

New Venture Survival Challenges in Kenya: Does Business Incubation Help?

Njau James Mwangi¹, Wachira Anita Wanjugu², Mwenda Lilian Karimi³

St. Paul's University¹

Dedan Kimathi University of Technology²

Dedan Kimathi University of Technology³

Abstract

Small enterprises face a myriad of challenges that include; lack of access to finance, especially long-term finance, cannot benefit from scale economies, constraints in process and product innovation, difficulties in accessing tangible and intangible resources and limited access to scientific knowledge all of which very much pronounced in new ventures. Therefore, this study sought to explore new venture survival challenges in incubated technology-based new ventures in Kenya. The literature review reveals knowledge gaps in the new venture survival research findings and the empirical evidence on the effect of business incubation on new venture Survival. The study was informed by the Logic Business incubator Model by Hackett and Dilts (2004). Given the research objective, a descriptive research design was appropriate for this study. A total of 9 incubators and 364 incubatees from Nairobi Metropolitan were involved in the study. From the business incubators, stratified random sampling was applied to obtain a sample size of 182 incubatees. A semi-structured questionnaire was used to collect both qualitative and quantitative data from the incubatees while an interview schedule collected qualitative data from the incubation managers. The quantitative was analyzed using the SPSS tool; version 25 which generated both descriptive and inferential statistics. Pearson's correlation coefficient indicated the magnitude of the relationship between business incubation and new venture survival, with a positive correlation; $r=0.487$, $p<0.05$. Bivariate regression analysis indicated that business incubation had a statistically significant effect on new venture survival, with the beta coefficients; $\beta = 0.607$, $p<0.05$). The qualitative data was analyzed using a qualitative analysis process. The analysis indicated that the majority of the incubator managers averred that high product acceptability and market consolidation had a great influence on new venture survival. Business incubators that support entrepreneurial and small business development were found to produce higher tenant survival rates. Therefore, this study recommends that the business incubator's value proposition should be strengthened to address the new venture survival challenges in Kenya. The business incubators need to model business support services that encompass the four elements of business support; business coaching, training, business plan support and provision of subsidies.

Key Words: *Business Incubation, Product Launching, Technology- Based New Venture Creation*

1.0 Introduction

The creation, development and growth of technology-based ventures continue to gain attention from policy-makers globally as an avenue for enhancing levels of innovation, economic and wealth creation activity and employment creation (Manimala & Vijay (2012, Basant & Cooper 2016). New venture creation underscores the growth and competitiveness of national economies and industries in terms of job creation and knowledge stock amplifying innovation. Research indicates that new start-ups in the US contributed to net job increase which was not the case for existing businesses in the period between 1977 and 2005, and in the UK the number of small and medium-sized firms (SMEs) has increased by 50% in the last 25 years (Gertner, 2013). Small-scale enterprises constitute a significant portion of most economies thereby making a valuable contribution to national economies through innovation and production of products and services (Jackle & Li, 2006).

Despite their immense contribution, Small enterprises face a myriad of challenges that include; a lack of access to finance, especially long-term finance, cannot benefit from scale economies, constraints in process and product innovation, difficulties in accessing tangible and intangible resources and limited access to scientific knowledge all of which very much pronounced in new ventures (Adelowo, Olaopa, & Siyanbola, 2012). Research work on entrepreneurship indicates that one-third of new firms do not survive the third year and close to 60% do not survive the seventh year (Chandra, 2007). It is against this backdrop that business incubation is increasingly being adopted as an important tool for supporting new venture creation and the entrepreneurial process in general in many countries.

In Kenya, the Micro, Small and Medium Enterprises (MSMEs) play a key role in fostering economic development in several ways including job creation, fostering innovation, and increasing competition which is an important source of goods. The contribution of this sector to the GDP cannot be overstated. A recent survey report indicated that the value of the MSME's output is estimated at Ksh 3,371.7 billion compared to a national output of Ksh 9,971.4 billion representing a contribution of 33.8 % in 2015 (Republic of Kenya, 2016). The report also highlights a myriad of challenges facing the sector, ranging from a cumbersome regulatory environment characterized by multiple licenses, lack of capital, expensive loans, stiff competition, insecurity, lack of markets, and poor infrastructure. Sessional Paper No. 2 of 2005 on the Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction also identified the challenges and the constraints affecting the sector. These include; limited linkages with large enterprises, inadequate access to skills and technology, inadequate business skills, limited access to markets and limited access to financial services (ROK, 2005).

Given this backdrop, the MSMEs basic report 2016 (Republic of Kenya, 2016) avers that 2.2 million MSMEs were closed in the last five years, 2016 inclusive. On average, the enterprises were closed at the age of 3.8 years. An earlier baseline survey on small enterprises in Kenya also found that business failure was high among Kenyan enterprises. The baseline survey on small enterprises in Kenya (National Baseline Survey, 1999) showed that there is a high rate of business failure and stagnation among many start-up Businesses.

According to the survey by the National Baseline Survey (1999), only 38% of the businesses manifested expansion while 58% did not register an increase in the employment of workers. These reports indicate that the role of small enterprises in economic growth is compromised by the challenges affecting the sector. There is a need for intervention in this sector especially in mitigating business failure and stagnation among many business start-ups. Some of the business assistance interventions geared towards supporting budding entrepreneurs include; workspace, sheltered estates, business development services and financial assistance schemes. Business incubation is a good example of business development services that are being used to support new venture creation in Kenya. The Ministry of Trade is taking a strategic direction by embracing Business Incubation as an engine of growth in the small business sector (Kinoti & Struwig, 2011).

One of the goals in Kenya's Vision 2030 blueprint is to maintain sustained economic growth of at least 10% per annum from the year 2012 and beyond. To achieve this growth rate, the blueprint underscores the key role that Micro Small and Medium Enterprises (MSMEs) will play in the attainment of this goal. Moreover, to mainstream this sector in economic growth contribution, the blueprint anticipates the establishment of 47 SME parks in the country to support the creation of related industries, jobs and a vibrant MSMEs sector. The blueprint, while acknowledging the improvement in the access to capital as an important factor in unlocking the growth potential of the sector; recognizes the need for capacity building and appropriate financial services for MSMEs (Republic of Kenya, 2007).

In line with the Vision 2030 and Private Sector Development Strategy (PSDS) Kenya acknowledges MSMEs as the crucial link between the private sector and Poverty reduction in the country. The strategy envisages the transition and graduation of MSMEs into large firms upon effective facilitation and support during their early stages of development. The PSDS goal five aims at promoting and facilitating the competitiveness of the small enterprise sector by; supporting the development of new ventures, facilitating the development of new enterprises, improving access to capital, promoting firm-to-firm linkages and promoting broader representation of the sector in business association (Republic of Kenya, 2016).

Wanyoko (2013) appreciates that business incubation is gaining prominence in Government policy, the private sector and academia as a mechanism for supporting new venture creation in

Kenya. Meru and Struwig (2015) aver that the history of business incubation in Kenya can be traced back to 1967 when the Industrial and Commercial Development Corporation (ICDC) established the Kenya Industrial Estate (KIE) to provide sheltered real estate services countrywide, financial assistance and business development services (BDS) to start-up enterprises. Since then, different types of business incubators have sprung up including incubators without walls such as Non- governmental Organizations (NGOs), virtual incubators like Willpower Solutions Centre, Church-based institutions and finally, incubators with walls that include international Finance Corporations small and Medium Enterprises (SMEs) solutions Centre.

Modern business incubation in Kenya started taking shape in the early 2000s and was marked by the establishment of both incubators with walls and virtual business incubators as initiatives of the government and non-government organizations (NGOs). The last decade has witnessed an increase in private and public business incubators in the country. Recent private incubators include; Business Incubator (KEKOBI) IHUB, NAILAB, and NETFUND among others. Most of the recent public incubators are found in Kenyan universities such as the Chandaria Innovation Centre in Kenyatta University, the C4D Innovation Hub at the University of Nairobi and the Innovation Hub at JKUAT (Kibuchi, 2016).

Although business incubation is gradually taking root in Kenya, there is scanty evidence on the effect of business incubation on new business venture creation (Kinoti, 2011, Wanyoko, 2013). There is a lack of broad-based statistics that rank and measure the effectiveness of incubation programs (Manimala & Vijay, 2012). There is a need to examine the effect of business incubation on new venture Survival.

The aim of this study was to explore business incubation and new venture survival challenges in technology-based new ventures in Kenya and explore new venture survival challenges in incubated technology-based new ventures in Kenya, as well as examine the effect of business incubation on new venture survival in Kenya.

2.0 Literature Review

Theoretical Framework

The conceptualization of this study was informed by the Logic Business Incubator Model by Hackett and Dilts (2004). This model is premised on the fact that business incubation allows the operationalization of an overarching community strategy to promote the survival of new firms and consequently, an incubator is an enabling technology rather than strategic technology. As such, the business incubation model is universal in application to both public and private business incubators. The model draws inputs from the theory of real options adopted by Hackett and Dilts (2004) to explain the business incubation process. The model processes and practices

include; selection, monitoring, business assistance, venture development, product development, and resource munificence. Figure 2.1 is a diagrammatic representation of Hackett & Dilts (2004a) Business Incubation Process Model.

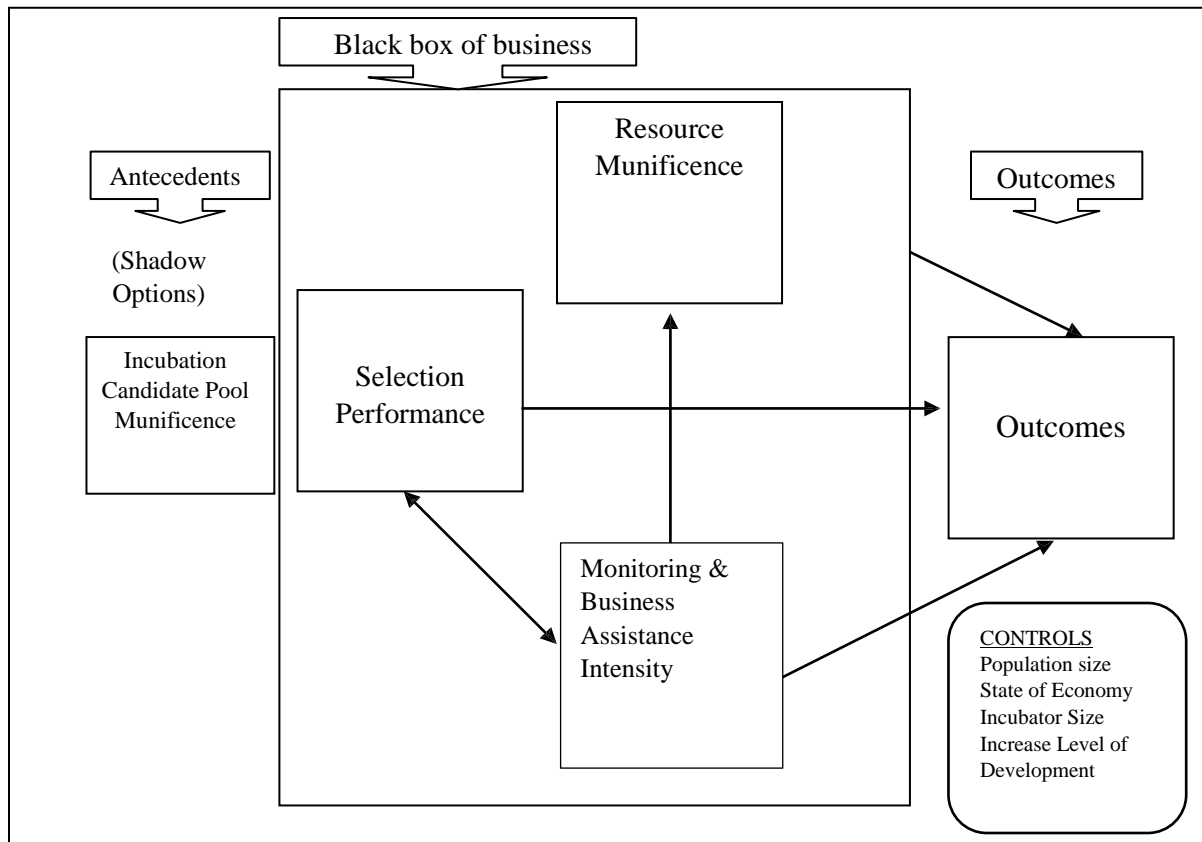


Figure 2.1: Hackett & Dilts Business Incubation Process Model (Hackett’s & Dilts, 2004a)

Hackett and Dilts (2004) incubation model suggests that the selection of incubatees is done from a pool of candidates after which the tenants in the business incubator are monitored and supported with resources during the initial development phase. The outcome of business incubation is either the success or failure of the incubatees as they leave the business incubator. Hackett and Dilts (2004) posit that the outputs and performance of the business incubation hinge on the ability of a business incubator to create real incubation options by selecting weak but promising nascent firms and monitoring and supporting the tenants in the business incubator. Therefore, Hackett and Dilts emphasis on the importance of selection performance and intensity of monitoring tenants and timely assistance efforts and resource munificence yields a more holistic vision of the incubation model (Moreira & Carvalho, 2012). However, it is important to note that any incubation program's success depends on the incubation practices that a business incubator adopts. Other important factors are; age, incubator size and the local environment.

Empirical Review

The failure rate for new ventures has been estimated to be 40% in the first year and 90 % over 10 years although the high failure rate has been disputed by research scholars. However, there is a general agreement that starting a new business is a high-risk activity (Evans & Dean, 2000). Despite the key role played by Micro, Small and Medium Enterprises in Kenya, 2.2 million MSMEs were closed in the last five years, 2016 inclusive (Republic of Kenya, 2016). New venture failure has been attributed to several factors that include, the cost of learning a new task, the characteristics of the new product, the presence or absence of informal organization structures and above all the liability of newness. The degree of novelty of a new organization normally manifested in the production and management aspects of the new firm is attributed to the liability of newness. Ahmed and Seet (2009) aver that management skills of new ventures are critical during the early stages of the nascent venture and therefore management skills must be augmented to match the stages of development of the new firm, failure to which the firm is unlikely to survive.

Despite the challenges highlighted above, entrepreneurs start new ventures with a basic expectation that they will rise above these challenges and survive. It is against this backdrop that business incubation emerged as a mechanism to ensure firm life endurance and business survival (Candida, Dennis, & Robert, 2009). Business incubators offer a range of services that encompass; management support, physical infrastructure, technical support, legal assistance, access to finance and networking. Business incubators provide a vehicle through which small businesses and aspiring entrepreneurs can access business support services for dealing with challenges in the entrepreneurial process. Business incubators can provide a remedy for the disadvantage of 'smallness' by providing diversified business support services valuable in fostering technological innovation and industrial renewal (Stephanie, 2006). Business incubation has been viewed as a mechanism for supporting new technology-based venture creation, supporting economic development through job creation, transfer and commercialization of technology and as an avenue to deal with market failures associated with knowledge and other innovation process inputs (Adelowo, Olaopa & Siyanbola, 2012).

Ratinho (2011) observes that business incubators have become popular instruments for accelerating the creation of successful new ventures and mitigating business failure. As such, there are about 900 incubators found in the European Union member countries and more than 1400 in the US an indication of the increased interest that policymakers are vesting on business incubation as an important tool in economic development. Literature review on the effects of business incubation on new venture creation indicates that a lot of focus by Business incubators is providing support to nascent businesses to promote growth and also increase the chances of survival of these firms. Business incubation is in the form of access to business support, infrastructure and access to business networks (Bergek & Norman, 2008; Hackett & Dilts, 2004; Rice, 2002). Other researchers have recognized the importance of an appropriate criterion for

selecting incubatees and exit policies from the incubator as a prerequisite for a successful incubation process (Aerts, Matthyssens, & Vandenbempt, 2007; Lee & Osteryoung, 2004).

However, there has been a mixed reaction to the question of whether business incubators have realized their intended impact of increasing the survival rate of new ventures. A study by Amezcua (2010), while examining business incubators and their tenants found that incubated businesses have slightly lower survival rates than their un-incubated counterparts but had slightly higher employment growth and sales growth rates. However, another study by Aerts et al. (2007) while evaluating the effects of screening practices on the survival rate of the incubator tenants found that for screening practices to have a positive relationship with survival rate, it has to be balanced in terms of the factors considered during screening. However, Incubators that support entrepreneurial and small business development were found to produce higher tenant survival rates.

A study done by Sungur (2015) examined business incubator networking and survival. The study applied a survey research design covering 414 firms in 12 provinces in Turkey. Analysis of the research findings indicated that external networking activities of tenant firms in business incubators increase the survival probability. The types of networking did not have the same effect on firm survival. Networking with off-incubator firms and external service providers had significant effects on tenant firms' survival rates but networking activities with commercial unions, universities and credit and financial institutions had a weak impact on firms' survival. Therefore, it is important to offer networking activities that will positively impact firms' survival comprised of local, regional, national and international networking.

Another study by Kibuchi (2016) assessed the business incubation services provided by business incubators using the case of iHUB. The study employed a survey research design and a sample size of 40 incubatees. The study emphasized the need for business incubators to give services to ventures that could increase their survival rate. The findings that were analysed using descriptive statistics indicated that iHUB assisted start-ups in developing financial and management skills ($M=2.60$), developing market strategies for new products or services ($M=2.77$), linking start-ups with mentors (2.83) and linking start-ups with business networks ($M=2.54$). The study concluded that iHUB business incubators supported the development of start-ups increasing their survival rate.

3.0 Research Methodology

The positivist philosophical underpinnings informed the choice of research methods in this research. The choice of descriptive research design allowed observation and description of the product launching challenges in a business incubation context. The technology-based new venture creation has been explained in terms of the new venture survival challenges and the role of business incubators in solving these challenges. The study involved 9 business incubators in Nairobi Metropolitan with the units of observation being incubators' managers and 384

incubatees involved in the creation of new ventures. A structured interview schedule was used to collect qualitative data from incubation managers. Quantitative data from incubatees was collected using a semi-structured questionnaire. Qualitative data was analysed using the thematic qualitative data method while descriptive and inferential methods were applied for the quantitative data.

4.0 Results and Discussion

Factors Affecting Business Survival

Seven items were constructed to measure factors affecting the survival of the new ventures on a scale of 1 to 5 points in a Likert-type survey instrument where: No extent = 1; Little extent = 2; Moderate extent = 3; Great extent = 4 and Very great extent = 5. The results were analyzed and summarized in Table 4.30

Table 4.1: Factors Affecting Survival of New Ventures

Statement	Response Rate Scale of 1-5				
	Non Extent	Little Extent	Mode-rate Extent	Great Extent	Very Great Extent
Inability to raise enough Working capital to meet daily expenses.	3.3%	7.9%	32.2%	25.0%	31.6%
Inability to control costs leading to run up into debts.	9.9%	21.1%	33.6%	21.1%	14.5%
Lack of Managerial expertise necessary for management processes and responding to a dynamic business environment.	11.2%	21.1%	30.9%	21.1%	15.8%
Inadequate business planning leading oversight in funding needs, operations management and marketing strategies.	7.2%	19.1%	29.6%	21.1%	23.0%
Lack of access to business networks for building strategic alliances.	5.3%	18.4%	40.1%	18.4%	17.8%
Inadequate access to sustainable innovation in response to continuous changes in the market place.	7.2%	15.1%	40.1%	23.7%	13.8%
Lack of marketing services to drive market penetration and consolidation in the face of competition.	3.9%	17.8%	32.9%	25.0%	20.4%

Results in Table 4.30 show that the majority of the respondents indicated that business survival was mostly affected by the inability to raise enough working capital to meet daily expenses. Approximately 32.2% of respondents indicated a moderate extent, 25.0% indicated a great extent and 31.6% indicated a very great extent respectively. Inadequate business planning leading to an oversight in funding needs, operations management and marketing strategies was second ranking. Approximately 29.6% of respondents indicated a moderate extent, 21.1% indicated a great extent and 23% indicated a very great extent respectively. Third in the ranking was the lack of marketing services to drive market penetration and consolidation in the face of competition.

Approximately 32.9% of respondents indicated a moderate extent, 25% indicated a great extent and 20.4% indicated a very great extent respectively. These findings agree with Ahmed and Seet (2009) who found that new venture failure has been attributed to the cost of learning the new task, characteristics of the new product, the presence or absence of informal organizational structures and management skills of new venture managers. The descriptive statistical analysis of factors affecting business survival is in agreement with the views of incubators' management. One incubator manager observed that;

“New venture survival challenges include; inadequate capital, new product market penetration and competition from cheap products. New venture survival is also affected by the high cost of production mostly attributed to the high cost of power in Kenya.” (Incubator manager M5)

Another incubation manager averred;

The challenge with business survival is not having room for flexibility when launching a new business. This means that you cannot decide whether to proceed with the idea as initially conceived or to do pivot modification. The inability to pivot is a big challenge for young businesses as well as matching production capacity with demand. The other drawback is a mismatch between cash flow and managing overheads. (Incubation manager M4)

Other factors that were also affecting business survival included lack of access to business networks for building strategic alliances. Approximately 40.1% of respondents indicated a moderate extent, 18.4% indicated a great extent and 17.8% indicated a very great extent respectively. The overall extent to which lack of access to business networks for building strategic alliances affected new ventures, considering great and very large extent yielded 36.2%. Inadequate access to sustainable innovation in response to continuous changes in the marketplace had approximately 40.1% of respondents indicating moderate extent, 23.7% indicating a great extent and 13.8% indicating very great extent respectively. The overall extent to which inadequate access to sustainable innovation in response to continuous changes in the marketplace affected new ventures, considering great and very great extent yielded 37.5%. Inability to control costs leading to running up into debts approximately 33.6% of respondents indicated moderate extent, 21.1% indicated a great extent and 14.4% indicated very great extent respectively. The overall extent to which inability to control costs leads to running into debts, considering great and very great extent yielded 37.5%. The findings on the management of production cost concur with the literature on product launching. For example, Ndiho (2016) avers that lack of proper management of the new product development process leading to high costs during the process has also been associated with a poor success rate in product launching. Research indicates that failure to properly address these challenges leads to the failure of nearly half of all the new products introduced by companies.

Finally, the lack of managerial expertise necessary for management processes and responding to the dynamic business environment approximately 30.9% of respondents indicated a moderate extent, 21.1% indicated a great extent and 15.8% indicated a very great extent respectively. The above results justify the need for business incubation as alluded to by Aerts et al. (2007) while

evaluating the effects of screening practices on the survival rate of the incubator tenants. The findings indicate that for incubation to have a positive relationship with the survival rate, it has to be balanced in terms of the factors considered during the screening and incubation process. However, incubators that support entrepreneurial and small business development were found to produce higher tenant survival rates.

Business Incubation and Business Survival

In analyzing the effects of business incubation on business survival, respondents were requested to indicate the extent to which they agreed with a set of eight statements as being direct effects of business incubation on the survival of new ventures. Responses were summarized on a Likert scale of 1 to 5 points where 5 = to a very great extent, 4=to a great extent, = 3 to a moderate extent, 2= to a little extent and 1= to no extent. The results are shown in Table 4.31 below.

Table 4.2: Business Incubation and Business Survival

Statements	Response Rate Scale of 1-5				
	No extent	Little extent	Mode-rate extent	Great extent	Very Great extent
Incubated business has better access to network resources important in underpinning new venture development.	1.3%	0.7%	18.4%	42.8%	36.8%
Incubated businesses can develop management competencies thus overcoming the liability of newness.	1.3%	3.3%	19.7%	44.1%	31.6%
Incubated business access sharing of resources in the incubator infrastructure hence leading to overhead cost-cutting.	3.3%	5.3%	23.7%	30.9%	36.8%
Incubated business is better placed to penetrate and consolidated its markets in the early stages of venture development.	3.3%	3.3%	28.9%	34.2%	30.3%
Incubated business has better access to funding and financial advice in early stages of venture development.	3.9%	6.6%	23.0%	36.8%	29.6%
Incubated business has better business planning and balanced optimism reducing chances of business failure.	2.6%	5.9%	25.0%	35.5%	30.9%
Incubated business exhibits high entrepreneurial learning from training and coaching given in the incubator increasing business survival.	2.0%	5.9%	17.1%	41.4%	33.6%
Incubated business has a better ability to form business alliances thus achieving credibility in the industry.	2.6%	5.3%	17.8%	43.4%	30.9%

Results in Table 4.31 indicate most respondents reported that incubation affected business survival through better access to network resources. About 42.8% and 36.8% of the respondents indicated that incubated businesses have better access to network resources important in underpinning new venture development to a great and very great extent, respectively.

Respondents who reported the extent of effect to be moderate in extent comprised 18.4%. About 0.7% and 1.3% of the respondents reported the extent as little and none, respectively. The high ranking of better access to network resources concerning business survival concurs with another study by Sungur (2015). The study indicated that external networking activities of tenant firms in the business incubator increased the survival probability of networking with external service providers having the highest effects on new venture's survival rates.

Incubated business exhibits high entrepreneurial learning from training and coaching given in the incubator increasing business survival was rated highly by a majority of the respondents at 41.4% for a great extent and 36.6% for a very great extent respectively. The majority of the respondents also indicated that incubated business has a better ability to form business alliances thus achieving credibility in the industry at 43.4% to a great extent and 30.9% to a very great extent respectively. Previous studies aver that training and coaching increase the chances of business survival. For example, a study by a study by Riunge (2014) sought to establish whether training determines the successful incubation of ICT start-up firms in Kenya. Research findings yielded a mean score of 3.94 of the responses, which indicated that most of the respondents, accented that training was a key determinant of successful ICT start-up firms' incubation. The descriptive statistical analysis on the effect of business incubation on business survival is in agreement with the views of incubators' management. One incubator manager observed that;

Incubator manager M3 observes;

So they actually make use of these networks, for example, financial and professional networks. We link entrepreneurs to investors who can support their companies. Sometimes, there is a collaboration between the university and the startup to develop a product or take a product to the market.

The opinion of incubatees and the views of incubator managers are in agreement with the existing literature on access to networks by start-ups. For instance, Ratinho, Harms and Groen (2009) aver that the idea of using networks through business incubators to compensate for a lack of resources is based on Social Capital Theory. New firms are constrained in terms of accessing established business networks that can compensate for a lack of human and financial resources, an important factor that influences a firm's performance. Access to professional business services through business networks is normally out of reach to many young new firms.

Table 3: Analysis of Incubator Managers' Views on New Venture Survival

New Venture Survival	Emergent themes	Comments
	Acceptability and market penetration of the new product.	Incubated businesses have high product acceptability in the market.
	High costs affect product launching.	Product development cost is reduced for incubated business.
	Market consolidation influence business survival	Incubated ventures are able to consolidate their market faster.
	Some ventures have business models that are not scalable	Business incubators help entrepreneurs to reconstruct scalable models.

Inferential Statistics

Pearson Product Movement Correlation Coefficient

Before carrying out a test on research hypotheses, the study examined how the variables of the study were correlated using Pearson’s Product Movement Correlation Coefficient. The correlation coefficient was used to determine the degree of relationship between the independent variable: Business Incubation, and the dependent variable: New Venture Survival in Kenya.

Table 4: Pearson Product Movement Correlation Coefficient

		Correlations	
		Business Incubation	New Venture Survival
Business Incubation	Pearson Correlation	1	
	Sig. (2-tailed)		
New Venture Survival	Pearson Correlation	.487**	1
	Sig. (2-tailed)	.000	

Table 4 shows outcome of this analysis indicated that Business Incubation had a moderate positive correlation with New Venture Survival in Kenya ($r=0.487, p<0.05$). Since the coefficient value was positive, it implied that an increase in the value of the independent variable would lead to an increase in the value of New Venture Survival.

Hypothesis Testing

H_{0_1} : Business incubation has no significant effect on New Venture Survival in technology-based ventures in Kenya.

Testing the Model Fitness for Business Incubation

The effect of the business incubation (X1) on the dependent variable; New Venture Survival was determined using bivariate regression analysis. Table 5 shows the results from testing the model fitness in the analysis output.

Table 5: Coefficients of Determination (R²) and Adjusted (R²) for Business Incubation

Model Summary									
					Change Statistics				
Model	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	
1	.487 ^a	.238	.59845	.238	46.755	1	150	.000	

The R- square and adjusted R- square was $(R^2) = 0.238$ and $adj. (R^2) = 0.233$ respectively as highlighted in Table 5. The R- square values indicate that Business Incubation was able to explain at least 23.3% variation in the dependent variable; New Venture Survival. Given that R^2 ranges from zero to one, and the closer to the value of one, the better “fit” the model is.

ANOVA for Regression for Business Incubation and New Venture Survival

The analysis of variance (ANOVA) was carried out to provide information about the variability within the bivariate regression model to form the basis for the test of significance. The outcome of the analysis of variance is shown in Table 6 below.

Table 6: ANOVA Results Business Incubation and New Venture Survival

		ANOVA				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.745	1	16.745	46.755	.000
	Residual	53.721	150	.358		
	Total	70.466	151			

The results of the significant test of the regression model had F statistics= 46.755 (1,150), p-value < 0.05, indicating a significant statistical meaning and “goodness” of fit of the model. For the model to have significant statistical meaning, the F change value should be greater than 10 (Field & Miles, 2013). The study, therefore, concluded that the model was statistically significant to predict the relationship between business incubation and new venture survival in Kenya.

Coefficients for Business Incubation

Table 7 shows the coefficients of the regression output for business incubation and New Venture Survival in technology-based new ventures in Nairobi Metropolitan. The coefficient values were used to generate the model for business incubation and product launching in technology-based new ventures $Y=1.749+0.607X_1$.

Table 7: Coefficients for Business Incubation

		Coefficients				
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	1.749	.324		5.392	.000
	Business Incubation	.607	.089	.487	6.838	.000

The results on Table 4.47 indicate that there existed a statistically significant positive relationship between the business incubation and New Venture Survival in Nairobi Metropolitan ($\beta = 0.607$, $p < 0.05$). This implies that if business incubation increases by one unit, product launching in technology-based new ventures would increase by 0.607. The computed t value was 5.392, $p < 0.05$. The computed p-value of 0.000 was less than .05. Thus the null hypothesis

(H_{0_1}) was rejected and the alternative hypothesis (H_{a_1}) accepted implying that business incubation process had a significant effect on new ventures survival in Nairobi Metropolitan. The critical t value is supposed to be between -1.96 and 1.96 to accept the null hypothesis. Therefore, the study concluded that business incubation had a significant effect on the survival of new ventures in Kenya.

5.0 Conclusion and Recommendations

Starting a new business is a high-risk activity, and therefore, the failure rate has been estimated to be 40% in the first year and 90% over 10 years. New venture failure has been attributed to several factors that include, the cost of learning a new task, the characteristics of the new product, the presence or absence of informal organization structures and above all the liability of newness. The degree of novelty of a new organization normally manifested in the production and management aspects of the new firm is attributed to the liability of newness.

Empirical findings indicate business survival was mostly affected by the inability to raise enough working capital to meet daily expenses. Inadequate business planning leading to an oversight in funding needs, operations management and marketing strategies was second ranking. Another major challenge for the new ventures was the lack of marketing services to drive market penetration and consolidation in the face of competition.

Analysis of whether business incubation increases new venture survival in Kenya, the data analysis indicated a positive outcome. The research findings indicated that incubated businesses have better access to network resources important in underpinning new venture development. The incubated business also exhibits high entrepreneurial learning from training and coaching given in the incubator increasing business survival. Moreover, a majority of the respondents also indicated that incubated businesses have a better ability to form business alliances thus achieving credibility in the industry. Last but not least, incubated business has better access to funding and financial advice in the early stages of venture development.

Therefore, based on the above findings, the study recommends that the business incubators value proposition should be strengthened to address new venture survival challenges in Kenya. To begin with, business incubators need to model business support services that encompass the four elements of business support; business coaching, training, business plan support and provision of subsidies. Business incubation managers and practitioners need to improve these elements to increase new venture creation success. For example, business incubators should increase the provision of training on management skills, product or service development and intellectual property that will lead to the creation of technology-based new ventures.

Most incubation managers contended that financial resource constraints affected the provision of incubation services. This implies that the majority of these business incubators may not be able to provide direct subsidies to their incubatees. Therefore the study recommends widening the funding pool to overcome resource constraints. Some of the strategies that business incubators

can employ include coming up with revenue-generating services such as extending some of their business development services to small enterprises outside of business incubation, taking an equity stake in successful ventures graduating out of the business incubators and also focusing on areas of technology that can attract donor funding.

References

- Adelowo Caleb, M., Olaopa, R. O., & Siyanbola, W. O. (2012). Technology Business Incubation as Strategy for SME Development: How far and how well in Nigeria. *Science and Technology*, 2(6), 172–181.
- Aerts, K., Matthyssens, P., & Vandenbempt, K. (2007). Critical role and screening practices of European business incubators. *Technovation*, 27(5), 254–267.
- Ahmad, N.H. and Seet, P. (2009) Dissecting Behaviours Associated with Business Failure: A Qualitative Study of SME Owners in Malaysia and Australia. *Asian Social Science*, 5, 98-103. <http://dx.doi.org/10.5539/ass.v5n9p98>
- Amezcuca, A. S., Grimes, M. G., Bradley, S. W., & Wiklund, J. (2013). Organizational Sponsorship and Founding Environments: A contingency view on the survival of business-incubated firms, 1994-2007. *Academy of Management Journal*, 56(6), 1628-1654.
- Basant, R., & Cooper, S. (2016). *Contrasting models of incubation for enterprise creation: Exploring lessons for efficacy and sustainability from higher education institutions in India and the United Kingdom*. Indian Institute of Management Ahmedabad, Research and Publication Department.
- Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. *Technovation*, 28(1–2), 20–28.
- Bhuiyan, N. (2011). A framework for successful new product development. *Journal of Industrial Engineering and Management (JIEM)*, 4(4), 746–770.
- Björklund, M., Kalling, T., & Setterberg, S. (2007). The success and failure of New Product Development--a study with focus on the early phases. *Nordic Academy of Management Conference*.
- Candida G. B; Dennis J. C. & Robert B., (2009), Pathways to entrepreneurial growth: The influence of management, marketing, and money, *Business Horizons*, 52, (5), 481-491
- Chandra, A. (2007), 'Business Incubation in Brazil: Creating an Environment for Entrepreneurship (October 1, 2007)'. Networks Financial Institute Working Paper No. 2007-WP-25. Available at SSRN: <http://ssrn.com/abstract=1058901>.
- Datis, K. (2014). A perspective on media entrepreneurship policy: Globalization of knowledge and the opportunities for developing economies. *Journal of Globalization Studies*, 5(2), 174–187.
- De Carolis, D. M., Litzky, B. E., & Eddleston, K. A. (2009). Why networks enhance the progress of new venture creation: The influence of social capital and cognition. *Entrepreneurship*

Theory and Practice, 33(2), 527–545.

Dee, N., Gill, D., Lacher, R., Livesey, F., & Minshall, T. (2012). *A review of research on the role and effectiveness of business incubation for high-growth start-ups*. University of Cambridge Institute for Manufacturing, 42.

Distanont, A., Khongmalai, O., & Kritpipat, P. (2018). Factors affecting technology transfer performance in the petrochemical industry in Thailand: A case study. *WMS Journal of Management*, 7(2), 23–35.

Douglas, E. J., & Shepherd, D. A. (2000). Entrepreneurship as a utility maximizing response. *Journal of Business Venturing*, 15(3), 231–251.

Dutta, D. K., Gwebu, K. L., & Wang, J. (2015). Personal innovativeness in technology, related knowledge and experience, and entrepreneurial intentions in emerging technology industries: a process of causation or effectuation? *International Entrepreneurship and Management Journal*, 11(3), 529–555.

Evan, J. D & Dean, A. S. (2000). Entrepreneurship as a utility maximizing response, *Journal of Business Venturing*, 15, (3), 231-251

Faith, D. O., & others. (2018). A review of the effect of pricing strategies on the purchase of consumer goods. *International Journal of Research in Management, Science & Technology (E-ISSN: 2321-3264) Vol, 2*.

Field, A. & Miles, J. (2013). *Discovering statistics using SAS*. London: SAGE.

Fok-Yew, O. (2014). The determinants of new product performance in Malaysian industry. *Journal of ASEAN Studies*, 2(2), 49–61.

Gentry, R. J., Dalziel, T., & Jamison, M. A. (2013). Who do start-up firms imitate? a study of new market entries in the Clec industry. *Journal of Small Business Management*, 51(4), 525–538.

Gertner, D. (2013). *Unpacking Incubation : Factors affecting incubation processes and their effects on new venture creation*. August.

Hackett, S. M., & Dilts, D. M. (2004). *A Real Options-Driven Theory of Business Incubation*. 41–54.

Jäckle, A. E., & Li, C. A. (2006). Firm dynamics and institutional participation: A case study on informality of micro enterprises in Peru. *Economic Development and Cultural Change*, 54(3), 557–578.

Kibuchi, J. (2016). *Business Incubation Services Offered to Start-up Businesses in Kenya*. (Unpublished MBA thesis, University of Nairobi). Retrieved from UoN repository. uonb.ac.ke. 8th/06/17.

Koks, S. C., Kilika, J. M., & others. (2016). Towards a theoretical model relating product development strategy, market adoption and firm performance: A research agenda. *Journal of Management and Strategy*, 7(1), 90.

- Lanza, A., & Passarelli, M. (2014). Technology change and dynamic entrepreneurial capabilities. *Journal of Small Business Management*, 52(3), 427–450.
- Lee, S. S. & Osteryoung, J. S. (2004). A Comparison of Critical Success Factors for Effective Operations of University Business Incubators in the United States and Korea. *Journal of Small Business Management*, 42(4), 418-426. doi:10.1111/j.1540- 627X. 2004.00120.
- Makanyeza, C., & Ndlovu, A. (2016). *ICT usage and its effect on export performance: Empirical evidence from small and medium enterprises in the manufacturing sector in Zimbabwe*.
- Manimala, M. J., & Vijay, D. (2012). Technology Business Incubators (TBIs): A perspective for the emerging economies. *IIM Bangalore Research Paper*, 358.
- McAdam, M., & McAdam, R. (2008). High tech start-ups in University Science Park incubators: The relationship between the start-up's lifecycle progression and use of the incubator's resources. *Technovation*, 28(5), 277–290.
- Mehdivand, M., Zali, M. R., Madhoshi, M., & Kordnaeij, A. (2012). Intellectual capital and nano-businesses performance: the moderating role of entrepreneurial orientation. *European Journal of Economics, Finance and Administrative Sciences*, 52(6), 147–162.
- Meru, A. K., & Struwig, M. (2015). Business-Incubation Process and Business Development in Kenya: Challenges and Recommendations. *Journal of Entrepreneurship and Innovation in Emerging Economies*, 1(1), 1–17.
- Mireftekhari, S. P., & Sciences, N. (2017). *Business incubator , a solution for startup ' s challenges A qualitative look at business incubator ' s support for startups to overcome the liability of newness and smallness*.
- Moreira, A. C. & Carvalho, M. F. (2012). Incubation of new ideas: extending incubation models to less-favored regions. *Entrepreneurship–Creativity and Innovative Business Models*, 41.
- National Baseline Survey. (1999). *National Micro and Small Enterprise Baseline Survey*. Nairobi: ICEG and K-REP.
- Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: an assessment and suggestions for future research. *Strategic Management Journal*, 28(2), 121–146.
- Pals, S. (2006). Factors determining success/failure in business incubators: A literature review of 17 countries. *Worcester Polytechnic Institute*, 2–81.
- Ratinho, T. (2011). *Are They Helping ? An Examination of Business Incubators ' Impact on Tenant Firms*.
- Ratinho, T., Harms, R., & Groen, A. (2009). *Technology business incubators as engines of growth: towards a distinction between technology incubators and non-technology incubators*. University of Twente. Retrieved from <http://doc.utwente.nl/73695> on 20th/05/17.
- Ratinho, T., Harms, R., Groen, A. J., Fink, M., & Hatak, I. (2010). *Towards a distinction between technology incubators and non-technology incubators: can they contribute to economic growth?*

- Republic of Kenya. (2005). Sessional Paper, 2 of 2005 on *Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction*, Nairobi: Government printers.
- Republic of Kenya. (2007). Kenya Vision 2030 - *A Globally Competitive and Prosperous Kenya*, (October), 1–180. Government Printers.
- Republic of Kenya, (2016). *MSME Basic Report, Kenya National Bureau of Statistics*. Nairobi: Government Printers.
- Rice, M. P. (2002). Co-production of Business Assistance in Business Incubators: An Exploratory Study. *Journal of Business Venturing*, 17, 163-187.
- Rose, J. (2012). Software Entrepreneurship: two paradigms for promoting new information technology ventures. *Software Innovation Aalborg University: Aalborg, Denmark, 1*, 98.
- Shane, S. A. (2008). *The illusions of entrepreneurship: The costly myths that entrepreneurs, investors, and policy makers live by*. Yale University Press.
- Stephanie P., (2006). *Factors Determining Success/Failure in Business Incubators: A Literature Review of 17 Countries*. Unpublished thesis. Worcester Polytechnic Institute.
- Sungur, O. (2015). Business Incubators, Networking and Firm Survival: Evidence from Turkey. *International Journal of Business and Social Science* 6, (5), 2219-6021.
- Tomy, S., & Pardede, E. (2018). From uncertainties to successful start ups: A data analytic
- Ucbasaran, D., Westhead, P., & Wright, M. (2008). Opportunity identification and pursuit: does an entrepreneur's human capital matter? *Small Business Economics*, 30(2), 153–173.
- Wanyoko, A. M. (2013). Influence of business incubation services on growth of Small and Medium Enterprises in Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1 (7), 454-468.