

Business Incubators: Boon or Boondoggle for SMEs and Economic Development of Pakistan

Nasir Mahmood^{1*}, Cai Jianfeng¹, Farhan Jamil², Jawad Karmat¹, Mustafa Khan¹
and Yue Cai³

¹*School of Management, Northwestern Polytechnical university, Xi'an, Shannxi, China*

²*Department of Management, Universiti Teknologi Malaysia, 81310, Malaysia*

³*Brock University, Canada*

*nasirmahmood@mail.nwpu.edu.cn

Abstract

In this age of technological development, business incubation system is an important tool, for the government to implement and facilitate technological innovation and entrepreneurship development. An effective business incubation system renders an important role in the nourishment of local, national and regional economies by producing employment opportunities & development of SMEs. This study presents evidence that suggests business incubators are important for economic development especially for developing countries like Pakistan. A comprehensive survey was carried out to analyze the current functional status of business incubators, along with the services provided by those incubators, with their success & shortcoming links with incubation system in Pakistan. The importance of business incubators for the promotion of entrepreneurship, development and technological innovation, addressed with an assessment of the needs of Pakistan economy. This is followed with an evaluation of the requirements to be dealt before incubators can leave the desired effects on the improvements of the entrepreneurship and technological innovation. Finally, the findings reveal implications for the future development programme of business incubators in Pakistan with the policy recommendation.

Keywords: *Business incubators, SMEs, Entrepreneurship, Economic Development, Pakistan*

1. Introduction

SMEs are playing an important role for enhancing national economic growth and job creation. Many developing countries are following the same programs which contain policy instrument addressing SMEs as like developed countries. Business incubation is one of the tools that help to create new opportunities for innovations & entrepreneurship. The concept of business incubation has achieved worldwide popularity for its efficaciousness in enabling a conducive environment for development of SMEs. Incubators are considered as a means of providing special business development service through innovations. Business incubation renders operational and strategic help for the prosperity and progress of entrepreneurship. It not only supports companies but also help them to progress at optimum level, socially and economically. Similarly, business incubators play an important role in the development of local, regional and national economies through the creation of jobs & innovations [2-4]. The survival of an economy is possible, if its entrepreneurs are continuously working for innovations [5]. Business incubators furnish technical support services like: advice on managerial affairs and counseling services, mediation service to the infants firms to grow and flourish in the beginning of their life cycle [6]. All developed countries are getting benefits from the

business incubation system by producing employment opportunities and economic development. Business incubators have shown their significant performance in North America and Western Europe over the past two decades and are now playing an important role to strengthen the entrepreneurship and local economic development throughout the world [7]. Business incubators have shown their significant importance to accelerate the economic development, job creation, innovations and support for the small and medium scale entrepreneurs. The survival and progress of an economy solely depends upon innovation. An innovative economy can help out its enterprises to maintain survival. Several developing countries, including Pakistan have adopted the business incubators approach to boost up its economy.

The body of this paper is as follows: section two contains literature review of business incubation concepts & development. Section three contains details of the types & roles of business incubators in Pakistan. Sections four give survey details about incubators in Pakistan. Section five discusses business incubators need for Pakistan economy. Section six discusses policy recommendation for Pakistan Incubators system. Section seven concludes with recommendations which ought to guide the future development of business incubators in Pakistan.

2. Related Literature Review of Business Incubation

Incubation system for business was originally started 50 years ago; however now, there are more than 7000 incubation programs that are in operation around the globe [9-10]. In 1959, Joseph Mancuso started the first business incubator in Batavia, New York, a privately owned for-profit center [11] for the economic necessity [12]. At that time, Mancuso used the strategy of expense sharing based on needs. His idea accomplished the goal by generating profit and job creation in community [13]. In 1980, an incubation program was established by Rensselaer polytechnic institute for its students, faculty and community residents (Burger, 1999). Incubators in North America have added 19,000 companies and create more than 245,000 jobs to support the economy. The numbers of incubators are growing at a very high rate around the globe. There were 200 at the beginning of the 1990s and now they are more than 7000 today. In 1980, there were only 12 incubators & now more than 1250 incubators in the United States [14]. There are more than 1000 incubators in Asia [15]. Incubation model has been serving as an investment vehicle for the development of commercialization of university technologies to increase job opportunities in community [14]. Business incubators are provide support to young firms to survive and grow during start up with new technological innovation and integrating business range of service [16-17] including:

- Incubators provide office space, manufacturing space on flexible and affordable terms as compared to market to support young firms.
- Incubators should exercise extreme caution in selecting firm, ensuring its input to show significant impact with innovation and growth. Normally tenant companies depend on incubators, with what the incubator will provide, how they will be evaluated [18]. [7] Exit criteria are not as extensive as entry criteria. Generally for ensuring a reasonable turnover, it limits tenancy to a period of between three to five years.
- Incubators offer access to financial resources with the help of business angels, capitalist and companies [19], except of this provision of other services enterprise counseling and training, R&D and risk capital, assistance with product development and marketing.
- Business incubators provide presentation skills to the incubatee who helps for attracting customer & sometimes search for investor [20-21].

Level of vulnerability is quite high at the beginning of the business. Thus; system of incubation provides aid to newly established enterprises to maintain their survival till the

time of financial sustainability. Actually, incubation provides support to the beginners financially and technically. Similarly, skilled management furnishes the idea of incubation to business till the financial sustainability.

Goals and Objectives of Business Incubation

Generally business incubation have different programs, each program demonstrates different set of objective & goals.

- Business incubators are an attractive tool for the local, regional and national economic development through new start-up companies and have the ability to generate more jobs as compared to other business programs. [1] Business incubators aim at the level self-reliance of a newly born company which will leave incubator after reaching the level of financial vulnerability. Additionally, at such moment the newly formed companies do not require incubator support in the matter business operations. Supporting environment provided by business incubators maximize the chances of success of start-up companies.
- Incubators support small enterprises and emerging venture by rendering technical services, management assistance, mentoring and assistance in developing their business [4, 22]. Incubators develop entrepreneurial processes for new venture creation, and their contribution to their success, [23-27] emergence of new sustainable jobs along wealth generating business contributes in the development of society [28-29]. Government around the world facilitates business enterprises by introducing friendly policies for the formation of new business venture [30].
- Business incubators help the newly established enterprises by rendering them an effective mechanism for their organization so that their probability of failure during their early age can be reduced at maximum level [31].

3. Types and Role of Business Incubators in Pakistan

In Pakistan following are the main types of business incubators,

University Based Incubators (UBIs)

Prime goal of universities is education; they can still make a substantial contribution to local, regional & national economies through innovative research & technology transfer to industry [32-34]. There are certain universities based incubators functioning within Pakistan; these incubators support their students & industries with new innovations. Incubators operating in the universities have the same operational mechanism like other common incubators but at the same moment they also have certain unique traits like; employment opportunities for their own students, facilitation to private sectors & regular monitoring till firm graduation [35]. Normally in Developed countries most of the universities have their own business incubators and provide necessary help to students starting technology transfer and new ventures .On the other hand, Universities have another prime function to perform which is about the synchronization of industry with education sector so that their faculty can have better research facilities and student can get appropriate employment opportunities [36]. Moreover, UBIs helps industries to introduce new products but they also decrease the level other associated risk factors. It is important to note that university incubators have become more popular in a short span of time. Hence universities have become an integral part of the incubators functioning. Incubators services help the universities research achievement commercialization and the entrepreneurial firm establishment; it is considered prime force for the economic progress of the developed and developing economies of the world [37]. UBIs are actually cultivating the seeds of economic development, employment opportunities, modern technology, innovation and the enhancement of the profit and investment opportunities

[38]. Some mainstream universities and higher education institutions have taken steps to establish UBIs in Pakistan [39].

Table 1. Some Examples of UBIs in Pakistan

University	Location	University	Location
University of Agriculture	Faisalabad	Institute of Business Administration,	Sukkar
University of Engineering & technology	Peshawar	Quaid-e-Azam, university	Islamabad
University of Veterinary and Animal Sciences	Lahore	University of Engineering & Technology	Lahore
LUMS Centre for Entrepreneurship	Lahore	Malakand University, Swat	Swat

Universities business incubators have been established to support knowledge based ventures, however, the prime concern of such incubators is to transfer scientific and technological based methods and SOPs from educational institutions to business organizations.

university based incubators are rich in resources like access to technology, capital which is not available to small business or individual and UBIs are an outlet for commercializing university innovative research [40]. UBIs provide double edged services to incubators clients; services related to universities and services related to incubation [41]. Conventional incubators services facilitates; shared office services, rents sharing for clients, emergence of the capital and business networks. These services rendered by the universities improve the knowledge of the enterprises and removes problems like smallness and newness. Universities of the contemporary world are developing relationships with industry and government for strengthening the local, regional and national economies.

Technology Business Incubators (TBIs)

A technology incubator is an entity that assists and stimulates innovation. Technology business Incubators seek to combine technology, resources and initial knowledge to improve entrepreneurial talent, speed up the development of nascent business, and thus expedite up the commercialization of technology [43]. Technology business incubators are included such as Research Parks, Technopolis, Science Parks and Technology Parks. The terms Science Parks, Research Parks and Technology Parks as well as Technology Incubators (TIs), Technology innovation centers (TICs) and Technology Business incubators are used opposite to each other in many countries but the level of dependence solely lies with the interaction between R&D community, investment and industry. [44] Small and medium enterprises (SMEs), especially in technology based industry, have become an essential part of the contemporary economies of the world. Technology business incubators are an initiative to provide a nurturing environment for technology-based business, innovation is brought to the market creating new products and services for the technology industry [46-47].

Table. 2 Some Example of Technology Business Incubators

Technology Incubation center	Location
NUST	Islamabad
Plan9 Tech Incubator	Lahore
COMSATS	Islamabad
Institute of Space Technology	Islamabad

In developing countries; TBIs are playing important role to boost up economies with the help of entrepreneurial and technological base through supporting technology-oriented SMEs [48-49]. The technology incubator is an entity where knowledge is transformed into innovative product [50] and has a principal task to nurture and secure the survival start-up. Technology business incubators play their crucial role by supporting different sector of economy.

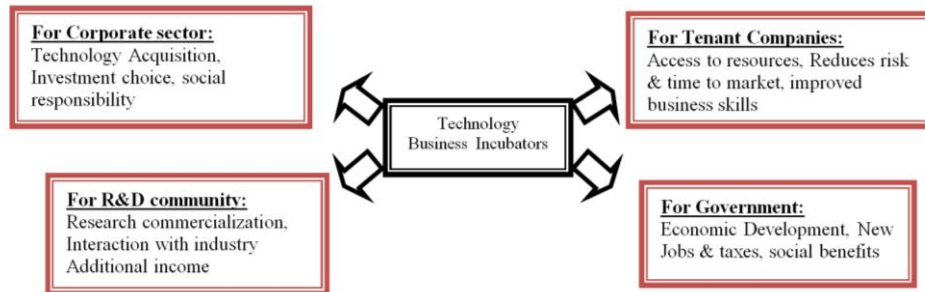


Figure 1. Source: Syianbola; 2008&2011

Commonly, TBI renders immense service ranging from market survey and marketing assistance, business planning and training, to statutory approval .It gives assistance in the creation of technology based enterprises.

Industrial Business Incubators (IBIs):

Commonly industrial business incubators are nurseries for the nourishment of new business and its establishment .However; these primarily aim at emergence of the industrial era at medium and small level. Similarly there are no limitations regarding the inclusion into the procedures. In Pakistan there are three industrial business incubators & all are under the control of Government. Normally these incubators give suggestions to government about industry requirement, how to solve the industry matter, which industry needs economic development.

Table. 3 Some Examples of Industrial Business Incubators

Industrial Incubators	Location
Small & Medium Enterprise Development Authority	Lahore
National Industrial Parks Dev & Mgmt Company	Karachi
PCSIR Laboratories Complex	Karachi

4. Survey of Business Incubators in Pakistan

A survey of business incubators in Pakistan was undertaken with a view to ascertaining the performance and service of incubators. The information and data collected from field survey provided the background material for the research findings & recommendation in this study. In undertaking the survey the methodology adopted included a combination of the following:

- I. Physical inspection of sites and facilities to observe the status of each incubator on the ground.
- II. Structured interviews with the incubators managers of the centers to obtain information on all areas of interest to the study.

III. Exchange of views with some of the entrepreneurs operating from the incubators to ascertain their experience as tenants of these centers.

Some key points were observed during the field survey that relate to facilities in incubators, technological innovations and government policies.

- The facilities are available and ascertain the number of such incubators in Pakistan.
- Assessing the requirements of such incubators in the context of government declared policy on their role in national development.
- Finding out how successful the incubators have been in promoting entrepreneurial activity and technological innovation.
- Finding out the key policy issue which is compulsory to be clear in implementing the development of the business incubator in Pakistan.

The survey revealed that there are at present only fifteen business incubators operating in Pakistan. The characteristics of these incubators are summarized in Table I. The facilities and services available in three types of incubators as well as their current operational status are reviewed as outlined below.

Table 4. Operational Status of Business Incubators in Pakistan as at 31st July 2014

Type	Name of Incubation center	Year started	Sponsor	Facilities provided
University based incubators	University of Agriculture, Faisalabad	2010	CSF&HEC	E,T,L,PI,W,RD,RST,SS & Financing
	University of Engineering & Technology, Peshawar	2011	HEC	E,T,PI ,RD,RST,SS & Financing
	University of Veterinary and Animal Sciences	2011	HEC	E,T,TR,W,,RST,SS &MC
	LUMS Centre for Entrepreneurship	2014	LUMS	E,T,TR,W,,RST,SS &MC
	University of the Engineering & Technology, Lahore	2009	UET&ACRE	E,T,TR,W,,RST,SS &MC
	Institute of Business Administration, Karachi	2012	HEC	E,T,TR,W,,RST,SS &MC
	Quaid-e-Azam, university, Islamabad	2012	HEC	E,T,TR,W,,RST,SS &MC
Technology business incubators	NUST	2005	NUST	E,T,TR,W,RST,IPR,SS
	Plan9 Tech Incubator	2012	PITB	E,T,TR,W,IPR,RST,SS
	COMSATS	2010	PSDP	E,T,TR,W,IPR,RST,SS
	Institute of Space Technology	2013	HEC	E,T,TR,W,RD,RST,SS
Industrial Business Incubators	Small & Medium Enterprise Development Authority	1998	GOP	E,T,TR,W,RD,RST,SS & factory sheds
	National Industrial Parks Dev & Mgmt Company	1993	MPGOP	E,T,TR,W,RD,RST,SS
	PCSIR Laboratories Complex, Karachi	1953	GP	E,T,TR,W,RD,RST,SS & factory sheds

Source: NBIA 2014 & HEC

Key: E = electricity TR = Training T = telephone SS = Security service W = water RST = Restaurant RD = refuse disposal L = Laboratories PI = Physical Infrastructure IPR = Intellectual Property Rights MC = Management consultancy.

5. Need Assessment of Business Incubators in Pakistan

Based on the survey of business incubators in Pakistan as highlighted above and on the structured interviews held with the key stakeholders interested in the programme, a number of needs have to be addressed urgently before the incubators can contribute towards the desired impact in promoting entrepreneurship development and technological innovation.

5.1. Inadequacy of Numbers

The first and most important observation is about the insufficient number of incubators in Pakistan. However, such a limited number of incubators are unable to meet the requirement for small and medium scale entrepreneurs. Therefore, it is important to establish more incubators in Pakistan.

5.2. Public Ownership and Lack of Private Sector Participation

All the prevailing incubators in Pakistan are controlled and operated by the government, the prime objective of establishing the pioneer incubator at NUST was to demonstrate the commercial viability of such incubators in Pakistan, so as to attract private sector to establish other industrial incubators.

5.3. Weak Management Structures

Similarly, all the operational incubators are considered weak with respect to management. They usually operate their function on part time basis or ad hoc basis which seems unhealthy for a productive incubation system. There should be emphasis on good management system and responsible manager should play a vital role in ensuring the long-term success of the incubator.

5.4. Improper Government Policies and Inadequate Funding of the Incubators Programs

In the last two decades government policies have been a major cause of inadequate number of business incubators along with poor financing. Similarly, no concrete steps were taken to establish industrial incubators for SMEs, with the supporting infrastructure and facilities.

5.5. Failure to Set Challenging, but Attainable Goals

Clarity of objectives is the prime goal for success of business incubator in future, similarly, feasible plans with limited recourses ranging from three to five years seems to be good. Such planning should be backed with the proper project studies, balance operational and implementation strategies with evaluation process. Additionally, all spheres of government should work together to implement the plans. It means that three spheres of government local, provincial and federal governments should work hard to attain the level of success and prosperity.

5.6. Poor Tenant Selection

Major factor that disrupts the BI is the periodic turnover of tenants, because of the absence of objective criteria for tenant admission procedures. No attention is paid to the alignment of companies "vision & objective". It is not unusual to find a company in an

incubator with a complete different scope. Most of the time tenants are admitted in incubators due to political associations instead of meritocracy. Consequently, potential probability of success of the business turns into a negative one due to this factor

6. Policy Issues and Recommendations

The key policy issues, which should guide the future development of business incubators in Pakistan as well as the recommendations arising there from, are as follows.

6.1. Ownership and Sponsorship

The three tiers of the government should play their role to develop a comprehensive policy for ownership and sponsorship of incubators centres. Each tier of the government should be responsible for policy matters and operation guidelines of business incubators. Similarly, government should encourage universities and private sector for incubation programs to accelerate commercialization.

6.2. Legal Status

For the business incubators promoted by government agencies, such incubators should be incorporated as companies limited by guarantee i.e. not for profit organizations. However they should strive for break even and be commercially driven in order to reduce dependence on the treasury for subvention. For incubators promoted by the private sector like Independent Private Incubators set up by single individual or group of individual who intend to help rising entrepreneurs to create & grow their business [51]. These should be incorporated with a limited companies limited by liabilities and profit making in order to guarantee a reasonable returns on capital invested.

6.3. Size of Incubator Centers

In order to get maximum result from business incubators, it is recommended that each incubator should be planned to provide services between 30 and 50 tenants. However, the development of facilities could be phased out in order to moderate the initial capital outlay required to establish each center.

6.4. Linkage with Industrial Estates

Physical location has a significant effect on the development of incubator. Incubator centers should be established near or within industrial estate/ universities to reduce the start-up cost.

6.5. Post Incubation Location

It is recommended that after graduation from business incubators, land should be provided to tenant for operation of the business near industrial estates. The plots should be allocated provisionally at the same time as the tenancy agreement for incubator units is being signed in order to guarantee compliance with exit regulations.

6.6. Coordination with Other SME Support Institution

There should be coordination between business incubators and other government institutions like Entrepreneurships development Programmes, Industrial Development Centers, Research institutions, universities and development finance to get optimum results. The help of others SMEs plays an important role in nourishment of small and medium enterprises.

6.7. Management Team of Incubators

According to [4] private incubators management team invest their own money in the new ventures and are deeply involved in the management and day by day operational aspects whereas public incubators management act as intermediaries. In addition it should be kept in mind that key to success of the incubator is the incubator manager. Manager will be responsible for its day to day management, long-term development & viability.

6.8. Admission and Exit of Tenant Firms

Incubator must lay down selection process through which it evaluates recommends and selects tenant firms [52, 27]. Different types of incubators have different purposes. Normally private incubators emphasize on investment potential, real estate development and technology transfer while pub; like incubator facilitate job creation and economic development. Exit criteria are not as complicated as entry criteria. Successful tenants move from the incubator itself.

6.9. Cooperation with Large Scale Firms

It is strongly recommended and encouraged to develop a key cooperation between SMEs and large scale firms in the society.

7. Conclusions

The survey of business incubator centers in Pakistan revealed that there are only fifteen in operation. Out of the fifteen, eight are universities based incubators, four are industrial incubators whilst the remaining three are technology business incubators. The role of incubation system in the development and sustainable growth of the small and medium business is vital through entrepreneurship, innovation and technologies. The innovation creates new jobs and economic development. The incubators are designed to promote entrepreneurship development and technological innovation at the small and medium enterprise level by nurturing a steady flow of successful productive enterprises after an incubation period of three to five years. However, a review of the present operational status of the business incubators showed that most of the business incubators are government sponsored, due to political influence on incubator management, process of innovation & development is not working properly. Given this unsatisfactory state of affairs, there is an urgent need to streamline the organizational, legal, management, financial and operational aspects of the incubator programme in order to avoid the mistakes of the past and ensure effective realization of the overall objective of promoting small enterprise establishment and economic development of Pakistan.

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Author



Nasir Mahmood, he is PhD scholar at School of Management, Northwestern Polytechnical University, Xi'an, China. His research interests are mainly in the field of innovation management, entrepreneurship and Business incubators in particular the evaluation of strategies and University- industry technology transfer. His email is nasirmahmood@mail.nwpu.edu.cn

