

## Performance Evaluation of Some Selected Incubated Enterprises at Technology Incubation Centre, Kano, Nigeria.

Mohammed Umar Jibrin

Director, Technology Incubation Centre, Farm Centre, P.O.Box 11787, Kano - Nigeria.

\*mjibrin2002@yahoo.com

### Abstract

The performances pattern in terms of monthly turnover of three (3) selected enterprises which were arbitrarily designated as A, B and C from Technology Incubation Centre (TIC), Kano were evaluated from 2007 to 2010. Three critical stages of the enterprises' incubation status were considered, that is their last twelve (12) months of resident incubation, next three (3) months of transition from resident incubation to post incubation and the subsequent first twelve (12) months of post incubation. A scatter diagram was then plotted as turnover versus time for the three (3) enterprises which produced unique relationships for each of the three (3) critical stages. It was observed that all the enterprises showed a parabolic behaviour in terms of progress in the last twelve (12) months of resident incubation. However, the three (3) months transition period considered as the period from graduation to final relocation from the centre characterized by the commencement of withdrawals of the subsidies enjoyed by the enterprises during the three (3) years in the TIC in facilities rent, utilities, marketing, ICT, technical/business coaching, etc, recorded a linear behaviour with a sharp drop in turnover. However, on final relocation outside the TIC which is the commencement of post incubation, the turnover in respect of enterprise A began to steadily rise, enterprise B maintained a constant turnover, while enterprise C recorded a gradual drop that led to its collapse. In summary, the results of the study call for the need by the stake holders of the Technology Incubation Programme in Nigeria (TIP), ie; Government at all tiers, Academia and the Industry/ Entrepreneurs to address the critical observations in the second (2<sup>nd</sup>) and third (3<sup>rd</sup>) stages through provision of facilities, grants, loans, etc including relocation to a befitting technology/innovation packs that will serve as a booster to their survival.

**Keywords:** Technology, Resident Incubation, Innovation, Enterprise, TIC/TIP.

### 1. Introduction

Technology Incubation Centre, Kano is one of the twenty seven (27) Government owned TICs in Nigeria. The aim of this paper is to determine the performance patterns of incubated enterprises that were nurtured under the same conditions, while the objectives are to observe the problems encountered, proffer solutions to the enterprises operators and also make suggestions on how the Nigerian TIP model can be enhanced for better service delivery.

Nigeria like many other developing nations, has technological goals which must be strategised for short term benefits such as food security, jobs/ wealth creation, poverty alleviation, etc as

well as long term strategic plans required to propel it to rank amongst the fastest growing and top 20 industrialized nations by the year 2020. Thus, Technology Incubation Programme has been established as one of the interventions of creating technology based small scale business start ups.

According to Abdullahi, G. L.(2005), Technology Incubation programme is a veritable institutional mechanism for the commercialization of research and development results from the academia, specialist research centres and other innovative efforts targetted towards accelerating the economic and technological development of a nation.

The above statement was corroborated by Rustam, Lalkaka and Daniel Shaffer (1999), who stated that the objective of an incubator is to help promote venture creation and economic development by providing affordable work space, shared facilities, counselling, training, information and access to professional networks.

The aim of the Technology Incubation Programme is to accelerate the industrial development of Nigeria through the creation of new businesses, jobs, wealth with a corresponding reduction in poverty. Lalkaka and Daniel Shaffer (1999), also confirmed this aim with reference to a survey undertaken by the National Business Incubators Association – NBIA (1998) that in the United States, current tenants and graduated enterprises have added to some 19,000 viable enterprises and 245,000 jobs. In Nigeria, the positive impacts in terms of new businesses and jobs creation amongst others are being felt:

Under the Nigerian Technology Incubation model, the process usually begins with the admission of a value added technology based prospective viable start up and graduating same as a matured small scale business after a period of 2-4 years. The uniqueness of the programme is that it provides very high subsidies compared to other known models. Post incubation begins after the graduated entrepreneur has relocated to a synergy based industrial cluster, technology park or any organised set up where some of the subsidies in respect of facilities and capacity building as earlier enjoyed at the TIC can be extended to facilitate corporate survival.

Technology Incubation Programme in Nigeria has the following four major defined benefits:

- For Government: Promotes economic development, leads to income, wealth and taxes generation, enhances the creation of entrepreneurial culture and demonstrates Government's commitment to the creation of small businesses.
- For Entrepreneurs {Incubatees}: Facilitates access to resources - information technology, mentors loans, grants, raises business credibility, reduces business risks, facilitates products' marketing and synergy between participants, Improve business skills, etc.
- For corporate sectors: Promotes knowledge acquisition and global competitiveness of products, creates investment choice, demonstrates commitment to social responsibility, etc.
- For the R&D and Academic community: Provides opportunity for research commercialization, fosters environment for interaction with industries and leads to additional income to researchers and jobs for graduates, etc -Abdullahi, L.G. (2005).

## 2. Methodology

Three (3) entrepreneurs of the Technology Incubation Centre, Kano, Nigeria, whose enterprises were designated A, B and C were considered for the study. The following basic selection criteria for the three (3) enterprises are as follows:

- All the three enterprises have interrelated products that fall under the classification of agro-allied fabrications.
- The three enterprises started operation as incubatees with two (2) employees and graduated from the centre with personnel numbering 12 to 15.
- They also started with an approximately same share capital and same sources of funding.
- The enterprises also exhibited the same behavioural pattern in terms of turnover, machinery and equipment acquisition.
- The academic qualifications and organogram of their techno – business plans are also comparable.

The monthly turnovers of the three (3) outfits were obtained through the following methods:

- Daily visits to the enterprises to record their turnover in terms of sales.
- Records from gate pass way bills during outside working hours and weekends.
- Interviews with the principals of the firms towards making them clearly understand the aims and objectives of the studies.

The conversion of these data to monthly basis was used for the entrepreneurs who are all in their third (3<sup>rd</sup>) year as incubatees in the centre for their next (12) months as incubation. Three (3) months were considered as the transition period from incubation to post incubation, during which they were packing out of the centre and also facing some subsidy reduction challenges, while another twelve (12) months was considered adequate enough for the graduated firms to have fully stabilized after relocation from the TIC. Thus, a total of twenty seven (27) months data was used for the study.

The entrepreneurs also willingly gave all the required data from their books of account. These were later cross checked with the records on security gate passes to ensure information accuracy. No contrary information was obtained, thus confirming the accuracy of the data.

### 3. Results

The following data are hereby presented for the three (3) stage encountered by the three (3) entrepreneurs.

**Table 1: Incubation**

Month	1	2	3	4	5	6	7	8	9	10	11	12
Enterprise A	0.2	0.24	0.51	0.86	1.15	1.53	1.92	2.36	3.01	3.82	4.60	5.65
Enterprise B	0.15	0.22	0.36	0.62	0.92	1.05	1.61	1.87	2.48	3.10	4.00	5.02
Enterprise C	0.18	0.21	0.32	0.48	0.80	0.89	1.05	1.56	2.10	2.63	3.00	3.51

**Table 2: Transition**

Month	13	14	15
Enterprise A	5.65	5.82	6.00
Enterprise B	5.02	5.07	5.12
Enterprise C	3.51	3.50	3.50

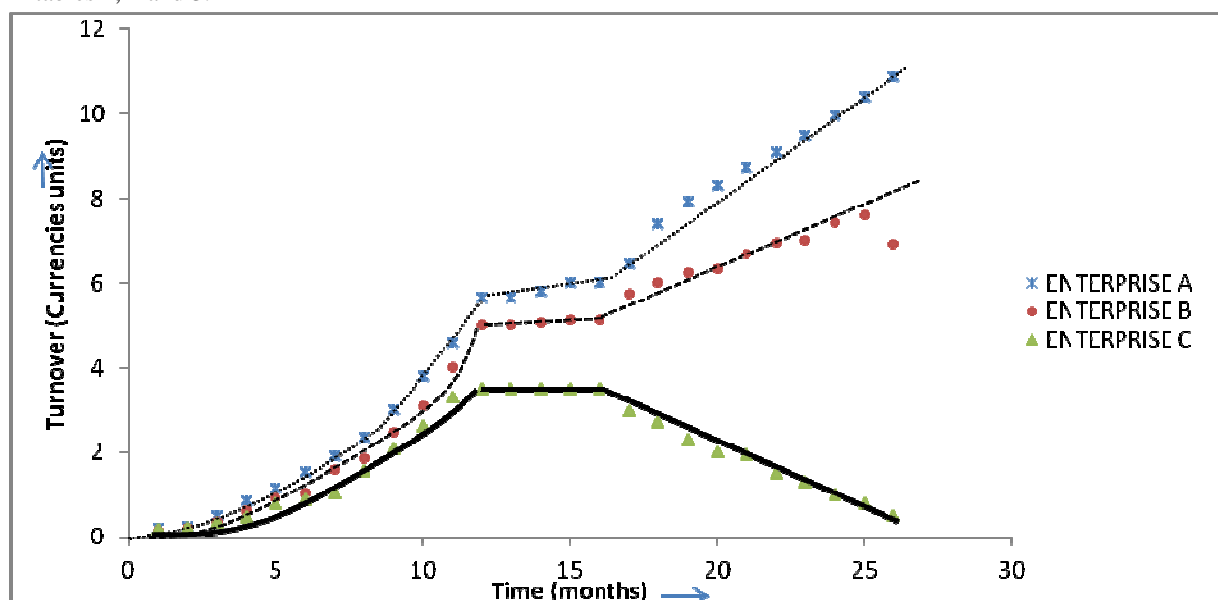
**Table 3: Post Incubation**

Month	16	17	18	19	20	21	22	23	24	25	26
Enterprise A	6.00	6.45	7.40	7.92	8.31	8.72	9.10	9.50	9.96	10.40	10.86
Enterprise B	5.12	5.75	6.00	6.25	6.35	6.68	6.95	7.02	7.42	7.60	6.92
Enterprise C	3.50	2.98	2.72	2.30	2.01	1.94	1.50	1.30	1.00	0.80	0.50

All units of the turn over which were originally in the Nigerian Naira were converted to a unit called currency units for corporate confidentiality reasons. As earlier stated , table 1 indicatates the period of the third (3<sup>rd</sup>) year stay as incubatees in the TIC. Table 2 indicates period of subsidies removal as the incubatee graduates and relocates to a place of their choice, while table 3 indicates a year after complete relocation from the TIC.

### 4. Analyses and Discussion of Results

The figure below shows a plot of turn over (currency units) versus time (months) for all the three stages as presented in tables 1, 2 and 3.



**Fig. I: A graph of Turnover versus Time for enterprises A, B and C.**

The ordinate indicates the cumulative turn over recooded by the three enterprises within a period of twenty seven

months. The absicca shows the first twelve months as resident incubation (months 0-12), next three months as transition period (months 12-15) and the subsequent 12 months (months 15-27) for the post incubation time frame under consideration.

From the figure, it can be seen that the scatter diagram shows a unique parabolic behaviour;  $aX^2 + bX + c = 0$  where  $a$ ,  $b$  and  $c$  are constants for the incubation stage.

A linear relationship in the form  $Y = mX + c$ ; where  $X$  and  $Y$  are variables,  $m$  is the slope with positive value of very small magnitude which tends to approach zero and  $c$  is a constant for the transition stage.

For the post incubation stage, it is interesting to note that each enterprise exhibited a different behaviour as follows:

Enterprise A: A linear relationship in the form  $Y = m_aX + c_a$ ; where  $X$  and  $Y$  are variables,  $m_a$  is the slope with positive value and  $c_a$  is a constant.

Enterprise B: A linear relationship in the form  $Y = c_b$ ; where  $Y$  is a variable and  $c_b$  is a constant.

Enterprise C: A linear relationship in the form  $Y = m_cX + c_c$ ; where  $X$  and  $Y$  are variables,  $m_c$  is the slope with negative value and  $c_c$  is a constant for the transition stage.

On a careful observation of the corporate behaviours, a point in enterprise B under post incubation can be seen to have suddenly dropped from the line of best fit to an alarming extent. This signifies a sudden drop in turnover most likely as a result of change in product quality that emanates from compromises in the workmanship, marketing strategy or both.

## 5. Conclusion

Based on the data obtained and the analyses made, the following conclusions are hereby made:

- All the three enterprises considered for the study showed a parabolic behaviour of the form;  $aX^2 + bX + c = 0$  in turnover during the last year as incubatees in the Technology Incubation Centre. The first differential which is in linear form, indicates a good progress in the business performance.
- All the three enterprises considered for the study showed a linear behaviour of the form;  $Y = mX + c$  in turnover during the transition stage between incubation and post incubation stages as they faces the challenges of leaving the Technology Incubation Centre. The first differential which is a constant, indicates a very little progress in the business performance.
- The linear behaviour during transition stage for the three enterprises showed a slightly positive slope (slight increase in turn over with respect to time) for enterprise A, signifying relative lighter distress while enterprises B and C showed no slope (No rate of change in turn over with respect to time). These are due to their level of preparedness as they prepare for exit from the TIC Kano.
- While enterprise A recovered from the transition distress during post incubation, enterprise B showed a sluggish recovery while enterprise C could not survive the business. The first differential which is in linear form, indicates a good progress in the business performance for enterprise A, The first differential which is a constant, indicates a fair progress in the business performance for enterprise B while the first differential which is a negative constant, indicates a business failure.
- There seems to be a drop either in products' quality, workmanship, or both as corporate organisations graduate from the TIC Kano.

## 5.1 Recommendations

The following recommendations are hereby made so that the benefits derivable from the Technolgy Incubation Programme (TIP) in Nigeria can be realized:

- Inorder to enhance the business survival rate of incubated businesses, all post incubation challenges in terms of infrastructural and financial support a must be addressed by the stake holders. Specifically, relocation to an industrial or a technology park, power, access to knowledge and seed capital amongst others as enjoyed during incubation must be extended.

- The operational guidelines document on TIP articulated by the Federal Ministry of Science and Technology- Nigeria authored by Aliyu, A. (2005) is to be revised to give emphasis on the establishment of befitting technology packs to TIP graduates based on the lessons from TIC Kano.

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