where ***m*** is the SME efficient factor

The SME efficient factors are factors that create an enabling environment for SMEs to thrive. This could range from the cost of doing business to the level of infrastructure available to small businesses.

5.5 Recommendations

There is particular attention in business incubators and their usefulness in economic development which suggests that there is a value in revisiting incubation and exploring how business incubation could be improved, particularly as debate continues regarding how the country will develop economically outside the resources sector. I agree with Allan Gannon's statement that small businesses are the backbone of the nation's economy (Gannon, 2016). I therefore recommend the following to boost the operations of Business Incubators in Zambia:

-Diversified spread of BIs in Zambia

The Zambia Institute of Policy Analysis and Research revealed an even spread of small enterprises in Zambia skewed towards the city areas where they get financing and other business support services(Research, 2015). This suggests that there is a need to have widespread Business Incubators across the country to harness the creativity and innovations that lie idle. Notwithstanding the infrastructure challenges in some of the rural regions, there is a need to create an enabling environment to make BIs thrive. There is a need for BIs to diversify into other sectors such as agriculture, financial services, health, education, energy, etc. moving away from the traditional technology hiving like that offered by Bingo hive.(Research, 2014)

-Simplified application processes

In line with the ease of doing business ranking (Release, By, & Executive, 2014, p5) Bringing simplification to the process of applying to enrol in a BI program should be achieved by incorporating the use mobile phone platforms and online applications that help the entrepreneur to generate a simple business plan. This would help capture the good

business ideas that world excel but are left out, because of the bureaucracy in the selection process.

-More sensitisation is needed/Local languages

Knowing the benefits especially on learning institutions as noted by Mian (Mian, 1996) that BIs offer, there is need to sensitize them in universities, colleges and high schools. Period promotions should be held to cultivate interest among the young entrepreneurs. Other activities such as quizzes, road shows, expos, etc can help reach the masses on the benefits. These and other activities should be translated into local languages for maximum impact.

5.6 Future Research Directions

This research paper contributes to a worldwide knowledge bank on the operations and effectiveness of Business Incubators in emerging nations such as Zambia. This study attempted to find the impact of Business Incubators in Zambia by identifying whether there was a reduction in operation costs. In addition, it sought to understand at what stage enrolment in a BI program is ideal for Zambian Entrepreneurs. Finally, the study tested enterprise growth in terms of number employees employed by a firm.

While this research paper explored the impact, future research could test the correlation between the length of the incubation period and the success of graduating ventures in different sectors of industry. This could result in reduced incubation periods for certain sectors, thereby making it easier to test the impact of the BI.

Testing of University Business Incubator linkages in Zambia as a success factor for enterprise growth can be analysed in a more specific study. This would assist policy makers whether to adopt this in the overall education framework.

REFERENCES

Adegbite, O. (2001). Business incubators and small enterprise development: The Nigerian experience. *Small Business Economics*, *17*(3), 157–166. https://doi.org/10.1023/A:1011801018398

AgBIT | Agribusiness Incubation Trust. (n.d.). Retrieved from http://www.agbit.co.zm/

Akçomak, İ. S. (2009). *Incubators as Tools for Entrepreneurship Promotion in Developing Countries*.

Albort-Morant, G., & Oghazi, P. (2016). How useful are incubators for new entrepreneurs? *Journal of Business Research*, *69*(6), 2125–2129. https://doi.org/10.1016/j.jbusres.2015.12.019

Al-Mubaraki, H. M., Al-Karaghouli, W., & Busler, M. (2010). The creation of business incubators in supporting economic development. In *European, Mediterranean & Middle Eastern Conference on Information Systems* (Vol. 2010, pp. 1–13).

Analysis, A. N., The, O. F., Models, I., By, E., Offices, T. T., High, P., … South, I. N. (2011). An Analysis Of The Incubation Models Employed By Technology Transfer Offices and Private High Technology Incubators In South Africa, (December).

Anderson, A. R., Li, J., Harrison, R., Robson, P. J. A., & Anderson, A. R. (2003). The increasing role of small business in the Chinese economy. *Journal of Small Business Management*, *41*(3), 310–316.

Andrews, J. (2012). The reasons start-ups fail.An examination of planned and emergent strategy in South African digital start-ups, and strategy's role in the failure of these organisations, (December).

Bajmocy, Z. (2007). Zoltán Bajmócy The Theory of Technology Business Incubation and Opportunities of Application in the Less Favoured Regions of Hungary Theses of PhD Dissertation. *Main*.

Ballot, J. S. S. (2011). *An Investigation into Possible Drivers of Success of Internet Based Business*. University of Cape Town.

Barbero, J. L., Casillas, J. C., Ramos, A., & Guitar, S. (2012a). Revisiting incubation

performance. *Technological Forecasting and Social Change*, *79*(5), 888–902. https://doi.org/10.1016/j.techfore.2011.12.003

Barbero, J. L., Casillas, J. C., Ramos, A., & Guitar, S. (2012b). Revisiting incubation performance. How incubator typology affects results. *Technological Forecasting and Social Change*, *79*(5), 888–902. https://doi.org/10.1016/j.techfore.2011.12.003

Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. *Technovation*, *28*(1-2), 20–28. https://doi.org/10.1016/j.technovation.2007.07.008

Bergek, A., & Norrman, C. (2008). Incubator best practise : A framework. *Technovation*, *28*(28), 20–28. https://doi.org/10.1016/j.technovation.2007.07.008

Bøllingtoft, A., & Ulhøi, J. P. (2005). The networked business incubator - Leveraging entrepreneurial agency? *Journal of Business Venturing*, *20*(2), 265–290. https://doi.org/10.1016/j.jbusvent.2003.12.005

BongoHive | Supporting the Zambian Startup and Tech Communities. (2016). Retrieved from http://bongohive.co.zm/

Brock, W. A., & Evans, D. S. (1989). *Small Business Economics* * (Vol. 1).

Bruneel, J., Ratinho, T., Clarysse, B., & Groen, A. (2012). The Evolution of Business Incubators: Comparing demand and supply of business incubation services across different incubator generations. *Technovation*, *32*(2), 110–121. https://doi.org/10.1016/j.technovation.2011.11.003

Carvalho;, L. M. C., & Galina, S. V. (2013). The role of Business incubators for start-ups development in Brazil and Portugal. *Management and Sustainable Development*, *11*(4), 256–267. https://doi.org/10.1108/WJEMSD-05-2014-0012

Chan, K. F., & Lau, T. (2005). Assessing technology incubator programs in the science park: The good, the bad and the ugly. *Technovation*, *25*(10), 1215–1228. https://doi.org/10.1016/j.technovation.2004.03.010

Christina, T. (2006). *Business Incubators: From Theory to Practice*. M.Sc in Economic & Business Strategy Department of Economics-University of Pireaus, 2006 166.

Clarysse, B., Wright, M., Lockett, A., Van de Velde, E., & Vohora, A. (2005). Spinning out new ventures: A typology of incubation strategies from European research institutions. *Journal of Business Venturing*, *20*(2), 183–216. https://doi.org/10.1016/j.jbusvent.2003.12.004

Colombo, M. G., & Delmastro, M. (2002). How effective are technology incubators? Evidence from Italy. *Research Policy*, *31*(7), 1103–1122. https://doi.org/10.1016/S0048-

7333(01)00178-0

Committee, B., Supervision, B., Study, Q. I., Ii, B., Guidance, T., & Committee, T. (2003). Quantitative Impact Study 3 – Overview of Global Results, (October 2002), 1–33.

CREASE, K. (2016). The Batavia Industrial Center : The Hatching of the World ' s First Business Incubator Author (s): KELLY KILCREASE Source : New York History , Vol . 93 , No . 1 (WINTER 2012), pp . 71-93 Published by : New York State Historical Association Stable URL, *93*(1), 71–93.

Day, J., & Day, J. (2006). Commentary – The value and importance of the small firm to the world economy. *European Journal of Marketing*, *34*(9), 1033–1037.

DFG. (2016). German Center for Research and Innovation - German Research Foundation. Retrieved from http://www.germaninnovation.org/about-us/gcri-partner-institutions/german-research-foundation

Docor International - Van Leer Technology Ventures. (n.d.). Retrieved from http://www.docor.com/docor-company/van-leer-technology-ventures

e – Newsletter Horticulture value chain agribusiness incubator launched. (2014), (11), 1–8.

Elif Business Solutions. (2014). *Lusaka virtual office*. Retrieved from (http://www.zamcom.smetoolkit.org/)

European Commission, E. D. G. (2002). Final report: benchmarking of Business Incubators. *Personnel*, *51*(February), 47. https://doi.org/10.1086/656690

Farley, B. (2013). *Will a network of African technology hubs be more effective (in helping tech enterprises to establish themselves and grow)?*

Fonseca, S. A., & Chiappetta Jabbour, C. J. (2012). Assessment of business incubators green performance: A framework and its application to Brazilian cases. *Technovation*, *32*(2), 122–132. https://doi.org/10.1016/j.technovation.2011.10.006

Foundation, A. (2016). The Awesome Foundation Veterans Chapter. Retrieved from http://www.awesomefoundation.org/en/submissions/new?chapter=veterans

Goma, M. (2007). *Liberalisation: Has it Brought about Economic Freedom*. University of Zambia.

GRZ Ministry of Commerce Trade and Industry. (2007). Republic of Zambia Ministry of Commerce , Trade and Industry Small and Medium Enterprises Survey 2003 – 2004 Final Report.

Hyman, E. L., Strauss, R., & Crayne, R. (1993). An enterprise-development strategy for Zambia. *Development in Practice*, *3*(2), 103–115.

https://doi.org/10.1080/096145249100077111

Jessica Kim. (2003). Less Time, More Money, Mentoring at Accelerators, Incubators. *Entreprenuers*.

Kukula Capital. (2016). Retrieved from http://kukulacapital.com/

Markley, D. M., Mcnamara, K. T., Markley, D. M., & Mcnamara, K. T. (2016). Linked references are available on JSTOR for this article : Business Incubators Local Economic and State Fiscal Impacts of Local leaders have a range of eco ?, *28*(1), 17–27.

Mas-Verdú, F., Ribeiro-Soriano, D., & Roig-Tierno, N. (2014). Firm survival: The role of incubators and business characteristics. *Journal of Business Research*, *68*(4), 793–796. https://doi.org/10.1016/j.jbusres.2014.11.030

McAdam, M., Miller, K., & McAdam, R. (2016). Situated regional university incubation: A multi-level stakeholder perspective. *Technovation*, *50-51*. https://doi.org/10.1016/j.technovation.2015.09.002

Mian, S. A. (1996). The university business incubator: A strategy for... *Journal of High Technology Management Research*, *7*(2), 191. https://doi.org/10.1016/S1047-8310(96)90004-8

MINISTRY OF COMMERCE, T. A. I. (2008). *The Micro, Small and Medium Enterprise Development Policy*.

Ministry of commerce trade and industry. (2015). Citizens Economic Empowerment Commission. Retrieved from http://www.mcti.gov.zm/index.php/about-mcti/statutory-bodies/citizens-economic-empowerment-commission

Modarresi, M., Arasti, Z., Talebi, K., & Farasatkhah, M. (2016). Women's entrepreneurship in Iran. *International Journal of Gender and Entrepreneurship*, *8*(4), 446–470. https://doi.org/10.1108/IJGE-03-2016-0006

National Assembly of Zambia. (2016). 2017 Budget Address by Honourable Felix C. Mutati, MP Minister of Finance, 23. Retrieved from http://www.parliament.gov.zm/sites/default/files/images/publication_docs/2017 Budget Speech.pdf

Nuwagaba, A. (2015). Enterprises (SMEs) in Zambia. *International Journal of Economics, Finance and Management*, *4*(4).

Nyamuka. (2016). NYAMUKA ZAMBIA – Nyamuka Zambia 2016 is here! Retrieved from http://nyamuka-zambia.com/

Özdemir, Ö. Ç., & Şehitoğlu, Y. (2013). Assessing the Impacts of Technology Business

Incubators: A framework for Technology Development Centers in Turkey. *Procedia - Social and Behavioral Sciences*, *75*, 282–291. https://doi.org/10.1016/j.sbspro.2013.04.032

Pompa, C. (2013). *Literature Review on the Impact of Business Incubation , Mentoring , Investment and Training on Start-up Companies*.

Ratinho, T. (2011). *Are They Helping ? An Examination of Business Incubators ' Impact on Tenant Firms*.

Ratinho, T., & Henriques, E. (2010). The role of science parks and business incubators in converging countries: Evidence from Portugal. *Technovation*, *30*(4), 278–290. https://doi.org/10.1016/j.technovation.2009.09.002

Release, P., By, S., & Executive, T. H. E. (2014). Ghana: 2014 Article IV Consultation--Staff Report; Press Release; and Statement by the Executive Director for Ghana; IMF Country Report 14/129; April 21, 2014, (14).

Research, Z. I. for P. A. and. (2014). *Investment brief*.

Research, Z. I. for P. A. and. (2015). *Flagship Project: More and Better Jobs*.

Schwartz, M., & Hornych, C. (2010). Cooperation patterns of incubator firms and the impact of incubator specialization: Empirical evidence from Germany. *Technovation*, *30*(9-10), 485–495. https://doi.org/10.1016/j.technovation.2010.05.001

Scillitoe, J. L., & Chakrabarti, A. K. (2010). The role of incubator interactions in assisting new ventures. *Technovation*, *30*(3), 155–167. https://doi.org/10.1016/j.technovation.2009.12.002

Series, B. B. I. (2016). *Sustainable investing and bond returns: Research study into the impact of ESG on credit portfolio performance*. Retrieved from https://www.investmentbank.barclays.com/content/dam/barclaysmicrosites/ibpublic/documents/our-insights/esg/barclays-sustainable-investing-and-bond-returns-3.6mb.pdf

Simon, C. J. (1998). Human Capital and Metropolitan Employment Growth. *Journal of Urban Economics*, *43*(2), 223–243. https://doi.org/10.1006/juec.1997.2048

Techtrends. (2016). Apply for global Nokia Open Innovation Challenge 2016 | TechTrends Zambia. Retrieved from http://www.techtrends.co.zm/apply-global-nokia-open-innovation-challenge-2016/

Thillairajan, A., & Jain, A. (2013). New and Nascent Enterprises: Analysis of Incubation Support in India. *The Journal of Private Equity*, *16*(3), 6,69–85. https://doi.org/10.3905/jpe.2013.16.3.069

Tola, A., & Contini, M. V. (2015). From the Diffusion of Innovation to Tech Parks, Business Incubators as a Model of Economic Development: The Case of “Sardegna Ricerche.” *Procedia - Social and Behavioral Sciences*, *176*, 494–503. https://doi.org/10.1016/j.sbspro.2015.01.502

Udell, G. G. (1990). Are business incubators really creating new jobs by creating new business and new products. *Journal of Product Innovation Management*, *7*(2), 108–122. https://doi.org/10.1016/0737-6782(90)90053-H

Vasily Ryzhonkov. (2012). Review of 20 Business Incubation Models – Hackett & Dilts Generic Business Incubator Model_2004 (Parts 12-13 of 20) | Entrepreneurship, Business Incubation, Business Models & Strategy Blog. Retrieved from https://worldbusinessincubation.wordpress.com/2013/09/24/review-of-20-business-incubation-models-hackett-dilts-generic-business-incubator-model_2004-parts-12-13-of-20/

vincenzo pisano elisa rita ferrari vincenzo fasoneAuthors, F. (2013). The orchestration of business models for territorial development. *Measuring Business Excellence, Vol. 20 Iss 4*, *20*(4). https://doi.org/http://dx.doi.org/10.1108/MRR-09-2015-0216

Wennekers, R. T. (2004). "Entrepreneurship, small business and economic growth. *Journal of Small Business and Enterprise Development*, *11*(1), 140–149. https://doi.org/10.1108/14626000410519173

Youth Empowerment Programme of the the Ministry of Youth and Sports. (2015). *PERFORMANCE AUDIT REPORT OF THE AUDITOR GENERAL ON THE YOUTH EMPOWERMENT PROGRAMME OF THE MINISTRY OF YOUTH AND SPORT* .

ZAMBIA, P. O. T. R. O. (2011). *Sixth national development plan 2011 – 2015*.

ZDA. (2015). Multi-facility Economic Zones. Retrieved from http://www.zda.org.zm/?q=content/multi-facility-economic-zone-mfez

Zhang, H., Wu, W., & Zhao, L. (2016). A study of knowledge supernetworks and network robustness in different business incubators. *Physica A: Statistical Mechanics and Its Applications*, *447*, 545–560. https://doi.org/10.1016/j.physa.2015.12.051

APPENDIX

Appendix 1: Sample of Questionnaire

Questionnaire number_____

THE UNIVERSITY OF CAPE TOWN
SCHOOL OF BUSINESS

INFORMED CONSENT FORM

TITLE OF RESEACH:

BUSINESS INCUBATORS IN ZAMBIA: A STUDY OF THE IMPACT ON THE GROWTH OF SMALL BUSINESSES

You are being invited to participate in a research study about the impact of business incubators on SMEs in Zambia. This study is being conducted by William Kasase from the department of Commerce at the University of Cape Town. This study is being conducted as part of a postgraduate thesis.

You were selected as a possible participant in this study because your business has been recognised as one of the SMEs in Zambia.

There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study and all information given is kept confidential. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

The questionnaire will take about approximately 10 minutes to complete. The information collected may not benefit you directly but information learned in this study should provide more general benefits.

Your participation in this study is voluntary. Your consent will be shown by signing below. You are free to decline to answer any particular question you do not wish to answer for any reason.

If you have questions about the study, please contact the person in charge of the research, **William Kabwe Kasase,williamkasase@yahoo.co.uk, +260 969 821 515.**

The University of Cape Town Commerce Faculty Ethics in Research has reviewed and approved my request to conduct this project. If you have any concerns about your rights in this study, please contact the supervisor, Dr. Jere Mlenga of the University of Cape Town at +27 84 701 4714 or mlengajere@hotmail.com .

Participant's Name:

Participant's signature

Data Collectors Signature

Section A: Background Characteristics

No	Questions	Response	[√]		Official use only
Q.1	Do you own this business?	(1) Yes	[ ]		[ ]
		(2) No	[ ]		
Q.2	What was your age as at last birthday?	……..			[ ]
Q.3	Sex	(1) Female	[ ]		[ ]
		(2) Male	[ ]		
		(3) I choose not to respond	[ ]		
Q. 4	What is your highest level of education attained?	(1) Primary	[ ]		
		(2) Secondary	[ ]		
		(3) Tertiary	[ ]		[ ]
Q.5	What legal structure is your business?	(1) sole trader	[ ]		
		(2) partnership	[ ]		
		(3) limited company	[ ]		[ ]
		(4) Other, specify…….	[ ]		
Q.6	What industry classification best describes the activities of your business?	……			[ ]
Q.7	How long has your business been in existence?	(1) Less than 6 months	[ ]		
		(2) 6 months to 1 year	[ ]		[ ]
		(3) 1 to 2 years	[ ]		
		(3)Over 2 years	[ ]		
Q.8	How many employees do you have?	……			[ ]
Section B: Knowledge about BI s					
Q.9	Have you ever heard of Business incubators in Zambia/? If No skip to sec C	(1) Yes	[ ]		[ ]
		(2) No	[ ]		

Q.10	What services do business incubators offer in Zambia?	…… ……..				
Section C: Impact of BIs on SMEs						
Q.11	Has your business ever received assistance from any business assistance programme in Zambia?		(1) Yes	[ ]	[ ]	
			(2) No	[ ]	[ ]	
Q.12	What kind of assistance did you receive from this programme?		……			
Q.13	At what stage in business did you receive such assistance?		(1) inception	[ ]		[ ]
			(2) 1 year later	[ ]		
			(3) 2 years later	[ ]		
Q.14	Are you still under this assistance programme?		(1) yes	[ ]		
			(2) No	[ ]		[ ]
Q.15	Such assistance has been of importance to the growth of your business?		(1) Strongly agree	[ ]		
			(2) Agree			
			(3)Strongly disagree	[ ]		
			(4) disagree	[ ]		
Q.16	Generally, business assistance programmes positively impact the growth of a business? If yes to Q16, Why? If No, proceed to Q.17 MULTIPLE RESPONSE TICK ALL THAT APPLY			**1)YES**	**2)NO**	[ ]
			(a)They help start-ups save on operating costs	[ ]	[ ]	
			(b)SMEs receive guidance on	[ ]	[ ]	

			how to run their businesses efficiently			
			(c) incubator SMEs have high probabilities of survival unlike non incubated ones	[ ]	[ ]	
			(d) incubator SMEs have lager business networks	[ ]	[ ]	
			(e) Other; specify…… …… ……			
Q.17	Do you think many SMEs in Zambia receive assistance from these different business assistance programmes No to Q17, Why? If Yes, proceed to Q.18 MULTIPLE RESPONSE TICK ALL THAT APPLY			**1)YES**	**2)NO**	
			(a) Many SMEs do not know about such programmes	[ ]	[ ]	[ ]
			(b) Many BI s are located in the city	[ ]	[ ]	
			c) The procedure for accessing BI s	[ ]	[ ]	

			is complicated			
			d)Many SMEs think it's better they do it on their own without involving anyone	[ ]	[ ]	
			(e) Other; specify	…….		[ ]
Q.18	Are there enough business incubators in Zambia?		(1) yes	[ ]		
			(2) No	[ ]	[ ]	
Q.19	To what level of importance are the following services to the growth and development of your business?					
		(1)un-important	(2) moderately important	3)important	4)very important	[ ]
	a)financing assistance	[ ]	[ ]	[ ]	[ ]	
	b)marketing and accounting	[ ]	[ ]	[ ]	[ ]	
	c)managerial skills	[ ]	[ ]	[ ]	[ ]	
	d)leadership development	[ ]	[ ]	[ ]	[ ]	
	e) Other, specify…….					
Q.20	What do you think should be done to encourage SMEs to benefit from business incubators?		…… …… ……			[ ]

	THANK YOU!			

Appendix 2: Useful Information

Donor	Project	Commitment	Objectives
Finland	Programme for Luapula Agricultural and Rural Development, (PLARD) (2007-2010)	USD10 million	Promote sustainable commercialisation and development of fisheries, agriculture and agribusiness and foster a supportive policy, regulatory and institutional environment.
Sweden	Agriculture Support Programme, (ASP) (2003-2008)	USD43 million Including USD2.4 million contribution from Norway	Promote smallholder commercialisation through entrepreneurship and business development, improved land, seed, crops and livestock productivity and improved service delivery of support entities
USA	Production, Finance and Improved Technologies, (PROFIT) (2005-2010)	USD15 million	Improve the competitiveness of selected agro-industries with large numbers of micro and small enterprises through: i) better inter-firm co-operation iii)building credibility and confidence in market mechanisms
IFAD	Smallholder Enterprise and Marketing Programme, (SHEMP) (2000-2008)	IFAD loan: USD15.9 million (Total cost: USD18.4 million)	Strengthen smallholder enterprise groups, improve access to suppliers and markets, including rehabilitation of feeder roads, and support the development of the agribusiness sector and trading enterprises serving small-scale farmers
World Bank	Agricultural Development Support Project (ADSP) (2006-2010)	$37.2 million (IDA loan)	Promote sustainable smallholders' commercialisation, through improved productivity, quality and efficiency of export-oriented value chains where they Participate

Source: OECD

Figure 16: Major Donor Private Finance Projects in Agriculture 2000-2010

Topics	DB 2015 Rank	DB 2014 Rank	Change in Rank
Starting a Business	68	72	↑ 4
Dealing with Construction Permits	99	102	↑ 3
Getting Electricity	126	126	No change
Registering Property ✗	152	106	↓ -46
Getting Credit ✔	23	30	↑ 7
Protecting Minority Investors	83	81	↓ -2
Paying Taxes ✔	78	80	↑ 2
Trading Across Borders	177	177	No change
Enforcing Contracts	98	98	No change
Resolving Insolvency	95	95	No change
Doing Business Rank	**111**	**107**	**↓ -4**

✔ =Doing Business reform making it easier to do business.
✗ =Change making it more difficult to do business.
Source: World Bank

Figure 17: Ease of Doing Business Rank in Zambia 2014-2015

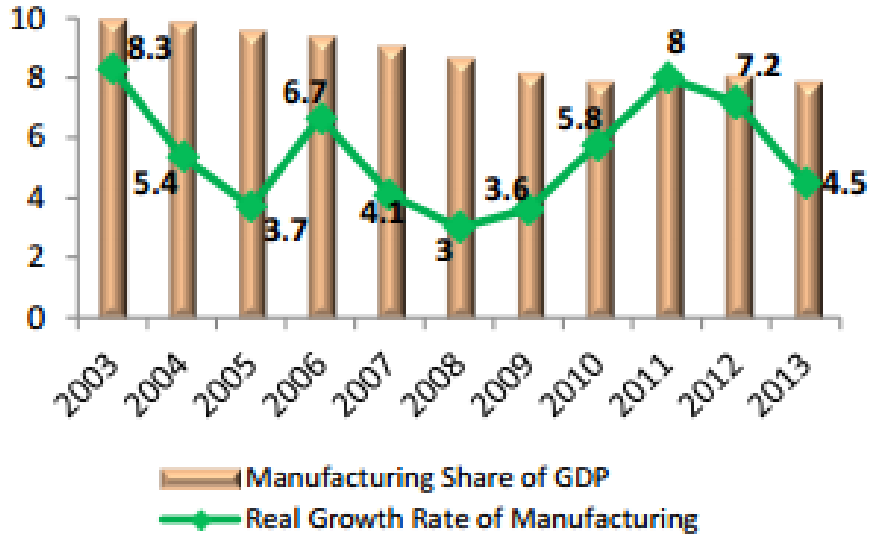
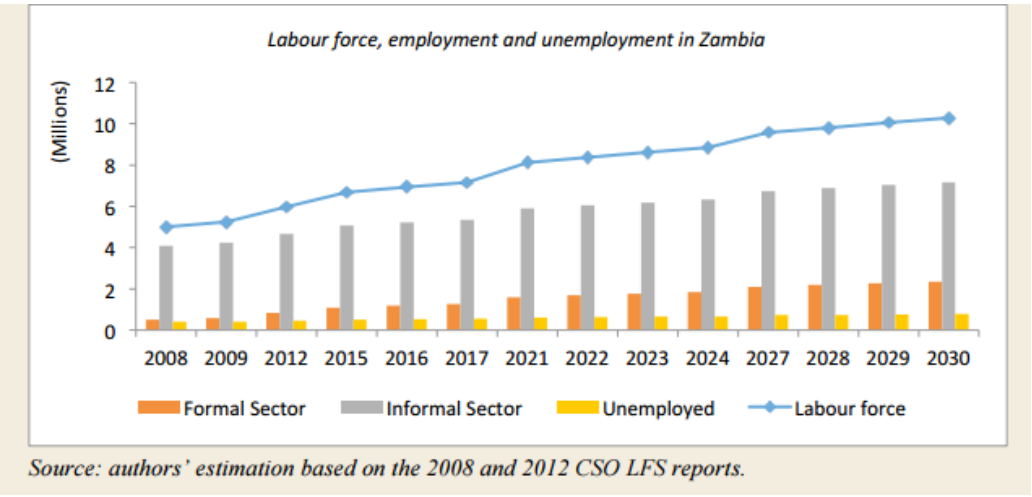


Figure 18: Real GDP Growth in the Manufacturing Industry

	Percent	Rank
Unemployment	19	1
Infrastructure/ roads	15	2
Farming/ agriculture	12	3
Education	10	4
Health	10	5
Water supply	9	6
Poverty/ destitution	6	7
Food shortage/ famine	3	8
Corruption	2	9
Management of economy	2	10

Question: In your opinion, what are the most important problems facing this country address?

Figure 19: Rank of Unemployment among Most Important Problems



Source: authors' estimation based on the 2008 and 2012 CSO LFS reports.

Figure 20: Population Growth will put more pressure on Unemployment