

# A Conceptual Study on Incubator and Its Process and Facilities

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**Abstract-** *Universities play an important role in motivating young graduates to become entrepreneurs. The objectives of this research are to study the facility provided by the incubators and to develop and growth of start-up. universities that have business incubators were considered for this research. A study was conducted with the help of review of literature, experts who have the necessary insights and experiences in managing both the incubators and the relationships within the incubators with the tenant firms. This research examines some significant measures with reference to the unique features of university incubators in order to better understand the manner in which incubators can be assessed in a developing country. The result of this research includes a framework of incubators in universities. This framework is developed on the basis of previous studies and the preliminary study.*

**Indexed Terms-** *Incubator; Framework; University incubator; Facilities*

## I. INTRODUCTION

According to Watson (1998) “The failure of new ventures in their early stages of development is a common occurrence”. Evolutionary theorists contend that the forces of selection that eliminate uncompetitive firms are a necessary phenomenon that contribute to the maintenance of healthy populations of organizations (Aldrich, 1999). The continuing growth, since 1980, in the number of business incubators operating, however, suggests that many governments, local communities and private investors believe that it is desirable to try to help “weak-but promising” firms to avoid failure by incubating them until they have developed self-sustaining business structures. We define business incubator as a shared office space facility that seeks

to provide it’s incubates (i.e., “portfolio-” or “client-” or “tenant-companies”) with a strategic, value-adding intervention system (i.e., business incubation) of monitoring and business assistance. Universities play an important role in motivating young graduates to become technology entrepreneurs. The increasing number of university-graduate entrepreneurs will reduce the unemployment rate, as well as create the work field. Several developing countries have experimented with a variety of programs and schemes supporting small and medium enterprises, often with assistance from multilateral and bilateral organizations. Business incubation programs or initiatives have been introduced particularly over the past decade, with varying degrees of success (Manan & Yunos, 2011).

## II. LITERATURE REVIEW

This section explores the existing theories and models that are relevant to the research subject, as well as those theories and models that form the body of knowledge of the research. In its most literal sense, a business incubator is a building that houses tenant companies that are in their initial phases of establishment.

In this research, a review of the literature (secondary data collection) on the research design was conducted in order to support the study. According to Choto (2015:13), secondary data are information that is not collected for the first time. Literature reviewed in the current study comprised relevant academic articles, textbooks, authentic journal articles downloaded from the Internet, business articles, newspaper and magazine articles, and online academic databases.

Figure 1 shows the evolution of incubators.

Theodorakopoulos et al. (2014:6) Put forward a representation of the generational evolution of business incubators.

Bruneel, Ratinho, Clarysse and Groen (2012:110) The basis of this postulation is the premise that a generational sequence of incubation models exists. Emphasis that incubation models adapt their value proportionate to the evolving needs of participating ventures.

Allahar et al. (2016:625) Agree with this perspective and describe the first-generation incubators as providers of facilities. The kind of support provided is seen as reactive.

Allahar et al. (2016:625) Describe the support provided by the incubators as proactive, in contrast to the reactive models of the preceding generation. This means that business incubators of this period interpreted possible future challenges for the entrepreneur and provided support in advance. Entrepreneurs had possibly become more complex and had disruptive innovations that required specialized services.

Allahar et al. (2016:625) Describe third generation incubators as seed financiers, Theodorakopoulos et al. (2014:6) Include in their model several other services offered by the incubator, including network development, business acceleration, mentoring and coaching, proactive support, networking, business advisory services, a variety of support services, shared facilities and affordable space.

Gilbert and Huq (2014:396) Indicate the most recent development of business incubation as being the move to fourth generation incubators. These incubators departed from the traditional facilities of an incubator and provided more than merely business support services.

Figure 2 Shows the types of incubators.

Allen (1986, 177) These are usually formal incubators – or physical structures with larger square footage than average. Their benefits are job creation, economic diversification, linkages with existing firms and tax base expansion.

These are classified on the basis of sponsorship and objectives.

There are:

Government (non-profit),

Private (for-profit),

Private (non-profit), and

Educational.

In this study only specify about the educational incubation model.

Figure 3 Shows the process in incubation.

Campbell et al.'s (1989) The model indicates that incubates are selected from a pool of incubation candidates, monitored and assisted, and infused with resources while they undergo early-stage development.

The process of incubation is explained step by step.

Figure 4 Shows the facilities provided by university incubation.

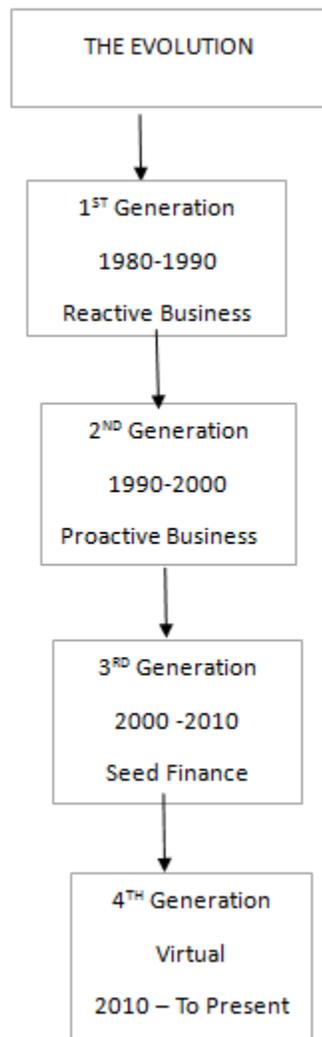
Lalkaka and Bishop (1996) The ultimate goal of business incubators is to support companies and entrepreneurs till they become sustainable businesses. Hackett and Dilts (2004) BIs provide their clients with specialized services such as flexible space, shared equipment, administrative services, granting them networking opportunities and access to venture capital.

Figure 5 Shows conceptual model.

### III. METHODOLOGY

The literature review covers academic literature, research and technical papers, government reports and working papers; all of which are considered to be useful.

Figure 1 The evolution of incubator:



The evolution of incubation models:

Theodorakopoulos et al. (2014:6)

A comprehensive discussion of the evolution of business incubators would surely take note of the pre-1980 period, considering the Batavia Industrial Centre in New York of 1959, which is believed to be the first business incubator. The sections below present a discussion of the generational development of the incubator models.

- First generation incubators (1980–1990):

Pauwels et al. (2016:3) The first generation of incubators focused on providing physical space and financial resources. Such a model can be said to be

simplistic and typical of a formative stage of a phenomenon. Through supplying physical needs of entrepreneurs only, the incubators met simple needs of a less complex business environment at a time when entrepreneurship was less pronounced as a vehicle for economic development.

Saffar (2008) Furthermore, it is believed that the first-generation models were based on offering entrepreneurs help only when it was critically needed. This is because first generation incubators, as indicated by the model, offered no more than physical space, which is in stark comparison to current incubator models. The basic function of a business incubator in this model was to provide office space for entrepreneurs to initiate their business activities. Services offered at first generation incubators were fundamental and aimed to accommodate the basic needs of new businesses.

It is possible to argue that this trend was befitting of the period, as creativity and innovation were not trending as in current times. It is not arguable that the youth demographic and general population of the time was much smaller and possibly absorbed in formal labour with a stable job/labour market. Business incubators evolved to be perceived as vital components for economic development, perhaps because economies have shifted in their well-being in contrast to the decade 1980 to 1990.

- Second generation incubators (1990–2000):

Second generation incubators, in addition to providing affordable space and facilities, offer a variety of other support services, business advisory services and networking.

This means that business incubators of this period interpreted possible future challenges for the entrepreneur and provided support in advance. Entrepreneurs had possibly become more complex and had disruptive innovations that required specialized services. Clearly, this period shows an expansion in terms of the range of services and products offered. The increase in services and products offered can be attributed to environmental complexity, mere innovation or simply natural evolution of entrepreneurship. Second-generation incubators were still limited in services provided

compared to the generation they preceded. In spite of this, it is notable that incubators have proven to be an economic development tool for entrepreneurs, hence their market demand.

Since 1980, incubated companies have created over 250 000 jobs, thereby increasing the tax base, occupying additional commercial real estate space, contributing to local business infrastructures and creating even more jobs in other industry sectors.

The first-generation incubators initially provided sufficient support for the incubates who only sought office space and basic office facilities. However, the need for consultancy and business advice became significant, which altered the model of the first-generation incubators to second-generation incubators. The characteristics of second-generation incubators include the typical office space rental, shared facilities, proactive support and business advisory services. This type of incubator model predominantly existed in Malaysia between 1995 and 1998, an era when the information and communication technology (ICT) industry was booming, although many of the incubators today still epitomize similar attributes.

- Third generation incubators (2000 to 2010):

Third generation incubators operate in highly specialized and complex environments with a wider array of innovations and ideas. The rise in technology and entrepreneurs in both the private and public sectors has heightened the demand for social services. Incubators have had to remodel from basic resource provision to specialized and customized services. Third generation incubators have experienced government policy co-ordination and frameworks created to foster growth of enterprise.

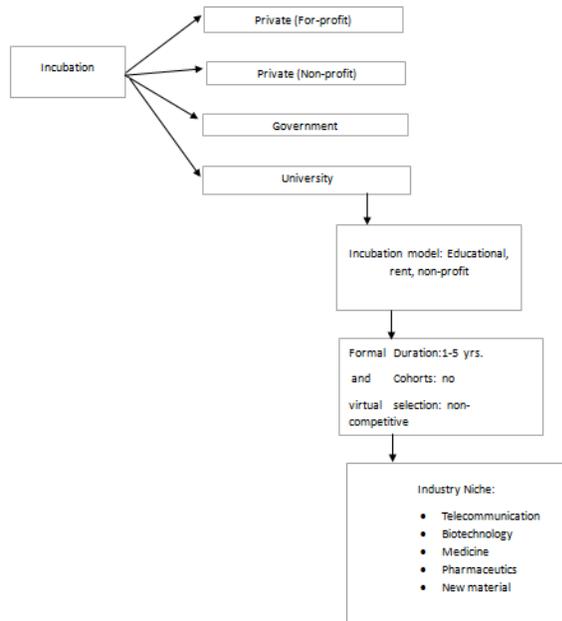
The growth and great expansion of enterprise has also caused a shift in thinking in society in general. Entrepreneurship has become central to higher education and training, government research, industrial research and development and academic research. Individuals and corporations alike are creating different custom models for entrepreneurial support for their respective industries, hence the expansion of the sector. Third generation incubation is described by Peters, Rice and Sundararajan

(2004:83) as having a focus on the importance of business support beyond just facilities and administrative services.

- Fourth generation incubators (2010 to present):

These incubators departed from the traditional facilities of an incubator and provided more than merely business support services. Characteristics of fourth generation incubators as asserted by Saffar (2008) include being accredited International Business Incubators (IBIs) and co-incubation. An example of this would be the International Business Incubator (IBI) in Silicon Valley that offers services to SMEs from other countries to establish their businesses in the US market. Services that fourth generation-type incubators offer, include: market assessment, market strategy consulting, partner and sales development, and establishment of an office in the respective countries. A fourth-generation incubators with higher levels of risk and mortality rates. Fourth generation incubators are described in some literature as 'virtual,' implying that they can offer advisory support using Internet communication technology and other modern communication technological services. Virtual incubators utilize computer technology to deliver services, or a hybrid approach that uses virtual and physical contact methods by incorporating elements of all previous generations of incubators. The current state of world economies, in particular regional integration and globalization, requires the re-modelling of incubation itself, hence virtual/fourth generation incubators.

Figure 2 The types of incubators:



They encourage entrepreneurship and minimize obstacles to new-business formation and growth. Most incubator facilities and programs are sponsored by one of four kinds of groups: Government(non-profit), private (for-profit), private (non-profit), and educational.

Examine the university type of incubator facilities identifying their unique organizational structure, the type of businesses they attract and the incubators’ benefits to various stakeholders.

In educational (university affiliated) incubators, the focus is on technology and science-based industries. They are likely to be located close to a university and the university is the primary source of funding. The benefits of these incubators are the product development and commercialization derived from research and the cooperation between universities and industries.

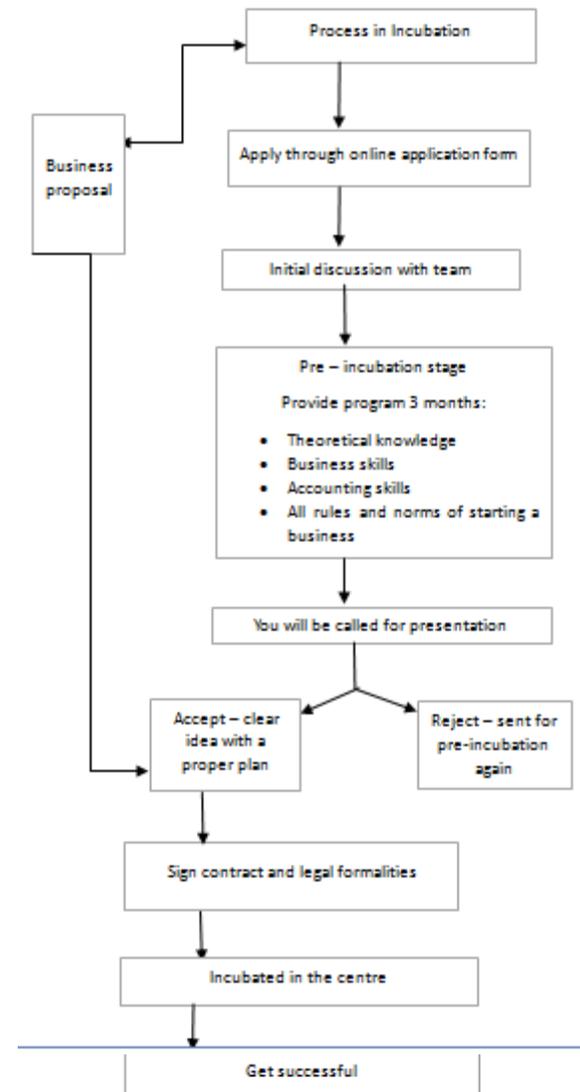
Characteristics of Tenants/Graduates:

- Researchers and highly educated professionals
- Science based and knowledge intensive firms
- Large portion of firm’s costs go to R&D

Success Variables:

- Access to R&D grants
- Presence of local entrepreneurial base
- Presence of venture capital and business angels
- Collaboration among University and industry
- Support from other business dev offices
- Larger firms in vicinity pertaining to the industry sector
- Financial success dependent on university funding

Figure 3The process in incubation:



1. Apply through online application form:  
It’s a right choice to choose an incubator before leaping into a startup company, once you a get an

idea for startup in the field or a problem to be solved based on technology, you surely can visit the incubation website for an online application and enroll yourself in it.

2. Initial discussion with Team:

After applying you will be called for a initial discussion from the Incubator Team, for further analysis for basic interest towards the business or service you're going to perform. You will be questioned on your vision towards your startup.

3. Pre incubation:

After being selected by the Team you will be going through the process of Pre-Incubation, It is a three-month program where all the participants will be provided with all the theoretical knowledge, business skills, accounting skills, all rules and norms of starting a business. They will be provided with narrow specific knowledge by the experts in those fields.

4. You'll be called for presentation:

After completing the pre-incubation course, you will be called for a business presentation with a proper plan execution strategy and complete product module.

5. Selected by the incubation screening committee:

Based on the presentation, the screening committee will select the best participants who have a clear idea with a proper plan. They select them on all the required basis. They check if they are strong with their idea and also check if the incubation mentorship is enough for them, if not they will be sent for pre-incubation again to gain even more knowledge in depth.

6. Sign contract & legal formalities:

After being selected by the screening committee, the participants are allowed to be incubated in the centre. They will be signing all the required legal formalities and contract required for being incubated. From now on they can utmost utilize the facilities provided by the incubation, they can use their workstation, research area, they will be helped by the investors for their business commencement.

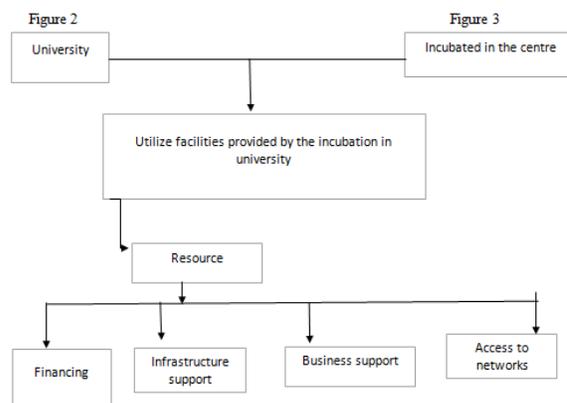
7. Get incubated:

Get incubated and be successful in your own domain of business.

Figure 4 The facilities provided by the incubation centre:5

Incubated in the centre then utilize the facilities provided by the centre.

From the figure 2 and 3,



Financing arrangement:

- ANGEL INVESTORS:

An angel investor is an individual who provides capital for a business start-up, usually in exchange for convertible debt or ownership equity. Angel investors usually give support to start-ups at the initial moments and when most investors are not prepared to back them. A Solid Business Plan: Angel investors want to see a business plan that's both convincing and complete, including financial projections, detailed marketing plans, and specifics about a target market. They want to see a developed vision that includes details of how to grow the business and remain competitive.

- VENTURE CAPITALIST: A venture capitalist (VC) is a private equity investor that provides capital to companies exhibiting high growth potential in exchange for an equity stake. Venture capitalists are willing to risk investing in such companies because they can earn a massive return on their investments if these companies are a success. Start-up companies with a potential to grow need a certain amount of investment.

Wealthy investors like to invest their capital in such businesses with a long-term growth perspective. This capital is known as venture capital and the investors are called venture capitalists.

- **GOVERNMENT FUNDING:** Under the Startup India program, the Government created the 'Fund of Funds for Startups (FFS) with a corpus of INR 10,000 crore to provide funding support for Startups, over a period of XIV and XV Finance commission cycles. The Fund was set up with the approval of Union Cabinet in June 2016. The operational guidelines were issued as per Cabinet approval. The FFS is managed by Small Industries Bank of India (SIDBI) and contributes to the corpus of Alternate Investment funds (AIFs) for investing in equity and equity linked instruments of various Startups. INR 600 crore has been released to SIDBI. Further, a letter of comfort for INR 1600 crore has been provided to SIDBI in January, 2018 taking the overall commitment to INR 2200 crore. SIDBI has further committed INR 2265 crore to 40 AIFs. The AIFs have started investing in the Startups and 193 Startups have received funding of INR 1150 Crore from AIFs. The current draw down from FFS is INR 347 Crore.
- **CROWD FUNDING:** The concept of crowdfunding is quite similar to mutual funds on a basic level. In this option, more than one investor is involved and they offer a fixed amount of money based on your business idea, goal, plan of action, and plans of making a profit. All you need to have are people who truly believe in your business idea. Crowdfunding is gaining popularity as it ascertains the belief that your idea is also believed by other experienced players in the market. Crowdfunding also helps you in getting the crucial funds from the idea stage itself. You can gather crowdfunding from friends, family, and entrepreneurs who believe in your business concept and have the means to come together and fund your aspiration.
- **SELF FUNDING:** Popularly known as bootstrapping, it is an ideal plan of action when it

is hard to convince others of your business idea and vision. Often investors ask for traction before making an investment, the initial round of self-funding allows you to prove the feasibility of your idea and build confidence in the investors for a further round of funding. Bootstrapping is a great idea for startup funding especially if the initial business requirement is small. It also gives you the freedom of being your own boss. You're not answerable to anyone and it allows you to keep an eye on the revenue earnings as well.

#### Infrastructure:

Infrastructure consists of space and shared resources, providing space has always been part of BI (Lalkaka and Bishop, 1996). Available premises are generally an office although some BI show different approaches such as hot-desking (more common in pre-incubation schemes) Provision of space is critical to business incubation (Bergek and Norrman, 2008; Lee and Oster young, 2004; McAdam and McAdam, 2008) and empirical evidence suggests it as the most beneficial feature to tenants (Chan and Lau, 2005). Additionally, the office space already includes some services which can be classified as shared resources. These include reception, secretariat, meeting rooms, conference rooms or car parking. More specialized premises, such as laboratories and research equipment, can also be placed under shared resources.

#### Business support services:

Professional business services emerged in the second generation of BIs and are integral part of the third generation. These include mentoring, coaching and counselling business plan development support and training (Aerts et al., 2007; Barrow, 2001). Recently, the concept of virtual business support emerged alongside the use of web-based technologies.

#### Access to networks:

Access to a network of professional contacts is also part of the incubator concept (Hansen et al., 2000). Some authors actually define BIs as networks of individuals and organizations (Hackett and Dilts, 2004, p. 57). Also, networking both among tenants, and graduates and tenants is reported in some empirical studies as crucial. Linking tenants to the most appropriate networks will ultimately help them

to build their social capital. The value of social capital for new ventures is already ascertained found critical among incubated companies.

IV. FINDINGS AND DISCUSSION

From the analysis of the literature review preceding data's, I came to know the details, process and facilities of the incubation centre.

With the help of the study, I will proceed my work with,

To study the satisfaction level of start-up.

Variables:

1. Office space
2. Infrastructure
3. Legal, administrative, marketing and technical assistance
4. Research and development (R & D)
5. Grants and funding aids given by the incubator
6. Quality of faculty / mentors at the incubation centre
7. Workshops, seminars, investor pitches and events organized by incubation centre
8. Fee charged for incubation.

V. CONCEPTUAL MODEL

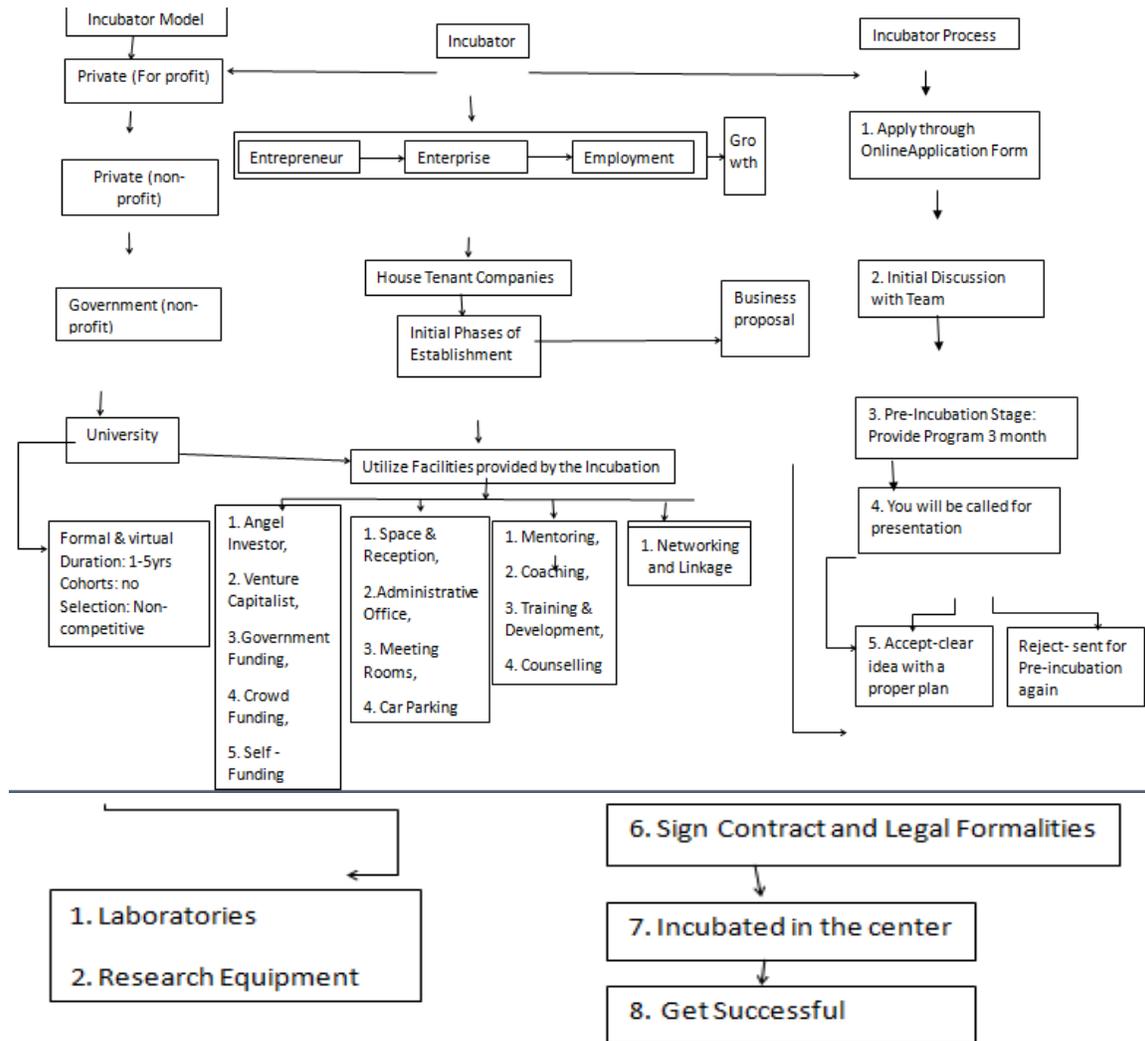


Figure 5 conceptual Framework

## CONCLUSION

In this systematic review, we have synthesized and analyzed concepts, about the incubators. Although a significant body of research has developed in the years since Campbell (1984) set the standard for describing incubators and their configurations, it is clear that research has just begun to scratch the surface of the surface of the incubator phenomenon. While much attention has been devoted to the description of incubator facilities, let's take next step focus on the satisfaction level of the start-up with the facilities provided by the incubator.

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