

Innovative Policies in Technology Business Incubation: Key elements for sustainable entrepreneurship development in Nigeria

Nkem Okpa Obaji*, Mercy Uche Olugu**, Kayode O. Balogun**

*Fakulti of Management, Universiti Teknologi Malaysia

** Department of Statistics, Federal School of Statistics, Ibadan Nigeria

Abstract- Entrepreneurial policies are generally enacted by governments to promote entrepreneurship and help sustain Small and Medium Enterprises (SMEs). However, in Nigeria, despite laudable policies, the implementation of those policies relating to entrepreneurship as well as technology incubation programme leaves a lot to be desired. Thus, the Nigerian version of business incubation is yet to attain success stories in comparison with some other developing nations. Consequently, the entrepreneurship development is also in the path of decline. Three key themes were identified, which formed the basis for developing the proposed theoretical framework. Also, several other factors that influence the success of entrepreneurship development through technology incubation were identified: infrastructure and local adaptation of the incubator model. The purpose of this study is to identify the specific elements that are crucial to the performance of Technology Business Incubation (TBI) in Nigeria.

Index Terms- Business incubation, Entrepreneurship development, Government policy, Nigeria, Sustainable development

I. INTRODUCTION

The role of innovation in creating economic advancement by concentrating on science and technology-based knowledge cannot be overemphasized [1, 2]. Wonglimpiyarat [3, 4] also discussed the relevance of technology innovation which has been globally acknowledged as causing the emergence of sustained economic development. Ajagbe and Ismail [5] viewed technology innovation as a key stimulant for growth in both developing and developed countries.

A number of programmes have been put in place to support entrepreneurship in several countries especially in the developing world. A case in point is Malaysia where innovation has been recognized as a strategy by the government to rapidly develop the country's economy technologically [5]. In addition, a recent study conducted by [6] describe how government contribution towards developing entrepreneurship through the offering of environment conducive to business in stimulating SMEs activity. Furthermore, [7] stressed that the government of emergent countries such as Japan, China, South Korea, Indonesia, Malaysia and India typically put in place affirmative government entrepreneurship policies that are advantageous to SMEs.

However, no matter how the entrepreneurial policies may nicely sound, there must be a mechanism in place that will be used to actualize the government strategy of transforming their various countries. Technology business incubation (TBI) is one of the mechanisms used to promote entrepreneurship through SMEs.

NBIA [8] describes business incubation as a business support procedure that fast-tracks the successful development of start-up and inexperienced businesses through the provision of a series of targeted resources and services to entrepreneurs. It stressed the importance of incubator management by acknowledging that the services are typically orchestrated by incubator management and offered both in the business incubator and through its network of contacts. In line with this Business Incubation is an integrated support programme offered by governments, academia and the private sector with the aim of breeding and fostering of promising value-added and technology-related ventures [9]. Phan et al [10] described incubators as a mechanism that is typically regarded as offering key contacts in the entrepreneurial value chain.

The Nigerian governments of different administrations since independence have shown interest and increasing appreciation of the role of Science and Technology (S&T) in national socio-economic development. The recognition of this fact motivated the Federal Government to restore the Federal Ministry of Science and Technology (FMST) as a separate organization in 1985. Since then, Nigeria has exhausted an immense arrangement of tasks on S&T strategy advancement through a blend of determined efforts of its scientists, engineers and technologists, international cooperation and government support.

In the past government has used different assistance schemes to assist in reducing the level of business failure [11, 12]. One notable feature of Nigeria's latest (2011) strategy on science and technology is the prominence of "Innovation", which refers to an enhancement or a completely new product, process or organizational system in the design, production and distribution of goods and services [9]. However, the number of policies that have been employed by several administrations failed to stand the test of time as a result of policy related issues including the implementation, inconsistent funding as well as government bureaucracy.

Particularly, the aim of this study is to highlight the importance of government policy related to science, technology

and innovation (STI) in the development of entrepreneurship using the business incubation scheme as the support structure.

The paper is structured as follows; Section 2 deals with the review of related literature. Section 3 dwells on the methodology, while section 4 is on findings and discussion and finally section 5 concluded the study with recommendation.

II. LITERATURE REVIEW

This section reviews the literature-related concepts which are imperative to the study under appraisal since they are the phenomenon of interest in the study as suggested by [13]. Some of the key concepts are business incubator, Nigerian STI policy, Nigerian TBI policy, business incubation success factors, SME among others.

Globally, any realistic innovation or advancement must be vigorously sustainable. Sustainable development implies a meeting point of three major concepts; Society, Environment and Economy. Sustainable Development Commission [14] defines "Sustainable development as development that meets the needs of the present, without compromising the ability of future generations to meet their own needs".

Figure 1 below describes the enhancement of the economic well-being as well as sustaining natural resources and environment. Its main import is to create a balance among the economic, environment and social needs, thereby allowing prosperity for now and hereafter generations. Pinter *et al* [15] maintains that sustainable development is balancing the protection of the natural environment with the fulfilment of human needs so that these needs can be met both now and in the future. Furthermore, the handy relationship between environmental health and human development, as well as the necessity to change social and economic policies in order to reduce the human impact on the planet has been universally acknowledged [16].

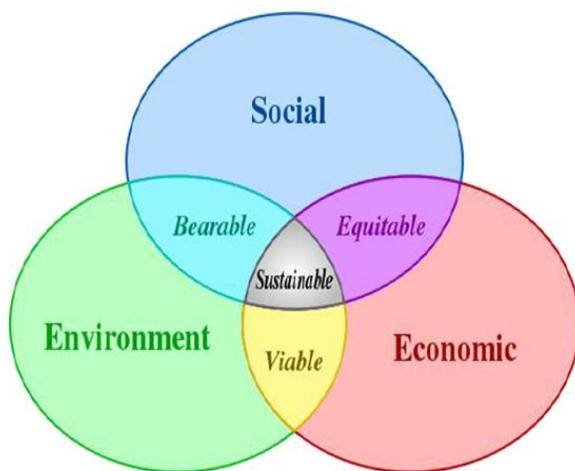


Figure 1: Innovative and Sustainable Development-shaping the future

2.1 Various Science & Technology Policies in Nigeria

The first National Science and Technology Policy in Nigeria came to being in 1986. Since then a total of four different science policies have evolved at different point in time which spanned within a period of twenty five years [17]. The policy was reviewed in 1997, 2003, 2005 and 2011.

2.2 Entrepreneurship and Assistance Policy Framework

Oni and Daniya [11]discussed the enthusiasm with which several countries adopted entrepreneurship especially the developing countries in the past using policies that are user-friendly in assisting the entrepreneurs. Country case-wise shows that in China, the government was resolute in helping to develop high technology businesses using policies that are friendly to the cause of entrepreneurship development [18] in the country. Etzkowitz [19]discussed the swiftness in the development of entrepreneurship in Brazil through government policies that were pitched towards the development of both low-tech and high-technological focused companies. In the case of Malaysia, [20] discussed the attentive manner in which the government approached the setting up of different technology financing groups with the intention of giving complete assistance to technology entrepreneurs.

Furthermore, in the Kingdom of Saudi Arabia, the government in its bid to put the country in equal status with high economic competitive countries worldwide put up a decade of entrepreneurship development policies in related innovation programme [21]. In Nigeria, several governments' administrations have at different period of time put a number of strategies to support the development of the SME sub-sector [12]. The past regimes set up at different periods, infrastructure to tackle the collective fiscal challenges in the nation. This was evidenced by the activities of the Directorate of Foods, Roads and Rural Infrastructure (DFRRI), National Directorate of Employment (NDE), Petroleum (Special) Trust Fund (PTF) and of recent, the Vision 20-20-20 as well as various poverty alleviation programmes.

2.3 Critical Success Factors for Business Incubation

Rockart [22]described the critical success factors as those elements related to attainment that duty bound to get the up-to-date consideration of management if the establishment is to continue to be competitive. The role of TBIs in assisting the early-stage businesses in overcoming the difficulties related to newly formed companies cannot be overemphasized. The goal of TBI is largely dependent on the different interest groups that set up the TBI. Thus the success of the TBI rest on meeting the aims of sponsors [23].

In business incubator study, several scholarly works have been conducted especially as it relates to success factors [23-28]. The findings of these scholarly works have been rotating round the traditional success factors which include inter alia Shared services; Business support services; Facilities and locations;

Incubator governance; Tenant entry and exit; Mentoring and Networking; Tie to University; Funding and Support; Community Support. The contemporary writers have also agreed with several critical success factors, which are not at divergence from those acknowledged by prior scholars [29].

Akcomak [30] observed that in developing countries, most incubators are still sustained financially by government; therefore the profit-making concept is still missing. Nevertheless, he contended that the commercial concept of incubators is the underlying principle for market failure argument. Von Zedtwitz, [31] previously recommends that whether an incubator is profit-related or not-for profit ought to be run as a business entity.

Kumar and Ravindran, [23] indicated that many scholarly works related to incubators have shown that the incubatees' continuous survival and growth should be an important goal of an incubator. This is also how a study underscores the perception of scholars that TBI as an instrument have the tendency to support newly formed technology-based enterprises, by helping them to improve their continuous survival [32].

In a study related to German context, [33] found that graduation causes an immediate negative effect on survival that lasts three years after graduation from incubators. Furthermore, [34] emphasized the relevance of counselling and networking collaborations with incubator management in causing the emergence of innovative enterprises.

2.4 Research context and the Nigerian Experience of business incubation initiative

The Batavia Industrial Center, generally recognized as the foremost U.S. business incubator, opened in Batavia, N.Y., in 1959. In 1980, approximately 12 business incubators were operating in the United States – all of them in the industrial Northeast, which had been hard-hit by plant closures in the previous decade [8].

Business Incubator is a facility-based technology infrastructure that assists the small new business start-ups to develop. TBIs are planned to present newly formed enterprises the technical assistance and facilities. Business incubation initiatives have been implemented in developing countries including Nigeria since the 1990s with uneven levels of success

The involvement of Nigeria with the TBI programme can be tracked through the interactions made by a UNDP representative to four African nations, viz.; Gabon, Cote D'Ivoire, Nigeria and Zimbabwe in June, 1988 in Gabon. The UNDP along with the four countries put together a passionate concern which they had previously shown in an industrial development procedure centred on the concepts of commercialization of R&D results and innovation for the development as well as submission of an importation swap policy; Job creation and capital creation through the useful employment of the association that exist between science and technology and the private enterprise development [35].

Nigeria started implementing it in 1993 when the first pilot centre was established in Lagos in 1993, then later established in Kano in 1994 and Aba in 1995. Presently, there are about 29 functional TIC in Nigeria [36]. Business incubation programme has been adopted in many developed and emerging nations since 1980s with different level of success. Nigeria has also implemented the initiative over two decades but the performance has not been comparatively mostly effective [37]. They claim that the drawback or difficulty encountered reveal how programmes or strategies imported from the developed countries need to be adapted to suit the local condition of the home-grown model. Since business incubator concept is a Western-driven model, it necessitates for local context adaptation.

There are so many factors that prevent a better operation of the Technology Business Incubation (TBI) in Nigeria which range from lack of adequate funding of the scheme to inconsistent government policies toward the Small and Medium Enterprises (SMEs) on one hand and the development of Science, Technology and Innovative Policy on the other hand.

There are a lot of claims from the stakeholders/participants that the programme has been successful but this study's assessment based on observation and interviews conducted revealed that most of the centres or the Nigerian incubation programme are not really where it ought to be in comparison with some other countries of equal development. This was supported by [7] scholarly work which concluded that the Nigerian context of technology incubation centres has not emphatically generated employments for the swarming populace, particularly the young people. Furthermore, their argument was strengthened by the report of the National Bureau of Statistics [38] that puts the total number of Nigerian population who are unemployed at 14 million.

2.5 National Policy on Technology Incubation in Nigeria

The drive for the policy is the employment of technology incubation programme as an instrument for technological, industrial, social and economic accomplishment and also to enhance the quality of life of its people. This is to be achieved by means of technology commercialization since quick development can only be reached if it is involved with dependable S&T policy. The basis of this is to establish best practices that will move the programme at the same level with associated programmes in other nations especially USA and other OECD nations. The intent is to in the best way exploit the benefit of technology incubation which include economic development at all levels, job formation, wealth creation, technology acquisition and techno-entrepreneurship culture support by Nigerians [39].

As sustainability is a paramount factor in developmental activities in today's world (c.f figure 1), technology incubation is not an exception. In all the activities that an incubator will embark on, the business practices that would be supported, sustainability must be the hallmark. Most technology incubations

are characterized by public-private partnership in the industrialized world as well as public sponsorship in the developing countries, in which the initial financial support is acquired from government mostly. Thus, the sustainability concept in relation to technology incubation implies the ability to continue to achieve results in a positive dimension, both in cash flows as the case may be and perpetuity.

The Nigeria's vision 20:2020 hold out to link TICs in its policy objectives [7]. The policy has two all-encompassing objectives, such as enhancing human and natural resources in order to attain quick economic growth. The second objective is translating the economic growth achieved in the first objective into reasonable social development for all citizens. These objectives have been conceptualized into social, economic, institutional and environmental dimensions.

2.4.1 Policy Objectives and Implementation Strategies

The significance of this policy is to present the platform for the high-scale industrial development, as well as innovativeness of the country. The policy will be realized if the much needed aims and their associated strategies are employed carefully. A number of the objectives of TBI and its related strategies are discussed below:

The setting up of established infrastructure and approaches for the improvement and technologies commercialization is one of the aims. The setting up of National Board for Technology Incubation for policy implementation was one of the strategies to achieving this objective. Setting up of TBI Centres all over the country was another strategy employed in achieving the objective. For the time being about twenty nine centres are operational [36]. Others are the setting up of Network of professional services providers [31, 40, 41] and instituting processes for technologies commercialization [5, 40]. Furthermore funding of the programme implementation is another objective of the policy. Outsourcing of resources from government endowments as well as donations, public as well as private sourcing of funds, venture capital; and International Donor Agencies sourcing of funds are some of the strategies to attain the objective [39].

The operative policy is centred on the Board's (NBTI) role. The NBTI coordinate the Technology Incubation programme in Nigeria while the actual incubation process takes place at Technology Incubation centres (TICs). NBTI functions inter alia are policy implementation and Coordination which involves development of working guidelines. Other roles include supervision, monitoring and evaluation; Financial Management and Control; Sourcing of fund; National and International Liaison; Program Planning and Development as well as provision of legal services [39].

III. METHODOLOGY

This study interviewed 10 respondents in Nigeria. Even though qualitative data collection does not prescribe a particular desired number of participants required to achieve understanding, [42] suggested that usually 9 to 20 in-depth interviews are

sufficient to gain the most insight from the participants. In line with this, 10 interviewees were selected for interview in this scholarly work,

After the data collection through interview was over, the data was transcribed, coded and emerging themes presented. This work was approached through a multiple case (cross case analysis) study methodology to tackle these questions. Interview transcript was transcribed and analysed following [43] qualitative data analysis.

In sum this study's design is centred on the principles of [44] and [45]. In line with this, the study employed a purposeful sampling, uses the case study as a reporting mechanism and employs a corresponding means to establish the positivist concepts of validity, reliability and objectivity as the researcher moves through the phenomenon under study. For the reason that naturalistic inquiry will employ other equivalent means to establish the positivist concepts of internal and external validity, reliability and objectivity (viz. credibility, transferability, dependability and confirmability).

IV. RESULTS AND DISCUSSION

The outcome of the structured interviews based on the research questions revealed that Government of various administrations have experimented with a lot of assistance policies geared towards helping the SMEs but the implementations of those policies at different times have been the shortcomings of the very nice policy documents which are very vivid on paper but to put in practice have been the bane of entrepreneurship development in Nigeria. Three major themes emerged from the interviews outcome; namely, inadequate funding, lack of policy implementation and inconsistent policy. This section contains key outcomes from the study which has assisted in approaching the research question. On the basis of the research findings a number of elements are responsible for successful incubation initiative, however, only the key elements are stated.

Research Question 1: Which factors are needed for the Nigerian government to operate a more successful TBI Model?

Policies offer strategic direction for virtually any government effort. It maps out a programme for the tactical and functional delivery of the initiative. However, poor policy direction has been a key obstacle militating against successful delivery of the TBI. This is long-established that there is a lack of a National blueprint on the Technology Incubation Programme. There is absence of a robust reference to the Technology Incubation Programme on the National Development Plan including the extant Vision 20-2020. The TBI allusion in the Nigerian Vision 20-2020 is just very weak. An original idea of the TBI effort in Nigeria was to lead to the transformation relating to R&D results directly into product or service within Nigerian economic system. This has since also been derailed due to the shortage relating to research facilities in Nigeria as well as inconsistency in terms of the way government executes its policies. Lack of

government implementation policy was acknowledged by all of the interviewees as very critical to the success or failure of the scheme, as the government is seen as the lead stakeholder as well as a policy provider. Consequently, the functionality of this initiative is contingent on how well policies are executed. There are various laudable federal government policies coming from diverse administrations even so the execution and also consistency towards performance in the programme has become the bane involving the nation's industrialization.

Government continually brings one policy document or the other from time to time with different nomenclature but with the same intentions and different modus operandi. This has made so many initiatives that have laudable plans to be thrown away just for its successor to be doing the same thing with a different name and with different workforce. This has not really helped the country in achieving the desired success in all these initiatives including SMEs on one hand and Technology Incubation on the other, due to changes and inconsistencies in the workforce as well as different objectives and perspectives of the plan.

The basis of starting technology incubation (TI) centers is to assist in the emergence of start-ups and fledgling companies that have acceptable technology input and output. Consequently, there is a need to offer financial resources to the incubator in such a way as to make funding accessible to the businesspersons; unfortunately, incubators cannot on their own make available funds for the tenants. The reason is that the incubators are not making money on their own; they still depend on government subvention for their sustainability and as such cannot offer any financial assistance directly to the tenant firms. This has made activities at the TI centers very challenging to the extent that the incubator management cannot render the basic role reposed on the incubator. Nevertheless, as the incubator cannot directly support the tenants financially, the incubator generally draws other financial suppliers (banks, venture capitalist, and angel organization) to support the tenants. In the case of commercial banks, the entrepreneurs are discouraged by the rigid security enforced by banks which makes it difficult for them to be given a credit facility. On the aspect of the venture capitalists, the Technology Incubation programme lacks the venture capitalists that would ordinarily come in to help out; unfortunately, they seldom exist and if they do exist, the venture capitalists would seldom invest in the fledgling business enterprises. Also, angel organizations who are private high net-worth individuals would be skeptical about taking up some equity investment in the newly formed businesses. Alagbaoso *et al* [46] recognize inadequate funding as one of the key challenges in entrepreneurship development. Business incubation literature has linked funding to be one of the success factors [23].

V. CONCLUSION LIMITATION AND IMPLICATION FOR FUTURE RESEARCH

This Research presents a concise appraisal of the literature related to success factors for technology business incubation. It highlights the various traditional factors that are vital to successful incubation practice as well as the government policies

as they relate to science, technology and innovation generally and technology incubation in Nigeria in particular. The full implementation of government policies are the much needed requirements needed to move the technology Incubation program in Nigeria forward as well as its sustainability. Also for a successful TBI Policy implementation, the program should engender technological SME development or focusing it to cause the transformation of the entire SME sector.

We are of the opinion that the result will fill a substantial amount of gap in the body of knowledge as well as contribute immensely to the policymakers and incubator managers.

This study is aimed at exploring the relevant research question guiding this scholarly. The themes that emerged from this research can help the policy makers in mapping out a new path to the development of entrepreneurship generally and business incubation programme in particular. Results suggest that in order to achieve a successful incubation attainment, certain elements, for example (efficient and user-friendly government policy and its implementation) ought to be in place

Furthermore, from the literature review above, it is pertinent to say that aside from the traditional success factors, government policies as they relate to science, technology and innovation (STI), technology business incubation (TBI) as well as SMEs are very crucial to the successful operation of TBI on one hand and entrepreneurship development on the other.

In addition, for the reason that this kind of research is usually context-specific, there are theoretical justifications to be based upon in which different emerging countries may perhaps experience similar dynamics. Accordingly, it necessitates for this deduction to be verified by future research undertakings to be conducted in other developing countries through analytic generalization [47]. Moreover, future research should be carried out quantitatively using the themes that emerged from the interviews to construct questionnaire instrument

ACKNOWLEDGMENT

The Authors would like to use this medium to express their appreciation to Ringa Kaingu Ringa for his constructive critique on this manuscript.

REFERENCES

- [1] Thiruchelvam, K., et al., *Towards Effective Policies for Innovation Financing in Asia-Financing Innovation, the Experience of Malaysia*. 2010, Working Paper Report Submitted to the IDRC Project.
- [2] Youtie, J. and Shapira, P., *Building an innovation hub: A case study of the transformation of university roles in regional technological and economic development*. Research policy, 2008. **37**(8): p. 1188-1204.
- [3] Wonglimpiyarat, J., *Government programmes in financing innovations: Comparative innovation system cases of Malaysia and Thailand*. Technology in Society, 2011. **33**(1): p. 156-164.
- [4] Khin, S., Ahmad, N. H., and Ramayah, T., *Product innovation among ICT technopreneurs in Malaysia*. Business Strategy Series, 2010. **11**(6): p. 397-406.
- [5] Musibau, A. A. and Kamariah, I., *The Financing of Early Staged Technology Based Firms in Malaysia*. Middle-East Journal of Scientific Research, 2013. **18**(5): p. 697-707.

- [6] Obaji, N. O. and Olugu, M. U., *The role of government policy in entrepreneurship development*. Management, 2014. **2**(4): p. 109-115.
- [7] Akhuemonkhan, I. A., et al., *Harnessing the Potentials of Technology Incubation Centres (TICs) as Tools for Fast-Tracking Entrepreneurship Development and actualisation of the Vision 20: 2020 in Nigeria*. Humanomics, 2014. **30**(4).
- [8] National Business Incubation Association 2009 *What is Business Incubation* http://www.nbia.org/resources_library/what_is/index.php
- [9] Obaji, N. O., Senin, A. A., and Richards, C. K. *Sustainable Innovative Policy in Technology Business Incubation: Key Factors for Successful Entrepreneurship Development in Nigeria*. 2012.
- [10] Phan, P. H., Siegel, D. S., and Wright, M., *Science parks and incubators: observations, synthesis and future research*. Journal of business venturing, 2005. **20**(2): p. 165-182.
- [11] Oni, E. O. and Daniya, A., *Development of Small and Medium Scale Enterprises: The role of Government and other Financial Institutions*. Arabian Journal of Business and Management Review (OMAN Chapter) Vol. 2012. **1**.
- [12] Ayodeji, A. R. and Balcioglu, H., *Financing Industrial Development In Nigeria: A Case Study Of The Small And Medium Enterprises In Kwara State*. Global Journal of Management And Business Research, 2010. **10**(3).
- [13] Sekaran, U. and Bougie, R., *Research Methods for Business - A Skill Building Approach*. fifth ed. 2010, New York: John Wiley & Sons.
- [14] Sustainable Development Commission 2011 *What is sustainable development?* <http://www.sd-commission.org.uk/pages/what-is-sustainable-development.html>
- [15] Pinter, L., Hardi, P., and Bartelmus, P., *Sustainable development indicators: proposals for the way forward prepared for the United Nations Division for Sustainable Development*. 2005: International Institute for Sustainable Development.
- [16] Ebiringa, O. T., *Entrepreneurship development for sustainable economic transformation: A study of YOUWIN programme in Eastern States of Nigeria*. Journal of Sustainable Development in Africa, 2013. **15**(5): p. 49-59.
- [17] 2011 *Science, Technology and Innovation (STI) Policy*
- [18] Cullen, M., Calitz, A., and Chandler, L., *Business incubation in the eastern Cape: a case study*. International Journal for Innovation Education and Research, 2014. **2**(05): p. 76-89.
- [19] Etzkowitz, H., *Incubation of incubators: innovation as a triple helix of university-industry-government networks*. Science and Public Policy, 2002. **29**(2): p. 115-128.
- [20] Ajagbe, M. A. and Ismail, K., *Factors influencing venture capital assessment of high growth companies in Malaysia*. International Journal of Entrepreneurship and Small Business, 2014. **21**(4): p. 457-494.
- [21] Salem, M. I., *The Role Of Business Incubators In The Economic Development Of Saudi Arabia*. International Business & Economics Research Journal (IBER), 2014. **13**(4): p. 853-860.
- [22] Rockart, J. F., *Chief executives define their own data needs*. Harvard business review, 1978. **57**(2): p. 81-93.
- [23] Kumar, K. S. and Ravindran, D. S. R., *A Study on Elements of Key Success Factors Determining the Performance of Incubators*. European Journal of Social Sciences, 2012. **28**(1): p. 13-23.
- [24] Smilor, R. W., *Managing the incubator system: critical success factors to accelerate new company development*. Engineering Management, IEEE Transactions on, 1987(3): p. 146-155.
- [25] Rice, M. P. and Matthews, J. B., *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation*. 1995, Westport, CT: Quorum Books.
- [26] Verma, S., *Success Factors for Business Incubators: An empirical study of Canadian Business Incubators*, in *Faculty of Graduate Studies and Research, Eric Sprott School of Business*. 2004, University of Ottawa: Ontario, Canada.
- [27] Somsuk, N. and Laosirihongthong, T., *A fuzzy AHP to prioritize enabling factors for strategic management of university business incubators: resource-based view*. Technological Forecasting and Social Change, 2014. **85**: p. 198-210.
- [28] Al-Mubarak, H., Ahmed, A., and Al-Ajmei, R., *Best Practices of Business Incubators in Developed and Developing Countries: the Roadmap for the Gulf Cooperation Council (GCC) Countries*. World Association for Sustainable Development, 2014.
- [29] Mbewana, P. N., *The Key Success Factors for Business Incubators in South Africa: The Godisa Case Study*, in *Faculty of Engineering*. 2007, University of Pretoria: South Africa.
- [30] Akcomak, I., *Incubators as Tools for Entrepreneurship Promotion in Developing Countries*. 2009, World Institute for Development Economics Research.
- [31] Von Zedtwitz, M., *Initial directors of international R&D laboratories*. R&D Management, 2003. **33**(4): p. 377-393.
- [32] Somsuk, N., Laosirihongthong, T., and Mclean, M. W. *Strategic management of university business incubators (UBIs): Resource-based view (RBV) theory*. in *Management of Innovation and Technology (ICMIT), 2012 IEEE International Conference on*. 2012. IEEE.
- [33] Schwartz, M., *Beyond incubation: an analysis of firm survival and exit dynamics in the post-graduation period*. The Journal of Technology Transfer, 2009. **34**(4): p. 403-421.
- [34] Scillitoe, J. L. and Chakrabarti, A. K., *The role of incubator interactions in assisting new ventures*. Technovation, 2010. **30**(3): p. 155-167.
- [35] Federal Ministry of Science and Technology, 2003 *The Organisation and Management of Technology Business Incubation in Nigeria*
- [36] Jibrin, M., Makoyo, M., and Amony, M. *Technology Incubation Programme for Development of Sustainable Entrepreneurial Skills in Nigeria*. in *International Journal of Engineering Research and Technology*. 2013. ESRSA Publications.
- [37] Obaji, N. O., Senin, A. A., and Richards, C. K., *Enhancing a Future version of the Nigerian SME Technology Incubation Model: Lessons for other developing countries*. 2012.
- [38] Statistics, N. B. O., *Unemployment rates in Nigeria*, in *Annual Report of NBS, Nigeria*. 2011: Abuja.
- [39] Federal Ministry of Science and Technology Quarterly 2005 *FMST: Policy, Functions, Structure and Operational Guidelines of Technology Incubation Programme in Nigeria*
- [40] Adelowo, C. M., Olaopa, R. O., and Siyanbola, W. O., *Technology Business Incubation as Strategy for SME Development: How Far, How Well in Nigeria?* Science and Technology, 2012. **2**(6): p. 172-181.
- [41] Raheem, S. and Akhuemonkhan, I., *Enterprise Development through Incubation Management*. Developing Country Studies, 2014. **4**(18): p. 67-82.
- [42] Yang, K., *Voice of the customer capture and analysis*. 2008, New York: McGraw Hill.
- [43] Rubin, H. J. and Rubin, I. S., *Qualitative interviewing: The art of hearing data*. 2012: Sage Publications.
- [44] Miles, M. B. and Huberman, A. M., *Qualitative data analysis: An expanded sourcebook*. 2nd ed. 1994, London: Sage Publications.
- [45] Miles, M. B., Huberman, A. M., and Saldaña, J., *Qualitative data analysis: A methods sourcebook*. 2014: SAGE Publications, Incorporated.
- [46] Alagbaoso, M., Myres, K., and Teresa, C. *Biotechnology Entrepreneurship in South Africa and Brazil*. in *27th International Business Research Conference*. 2014. Toronto, Canada: Ryerson University.
- [47] Yin, R. K., *Applications of case study research*. 2012: Sage Publication.

AUTHORS

First Author – Nkem Okpa Obaji, Ph.D, Universiti Teknologi Malaysia, amazonsng@yahoo.com

Second Author – Mercy Uche Olugu, M.Sc, Federal School of Statistics, Ibadan, Nigeria olugumercy@yahoo.com

Third Author – Kayode O. Balogun, M.Sc, Federal School of Statistics, Ibadan, Nigeria, kayibalogun@yahoo.com.

Correspondence Author – Nkem Okpa Obaji, amazonsng@yahoo.com, amazonsng@gmail.com, +60162738205

