Journal of Entrepreneurship & Organization Management

Ahmed et al., J Entrepren Organiz Manag 2020, 9:1

Research Article Open Access

Role of Business Incubators as a Service Provider in Entrepreneurship Development

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Abstract

Entrepreneurship is considered as a main pillar of economic structure and they have pivotal role in economic development, income generation, employment creation, poverty reduction and wealth creation. The history of business incubators (BI) dates back to the middle of the last century, when unemployment was high due to the great recession in the United States and the United Kingdom, leading to a major collapse of the industrial sectors. During this period, it was increasingly recognized that new strategies were needed to regenerate income levels in industries and increase entrepreneurial activity in economies. Therefore, this study aims to develop a conceptual model that examine the role of BIs in entrepreneurship development. Particularly, our focus is on the impact of services offered by BIs, namely networking services, capital support and training programs, on entrepreneurship development. Using 245 samples we used simple random sampling. Data were collected from business incubators, graduate and post graduate schools who received incubation training. Analysis was done using Partial least squares structural equation modelling. Empirical results reveal that networking services have a positive impact on entrepreneurship. Whereas, capital support has a positive impact on entrepreneurship development. Meanwhile, training programs has a positive impact on entrepreneurship development. Based on our quantitative findings, we conclude that our model is effective, in the sense that it can fully explain the role of the incubators in facilitating entrepreneurship. Hence, these services should be provided to a greater extent, and the level of other services should be improved to further help entrepreneurs in developed and developing countries to survive and develop entrepreneurship. The results of this study help policy makers to formulate policies to play the role of incubators and be more effective in promoting entrepreneurship and ultimately accumulating wealth in Pakistan.

Keywords: Entrepreneruship development; Business incubators; Networking services; Capital support; Training programs

Introduction

Business incubators are getting positive words and feelings since last decades [1-3]. Incubators usually look for to offer a cherishing venue, [4,5] and a sheltered environment [6] by keenly confirming that newly established catch means, facilities, and help [7]. The facilities also contain associating the firms to the tactical cohorts, succor with the business essentials, and marketplace investigation, entrance to pledge program, advanced credits, and bank credits as well as providing the interacting activities [8]. Incubation axes, accelerators, and business entities sustenance advisors may perform vital roles in searching new entrepreneurial openings and are measured as tactical players for early empire-building doings [1,9]. They can smooth preliminary product advancement [4,10], stimulate blossoming entrepreneurship in specific business sectors, regions and zones [11,12], sustenance enlargement of unsettling, or provide the assistance in promotion of goods and services [13].

Researchers have proposed various theories of entrepreneurship. For example, Schumpeter, in 1949, argued that the role of entrepreneurs was to initiate and help sustain the process of development through economic circulation [14]. On the other hand, the economic theory of entrepreneurship says that entrepreneurship is successful only when the economic environment is favorable, while some studies have presented a theory of entrepreneurship that exposure to new opportunities and ideas leads to entrepreneurship in the economy [15].

Aerts et al. [16] concluded that choice of lodgers depends on stable airing extents from amongst financial, team and market dynamics which primes to the higher success rate the influence of small and medium enterprises in developing countries has headed to improved sustenance for the establishment of the firm. For example, in Pakistan SME contribute 30% in the gross domestic product and provide 78% of jobs to the labor force in the agriculture sector. All over the world countries are serious about investing as well as supporting the establishment of BIs [17]. Yin et al. [18], avers that the main emphasis of BIs is to upturn the chance of endurance of incubated business entities during the initial years. Similarly, in Pakistan, although business incubators are an essential tool for the government of Pakistan to promote sustainable entrepreneurship growth. Therefore, the focus of this article is to study whether business incubation can provide essential network services, capital support and training programs for entrepreneurship development.

Following this brief introduction, Section 2 shows a review of the literature. Section 3 explains the research methodology and data collection tools. Section 4 discusses data analysis and results. Section 5 presents the discussion. Lastly, sections 6 and 7 exhibit the conclusions, limitations, and research direction.

In general, we believe that our contribution provides a subtle impression of business development through the services provided

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Recieved December 30, 2019; **Accepted** February 28, 2020; **Published** March 06, 2020

Citation: Ahmed N, Li C, Qalati SA, Khan A, Siddiqui F (2020) Role of Business Incubators as a Service Provider in Entrepreneurship Development. J Entrepren Organiz Manag 9: 279.

by the business incubator. Although few studies are investigating the network resources of incubated entrepreneurs, as far as we know, this is the first study to compare the key services provided by the incubator. Therefore, we argue that our research fills an essential gap in the research literature of incubating startups. It can be expected that by testing the conceptual model, it will further strengthen the cooperation between education providers and business incubators in fostering entrepreneurial learning. In addition, the conceptual model proposed in this article can improve the understanding of the importance of the relationship between the mentor and the incubate, and the facilitators that influence the learner can play a role in both the education and incubation environment.

Literature Review and Hypothesis Development

After the relevant literature reviewed, this study proposes a conceptual model to go further. The model shows the different relationships between current research variables Figure 1.

Business incubators

Incubation or nurture is normally assumed as a collaborative process whose aim is to motivate people to jolt their venture, and to offer seed capital in the enlargement of new goods and services [19]. There are various definitions related to the term Business Incubator; it's the broader term that can be used to define an extensive array of firms that assist an entrepreneur in building their innovative ideas from notion to throwing off a new venture [20]. An environment in which firms get the support of facilities and assistance related to opportunities and threats in the early stage of the venture falls in a range of business incubators [21]. BIs are firms that expedite the empire-building procedure by offering the well-established infrastructure, networking services, promotions, and support facilities to early-stage ventures [22-24]. Business incubators offer the basic resource so that organization transforms the technology-based innovative idea into execution Phan [25]. BIs model contains diverse phases [24]. Business incubators take decision-related to the selection of appropriate start-ups to consent for incubation from a more significant number of tenants [26]. According to OECD and Commission [27], business incubators centers also facilitate those having new idea *via* offering seed up capital, advice, consultancy services as well as make the policies for them. Jenyo [28] conclude that the incubation development theory suggests the posing of collective services such as workplaces, capital, networking services, and promotion to important firms. The acts as intercessor among incubates and the outside environment which includes external networking services and other entities [29].

Entrepreneurship development

The role of entrepreneurship in nurturing growth in the economy has produced a robust stimulation in developing countries and the officials responsible for making policies [30]. Even between researchers, entrepreneurship is seen as crucial to economic progress worldwide [31]. However, a researcher like Sautet [32], claimed that the optimistic relationship of entrepreneurship is just witnessed in developed countries, while this influence was absent in the developing countries. In against Hamdan [33], conclude that this was just because of differences in entrepreneurship types. While he believes that requisite entrepreneurship does not affect economic growth and development, however, opportunity entrepreneurship has a crucial positive relationship. In addition, Hamdan [33], concludes that opportunity entrepreneurship stimulates economic growth and development, generates jobs and aids in scarcity easing. Sanyal and Hisam [34], investigated the positive and significant relationship between sustainable entrepreneurship and economic growth.

Networking services

Entree to the industry as well as specific sector linkages, is vital for the new ventures. Business networking services involve a combination of connections made *via* collaboration with numerous mediators or firms that offer venture with significant means [35]. According to Njau et al. [36], findings there was the positive influence of networking services over venture creation. Alpenidze et al. [37], specified that along with the availability of funds, internal capabilities of the firms and robust networking services, have a dynamic, positive relationship with entrepreneurship development. Pettersen et al. [35], concluded that BIs offer essential networking services means and to a reduced degree to deliver non-generic networking services. The network services provided by incubators include: assisting the business with essential knowledge, connect with venture capitalists, business angels, mentors and strategic partners, help raise bank financing, grants, seeds and venture [36].

Hypothesis-1: BIs provide networking services have a positive impact on entrepreneurship development.

Capital support

Dee et al. [38] concluded that the startup companies spend an average of two years in a business incubator during which numerous benefits like funding, office space, equipment, etc. are provided by the incubators to the startup business. The survival and growth of new ventures needed support from the business incubators. According

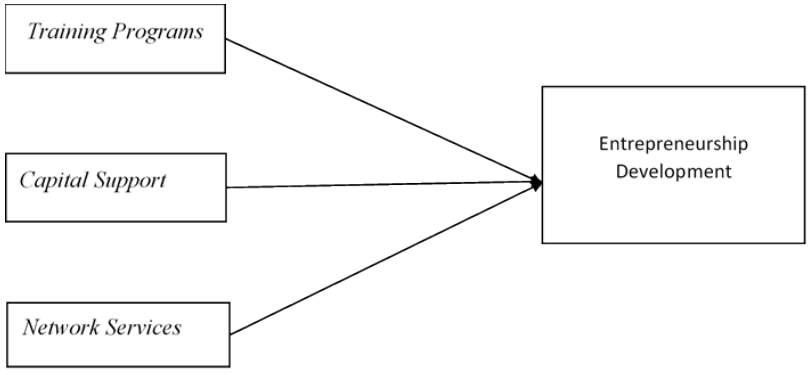

Figure 1: Conceptual model.

to Njau et al. [36], the survival and growth of new ventures needed support from the business incubators. The support can be in the form of providing funds, networking, training, buildings, office spaces, technical support, etc.

Hypothesis-2: BIs provide capital support has a positive impact on entrepreneurship development.

Training program

Kuryan et al. [39], also stimulate the formation of innovative organizational culture. They added that business support services are usually associated with coaching and training. Training programs mean that an incubated company is assigned a coach or a mentor who can typically provide professional advice on a wide range of issues related to business development [40,41] conclude that the training programs and networking services are essential elements behind the success of European technology business incubators, while capital support and managerial activities are behind the United States BIs.

Hypothesis-3: BIs provide training programs have a positive impact on entrepreneurship development.

Research Methodology

Previous scholars, focused widely on the exploratory research, they have used qualitative techniques. Few of them used the quantitate technique. This study focused entirely on the quantitative technique of the research. This study used simple random sampling to reach the maximum respondents. In order to collect more comprehensive information, a closed-ended questionnaire was used and applied in this study as a data collection tool. The respondents of the study included both incubates and entrepreneurs engaged in receiving training services. Data were collected from the business incubators, graduate and post-graduate schools from four big cities of Pakistan namely: Islamabad, Lahore, Karachi and Peshawar. The present study employed a field survey method. A total of 260 questionnaires were distributed whereas, 245 were returned with proper responses. However, remaining 15 questionnaires were not included in this study due to incomplete information received from the respondents. The measurement and structure model are analyzed by using the structural equation Model (SEM) method on partial least squares (PLS). The reliability analysis was done on all variables (entrepreneurship development, networking services, capital support and training programs) to assess the degree of internal consistency between multiple variables, which is interpreted as Cronbach's alpha.

Measurement scales

The measurement scale for networking services we adopt five items scles to measure the variable was adopted from the previous studies [36]. Whereas, the scale for capital support five items scle borrowed from the study of [42]. Whereas five items scale for training programs was adopted from the study of Lukes et al. [24,43]. These items scale employed for assessing the networking services, capital support and training programs provided by business incubators to incubates. To measure each part of the variables, we used a five-point Likert scale ranging from "strongly disagree" to "strongly agree".

Results

The most widely accepted and newest techniques nowadays is partial least square structural equation modelling and the techniques used in it [44,45]. This study results based on PLS-SEM 3.2.7. The likings of using this software embroil the comprehensive attractiveness, and suitability of its application [45,46]. Furthermore, involves comprehensive information about variables [47]. Also, PLS method is considered a well recognized method [48]. Therefore, for analysis of the results partial least square structural equation modeling (PLS-SEM) was employed. Several tests particularly related to reliability, validity and path coefficients, as well as to ensure the data free from multicollinearity and other data related bias were measured [49]. This analysis section used a two-way approach to assess the results. (1) Assessment of measurement model and (2) Structural model, [49,50].

Table 1 contains demographical information about the respondents. As mentioned earlier the questionnaire has been shared *via* social media as well as a field survey. The information has been received from Islamabad, Lahore, Karachi, and Peshawar. Results showed that out of 245 respondents, 212 (90%) were male and rest of 33 (10%) were females. In addition, 51% of respondents having age in the range of 31-40, it shows the young population of Pakistan. Furthermore, 71% of respondents fell in the middle management of the business entities. 58% of populations hold a master's degree. And 51% have 6–10 years of job experience.

Measurement of model

As per Henseler et al. [50] suggestions in order to measure the model of study, scholars are required to assess the "individual item reliability, internal consistency, content validity, convergent validity, and discriminant validity."

Individual item reliability

Measured by taking into account the outer loadings of items related to particular constructs [46,51] recommended that it should be retained between 0.40 and 0.70. While Chin [52] proposed that it should exceed 0.5. Hence as demonstrated in Table 1 all the values of items of six constructs adequately satisfied and meet the standard, items values noted in the range of 0.694 and 0.945. As per the rule of thumb set by Nunnally [53], the value of Cronbach's Alpha should be greater than 0.7. As displayed in Table 1, the values of CA fall in the range of 0.764 to 0.871. Therefore, it is concluded that the present study adequately meets the standard of reliability of the measures.

Internal consistency reliability

Bagozzi and Yi [54] rule of thumb stated that the value of composite reliability should be equivalent to or greater than 0.7. However, Table 1

Variables: Total					N=245				
Controls	Gender		Age				Managerial Level		
	Male	Female	21-30	31-40	41-50	51-60	Top	Middle	Lower
Variance	212 (90%)	33 (10%)	34 (14%)	110 (45%)	52 (21%)	49 (20%)	49 (20%)	174 (71%)	22 (9%)
Controls	Education				Experience (No of years)				
	Bachelors		Masters	PhD	1-5	6-10	11-15	16-20	
Variance	78 (32%)		142 (58%)	25 (10%)	44 (18%)	125 (51%)	32 (13%)	44 (18%)	

Table 1: Demographical information.

reflects the coefficient value of CR of the constructs, as displayed in the mentioned table values' falls in the range of 0.850 to 0.941, suggesting the adequate reliability of the measures.

Convergent validity

As per Chin [52], Fornell and Larcker [55] rule of thumb the value of AVE, should be equivalent to 0.5 or above. The value of AVE of the present study as reflected in Table 2 falls in the range of 0.586 to 0.841henceforth, it is concluded that this study demonstrated the satisfactory level of convergent validity.

Discriminant validity

Two methods were used to evaluate the "discriminant validity" of the variables.

1) It was ensured that the cross-loadings of indicators should be higher than any other opposing constructs [51].

2) According to the Fornell and Larcker [55] criterion, the square root of AVE for each construct should exceed the inter-correlations of the construct with other model constructs". Hence, as reflected in Table 3 both approaches ensured the satisfaction of the results and validity. Therefore, it could be concluded that all the constructs utilized in the current study have sufficient level of discriminant validity.

Constructs	Loadings	Items	CA	CR	AVE
Capital	CS1	0.736	0.847	0.891	0.622
Support (CS)	CS2	0.713			
	CS3	0.841			
	CS4	0.836			
	CS5	0.81			
Entrepreneurship	ED1	0.747	0.842	0.889	0.617
Development (ED)	ED2	0.902			
	ED3	0.747			
	ED4	0.802			
	ED5	0.715			
Network	NS1	0.659	0.768	0.844	0.52
Services (NS)	NS2	0.714			
	NS3	0.818			
	NS4	0.733			
	NS5	0.671			
Training Programs (TP)	TP1	0.688	0.871	0.907	0.663
	TP2	0.862			
	TP3	0.846			
	TP4	0.86			
	TP5	0.802			

Table 2: Measurement of Model.

	1	2	3	4
Capital Support	**0.789**			
Entrepreneurship Development	0.426	**0.785**		
Network Services	0.595	0.579	**0.721**	
Training Programs	0.197	0.415	0.299	**0.815**

Table 3: Latent variable correlation and square root of average variance extracted.

An assessment of the structural model

This article utilized PLS bootstrapping with 600 bootstraps and 567 cases with the motive to enlighten the path coefficients and their significance [56]. Table 4 and Figure 2 demonstrate the comprehensive depiction of evaluations of the structural model alongside with statistics related to moderation of environmental awareness. In order to evaluate the variance of the measures, PLS-SEM suggests evaluating the R^2 coefficient which also called the coefficient of determination [56]. According to Cohen [57], the value of R^2 0.60, 0.33 and 0.19 respectively set as rule of thumb and these values described as substantial, moderate and weak. In contrast, the value of 0.75, 0.5, and 0.25 respectively set as a rule of thumb [50,49], proposed that R^2 coefficient is subject to the situation where a specific study is conducted. Yet, as per Falk and Miller [58], recommendation R^2 coefficients of 0.10 is also acceptable. Meanwhile, as reflected in Table 5 the present study R^2 noted was 0.405. This proposes that network services, capital support and training programs defines 40.5 percent of the variance in the entrepreneurship development. According to Chin [52], suggestion the obtained value of R^2 is moderate.

Predictive relevance of the model

Keeping in view the reflective nature of measures, this study employed cross-validated redundancy measure Q^2, for evaluating the model as per suggestions of Ringle et al. [59]. It is an indicator of the model's out-of-sample predictive power or predictive relevance should be Q^2 value [60,61]. In the structural equation model, Q^2 values larger than zero for a specific reflective endogenous latent variable indicate the path model's predictive relevance for a particular dependent construct. Hence, as reflected in Table 6 the results of the study show that model has predictive relevance.

Figure 2 exhibited underneath to show the beta coefficient along with the p-value. As per findings, all paths were founded significant with t-value>2 and p-value <0.0. Moreover, the path having a maximum coefficient value (0.43) was founded between networking services and entrepreneurship development. While the smallest value (0.118) was found between Capital Support and entrepreneurship development. Furthermore, all the items of the construct contain the coefficient with a t-value. All the items were founded significant with t-value>2.

Discussion

The study aimed to examine the role of business incubators in providing grater services to support entrepreneurship development. For that purpose, we proposed a conceptual model that includes networking services, capital support, training programs and entrepreneurship development. The customized incubators are also offering customized services to the tenants. Hence, a conceptual model is developed and analysis was done on the sample of 245. Data were collected from business incubators, students from well-reputed undergraduate and

Hypotheses	Relationships	Beta	Mean	SD	t-value	p-value	Decision
H1	Network Services -> Entrepreneurship Development	0.43	0.432	0.053	8.154	0	Supported
H2	Capital Support -> Entrepreneurship Development	0.118	0.116	0.051	2.334	0.02	Supported
H3	Training Programs -> Entrepreneurship Development	0.263	0.267	0.043	6.14	0	Supported

Table 4: Path coefficients and hypotheses testing.

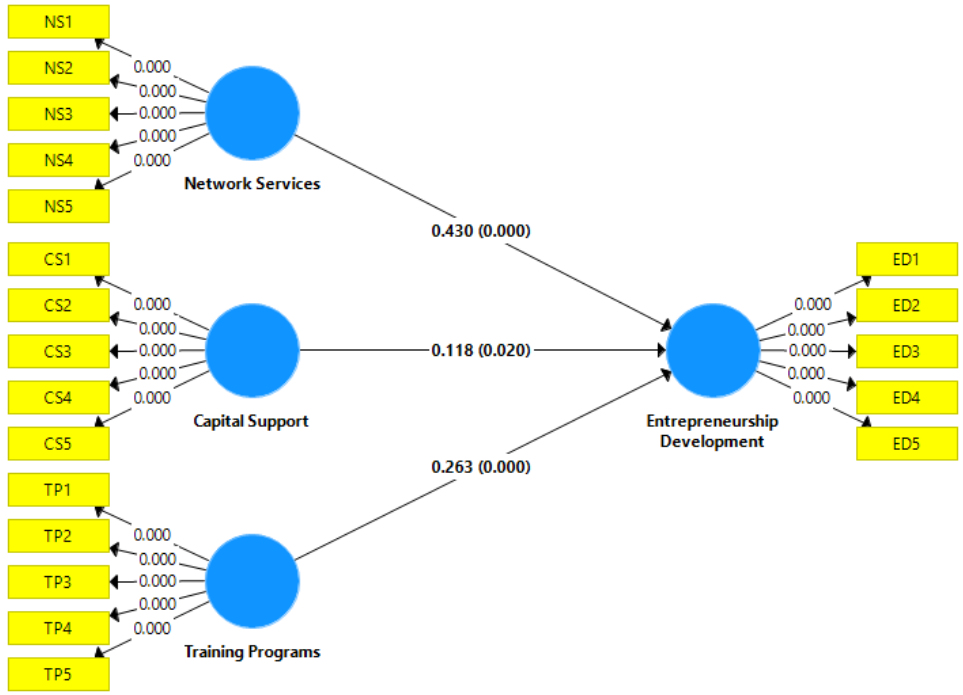

Figure 2: Structural Equation Modeling (Path coefficient and p-value).

	SSO	SSE	Q² (=1-SSE/SSO)
Entrepreneurship Development	2,835.00	2,151.93	0.241

Table 5: Cross validated redundancy.

Estimated Model	R Square	R Square Adjusted
Entrepreneurship Development	0.408	0.405

Table 6: Strength of model.

graduate schools. The study was conducted on entrepreneurs who received incubation services from business incubators. The reliability and validity of scales are measured by Cronbach alpha and the results show that the measurement model is satisfactory and acceptable. However, this study used structural equation model and Partial least squares statistical techniques to examine the relationship between variables, as this technique is particularly suitable for testing multi-level theoretical frameworks and makes it possible to evaluate several relationships between variables and potential variables that can be observed at the same time [62,63]. Hence, in the current study, three hypotheses were constructed. However, our results indicate that networking services have a positive impact on entrepreneurship development. The results found in the study include positive beta coefficient 0.43, mean 0.42, standard deviation 0.053, t-value 8.154>2, and p-value 0.000<0.05. According to Alpenidze and Pauceanu [37], networking services required to promote the business entities, their businesses at a larger platform to assist in newly established ventures by offering greater exposure related to the numerous situations. He further concluded that formal networking services with business and industry associations could provide various benefits such as management, financial and technical services, and legal advice in order to greatly improve company performance. These results are persistent with the previous study [64]. Results also show that capital support has a positive impact on entrepreneurship development with beta coefficient 0.118, mean 0.116, standard deviation 0.051, t-value 2.334>2, and p-value 0.02< 0.05. In fact, recent incubators, especially private incubators, focus on providing direct access to capital and more intangible and high-value services in order to promote entrepreneurship. As a result, the incubator has adapted the model to the company's requirements and now offers more opportunities for direct funding to promote entrepreneurship [65]. Empirical results specify that training programs has a positive impact on entrepreneurship development with beta coefficient 0.263, mean 0.267, standard deviation 0.043, t-value 6.14> 2, and p-value 0.000 <0.05. Researchers have also found that providing training and coaching services is an important service provided by business incubators. Training programs are considered essential for continuous learning and skill development and ultimately achieve outstanding performance [27,66]. Whereas, Lukes et al. [67] concluded that training programs are a mechanism for transferring skills/capabilities to trainees. He further added that during the incubation process, special tenants will be transferred to specific tenants in important areas of practice, such as financial management, financial records and reporting, building quality management systems, leadership, etc. The present study has proved that business incubators play an important role in providing networking services, capital support and training programs to support entrepreneurship development. The study will also provide key support for individuals and entrepreneurs through a supportive environment, provide advanced entrepreneurial opportunities, help them develop new businesses.

Conclusion

Business incubators play a more critical role in successful

entrepreneurship around the world. The research literature also reveals and highlights the vital role of business incubators. Even though various qualitative studies have been conducted related to the role of business incubations and the services offered. This study aims to examine the role of business incubators in providing services in order to support entrepreneurship development. It focused on the greater importance of networking services, capital support and training programs in fostering entrepreneurship. However, a positive relationship is found among variables and hypotheses were supported. The strong relationship was found among networking services, capital support, training programs and entrepreneurship development. Thus, the hypotheses constructed were supported. The customized incubators are also offering customized services to the tenants. Previous studies and literature exhibited that most of the incubators operating are technology-based. It is widely accepted that no country has unlimited resources and capabilities to sustain the economy. Likewise, incubators also needed support to offers the services to incubate. In this regard, this study proved the useful role of incubators in providing network services, financial support, and training programs to businesses. Therefore, these services should be provided to a greater extent, and the level of other services should be improved to further help entrepreneurs in developed and developing countries to survive and develop entrepreneurship.

Implications

This research provides some contributions to the literature in the areas of the important role of services provided by business incubators and entrepreneurship development. it improves understanding of the role or importance of the services provided by business incubators for entrepreneurial development. The present study provides a starting point for scholars and experts to further study entrepreneurial policies and practices. For researchers, this study clarifies the defining attributes of the services provided by BIs, entrepreneurship and economic development dimensions and their proposed relationships. For experts, the findings of this study can be used to understand the key role of business incubators in entrepreneurship and economic development. The results of the study, if applied in practice, will go a long way towards promoting entrepreneurship development and ultimately promoting economic growth in developed and under-developing countries.

Limitation and Recommendation

The study was conducted in the context of Pakistan. It was limited to only a few major cities as mentioned in the methodology. It can be used in other developing countries. However, business incubators can be used with other variables to perform the role of mediator. Moreover, the social capital, value creation, funding, consultancy services as well as training and development can be used with business incubators. Hence, the government must put emphasis on funding, decrease the tax on import of technology, improve infrastructure, as well as launch the training program in collaboration with the business incubators. In order to improve the economic conditions and to sustain entrepreneurship growth, the government should allocate the larger budget for the organizations and incubators. By taking into account, the performance of SMEs 78% of employment in the agriculture sector was supported by small-medium enterprise and development authority. The government should offer ease steps and decrease the requirement of the establishment of the venture.

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