

Role of Technology Incubation Centers in Promoting Small - Scale Business: A Case with Special Reference to Tamilnadu

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Article Info

Volume 82

Page Number: 9279 - 9286

Publication Issue:

January-February 2020

Article History

Article Received: 18 May 2019

Revised: 14 July 2019

Accepted: 22 December 2019

Publication: 10 February 2020

Abstract:

The primary objective of this study is to examine the role of incubation centers that help to promote the small - scale enterprises or business. Since the universities in Tamil Nadu are striving to bring more number of entrepreneurs and provide them assistance to nurture innovative business. The incubation centers play a vital, essential role in creation of entrepreneurs because, they are one who develop ideas and provide with the sources of funds, human power and other market potential. One of the prime objectives of the incubation centers is to encourage the entrepreneurial culture among the young and dynamic professionals from initial stage of their curriculum so as to equip them with potentials to become as job provider rather than a job seeker. Depending upon the observation this paper examine the role of technology incubation centers in Tamil Nadu and that facilitates with broader scope of resources and amenities to enhance the start ups and to develop the SMEs with innovative ideas..

Keywords: Technology Incubation Centers, Innovative Business, Technology Transfer, SEED, TBI, Technology and Entrepreneurship.

1. INTRODUCTION:

Entrepreneurship is a self-motivated activity to ingeniously act in order to create incremental gain. An Entrepreneur is a one who establishes the business and assumes the risk for it. Historically India was the nation having more number of entrepreneurs and very less number of employees. The business incubator could be defined as: "an institution standing alone with a prestigious personality. Provides a number of services and facilities for small projects and help them to overcome the burden of the first stages, it may be a private or mix or State institution Business Incubator, that gives her strong support.

The Small Scale business plays a vital role in our nation's economic development. The small scale business can provide ample of opportunities and they are centered on small and medium business owners. Entrepreneurs having more number of skills and are given from the incubation centers. The Incubation Centers are having the conducive and flexible environment and are having more technology centers to impart the necessary training skills among the entrepreneurs. Indian Universities are well focused and are emphasizing to establish more number of Technology Business Incubation Centers to assist the young dynamic graduates / post graduates to become as entrepreneur. Business Incubators major role falls in creation and focusing the small business

and they will support them with hefty financial assistance as well as technological guidance.

Entrepreneurship and small business correspond to one of the inclination followed by the incubation centers in Tamil Nadu. TBIs facilitate suitable infrastructure to assist new high-tech companies to defeat the hurdles associated with the innovation process and their presentation could directly or indirectly influence the achievement of new ventures and the sustainability of the national innovation system. Through this we came to know that we may analyze four distinctive assistance on Technology business Incubators first, Technology Business Incubators play the role which is extensively having knowledge based solutions. Relatively unexplored in these terms second, most of the research is based upon the technology incubation centers. Third, it is also considered that other key resources will also support the functions of TBI. Fourth, In Tamil Nadu the performance of Technology Business Incubators in terms of their growth and the training of incubates. In this process Technology Business Incubators (TBIs) have become an important tool as intermediaries whose actions typically serve to reduce transaction costs, promote science-industry-government interactions, and support the creation of new innovative ventures.

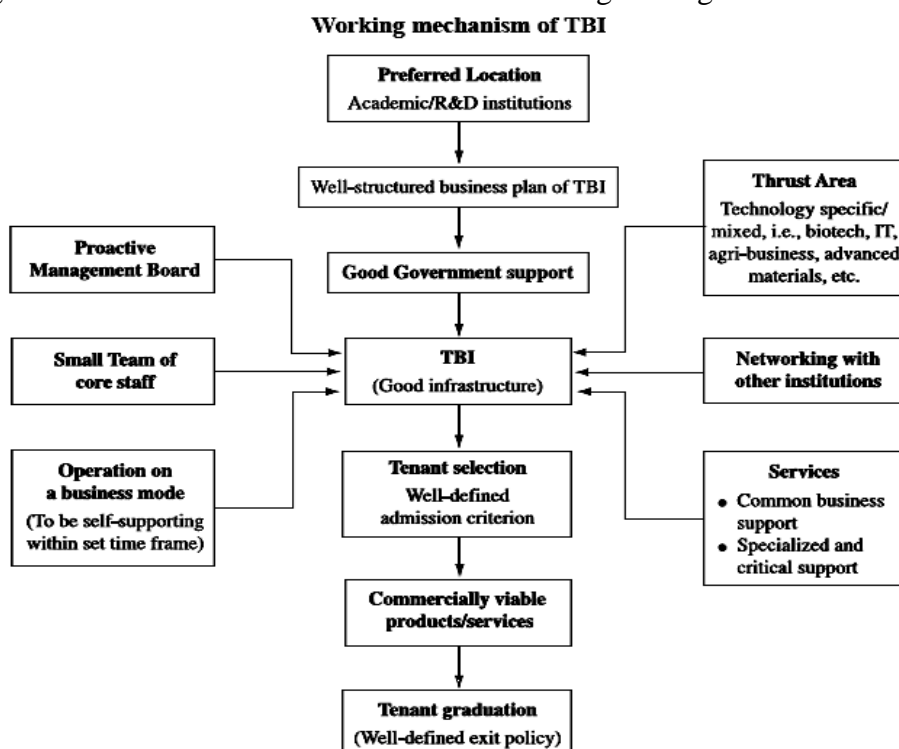
2. THE THEORY OF TECHNOLOGY INCUBATION:

The term incubator is said to be the device that nurtures undeveloped occurrence to development under the sustainable controlled environment. Technology Business Incubator is a program that regulates the entire process of generating successful new ventures, by facilitating the entrepreneurs with a inclusive and incorporated module of services. Some of the TBI services that include, Work space made available on a stretchy and reasonable, but that is provided on temporary basis and few common services like secretarial support, shared usage of office equipments, business consulting, access to development support, etc.

National Business Incubators Association (NBIA) defines the Technology Business Incubation as, "Business Incubation identifies the method of preliminary and rising companies, provided that entrepreneurs with the know-how, complex and utensils they need to make their ventures successful. Incubation programmes branch out economies, commercialize technologies, create jobs and create wealth". Through Business incubation, dreams of new and emerging businesses are changed into actuality with condensed risk.

3. TECHNOLOGY BUSINESS INCUBATOR - WORKING MECHANISM:

The TBI's working mechanism can be described in detailed through a diagram below.



The successful operation of a TBI can be viewed through various aspects, location is very important; through some of the important links the knowledge can be gathered. Business plan should be well-structured, it should comprise of identified focus areas, a competent management team having productive groups, a plan for obtaining of finance including cash inflow and outflow. It needs to be delivered with high potential to the Small Scale sector with the adequate technologies. The Technology Business Incubators are provided with well structured services, small core team staff and good infrastructure so as to nurture with sophisticated environment.

4. THE INCUBATION PROCESS:

The Business Incubation works as an investor by putting resources into the management, rather than just thoughts. The Business Incubator ascertains the capacity of the business visionary just as the market capability of the dare to decide the business potential. Different techniques are utilized and applied to evaluate the business person and business potential. This requires the inclusion of agents, industry and business advancement specialists. Exceedingly fruitful business visionaries have high interior locus of control and a significant requirement for accomplishment. The Business incubation process is said to be the systematic work that support the progress and development of enterprises at the early stage. This incubation process develops the new conducive environment which supports the new ventures by providing the assistance in launching the business centers at minimal cost and optimizing the efficiency of enterprises.

5. TECHNOLOGY BUSINESS INCUBATION PROGRAM:

The Technology Business Incubation functions by the way of investing in new broader innovation schemes that nurture the development of business, instead of just ideas. The main objective of an Incubator is to generate victorious enterprises which will leave the program financially practical and self-supporting. The graduates of these incubators have the prospective to generate more jobs, invigorate neighborhoods, develop latest technologies, and reinforce local and national economies. The program

can be segmented into three phase's viz., *STUDY, SEED AND START*. This can be explained in a better way by the below figure (Figure 1). These Technology Business Incubation Centers are enhancing and enriching the Small Scale Businesses by the way of Advisory services, Market Plans, Fund Assistance, etc. Technology Business Incubation (TBI) is one of the strategies identified by Department of Science and Technology (DOST) to promote innovation and 'Technopreneurship' for the country's socio-economic development in a knowledge-based world economy. TBI involves an ecosystem where innovation is promoted and supported towards commercialization. Having the wide range of resources, start up business is sourced with range of resources, services and amenities needed at the time of development stage. The ultimate goal of Technology Business Incubators is to produce more number of firms which will provide financially viable.

6. THE CONCEPT OF ENTREPRENEURSHIP:

In today's world wherever technological amendment, alleviation, outsourcing, and restructuring rule, the topic of entrepreneurship has gained bigger interest and discussions targeted on what truly represent entrepreneurship and the way so much it extends. This suggests that entrepreneurship is that the method of enterprise activities involved with distinctive and exploiting business opportunities whereas forward its associated risks. Entrepreneurship is a few reasonably behavior that features initiative taking, reorganizing economic activities and therefore the acceptance of its risks. It's vital to notice that entrepreneurial activities are universal and may so be promoted even in societies that manifest low entrepreneurship activities. Under the entrepreneurial factor the entrepreneurship can be discussed, it is a new factor in production and which makes use of the available resources. Entrepreneurship is defined as the process through which the individuals can either on their own or within the organizations - pursue opportunities.

7. REVIEW OF LITERATURE:

¹ Perez Luno, et. al. (2011), in their study entitled " The Dual Nature of Innovative Activity:

How Entrepreneurial Orientation Influences Innovation Generation and Adoption" so many distinctions were made between advanced/radical and incremental modernization and between the lead and follower business. Larger amount of investment was required between the lead technology business and even high risk was involved in it.

² **Tang, et. al. (2011)**, in their study entitled, "Technology Business Incubators in China and India A Comparative Case Study", African Journal of Science, Technology, Innovation and Development" stated that both in India as well as China Technology Business Incubators are supported by public funding only. By enabling the services they can reduce the cost through creation of new businesses. That will create new opportunities and through that economic growth can be achieved.

³ **Mathew, Devi Vijay (2012)**, in their study entitled " Technology Business Incubators (TBIs): A Perspective for the Emerging Economies", Technology Business Incubators can reduce the market risks through intervention from foreign organization for improving the economic development with the use of high - end technology.

⁴ **Cuadrado Roura, et. al. (2015)**, in their study entitled " Business Incubation: Innovative Services in an Entrepreneurship Ecosystem", stated that the capability of incubator administration to bring about transformation in their incubates is probable to vary, depending on their talent to admittance other flawed resources.

⁵ **Aimal Mirza (2017)**, in their study entitled "Role of Incubation Centers in Growth of Small-Scaled Businesses in Afghanistan", it has been stated that business incubation centers facilitated enormous work space to a good extend and some of the other vital facilities such as communication, library and laboratory can be much improved.

⁶ **Sameer Mumtaz, et.al (2017)**, in their study entitled "Role of Technology Business Incubators to Nurture Entrepreneurship", it is found through the study that most of the incubation centers are altering the mindset of incubates to become as job providers rather than job seekers. Most of the tenant firms are given with the opportunity to obtain

multipurpose skills and experiences from gigantic industry experts.

8. RESEARCH METHODOLOGY:

In this paper Researcher has selected few technology, business incubation centers across Tamil Nadu. The researcher has selected technology, business incubation centres, which impart high quality training with respect to technology transfer to the incubates for commencing Small - Scale businesses. The data are purely secondary and analysis is done by the researcher for the identification of role of TBI.

9. OBJECTIVES:

Some of the objectives of this study are as follows:-

1. To examine the various Technology business incubators located across Tamil Nadu and their services to small - scale business in Tamil Nadu.
2. To study the support services rendered by TBI to small - scale business enterprises.

10. TECHNOLOGY BUSINESS INCUBATORS IN TAMIL NADU SERVING SMEs:

The Technology Business Incubators that have been established across Tamil Nadu at various colleges and universities which are aimed at providing the services to the new ventures particularly that are categorized as SME. These incubation centers are providing the services to their incubates with the support of the Department of Science and Technology, Ministry of Commerce and other supporting departments in governments that are fulfilling all the needs of the entrepreneurs. The financial institutions are also supporting the Small Scale Enterprises for the creation of opportunities and for the economic growth. The Incubation Centers are being supported by the foreign agencies also.

11. LIST OF TECHNOLOGY BUSINESS INCUBATORS IN TAMIL NADU:

The list of technology incubation centers which are established in Tamil Nadu for nurturing and fostering the entrepreneurship could be seen as follows, these technology business incubation centers are focused on developing the required skills for tenant companies and the SMEs. Technology Business Incubation Centers offer more number of Technology Based services which are highly innovative and those programmes are funded by

Government of India and State government for their support to their training services.

Table 1: List of Technology Business Incubation Centers in Tamil Nadu

Name of the TBI	Features of TBI	Location	Year of Establishment
Coimbatore Innovation and Business	Competency Capacities, Partnerships, Innovation Labs, Business Incubators and Sector Incubators	KCT College of Technology, Coimbatore	2014
IIT Madras Incubator Cell	Nurturing Technology and Knowledge based Ventures	IIT Madras - Chennai	2013
Periyar Technology Business Incubator	Technical Experts, Bankers, Venture Capitalists, Technopreneurship and Academia.	Periyar University, Salem	2006
PSG - STEP	PSG College of Technology, Coimbatore	Coimbatore	1998
Sathyabama University - TBI	Marine Bio Resource Utilization, Marine Technology, Engineering Research, Tech Waste Management.	Chennai	2013
Rural Technology and Business Incubator	Training, Computational Enhancing, etc.	Chennai	2006
Technology Business Incubator, Center For Bio Technology, Anna University.	Robust Training in the frontier areas of Biotechnology, Research and Consultancy Services, Fundamental Areas in the areas of Bio Technology	Chennai	2002
University of Madras, Technology Business Incubator	Knowledge based health care products, herbal Care Products and for the sustainable growth.	Chennai	2006
Vellore Institute of Technology, Technology Business Incubator	Providing Incubation Support services to Startups.	Vellore	2004
Council for Entrepreneurial Development	Automobile and Electronics , Tools, Expertise and other sources to New Venturists	Chennai	2015
Hindustan College of Engineering and Technology	Encouraging Innovative Talent for students - Technology and Entrepreneurship	Chennai	2015
SREC - BI	Nurturing Technology based and Knowledge based entrepreneurs for starting new ventures	Chennai	2011
Technology Business Incubator - Kongu Engineering College	New innovations Lab, Design and Layout for business, canopy, etc.	Erode	2006
St. Peter's Engineering College - Technology	Refrigeration and Cold Chain	Tamilnadu	2009
PSG STEP - Incubation Center	Software's, Hi Tech automation, Electronic Products, Eco Friendly, Electronic Products, etc.	Coimbatore	1998
TNAU - Technology Business Incubator	High Definition Research in the areas of agriculture and allied areas.	Coimbatore	2011
Veltech Technology Business Incubator	E - Waste Management, Plastics Waste Management, Renewable Energy, IT/ITES research.	Chennai	2010

Thiagarajar College of Engineering - TBI	Innovation Management, Software Research and Programming.	Madurai	2006
KLN College of Engineering, Pottapalayam	Engineering Research, Development attributes.	Madurai	2010
Thanthai Periyar Government College - TBI	Entrepreneurship Training, Leather Tanning Training etc.	Vellore	2007
Syed Ammal Engineering College, Ramanathapuram	Technology Training, Engineering Development	Ramanathapuram	2010

Thus we may infer that most of the incubation centers across Tamil Nadu are focusing on innovation, Latest improvements in the field development of SMEs, providing the training and support services to the incubates for their development. TBI provides the consultation in the areas of Technology, Renewable energy, IT/ ITES, to the SME for the planning of their unit, layout, employee intake, cost reduction, transportation, cost cutting edge, financial forecasting and so on. The TBI is doing their in depth research for helping the SME to sustain in the field of business battle.

12. SERVICES PROVIDED BY TECHNOLOGY BUSINESS INCUBATORS IN TAMIL NADU:

The following table illustrates the services provided by Technology Business Incubators in Tamil Nadu are as follows.

Table 2: Services of TBI to SMEs in Tamil Nadu

SERVICES	PERCENTAGE OF INCUBATES (SME) GETTING TRAINED
Technology Services and Assistance	86%
Training	78%
Marketing Consultancy	46%
Rental Space for Enterprises	83%
Logistical Services	86%
Business Planning Consultancy	100%
Venture Capital Financing	46%

Source: Department of Small Scale Industries, Government of Tamil Nadu and various issues.

From the above Table 2, we may understand that the listed services are being rendered to the incubates or the SMEs by the technology business incubators. It could be clearly understood that the majority of the incubates are getting Business Planning Consultancy

from the TBI's and followed by that Logistical Services are being provided to the SME's from the TBIs. And, the remaining is for the Training, Rental Space for Enterprises and Technology Services and Assistance.

13. TECHNOLOGY BUSINESS INCUBATOR SUPPORT SERVICES:

Technology Business Incubators aim at four which provide maximum and fully fledged support to assist the incubates who are ready to invest in R&D-driven robustness and new inventions. These are the major support services that are used for the TBI performance.

a) Technical Support Services:

The term 'Technical support' refers to shared labs, equipments, and other research amenities facilitated by an incubator to the firms for gaining access to affordable technical and scientific resources. We shall use the total amount that a TBI invests in setting up and running its public service platform to measure the scale of its technical service support to new technology-based enterprises.

b) Financial Service Support:

A key determinant of the success of incubates is likely to be the amount of investment in the R&D required for the successful development of innovative products and processes (Acs and Audretsch 1988; Colombo et al. 2010; Perez-Luno, Wilklund, and Cabrera 2011). The amount of incubator funding available to incubate is used here to measure the level of financial service support. Incubator funding can be allocated as grant, loan or equity funding, payment for using external research facilities, and/or payment for IP applications, depending on the nature and ownership of the incubator.

c) Entrepreneurial Service Support:

TBIs offer entrepreneurial assistance services to founding entrepreneurs who are likely to possess technological expertise but lack entrepreneurial experience. The number of entrepreneurs who provide entrepreneurial assistance to resident firms is used here to measure the scale of a TBI's entrepreneurial mentoring service.

d) Professional Service Support:

TBIs typically provide a range of professional services to their resident firms such as advice on licensing, training, legal protection, patent searching and networking with key suppliers and customers. The scale of professional service support can be measured by the number of full-time employees in an incubator as it seems reasonable to assume that the more staff serving resident entrepreneurs, the greater the professional support available to facilitate innovation.

e) Provide specialized services to existing SMEs in the region:

TBIs provide all the kinds of specialized services to the incubates such as funding, training, clearance services, transporting etc.

f) Networking service Support:

Through this kind of services the TBI can encourage more number of Tenants and by disseminating the information on the networking potential with business actor's exterior the TBI nationally and internationally.

14. CONCLUSION AND RECOMMENDATIONS:

In Tamil Nadu both the public and private institutions have set up the technology business incubators across the cities in their premises and are offering wide range of services to the tenant companies. The Incubation centers are providing the capacity building programmes to the students who are recently graduated linking the gap between academia and industry by organizing suitable lectures, workshops for the learning of students, entrepreneurs. In order to inculcate and nurture the entrepreneurial culture among the students to make them as job provider, rather than job seeker. Technology Business incubator centers have created Entrepreneurship and around 72 incubated companies that have been transformed in successful business now. These business incubators are emphasizing on providing the necessary skills and the financial assistance activities to the incubates and they are sourcing the funds from various financing bodies like IL&FS, IFCI, etc who are constantly funding the start ups and MSME. The Incubates are getting trained in the areas of technology, Fashion and apparel design, Electronics, House Hold things,

glassware etc to increase in the production of outputs so as to create employability. Like in other states in India like Gujarat and Haryana which are at the top edge in technology business incubation Tamil Nadu shall also encourage and widen the support to the entrepreneurs by overcoming the barriers to promote SMEs and shall seek the government support for the marketability.

15. RECOMMENDATIONS:

Thus the importance of Technology Business Incubator is very clear and it is recommended that the state universities across Tamil Nadu can begin with Business Incubation centers to foster the speedy growth in SME sector. In order to help the firms to acquire capacities effectively the business incubation process should be very qualitative in all the aspects. The Incubation process shall mostly help the firms in fostering the SMEs productivity. Government of Tamil Nadu shall frame up with required things that would be helping the SMEs and shall facilitate the Technology business incubation centers in every district.

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ACKNOWLEDGMENT

The authors wish to thank the Ministry of Human Resources and Development for granting RUSA 2.0 which provided the financial assistance to the researchers.