



Incubation and Acceleration Programmes on Start-Up Success of Manufacturing Firms in South-South Nigeria

EBOH, Mercy Ebele

Department of Marketing and Entrepreneurship,

Faculty of Management Sciences,

Delta State University, Abraka.

ebelemarcy73@gmail.com,

mercyebob@delsu.edu.ng

+2349035709724

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Abstract

The study examined incubation and acceleration programmes on start-up success of manufacturing firms in South-South, Nigeria. The specific objectives observed technology transfer programme, knowledge transfer programme and strategic guidance programme on start-up success of manufacturing firms in South-South, Nigeria. The study adopted cross sectional survey research design method. The study used primary data sources and secondary data. Primary data was collected from the employees of of the selected manufacturing firms in Delta State, using structured questionnaire. Content and construct validity was achieved though seeking expert opinion of the study's supervisor. Reliability was ascertained using Cronbach Alpha coefficient. Descriptive statistics and linear regression analysis were used to analyze the quantitative data. Data was analyzed using tables and figures. The findings of the study revealed that the dimensions of incubation and acceleration programmes (technology transfer programme does have significant effect on start up success of manufacturing firms in South-South Nigeria, knowledge transfer programme does have significant effect on start up success of manufacturing firms in South-South Nigeria and strategic guidance programme does have significant effect on start up success of manufacturing firms in South-South Nigeria) employed in this study have significant and statistical effects on start-up success of selected manufacturing firms in South-South Nigeria. The study concluded that incubation and acceleration programmes adopted in this study have significant effect on start-up success of selected manufacturing firms in South-South, Nigeria. The study recommends that manufacturing firms should place emphasis on the importance of effective design in incubation and acceleration programmes, particularly those of an economic character, as a critical determinant of success. It advocates for an intentional and strategic approach in structuring programs to ensure they not only fulfill the specific objectives but can achieve impactful results. Hence, the research sheds light on the way design influences the efficacy and performance of economic programs, specifically in the context of start-ups participating in accelerator initiatives.

KEYWORDS: Incubation, Acceleration Programmes, Manufacturing Firms, Technology Transfer Programme, Knowledge Transfer Programme , Strategic Guidance Programme

Introduction

New venture creation is indeed established ventures operate with the intent of being successful but failure is ever present due to the environment ventures operate in. Evolutionary theorists argue “that the forces of selection that eliminate uncompetitive firms are a necessary phenomena that contributes to the maintenance of healthy populations of organizations. Industrialisation has led to the establishment of African Incubator Network (AIN), a development programme anchored by Infodev. Infodev is a research capacity building and advisory service organisation that seeks to help developing countries and their international partners to use information and connection broadly and effectively as tools for poverty reduction and sustainable economic growth (Evelyn & Eno, 2024). Business incubators nurture start-up enterprises by providing an enabling environment for entrepreneurs where they will have access to shared infrastructure, coaching, business and financial servicing, and linkages with domestic and international markets (Alfred, 2025).

Incubation activities, which focus on entrepreneurial learning outside of the classroom, are becoming an increasingly important component of an entrepreneurship education curriculum (Haneberg & Aaboen, 2020; Wei, Liu, & Sha, 2019). They are often experiential in nature, with the student having the chance to apply theory and information taught in the classroom (Haneberg, Aaboen & Middleton, 2022). However, the journey from inception to sustainability is fraught with uncertainties, and many startups face formidable challenges that can impede their growth. Understanding the factors that contribute to startup success is critical for entrepreneurs, investors, policymakers, and the broader business community (Bărbulescu, 2021). Incubators allow entrepreneurs to nurture their ideas and convert them into fully functional business models over an unlimited period (Bărbulescu, 2021). On the other hand, accelerator programs have a fixed duration, usually three to six months, to ensure rapid growth and scaling. In the

process of realizing a project or business idea, entrepreneurs face numerous problems in different subjects such as legal, economic, technological, etc. It is very difficult for entrepreneurs to cope with these problems alone and to establish and successfully maintain their companies. However, successful entrepreneurs, who find solutions to important problems in our lives are also contributing to the national economy. By scrutinizing the strategies, funding mechanisms, incubation programs, and collaborative environments offered by these incubators, we aim to distill key lessons and contribute to the ongoing discourse surrounding effective support systems for entrepreneurial endeavors. As we embark on this review, my exploration will traverse the multifaceted terrain of business incubation and acceleration programmes, shedding light on their role as architects of success for startups in the dynamic and innovative landscape of manufacturing firms in South-South Nigeria.

The entrepreneurial landscape in Nigeria is burgeoning, with a notable increase in startups driven by the demand for innovative solutions. However, these startups face challenges in achieving sustainability and growth. Business incubation programs are pivotal in addressing these challenges by offering mentorship, funding, networking, and access to resources, which support nascent businesses through their critical early stages, equipping them with necessary tools to thrive in competitive markets. Manufacturing firms are usually started by a small number of owners or sometimes single owner and usually with no formal procedures and operations. Owners usually manage manufacturing businesses with little skills and knowledge to the extent where the growth stage is critical requiring clear vision and mission for success. The purpose of this study lies at this critical and vital stage where strategic guidance is needed for small business transitional growth. The achievement of the study purpose is possible if an understanding of the strategic guidance plan that can enable the attainment of the management of the transition stages of business growth effectively. Manufacturing

business strategic plan must communicate the vision and mission of owners to employees and customers. The study will enhance the growth of businesses in the Nigerian economy through the understanding of the relationship between incubation and acceleration programmes on startup success. In the lenses of success, this raises a discourse on the way different designs of incubation and acceleration programs impact the start-ups, which leads to the following narrative empirical review. Therefore, the study's general objective was to determine the effect of incubation and acceleration programmes on startups success of manufacturing firms in South-South Nigeria.

The study will provide insights to regulators and policy makers on the accelerator programmes enhancing the startups business success and functioning, which will help in regulation and policy formulation.

Review of Related Literature

Incubation and Acceleration Programmes

The idea of business incubation was conceived as a supportive mechanism to support startups and to promote the development of SMEs and entrepreneurship in both developed and developing countries. By offering professional and consulting services to start-ups and by mentoring, nurturing, and fortifying them to survive, technological incubation aims to generate employment, economic growth, technology transfer, and commercialization of technology. The goal is to expand SMEs and new business ventures, respectively (Henry, 2024). Scholars have agreed that business incubation is a vital tool for economic development, growth and technology transfer in both developed and developing economies. The idea behind business incubation is to increase the survival and growth of businesses by creating systems that would guarantee the early detection of companies with high success potential but limited resources. By ensuring that businesses overcome the so-called liability of smallness and the liability of newness, the notion produces innovative businesses that are profitable, competitive,

and long-lasting (Salvador & Rolfo, 2021). Thus, according to Hackett and Dilts (2024), the incubation phenomenon is regarded as an enabling technology "that capacitate the functionality of critical and possibly strategic technologies.

Technology Transfer Programme

Technology transfer is the process by which a developer of technology makes its technology available to a commercial partner that will exploit the technology. Technology transfer can be seen as the process of advancing of technology from one place to another Sounder, Nasher and Padmanatha, 2020). Technology transfer is also refers to movements of technology from the research institute to industry or from one place to another (Partil, 2022). Urbano (2023) opine that technology transfer is the process sharing of knowledge that is applied to research in technology agencies, universities, laboratories and other institutions that are capable of knowledge sharing. Urbano (2023) further posits that effective knowledge sharing among entrepreneurs will lead to technology transfer. This entails the provision of training support for developing entrepreneurs. In this case, an innovation based incubator should involve highly specialised and qualified team. Moreover, technology transfer would be enhanced by effective back up through leveraging on the experience of senior staff. Technology and innovation are bedrock of development in developed economies where technology transfer is eminent through technology commercialisation of Research and Development (R&D) result.

Knowledge Transfer Programme

One of the most important aspect in determining the success or failure of any start-up is knowledge transfer because it provides the avenue for an experience person in business to teach or transfer his/her wealth of knowledge to another who is just starting or about to start, in this case, students. In this information era, students can use knowledge transfer techniques to comprehend the material they have learned

and develop entrepreneurial abilities. It is important to provide students the chance to share the entrepreneurial skills they have developed via learning activities. Students can acquire suitable behaviours for their commercial or entrepreneurial activities with the help of knowledge transfer, particularly linked to best practices. Janus (2015) posits that knowledge transfer is a two-way or multi-way interaction in which many parties are interested in learning from one another. .

Strategic Guidance Programme

Businesses face numerous problems in the ever-changing modern paradigm, such as governmental laws, fierce competition, growing customer demands, and substitute services, in addition to dynamic environmental changes (Lutfi et al., 2023). In order to ensure the company's survival and growth, organizations endeavor to implement innovative ideas that direct their strategies, decision-making framework, and the scope and character of their operations (Lutfi, AlKhasawneh, Almaiah, Alsyuf, & Alrawa, 2022). Gaining a strategic edge could be difficult in such complex and volatile markets (Shaheen, 2023). Companies employ a variety of strategies and approaches to gain a competitive edge and work to resolve these problems, which exacerbate and build up (Qushtom, 2022). The strategy of a company may have an impact on its investments, activities, market relationships, and, eventually, performance (Lutfi, Al-Khasawneh, Almaiah & Alshira'h, 2022). However, how the company reacts and engages with environmental changes and fluctuations as they happen in real time at the local, regional, and worldwide levels of market activity will determine a lot of the objectives and goals that are pursued. Strategic management must be used to help set goals, determine future orientations, distribute limited resources, foster effective leadership, and build skills if a company is to prosper (Al-Majali & Sunna'a, 2023).

Start-up Success

Startup success has been described as value creation in a firm that may produce a

positive change in the financial situation of a company depending on the financial results that an improved Return on Investment (ROI) will bring. Improved ROI is the result of better utilization of raw material, labour, capital and proper resource management (Richard, Yip, Johnson & Devinne, 2019). Given the importance a company's performance plays in investment decision making, it is important that investors can utilize appropriate criteria for the concept of a firm to succeed. Richard et al. (2009) acknowledge failure to have consensus on firm success definition. This is indicated by the contrary definition by Valmohammadi and Servati (2021) who described startup success as relating to the efficiency in performing a task. March and Sutton (2024) however defines business success as both behaviour and results which are the fundamental interest of every business manager that are undertaken in any firm. Globally, it is widely accepted that new start-ups are the engine room for economic development through employment generation Chandra, (2013) and support for technological advancement, increase competitiveness, economic revival of regions, innovation and technology transfer. According to Tilley and Tonge, (2022) revealed that start-ups introduce new product, new knowledge or utilize previous knowledge created by others to developed their new product and services. They contribute to economic growth through innovation. Other researcher like Gamsey, (2022) revealed that new start-ups instigate diversification, innovation and new product to the market. The benefits of new start-ups in the society even occurred to those who do not create new venture; new start-ups viewed as critical to entrepreneurship and economic development.

Theoretical Framework

The Theoretical framework for this study is anchored on Diffusion of innovation Theory

Diffusion of Innovation Theory

The theory was introduced by Everett Rogers in 1962. In his paper, he explains that diffusion is the process where an

innovative idea, process or product is communicated to members in a community (Rogers, 1962). This theory brings in different disciplines and varies severally. Getting a new idea to be adopted and accepted can be such a difficult task and that is the grounds for the interest in the diffusion of innovations theory this is because it takes a long time. Most institutions face the problem of trying to accelerate this rate of adoption where the rate of adoption is the rate at which an innovation is well taken up by members of a community. The rate of adoption is calculated based on the persons absorbing the idea or innovation within a frame of time. This is denoted by an arithmetical curve representing innovation (Rogers, 1995). This theory sought to give details on why, how, and at what rate new thoughts

and technology are absorbed. Accelerator programs being a new and recent ideology will be well discussed in the theory. The diffusion of innovation theory links to the current study because it sought to determine if accelerator programs lead to success of start-ups, accelerator programs are bases of transmitting innovation to start-ups'. If the innovations, provided by the accelerators enhance the start-ups success, then the study's results would support the diffusion of innovation theory.

Research Methodology

The research design employed for this study is a cross-sectional survey research design. The study population comprised of customers of selected manufacturing outlets in Delta State

Population Distribution of Employee of Selected Manufacturing Firms

S/N	Firm	Location	Population	Frequency
1	Top Feeds	Sapele	61	0.83
2	Beta Glass	Ughelli	29	0.83
3	Flour Mill	Sapele	83	0.83
	Total		173	100

Source: Researcher's Field Survey Analysis (2025)

For the purpose of this research, the appropriate number of representation of the population for this study was determined using a formula cited in Taro Yamane's book, thus:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size sought

e = level of significance

N = population size

Working reveals the desired sample size thus:

The sample sought is:

$$n = \frac{173}{1 + 173(0.05)^2}$$

$$n = \frac{173}{1 + 323(0.0025)}$$

$$n = \frac{173}{1.4325} = 120$$

Therefore, the sample size of the study was one hundred and twenty employees from the selected manufacturing firms in South-South Nigeria.

Sampling Technique

For sampling technique, the study employed a stratified random sampling method; selecting respondents that were readily available participated in the study. Stratified sampling technique, in this scenario, provides a focused approach to target the

exact subset of the population that can offer rich and relevant insights, thereby making it an appropriate choice for this study. One major consideration in deciding any sample size and procedure is the representativeness of the samples that are finally selected.

Validity and Reliability

The structured questionnaire was first subjected to a pre-test process involving five academic experts to ascertain content validity. The reliability of the questionnaire was tested using Cronbach's alpha. The reliability of the instrument to be used in the study will be assessed through the test-retest reliability method. For reliability of the measurement instrument, a pilot test was done on 10 percent (10%) of the sample size (20 respondents). This was necessary in ensuring the consistency of the results.

Method of Data Collection

Primary source of data is a collection of items to which a respondent is expected to react in writing as defined by the questionnaire form (Oso & Onen 2018). Being the main instrument to be used for data collection, the questionnaire was comprise of well-designed questions administered on the targeted population of this study. Questionnaire is one of the most common tools for gathering data on survey; research is a set of targeted questions which utilizes different scales to measure the perspective and insight of a respondent. Content validity was used to determine the validity of the questionnaire. The secondary

source of data was generated through intensive review of literature. This source of data was used in order to augment the information from the primary source of data and enabled the researcher to gather corroborative information in order to make objective analysis. The secondary source of data include: textbooks, journals found at the library of the organizations under study, newspaper articles, magazines, conference papers, empirical review, unpublished works that relate to the topic of study and extracts from the internet.

Data Analysis and Presentation of Results

One hundred and twenty (120) respondents were properly administered the copies of the questionnaire developed for this study. Out of the one hundred twenty (120) copies administered on the respondents, only ninety nine (99) copies and twenty one (21) copies were not retrieved. Out of the ninety nine copies retrieved only eighty eight copies (88) were properly filled, while eleven (11) copies of the questionnaire were filled incorrectly. The analysis is based on the sample size determined for this study, which were one hundred and twenty (120) copies of questionnaire. And the data were analyzed using linear regression and descriptive statistics.

Test of Hypotheses

Hypothesis one

H0₁: technology transfer programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Significance of Pearson's Movement Coefficient of Technology Transfer

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.809	1.120		2.509	.013
	Technology Transfer	.811	.065	.755	12.504	.000

a. Dependent Variable: Start-Up Success

Source: Analysis of Field Survey, 2025

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755 ^a	.570	.566	1.393
a. Predictors: (Constant), Technology Transfer				

Source: Analysis of Field Survey, 2025

From the linear regression result in table 4.3 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take, therefore, is to reject the null hypotheses while the alternate hypotheses will be accepted. This implies that technology transfer programme do have significant effect on start-up success. And from the beta value observed (i.e. $\beta=0.755$ or 75.5%) shows that change in technology transfer programme can predict the outcome in start-up success, this implies that change in technology transfer programme has a

positive effect on start-up success. Also the adjusted $r^2 = 0.556$ (55.6%) showing the extent to which variance in start-up success. is cause by technology transfer programme. That is, technology transfer programme contribute 55.6% change in start-up success.

Hypothesis Two

H0₂: knowledge transfer programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Test of H0₂ Significance of Pearson's Moment Coefficient of Knowledge Transfer

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	10.762	1.434		7.504
	Knowledge Transfer Programme	.373	.089	.359	4.185

a. Dependent Variable: Start-Up Success

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359 ^a	.129	.122	1.982
a. Predictors: (Constant), Knowledge Transfer Programme				

From the table 4.4 and 4.5 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take is to reject the null hypotheses while the alternate hypotheses will be accepted. This implies that Knowledge Transfer Programme do have significant effect on start-up success. And from the beta value observed (i.e. $\beta=0.359$ or 35.9%) shows that change in Knowledge Transfer Programme

could lead to start-up success. Also the adjusted $r^2 = 0.122$ (12.2%) showing the level to which variance in start-up success is cause by Knowledge Transfer Programme. That is, Knowledge Transfer Programme contribute 12.2% change in start-up success

Hypothesis Three

H0₃: strategic guidance programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Table 4.6: Test of H₀₂ Significance of Pearson's Moment Coefficient of Strategic Guidance Programme

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.741	1.457		7.370	.000
	Strategic Guidance Programme	.373	.090	.356	4.132	.000

a. Dependent Variable: Start-Up Success

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356 ^a	.126	.119	1.985

a. Predictors: (Constant), Strategic Guidance Programme

From table 4.6 and 4.7 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take is to reject the null hypotheses while the alternate hypotheses accepted. This proves that Strategic Guidance Programme does have significant effect on the start-up success. And from the beta value observed (i.e. $\beta=0.356$ or 35.6%) shows that change in Strategic Guidance Programme can predict start-up success for manufacturing firms. Also the adjusted $r^2 = 0.119$ (11.9%) showing the height to which variance in start-up success is cause by Strategic Guidance Programme contribute 12.2% change in start-up success of manufacturing firms.

Discussion of Results

Technology Transfer Programme and Start-Up Success

From the presentation of data showing all the respondents' response toward questionnaire administered to them. 92 copies of the questionnaire were retrieved, four copies from the 92 copies retrieved were not properly filled and only 88 copies were used for analyzing the regression and descriptive statistics. In the test of hypotheses one, the calculated p-value was observed to be less compared to the p-value critical. This was why the null hypothesis was rejected while the alternate hypotheses accepted which indicated that technology transfer programme have a significance

effect on start-up success. Also, the R-square value observed, show the extent to which variance in start-up success are caused technology transfer programme which is a strong predictor of start-up success of manufacturing firms. This finding is in line with previous research of Jenyo (2024) examined effect of technology incubation programme on start-ups operation in Akure, Ondo state. Nigeria. The study employed cross section survey design. The sample for this study consisted of 168 respondents which were randomly selected out of the population of 298 entrepreneurs who had graduated from the incubation centre. The study used primary data specifically structured questionnaire, and linear regression was used for data analysis. Findings revealed that mentoring and, technology transfer foster the development of start-up ventures and entrepreneurs. The study concluded that technology business incubation is a good medium for nurturing entrepreneurs and their ventures in the country as they contribute to solving the tripartite societal need of job creation, poverty reduction and economic development. The study recommended that Government should intensify effort in funding qualified personnel and provide modern technology needed to boost incubation activities in the country.

Knowledge Transfer Programme and Start-Up Success

On the basis of the findings made, practical implications were presented in the study for possible application by financial service providers. From the test of Hypothesis two, the calculate p-value was observed to be less compared to the P-value critical. This was why the null hypothesis was rejected while the alternate hypothesis accepted which show that knowledge transfer programmes have a significant effect on start-up success of manufacturing firms. The R-square value shows the variance in knowledge transfer as a strong positive predictor of start-up success of manufacturing firms. In line, Borana (2025) who conducted a narrative literature review to synthesize the understanding in the way different characteristics of accelerator programs design influence the performance and growth of start-ups in terms of success. Findings collectively indicate that a nuanced approach to program design, considering sector, geography, culture, and start-up specific needs, is crucial for maximizing the impact of acceleration programs. The main contribution of the paper is highlighting the critical role of effective program design in ensuring the success of economic initiatives, particularly for start-ups in accelerator programs. By offering a nuanced construct of success and identifying key components such as mentorship and ecosystem engagement, it advances both academic understanding and practical strategies for optimizing acceleration outcomes. A key limitation is the absence of a systematic literature review, which may narrow the scope of insights and limit the comprehensiveness of its conclusions. Future research could focus on developing a standardized success construct, enforceable as a curriculum to guide and assess start-ups in accelerator programs. This framework could be contextualized within theoretical paradigms like the Competence-Based View to explore competencies and contextual variables critical to entrepreneurial success sustainability.

Strategic Guidance Programme and Start-Up Success

Also in hypothesis three, the calculate p-value was observed to be less compared to the P-value critical. This was why the null hypothesis was rejected while the alternate hypothesis accepted which show that strategic guidance programme has a significant effect on start-up success and the R-square value shows the variance in start-up success caused by the level of strategic guidance programme. This is confirmed by Ashal, Abou-Moghli, Daoud and Lutfi (2024), they investigated the mediating influence of sustainability on the link between strategic guidance and organizational performance. Based on the knowledge gap that the literature analysis revealed, a research model was created. A random sample of 321 managerial and non-managerial employees was taken. The findings of the hypothesis testing revealed that with operational sustainability as a moderating variable, the relationship becomes stronger between entrepreneurial orientation, technology orientation, market orientation, and organizational performance. Despite the importance of integration between strategic orientation and operational sustainability to achieve the required organizational performance, there is a literature gap and an inadequate number of studies linking organisational performance and strategic guidance via operational sustainability. This research is intended to bridge the identified gap by attempting to contribute knowledge to this field of study by examining strategic orientation's impacts in terms of entrepreneurial orientation, technology orientation, and market orientation on organizational performance using the non-financial performance through the examination of the mediating role of operational sustainability using the context of the telecommunication sector in Jordan.

Conclusion

This study highlights the critical role of incubation and acceleration programs in fostering start-up success and driving economic growth in Nigeria. The results

demonstrate that these programs provide essential support to entrepreneurs, improving their chances of success by offering mentorship, resources, and networking opportunities. Additionally, successful start-ups contribute significantly to the economy by creating jobs, encouraging innovation, and stimulating market expansion. Incubators and accelerators are indispensable components of the startup ecosystem, providing crucial support that enhances the survival and success of new ventures.

Recommendations

For future research, this study recommends that;

- i. Government should intensify efforts on funding and equipping Technology Business Incubation Centres with the right personnel and modern technology needed to boost incubation of startups in the country.
- ii. the enterprises should take cognizance of maintaining the momentum of the type of innovation so as to keep the activities of the market and give room for future expansion. Also, the technology incubation programme has shown to be effective tools in developing and assisting in enterprises in Nigeria
- iii. the study emphasizes the need for policymakers to invest in and expand business incubation and acceleration programs to support the growth of start-ups and, consequently, enhance economic development in Nigeria.

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