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Factors Affecting Entrepreneurs' Choice of Business Incubator: A Study of Indian Technology Entrepreneurs

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Abstract:

Technology startups have been mushrooming in India in the recent past. Several factors such as availability of well-trained IT professionals, the booming of e-commerce and supportive government policies have contributed to this phenomenon. They have contributed immensely to the startup scenario in India and contribute a fair share in wealth creation and employment generation. However, technology entrepreneurship needs a supportive ecosystem to grow and flourish such as proper mentoring, a strong network of business partners and other organizations.

In this scenario, the role of business incubators is crucial in supporting startups in their initial stages. Choosing a business incubator that is suitable to the business is a key managerial decision that has to be taken by an entrepreneur which can be crucial in the future success or failure of the enterprise. This decision becomes even more complex for technology entrepreneurs because of several sector specific issues. This research study identifies five key variables that are considered by Indian technology entrepreneurs while choosing a business incubator. The hypotheses are tested using Structural Equation Modeling. It was found that networking opportunities, sector focus and location of the program had an impact on the choice of business incubator while other factors like participant screening and support services did not have a significant impact.

Keywords: *Technology entrepreneur, business incubator, India*

1. Introduction

Technology startups have been mushrooming in India in the recent past. Several factors such as availability of well-trained IT professionals, the booming of e-commerce and supportive government policies have contributed to this phenomenon. They have contributed immensely to the startup scenario in India and contribute a fair share in wealth creation and employment generation. However, technology entrepreneurship needs a supportive ecosystem to grow and flourish such as proper mentoring, a strong network of business partners and other organizations.

Startup entrepreneurs face several hurdles in founding, growing and sustaining their startup businesses in the long run. A lack of proper R&D infrastructure, tough and rigid labour regulations, finding suitable sources of funding, finding right markets for products produced and a lack of educational and training facilities for entrepreneurs are some prevalent challenges in developing countries (Shanfari D., 2012). Many small business owners fail to successfully negotiate these multifarious challenges resulting in failure in the initial stages of the business.

Business incubators play an important role in enabling technology entrepreneurs to grow and sustain their businesses in the long run. However, these mechanisms are still in an evolving stage of growth in India and therefore, it is a challenge for entrepreneurs to make a proper assessment and to decide on joining an incubator or accelerator and which specific incubator best suits their unique needs.

The primary challenge facing a technology entrepreneur are the factors to be taken into consideration when selecting a potential organization that will mentor and handhold the newly founded startup. Considering the fact that there is a proliferation of interconnected factors that can affect the success or failure of a startup, this is a tough and confusing choice. Commercializing the new business ideas and innovations present several challenges for new technology ventures. Communities and organizations all over the world have been constantly looking for new ways and means to encourage, motivate and support new businesses, as they have been proven to develop economic development and create much needed employment opportunities for the local population. One such mechanism to boost entrepreneurship is business incubation, which has several variants. Technology incubation is a variant of business incubation that focuses on

technology driven business models. According to OECD (2010), technology-based incubators provide workspaces, shared facilities and a range of business support services to tech – oriented startup entrepreneurs.

1.1. Incubators

Business incubators have been defined by various organizations and scholars in different ways based on their focus, structure and utility. An incubator is essentially an organization that provides entrepreneurs with an array of targeted resources and needed services. According to Aernoudt (2004), “the term incubator as an umbrella concept which covers a heterogeneous group of institutions.” Several studies conducted globally have classified and differentiated incubators on various dimensions such as; purpose (Bollingtoft&Ulhoi 2005), service portfolio and management features (Aerts et al, 2007)and on ownership pattern such as public and private incubators (Grimaldi &Grandi 2005). Joseph Mancuso opened the Batavia Industrial Center in New York in 1959 as an institution to assist and support new ventures to develop and grow and this is when the term “incubator” was first used in the business context. (Barrehag et al, 2012).

Incubators differ from technology and research parks in their devotion to early stage and startup companies, as well as through the services/facilities they are providing. Because startup companies lack networks, experience, and resources, business incubators provide services that assist these companies to get through the initial hurdles that they are likely to encounter during the business startup process. Such hurdles include computer services, accounting services, legal services, funding, space as well as other prerequisites that are important to running the business. The services also include linking the business to the strategic partners, assist with the business basics, and market research, access to guarantee program, loan funds and bank loans as well as offering the networking activities. Put it simply, the technology and research parks offer mainly physical infrastructure, meanwhile business incubators offer know-how and networking during incubation and post-incubation period.

Entrepreneurs and startups who take the services of and join an incubator are called tenants. Any business wishing to join an incubator has to apply and are evaluated on the basis of a preset list of criteria. In general, only those who have feasible ideas and a strong business plan are admitted. These business incubation programs are sponsored by the government entities, the economic development organizations as well as the academic institutions and corporates. Measuring the success of incubators in sustaining startups has also been tough due to factors like different selection criteria, lack of proper data, difficulty in accessing data and diversity of factors (Isabelle, 2013). In such a scenario, how does an entrepreneur know which factors in choosing an incubator are crucial for the future success of his venture?

This article will focus on some key factors that influence the decision of Indian entrepreneurs while choosing a suitable business incubator to assist his new business. Based on an extensive review of literature, five factors have been identified. The factors have been analysed using Confirmatory Factor Analysis and Structural Equation Modeling.

2. Literature Review

Business incubators refer to organizations whose primary objective is to nurture and support the growth of other business entities (Stokan, Thompson, & Mahu, 2015). Especially, the business incubators support the establishment and growth of new firms. The incubating process is such that they provide the young businesses with both tangible and intangible resources. The intangible resources include expertise and networking opportunities (Tötterman & Sten, 2005). On the other hand, the intangible resources could entail shared workstations, shared equipment, and common administrative services (Rice, 2002). The choice of business incubators should be done with a view of ensuring that the best incubating organization is selected for the organization. The various variables that should be considered when choosing the appropriate business incubators include the following.

2.1. Participant Screening

One of the primary elements in business incubating is participant screening. The business incubators ought to maintain a stable flow of quality business proposals. To achieve that, the organizations need to engage in effective marketing and promotion campaigns to create awareness about their existence and the roles they undertake (Van Weele, van Rijnsoever, & Nauta, 2017). The organizations are tasked with filtering the right applicants with requisite qualifications threshold. Hence, filtering criteria similar to those applied by venture capitalists are applied here.

There are three sets of screening criteria that business incubators usually employ. First, the experience of the start-up company's management team is assessed. Typically, a business with an experienced management team with an exemplary history of stellar performance is likelier to achieve huge financial returns when compared with another business with the inexperienced managerial team (Gerlach & Brem, 2015). Second, there is the business' financial strength. In as much as the one of the business incubator's role to provide financial support to those start-ups, the proprietors should have invested adequate amount into them. That shows that they have a significant stake in the companies' success and thus are likelier to act towards the interest of those businesses. Lastly, there are personal and market factors. Market factors entail the external forces that could have a bearing on the business's performance. For instance, a start-up company whose business line is in the auto industry could face problems in the wake of tariffs imposed on the auto exports by different countries. Hence, that could be a relevant factor during the screening stage in choosing the most appropriate start-up business to support.

2.2. Networking Opportunities and Support Services

The other variable relevant to business incubating organizations is networking opportunities and support services. By and large, incubation entails bringing together of ideas from various quarters with a view of supporting the

execution of the best business ideas (Stokan et al., 2015). Thus, the business incubating organizations get to interact with the most ingenious individuals in different industries. The meet-up between the ingenious individuals creates a symbiotic relationship between the different players resulting in a rich network of interdependent commercial entities.

Further, the business incubators provide support services to the start-up companies under their wings. However, this objective is gradually being modified with different incubators providing different sets of support services to the young businesses. By and large, most incubating organization are conducting extensive market research with a view of establishing which support services are most relevant to respective business organizations. With that, the risk is minimized as the incubators end up choosing the best risk-balanced portfolio for their activities.

Some of the areas likely to be covered by incubating organization's support services include the sales sector, legal functions, patenting functions, and sales. To an extent, the support services role could inhibit networking of ingenious people in the sector. Business incubators could aim to minimize loss of intellectual property by eliminating interaction with other players thus limiting the networking aspect of business incubating (Bøllingtoft & Ulhøi, 2005).

2.3. Location of Program

The location of program is a fundamental factor to be considered by business incubating organizations. There are quite a lot of companies that send applications to these business incubating organization. The companies are varied in their geographical location. The element of location should be given great credence as it could influence the organizations in many different ways.

First, the most viable start-ups are set up close to the targeted market. With the growth of globalization, however, this factor is steadily becoming redundant. The organization should seek to have stellar supply chain functions (Hansen, Chesbrough, Nohria, & Sull, 2000). Therefore, with a business start-up that is located far from the target markets, the incubating organization should consider which supply chain options are available.

2.4. Sector Focus

The other variable that is fundamental in the choice of business incubators is the sector focus. There are many business lines that businesses could focus on. For instance, there are technological, agricultural, tourism, and manufacturing sectors (Mian, Lamine, & Fayolle, 2016). The choice by incubators is greatly enhanced with the sectors in which the start-ups fall.

If a start-up company has its business line in the technological sector, it would be more prudent that the business incubators experienced with support services are given utmost consideration (Zhao, Zhang, & Wu, 2017). Likewise, incubating organizations should consider those applicants whose line of business fall under their respective portfolios. The essence of this variable choice is to ensure that different business optimizes on the support services offered by the different incubating organizations.

2.5. Conceptual Framework

Based on the results of the literature review and an interview based survey conducted via e-mail with a group of technology entrepreneurs in India, a conceptual model was proposed for the current study to highlight the impact of the independent variables on the entrepreneurs' choice of business incubator

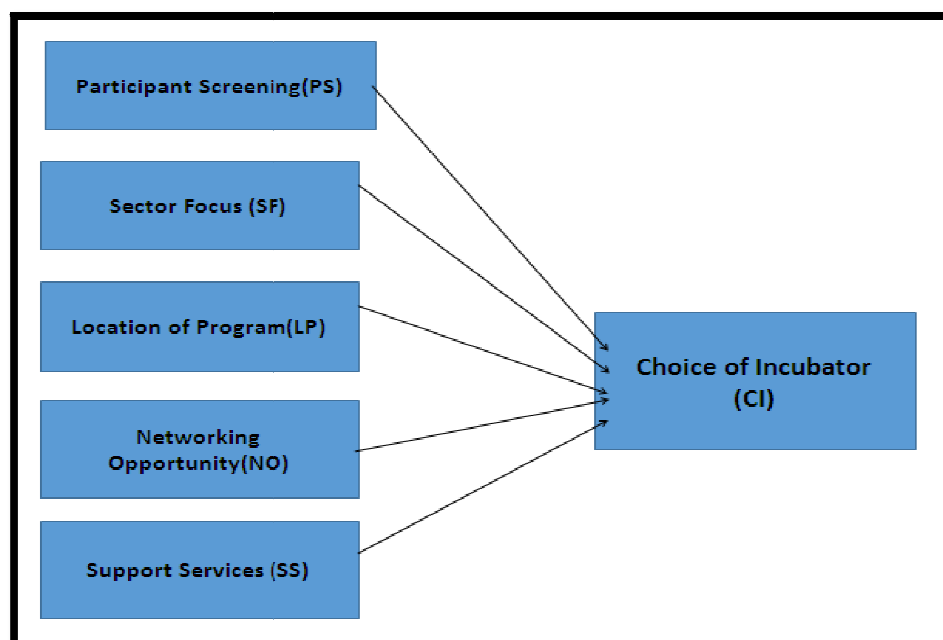


Figure 1: Conceptual Model

There are five independent variables in the model namely participant screening, sector focus of the program, location of the program, available networking opportunities for the entrepreneur and support services provided by the incubator. The dependent variable is the choice of incubator, that is whether the entrepreneur will choose the incubator as a partner or not.

2.6. Hypotheses of the Study

From the literature survey five hypotheses were developed for the study as given below:

- H1: There is an impact of participant screening policies on the choice of technology incubator
- H2: There is an impact of the sector focus on the choice of technology incubator
- H3: There is an impact of the location of the program on the choice of technology incubator
- H4: There is an impact of availability of networking opportunity on the choice of technology incubator.
- H5: there is an impact of support services provided on the choice of technology incubator.

3. Research Methodology

An applied and descriptive correlation method was applied in this study. After gathering data from Indian technology entrepreneurs who were considering choice of incubator for their startups, recommended model and the causal effects among the variables have been investigated. The data was collected using a structured questionnaire. The survey population included all technology entrepreneurs in three states of India who were trying to select a suitable incubator for their business. Random sampling was used and Cochran's methods was used to calculate the sample size, based on which 150 questionnaires were distributed to the respondents. Out of these 150 distributed questionnaires, 128 were found to be suitable for analysis. The current paper examined the impact of five independent variables (participant screening, sector focus, location of program, networking opportunity and support services) on the dependent variable (technology entrepreneurs' choice of business incubator) with the questionnaire using a five point Likert scale. The data was analyzed using Structural Equation Modeling (SEM) which is a multivariate technique combining factor analysis and multiple regression and enables the testing of the causal relationship between latent variables at one attempt (Hair et al., 2010). Anderson and Gerbing (1988) pointed out that SEM applies both Confirmatory Factor Analysis (CFA) as well as hypothesis testing for the structural model between variables.

4. Results and Discussions

As the first step of SEM analysis, CFA is conducted to ensure that the research data are valid and reliable. According to Hair et al. (2010), a minimum value of (0.5) of standardized factor loading (λ) of each indicator and a minimum value of (0.4) of Average Variance Extracted (AVE) indicates good validity of data. Cronbach's Alpha (α) and Construct Reliability (CR) minimum score of (0.6) is an indicator that the data being used is reliable.

Average Variance Extracted (AVE) as well as Convergent Validity were applied to determine the validity of the questionnaire using Discriminant Validity method. Table 2 which is a snapshot of the CFA analysis shows that the variables are appropriate for discriminant validity. Root Mean-Variance extracted for each construct structures are more compared to its correlation with other structures as indicated by the results of Convergent Validity. Thus the questionnaire has required validity. The table also shows that the AVE value of each variable is greater than 0.4, which means all indicators are valid. Composite Reliability and Cronbach's Alpha reliability coefficient were used to assess the reliability of the variables. All variables are reliable as the values of Cronbach's Alpha (α) and Composite Reliability are more than 0.7 for each variable.

Construct	Composite Reliability	Cronbach's Alpha	AVE
Participant Screening	0.84	0.89	0.59
Sector Focus	0.90	0.91	0.52
Location of Program	0.94	0.85	0.66
Networking Opportunity	0.88	0.80	0.72
Support Services	0.87	0.88	0.53

Table 2: Questionnaire Validity and Reliability

The CFA analysis on the data also indicates favorable goodness of fit (GOF) ($\chi^2/df = 2.620$; RMSEA = 0.070; TLI = 0.878; and CFI = 0.840). According to Hair et al. (2010) a model with 3 to 4 GOF index is a good one.

The second step after checking the reliability and validity of the data, is to test the research hypotheses. The second step of SEM modelling is to test the hypotheses of the study by constructing structural model. The results of the structural model are illustrated in Figure 2.

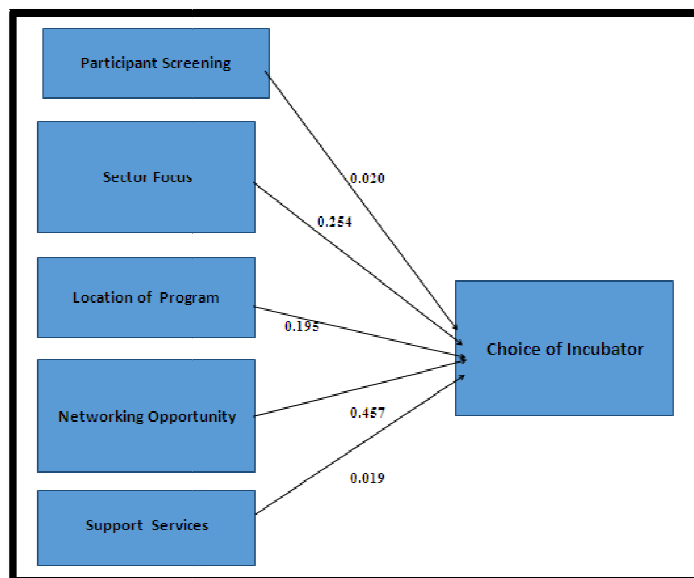


Figure 2: Structural Equation Modeling Results
Note: Standardized Path Coefficients Provided

The structural model's results from the Figure 2 and Table 3 shows that not all the independent variables can predict the Indian technology entrepreneurs' choice of business incubator. Networking opportunities for the entrepreneur with external organizations as well as other incubator participants was found to have the most significant impact on the entrepreneurs' choice of incubator, followed by sectoral focus of the incubator and the geographical location of the incubator program. On the other hand, participant screening criteria and procedures and supporting activities did not have a significant impact on the entrepreneurs' choice of incubators. Thus H1 and H5 are not supported while H2, H3 and H4 are supported by the results of the study. The results indicate the importance of providing opportunities for the entrepreneur to share his ideas and doubts with peers and mentors as well as sector focused incubator facilities. These results are not in line with studies on industrial incubators, where sector focus has not been found to have significant impact on choice of business incubator.

Structural Relationship between constructs	Standardized Estimates	Critical Ratio	P-Value	Remarks
PS → CI	0.020	0.529	0.597	H1 not supported
SF → CI	0.254	4.336	***	H2 supported
LP → CI	0.195	2.119	0.034	H3 supported
NO → CI	0.457	2.465	***	H4 supported
SS → CI	0.019	0.107	0.915	H5 not supported

Table 3: Hypotheses Testing Results on the Structural Model
Note: *** Significant Coefficient Is Recorded At P-Value < 0.001

5. Conclusions

This study was done to reveal the factors that are of key importance to technology entrepreneurs' in India in selecting a suitable business incubator to support their startups. The Indian technology sector has witnessed a boom in the past decade and this has led to a mushrooming of startups with innovative business models based on technology in the fields of mobile applications, gaming, technical support services, graphics design among others. Simultaneously, there has been a tremendous growth in technology based incubators in different parts of India to support, guide and mentor these startups in their vulnerable initial days. Using a descriptive correlational method, five factors were identified from the literature review and these were further analysed using data collected from one hundred and twenty-eight entrepreneurs spread across three Indian states. As illustrated from Table 2, networking opportunities, sector focus of the incubator and location of the program were the key influencing factors behind the choice of an incubator, while participant screening and support services were found not to influence this choice. Three out of the five hypotheses were supported.

This study is one of a very few studies done in this field especially in India. Thus, in a way, it attempts to bridge the knowledge gap by providing research-based evidence on the key factors affecting incubator choice among new generation technology entrepreneurs. It is seen that the entrepreneurs give primary importance to the opportunities for networking with peers, mentors and other innovators, followed by the sector based focus of the chosen incubator. The traditional factors like support services and mentoring are no longer the primary reasons for selecting a particular incubator, thus showing that these are probably taken for granted. These findings have implications for incubator managers, policy makers and other stake holders in ensuring successful implementation of incubator programs in the future.

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