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ADHOC REMEDIES FOR MSMES PERFORMANCE IN NIGERIA: TECHNOLOGY INCUBATION PROGRAMME APPROACH

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ABSTRACT

Several efforts have been made in dealing with the violation of the assumptions made regarding the success story of MSMEs documented and some yielded results. Particular attention is that of the start-up problem. Business incubators are organizations created to help small and young firms become stable and profitable, which is a mainstay of economic development programs. The literature emphasizes several criteria and indicators to measure incubators' performance or outcomes such as occupancy, jobs created, firms graduate, tenant revenues, number of patent applications per firm, number of discontinued businesses and others. Incubators have been observed as helping to build entrepreneurial cultures and clusters, acting as a catalyst for the development of integrated business support networks which include finance providers, universities, business schools, large companies, business professionals and government bodies. Due to the significance of technological innovation and entrepreneurship in shaping the future, this paper looks at technology incubation centres and their role in commercializing technologies and developing high value-added products, processes and services. In the new environment of rapid technological advances and globalizing trade, modern small businesses are playing a significant role in creating innovations, employment, income and growth with equity. This study deals with performance assessment of incubators with respect to job creation using the existing Technology Incubation Centres in Nigeria. The objectives of this paper will be focus on Technology Incubation Centres implementation processes, institutional structures and the services provided by the government to the incubatees and affiliates.

Keywords: Business Incubators, New Firms, Government Policy, Performance

INTRODUCTION

In a rapidly changing global economy, small and medium scale enterprises (SMEs) are increasingly a force for enhancing national economic growth and employment. Many government programmes contain policy instruments addressing SMEs. New structures and strategies are being explored that will help small enterprises to grow and provide a promising future in the global market. In a number of more competitive economies, business incubation is one of the tools that have helped to create new entrepreneurial skills and new businesses. The incubation process that was developed has included services for on the spot diagnosis and treatment of business problems, dramatically lowering the usual early stage failure rate. Business incubator programs, often called "new entrepreneur creation projects" helps develop new entrepreneurs and supports them to start up business and be better able to survive on a longer-term sustainable basis. The business incubator target group includes small entrepreneurs that want to grow, new graduates and those who would like to develop their talent and ideas and commercialize them.

According to Gartner (1985), new venture creation is the organizing of new organizations. There is growing awareness that new venture creation is a multi-dimensional phenomenon, where aspects relating to the entrepreneur, the new firm and the environment interact in complex ways within the dynamic system of new enterprise development (Lichtenstein et al., 2006; Davidsson and Gordon, 2010; Shepherd, 2011).

Public policy directives require the accelerated creation of new ventures through a variety of interventions designed to curb new venture failure rates. Out of a myriad of such interventions, it has been suggested that business incubation most comprehensively resolves the issues surrounding the venture creation process (Aernoudt, 2004; Hackett and Dilts, 2004a; Phan et al., 2005). Business Incubators are defined as a location in which entrepreneurs can receive pro-active, value-added support, and access to critical tools, information, education, contacts, resources and capital that may otherwise be unaffordable, inaccessible or unknown. Generally, the primary objective of an incubator is to help promote venture creation and economic development by providing affordable work-space, shared facilities, counseling, training, information and access to professional networks, for selected entrepreneurial groups. Some incubators target clusters of sectoral activities such as biotechnology or computer software, but most have mixed tenants.

The entrepreneurs who are formally described as SMEs are usually recognized as the foundation for the urban and economic growth of many nations. Globally, SMEs are noted for their massive assistance to the advancement procedure as well as engine for economic growth (Obitayo, 2001). The main benefit of this segment according to Aremu and Adeyemi (2011) is its job creation prospect at modest investment outlay. Kumar and Ravindran, (2012) also concur on this as they declare that entrepreneurship is vital to the growth of a country through employment generation, innovative products development as well as methods through modernization. Libecap, (2011) also declares that when policymakers as well as macroeconomists are anxiously looking for measures that could drive economic development, spurn inactivity as well as promote employment formation, private enterprise is usually the spotlight for consideration. Technology business incubation scheme is the particular mechanism that will actualize the above mentioned macroeconomic strategies. In citing NBIA, (2010), Al-Mubaraki, (2012) declares that business incubators assist business enterprises to transform their thoughts into practicable as well as strengthening their ventures by assisting them from commencement to when they will be able to survive on their own. Business incubators are mechanism for

value addition to firms and incubatees. Incubation program is aimed at achieving three main macroeconomic objectives of job creation, economic development and international Networking.

Most industrialized and developing nations have implemented Technology Incubation Programme scheme to accelerate the establishment of innovative knowledge-related businesses because of its above eighty percent success level of innovative business enterprise formation, as well as its support arising from its spinoff effects such as Technology transfer, job creation as well as capital.

In the light of these high failure rates of small businesses on the one hand and the vital contributions they make to the economy and society on the other, numerous concepts and strategies have been formulated to assist these enterprises. Such strategies relate to the formation, development and survival of new and small businesses (Cromie, 1991) Among the existing concepts and strategies, business incubation, which began to evolve and gain popularity in the USA in the 1980s, has become more widely considered as a promising support mechanism for entrepreneurship development (Abduh, 2003; Lumpkin and Ireland, 1988).

The history of Technology Incubation Programme (TIP) in Nigeria dated back to 1992 to 1993 when the first Technology Incubation Centre was commissioned in Agege, Lagos (FMST, 2005). It came to fifteen (15) in 2004 and in 2005 an agency was established to oversee and coordinate the activities of these Centre's. The agency became an agency of the Federal Ministry of Science and Technology (FMST) and was named National Board for Technology Incubation (NBTI). To date the Centre have spread to 36 States of the Federation with 6 region offices and 15 Extensions office across the Country with over Eight hundred and twenty-six (826) products in the market creating more than four thousand, seven hundred and fifty-six (4,756) direct jobs nationwide (NBTI, 2015). Ihenacho, (2005) pinpoints that there is proliferation of Technology Incubation Centres (TICs) in Nigeria, but the performances of almost all of them are below expectation due to inadequate task execution and abysmal administrations. A crucial evaluation according, to Adegbite, (2001) shows that TICs have failed to accomplish the basic purpose of developing sustained successful ventures. The growth of the initiative has been hindered by adaptation problem, incoherent financial support, structural difficulties in administrative dealings as well as ineffectively construed relationships with appropriate establishments as well as inconsistent government policies as they relate to Science, technology and innovation (STI) and Technology Incubation in particular. Other Achilles heel to the Nigerian model which is similar to other developing countries includes heavy reliance on government patronage as well as paying particular attention to physical amenities instead of services of intangible value.

Business incubation initiatives have really thrived seriously in places like Western Europe and North America where the idea of business incubation program was conceived, nursed and brought to the fore.

Most developing countries just like Nigeria aspire to institute best practices that will move the program at par with related schemes in other countries with success stories on incubation program particularly USA and other OECD countries but the dilemma faced by Nigeria as a developing country also affect majority of the developing countries in their path to a better incubation model. Since the initiative was a borrowed technology from the OECD Countries to developing countries the issue of adaptability has been a major predicament for some of the emerging countries, for instance, Nigeria which adapted the scheme from the USA with recommendation and design from the United Nations Development Programme (UNDP) has social infrastructural problems, therefore how is the initiative going to succeed without the country first tackle the infrastructural problem.

The scope of the programme under the policy is to nurture the development and commercialization of Low Technologies; ranging from manufacturing of simple equipment and machineries, upgrading of traditional technologies and handcrafts to medium technologies such as manufacturing of electrical and electronic components and equipment's; chemical processes and manufacture of plastic items and manufacturing of scientific equipment among others to High technologies of Biotechnology, information and communication technology, space technology, artificial intelligence and Robotics to Emerging technologies in Advanced materials Nano and laser technologies (NBTI, 2005).

The vision statement of the programme is to make Nigeria a technologically competitive nation through the commercialization of Research and Development (R&D) results and other innovative efforts using technology incubation as a tool.

The mission statement is to create a state-of-the art infrastructure for the nurturing of technology-based enterprises to promote Nigeria's indigenous potentials for economic development through value added and technology-related activities and to establish effective linkages between technology providers (Universities, Polytechnics, Research Institutes and Individuals), entrepreneurs (Industry) and capital for the creation of viable technology-based enterprises.

Role of the Stakeholders (Federal Ministry of Science and Technology, 2005)

Federal Government/ National Board for Technology Incubation (NBTI):

i. Policy guideline for the execution of programme
ii. Providing Technology focus for TIP, Management of the entire programme.
iii. Provision of specialized and customized infrastructure
iv. Provision of a central facility workshop, equipment, laboratories for the technical development needs of the entrepreneur,
v. Granting of development fund (seed capital), a non-interest revolving loan, to entrepreneurs in partnership with relevant stakeholders for sustenance of the programme.
vi. Facilitating linkage with knowledge base and external service providers
vii. Provision of marketing outlets through exposure to local and international trade fairs and exhibitions in collaboration with Nigeria Export Promotion Council.

Host State Governments

i. Provision of adequate specious site that allows for future expansion.
ii. Provision of functional building for offices and incubation units and renovation of same where necessary.
iii. Provision of good access road to the Centre.
iv. Provision of utilities (Water Electricity, Telephone, etc) to the Centre.
v. Provision of technology or industrial parks for the relocation of the entrepreneurs after graduation.
vi. Promotion of the products from TICs and to effect its acceptance among the Government functionaries and other trading Companies of the State.

vii. Any other functions necessary for the attainment of programme objectives.

Private Sector Organization:

i. Partner with relevant tiers of government for the establishment of TIC.
ii. Partner with relevant tiers of government for the provision of post incubation infrastructure
iii. Take equity participation in companies of incubatees and post incubation investments.
iv. Invest in product development particularity those with value addition to their organization.
v. Take- up and translate commercially viable R&D results and innovation into enterprises.

Entrepreneurs

i. Provide Business plan that translate commercially viable R&D results, invention and /or indigenous knowledge into goods and services.
ii. Provide take-off capital for the business
iii. Provide basic machinery for the take-off of the enterprises
iv. Provide raw materials for the enterprise
v. Provide adequate management for the business.
vi. Provide periodic report.
vii. Abide by the rules and regulations of the TIP.

Research Institutes/ Tertiary Institutions:

i. Provide technically feasible and commercially viable R&D results and inventions.
ii. Provide technical support to the TIC s,
iii. Establish sustained institutional linkages with the centres,
iv. Collaborate with relevant tier of Government for the establishment of TICs.
v. Establish institution-based incubators to commercialize R& D results.

MATERIALS AND METHODS

Research involves investigating new and innovative aspects of any branch of knowledge. It also involves defining and redefining problems, formulating hypotheses, suggesting solution approaches, and deducing new conclusions. It involves a search for knowledge through an objective and systematic method so as to find solutions to problems or developing a theory (Rajasekar et al., 2006).

Research employs the use of some tools to collect data, which is then analyzed in order to have a better understanding of the problem and help proffer possible solutions or solution approaches. One of such tool is exploratory research tools. Exploratory research tools are used to gather preliminary data which helps to define a problem within a suggested hypothesis. Exploratory research mostly relies on secondary data which could take the form of quantitative approach such as reviewing works in published literature or manual or qualitative approach such as informal discussions with target participants. Exploratory research can take other formal approaches such as: case studies, in-depth interviews, pilot studies, or focus groups (Kothari, 2004).

This paper uses exploratory research tools for data collection from National Board for Technology Incubation (NBTI) on job creation, created by 27 centres and 3 extensions covering from 2013 to 2015.

RESULTS AND DISCUSSION

To test the performance assessment of incubator with respect to job creation using the existing Technology Incubation Centres in Nigeria, yearly data were collected from National Board for Technology Incubation (NBTI) on job created by 27 centres and 3 extensions covering from 2013 to 2015. Descriptive Analysis was employed to test the statistical significant difference between the distribution of the population of validated Technology Incubation Centres and the jobs created in there various location and in Nigeria at large. The data were analysed further with parametric statistics named ANOVA using statistical software called SPSS and mean plots to show the cyclical movement of the job created within the three (3) years.

Table 1: Model Summary Of The Job Created From Year 2013-2015

Model Summary

Equation 1	**Multiple R**	.221
	R Square	.079
	Adjusted R Square	-.070
	Std. Error of the Estimate	9.334

The table 1 show that the data is significant with 79% of coefficient of determination

Table 2: ANOVA Table of the Job Created from Year 2013-2015

ANOVA

	Regression	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Equation 1	Regression	107.341	3	35.780	.411	.747
	Residual	2091.08	24	87.129		
	Total	2198.429	27			

The ANOVA table above showed that the job created by the 30 centres in their various location is statistical significant

Table 3: Descriptive Statistics Of Jobs Created Between (2013, 2014 And 2015) In Thirty (30) Centres

		Centre	**Job Created in 2013**	**Job Created in 2014**	**Job Created in 2015**
N	Valid	30	28	30	30
	Missing	0	2	0	0
Mean		15.50	55.89	76.90	125.33
Std. Error of Mean		1.607	15.608	21.033	37.477
Median		15.50	38.50	48.00	63.00
Mode		1[a]	16[a]	19[a]	28
Std. Deviation		8.803	82.590	115.201	205.272

Variance		77.500	6821.136	13271.334	42136.644
Skewness		.000	4.339	3.952	3.378
Std. Error of Skewness		.427	.441	.427	.427
Kurtosis		-1.200	20.921	17.862	11.848
Std. Error of Kurtosis		.833	.858	.833	.833
Range		29	446	618	966
Minimum		1	5	2	19
Maximum		30	451	620	985
Sum		465	1565	2307	3760
Percentiles	25	7.75	18.25	21.75	31.50
	50	15.50	38.50	48.00	63.00
	75	23.25	58.00	82.50	94.75

Means Plots

The purpose of the mean plots is to show the cyclical movement of the job created within the three (3) years. The disjoint in the chart of the job created in year 2013 in Ile-Ife and Odogbolu Centres occurs because there was no information provided on the job created for that year.

Among the First Generation Centres (FGC), Kano Centre maintained the highest peak point for the three (3) years, followed by Lagos and Calabar Centres who's almost at the same point in year 2013.

In year 2014, Calabar Centre moved ahead of Lagos Centre after Kano Centre and Bauchi and Nnewi at the same point behind Lagos Centre. Interestingly, Abeokuta Centre almost at the same point with the First Generation Centres (Aba & Sokoto).

Surprisingly, in year 2015, Nnewi Centre made wonderful moved behind Kano Centre followed by Calabar, Lagos and Bauchi Centres.

Ironically, some millennium Centres like Abeokuta and Uyo Centres shows a behaviour that is reasonably better than others and outwit some First Generation Centres (FGC) in the ordered of jobs created (see the Figures 1-3 below).

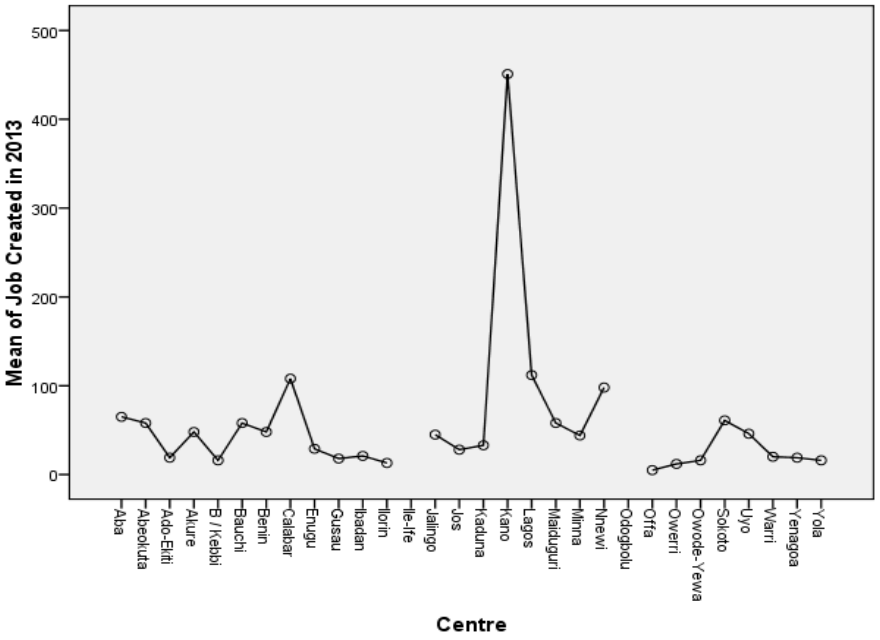

Figure 1: Means Plots of Job Created in 2013

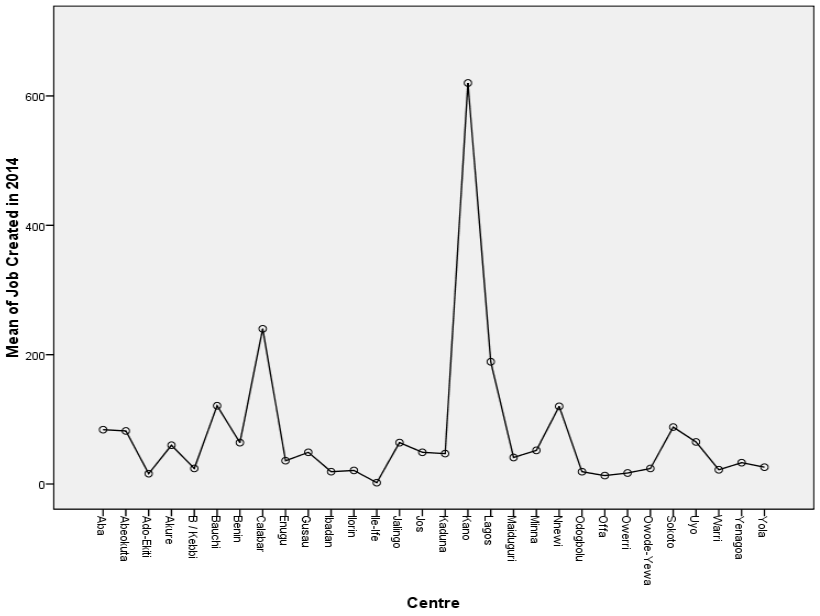

Figure 2: Means Plots of Job Created in 2014

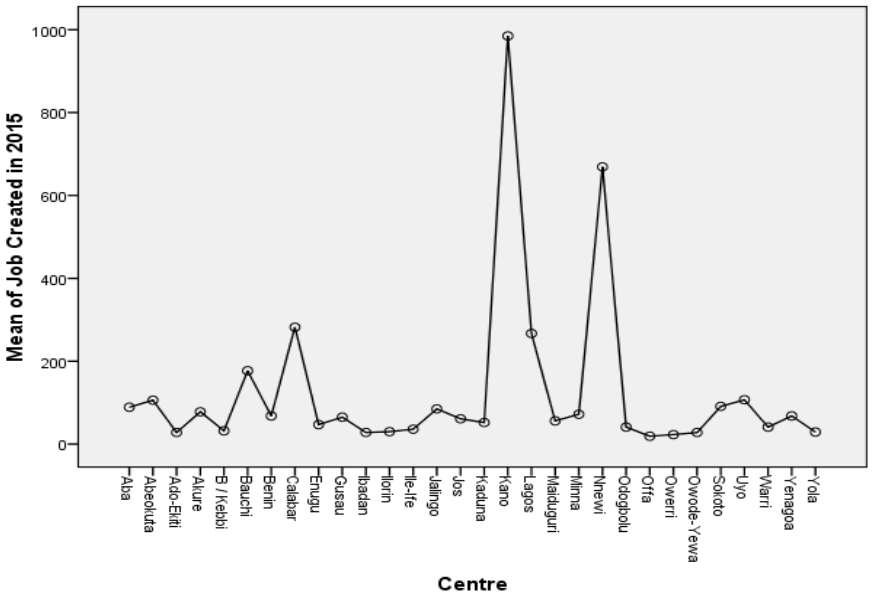

Figure 3: Means Plots of Job Created in 2015

CONCLUSION

From this study, it emerges, less as a surprise than as a confirmation, that technology business incubation remains a viable mechanism for sustaining and advancing small and medium-scale enterprises, while also serving as a broader economic development strategy, particularly within developing economies. Across these contexts, approaches to incubation have tended to converge, most notably in their heavy reliance on government financing and institutional support; Nigeria largely follows this pattern. Yet comparative evidence complicates the picture: The Chinese model demonstrates that, even with sustained government patronage, incubation programmes can evolve into powerful engines of job creation and substantial contributors to national GDP, a trajectory similarly observed in Brazil. In this sense, some developing countries appear to be edging closer to international best practices in incubation. Empirical findings from this investigation further indicate that technology incubation centres have made tangible contributions to employment generation, poverty reduction, and wealth creation within their host communities. The implication is fairly direct: provided that federal, state, and local governments, alongside other key stakeholders, fulfil their roles through funding, grants, infrastructure provision, patronage, and effective triple-helix linkages, the Technology Incubation Programme holds the potential to become a durable remedy for improving SME performance in Nigeria, all else being equal.

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