INDUCTION OF BUSINESS INCUBATION CENTERS IN EDUCATIONAL INSTITUTIONS: AN EFFECTIVE APPROACH TO FOSTER ENTREPRENEURSHIP

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ABSTRACT

Present study aimed to investigate the contribution of business incubation centers in fostering entrepreneurship along with entrepreneurship education. A mediated model is proposed to clarify our understanding about the phenomenon. The study used survey technique to approach the objectives of the research. Questionnaire survey was conducted in public sector universities of Pakistan in the year 2017. Structural Equation Modeling technique is applied to test the causal effect of entrepreneurship education and business incubation on entrepreneurial intention of the respondents. The results proclaim that both the entrepreneurship education and business incubation have direct positive impact on entrepreneurial intention of the students. The results also evidenced that entrepreneurial self-efficacy mediates the relationship of entrepreneurship education, business incubation and entrepreneurial intention.

Keywords: Business Incubation Centers, Educational Institutions, Entrepreneurial Self-Efficacy, Entrepreneurial Intention.

INTRODUCTION

Entrepreneurship is an emerging research field and within a few decades it has appealed a large number of scholars around the world (Déry and Toulouse, 1996; Busenitz et al., 2003; Schildt and Sillanpää, 2004; Bruton et al., 2008; Welter and Lasch, 2008; Hindle and Moroz, 2010; Audretsch et al., 2016). The entrepreneurs are considered the main pillar of economic structure and they have decisive role in economic growth, revenue generation, job creation, poverty alleviation and wealth creation (Romer, 1994). With their distinct attributes they have a potential to transform innovation into a new, efficient and valuable product and service, and contribute to the economic development of the country (Schumpeter, 1934). A widespread research work advocates the significance of entrepreneurship education for the evolution of entrepreneurship, but a limited research work shed light on the contribution of business incubation centers in fostering entrepreneurship. It is acknowledged by the practitioners that only the entrepreneurship education is not sufficient to nurture the entrepreneurial skill and capabilities of the students, but the business incubators have their distinct role to expose and glint the hidden capacities of the potential entrepreneurs.

LITERATURE REVIEW

Theory of Planned Behavior (TPB) and Entrepreneurial Intentions

Large number of research studies (Franke and Lüthje, 2004; Sesen, 2013; Nasiru et al., 2015; Yıldırım et al., 2016; Aliman and Jalal, 2013; Ciappei et al., 2016; Astuti and Martdianty, 2012; Huffman and Quigley, 2002; Liñán et al., 2011) focused on the contribution of entrepreneurship education in promotion of entrepreneurial intention among the university students. As per Ajzen (1991), Theory of Planned Behavior (TPB) is a standardized theoretical model to describe entrepreneurial intentions and ultimately their entrepreneurial behavior. Entrepreneurial intention is the result of an individual entrepreneurial self-efficacy toward entrepreneurial behavior (Krueger Jr et al., 2000; Schlaegel and Koenig, 2014).

Business Incubation Centers and Entrepreneurial Intentions

According to (Nelson and Monsen, 2014), only the classroom teaching is not enough for technology commercialization and successful university entrepreneurship, but a close linkages between business, science & technology and the other parties is necessary to understand the whole university entrepreneurial ecosystem. As per (Mian, 1994; Grimaldi and Grandi, 2005) the business incubators provide a real platform to the young entrepreneurs from where they start their journey toward new venture creation and further it contribute to their firm's survival and growth. Along with the entrepreneurship education, business incubation centers play a decisive role in developing entrepreneurial culture and promoting entrepreneurship in a country (Mian, 1997; Grimaldi and Grandi, 2005; Aerts et al., 2007; Pauwels et al., 2016).

Entrepreneurial Self-Efficacy (ESE) and Entrepreneurial Intentions

Entrepreneurial intention refers to create and manage one's own business and it comprise a complex process that subject to the influence of multiple factors (Chen et al., 1998). The most influential component of this intentional model is ESE that is a personal belief of an individual that he or she is capable to successfully perform all the entrepreneurial roles and tasks, and to build a successful enterprise (Boyd and Vozikis, 1994; Krueger Jr and Brazeal, 1994; Zhao et al., 2005; Wilson et al., 2007; Souitaris et al., 2007; Fitzsimmons and Douglas, 2011; Schlaegel and Koenig, 2014). In line with the previous research findings, (Drnovšek et al., 2010; Bae et al., 2014; Mauer et al., 2017) also suggest ESE as an important explanatory variable that not only strength the entrepreneurial intentions but also increase the likelihood that those intentions will result in entrepreneurial actions.

According to social cognitive theory of (Bandura, 1986), self-efficacy guides behavior, outlines the courses of action, and develops persistence in the face of obstacles. Further, Bae et al. (2014) and Jansen et al. (2015) suggest that entrepreneurship education and business incubation strength the entrepreneurial self-efficacy that guide the entrepreneurial behaviors and result in entrepreneurial actions among university students. The students who perceive high entrepreneurial self-efficacy are often found to have an intent to start and manage their own business instead of to be an employee in long run. This notion is supported by a large numbers of existing studies (Arenius and Minniti, 2005; Barnir et al., 2011; Zhao et al., 2005; Shinnar et al., 2014; Barbosa et al., 2007; Martin et al., 2013; Bae et al., 2014; Fayolle and Gailly, 2015; Bullough et al., 2014; Mauer et al., 2017).

THEORETICAL FRAMEWORK AND THE HYPOTHESES

After an in-depth study of relevant literature, the study proposes the following theoretical framework to proceed further. The model shows the different relationships between the variables of the present research work (Figure 1).

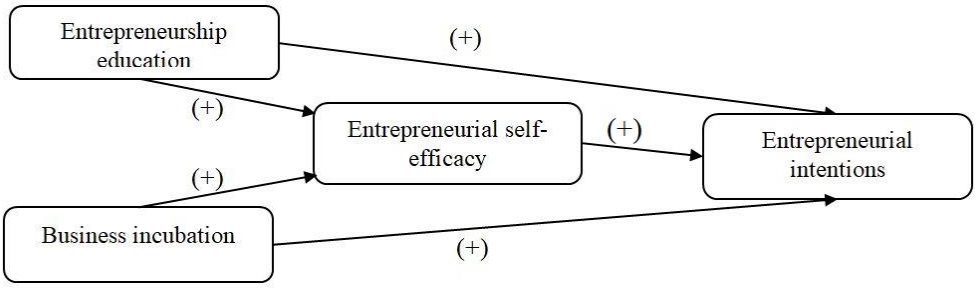

FIGURE 1
THEORETICAL FRAMEWORK FOR ENTREPRENEURSHIP EDUCATION, BUSINESS INCUBATION, ENTREPRENEURIAL SELF-EFFICACY AND ENTREPRENEURIAL INTENTIONS

Hypotheses Development

Most of the empirical studies proclaims that entrepreneurship education have a positive impact on students' entrepreneurial intention. For example, (Wu and Wu, 2008) confirm that student who follow entrepreneurship education indeed show a greater intention to start-up. Further, with the help of empirical data collected from 494 Chinese university's students (Zhang et al., 2014) proclaimed that entrepreneurship education does have a significant positive impact on entrepreneurial intention. In other words, taking entrepreneurship education can stimulate entrepreneurial intention and improve the probability of this intention-making (Yun, 2010; Chen and He, 2010). We therefore form the following hypothesis on the impact of entrepreneurship education on EI.

H_1: Entrepreneurship education has positive impact on entrepreneurial intention.

The business incubators create a supportive environment for potential entrepreneurs that is conducive to the *"hatching"* of new firms (Bergek and Norrman, 2008; Martínez et al., 2017). Most of the recent studies (Jansen et al., 2015; Guerrero et al., 2017; Stephens and Onofrei, 2012; Buckley and Davis, 2016) suggest that training and the entrepreneurial experience significantly affect the beliefs and attitudes of individuals towards entrepreneurship. So, the incubating services have a positive impact on the perceptions and intentions of the incubated individuals because of the learning effect and entrepreneurial experiences (Martínez et al., 2017).

H_2: Business incubation has positive impact on entrepreneurial intention.

In relation to the antecedents of perceived feasibility in entrepreneurship, the business incubators and entrepreneurship education increase the self-efficacy of the entrepreneur during the process new venture creation (Martínez et al., 2017). Stephens and Onofrei, (2012) suggest that business incubation along with entrepreneurship education increase the entrepreneur's professionalism, improve business management skills and ultimately increase one's

entrepreneurial self-efficacy. (Bacq et al., 2017) proclaimed that higher entrepreneurial self-efficacy tend to have higher entrepreneurial intentions. Most of the studies have examined how individual perceptions of capabilities influence the decision to become an entrepreneur. For example, (Zhao et al., 2005) provided convincing evidence that individuals choose to become entrepreneurs largely because they have high entrepreneurial self-efficacy–their own belief that they are competent and can succeed in this role. His study on university's students also acknowledged that the effects of perceived learning from entrepreneurship-related courses and previous entrepreneurial experience on entrepreneurial intentions were fully mediated by their entrepreneurial self-efficacy. So, on the basis of above rationales we proposed that:

H_3: Entrepreneurial self-efficacy mediated the positive association between entrepreneurship education and entrepreneurial intention.

H_4: Entrepreneurial self-efficacy mediated the positive association between business incubation and entrepreneurial intention.

METHODOLOGY

Sampling and Data Collection

Present study used stratified sampling technique to select a sample frame from 10 public sector universities of Pakistan. The sample drew from departments of business administration and management sciences. Data was collected from business graduates, who have studied entrepreneurship training and development programs, and currently were involved in entrepreneurial activities through business incubation centers. The study used survey technique to collect data from the respondents and the survey questionnaires were distributed with the help of professors among 500 students. A total 480 properly filled questioners returned and used to test relationships between variables of the study.

Measurement Scales

To measure the variables of this study, we adopt existing and widely used measurement scales.

Entrepreneurship education: To measure entrepreneurship education we adopt eight items Entrepreneurship Training Program (ETP) scale, that was developed and used by (Adekiya and Ibrahim, 2016) in their field survey.

Business incubation: After in-depth study of literature and with the consultation of large number of academic experts, researchers and practitioners, a six item measurement scale finalized to assess the effectiveness of business incubation centers to promote entrepreneurship. Overall fit statistics indicate an adequate fit for this measurement scale (Table 1 and Figure 2). The scale consists of these items:

1. Business incubators groom the entrepreneurial skills and capabilities of young entrepreneurs.
2. To work at a common place with similar professionals help us to solve the common problems, and to share each other's networks and resources.
3. Business incubators provide a wonderful professional environment that boosts the motivation and productivity of young entrepreneurs.

4. The mentoring and coaching sessions help the incubatees to get quickly, and follow the right track to start a new business.
5. Networking service give opportunities to young entrepreneurs to meet with the different parties that involved in entrepreneurship ecosystem.
6. Overall, the business incubator is a good platform to start new business by young entrepreneurs and to promote entrepreneurship.

Entrepreneurial self-efficacy: To measure students' entrepreneurial self-efficacy, we adopted the five dimensional ESE measurement scale developed by (Chen et al., 1998).

Entrepreneurial intention: Entrepreneurial intentions of the students was assessed through EI scale developed by (Miranda et al., 2017) and this scale is based on the proposals of (Autio et al., 2001; Liñán and Chen, 2009; Obschonka et al., 2015). The students were asked to respond on 5 point likert scale ranging from 1 (Strongly disagree) to 5 (strongly agree).

Table 1
FACTOR LOADING AND ALPHA COEFFICIENT FOR BUSINESS INCUBATION SCALE

Items	Factor loading	Cronbach Alpha	P vale
BI 1	0.609	0.802	****
BI 2	0.845		
BI 3	0.856		
BI 4	0.631		
BI 5	0.506		
BI 6	0.604		

Note: ***shows the probability value at 1% level of significance.

Table 1 represent factor loading for all the construct items of Business Incubation construct. All the factor loading values (represent the explained variance into overall business incubation construct due to change in each item) are above the minimum threshold value of 0.500 and Cronbach alpha is 0.802 for the overall business incubation construct. All the values are significant at 99% level of significance that proclaimed that all the items significantly contribute to the suggested measurement construct of business incubation.

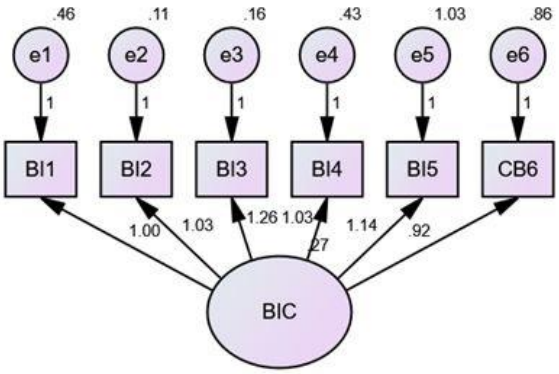

FIGURE 2
CFA MODEL FOR MEASUREMENT CONSTRUCT OF BUSINESS INCUBATION
Note: $\chi 2/df=2.61$; RMSER=0.051; GFI=0.987; NFI=0.985; CFI=0.990; RFI=0.706; $p<0.01$.

RESULTS

Multiples statistical tools applied to test the reliability and validity of the measurement construct and to test the causal effects of independent variables on dependent variable. The study used Structural Equation Modeling (SEM) technique, as this technique is particularly suitable to test a multilevel theoretical framework because using this technique we can evaluate simultaneously the relationships between a number of observed and latent variables (Bagozzi and Yi, 2012). According to Anderson and Gerbing (1988) we used a two-step SEM approach. In first step, we conduct Confirmatory Factor Analysis (CFA) to assess the validity of overall model and the discriminant validity of the individual constructs. In second step, a structural model is developed to estimate the path coefficients for hypothetical relationships between the different variables.

Measurement Model Validity

Before going to test the causal effects of independent variables on dependent variable, we estimate the reliability and validity of all construct measures. For this purpose, Conformity Factor Analyses (CFA) carried out using the software solution AMOS 21. Results of CFA for entrepreneurship education measurement construct indicated good fit, Goodness-of-fit indexes: $\chi 2/df=3.98$; Goodness Of Fit Index (GFI)=0.987; Comparative Fit Index (CFI)=0.983; Normed Fit Index (NFI)=0.978; Root Mean Square of Approximation (RMSEA)=0.078; $P<0.05$. Results of CFA for business incubation measurement construct also indicated good fit, Goodness-of-fit indexes: $\chi 2/df=2.61$; GFI=0.987; CFI=0.990; NFI=0.985; RMSEA=0.051; $P<0.05$. Results of CFA for entrepreneurial self-efficacy construct also showed good fit, Goodness-of-fit indexes: $\chi 2/df=3.51$; GFI=0.994; CFI=0.995; NFI=0.993; RMSEA=0.072; $P<0.05$. The results of dependent variable construct entrepreneurial intention also specify a good fit, Goodness-of-fit indexes: $\chi 2/df=2.24$; GFI=0.990; CFI=0.993; NFI=0.988; RMSEA=0.051; $P<0.05$. Further, the item's factor loading of each constructs exceeded the threshold value of 0.50 and Cronbach alpha coefficient for all the construct is greater than 0.70 and statistically significant at 5% level.

Test of Hypotheses: SEM Analyses and their Results

Since the CFA results show a good fit for measurement constructs, we proceed to evaluate the structural model with the help of AMOS 21. The main results of path analyses are presented in Figures 3 and 4, where we display the direct and mediated association among different variables of the study. Tables 2 and 3 depicted the path analyses results and depicted the path coefficient for direct and mediated effect of independent variables on dependent variable of the study that provided empirical support to hypothetical relationships of our study.

Figure 3 represents Path diagram for direct effect.

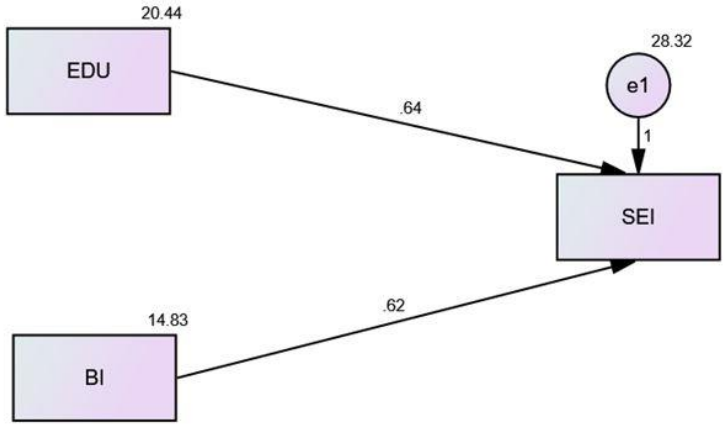

FIGURE 3
DIRECT EFFECT OF ENTREPRENEURSHIP EDUCATION AND BUSINESS INCUBATION ON ENTREPRENEURIAL INTENTION
Note: RMSER=0.045; GFI=0.877; NFI=0.731; CFI=0.745; p<0.01.

Figure 4 represents path diagram for mediation effect.

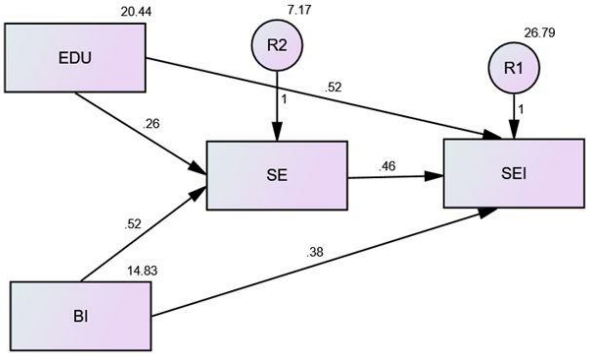

FIGURE 4
MEDIATING EFFECT OF ENTREPRENEURIAL SELF-EFFICACY BETWEEN THE RELATIONSHIP OF ENTREPRENEURSHIP EDUCATION, BUSINESS INCUBATION AND ENTREPRENEURIAL INTENTION
Note: RMSER=0.051; GFI=0.832; NFI=0.732; CFI=0.731; p<0.01.

Table 2
PATH COEFFICIENT FOR DIRECT EFFECT

Path			β Coefficient	S.E	C.R	P
EDU	→	SE I	0.636	0.054	11.829	***
BI	→	SEI	0.616	0.063	9.752	***

Note: ***shows the probability value at 1% level of significance.

Table.3 PATH COEFFICIENT FOR MEDIATION EFFECT						
Path			**β Coefficient**	**S.E**	**C.R**	**P**
EDU	→	SEI	0.517	0.057	9.05	***
BI	→	SEI	0.377	0.077	4.918	***
EDU	→	ESE	0.259	0.027	9.565	***
BI	→	ESE	0.517	0.032	16.297	***
ESE	→	SEI	0.462	0.088	5.231	***

Note: ***shows the probability value at 1% level of significance

DISCUSSION

Present study was aimed to investigate the simultaneous impact of entrepreneurship education and business incubation on entrepreneurial intention of university students. For this purpose, a mediated model is developed and tested with the help of empirical data, collected from four hundred and eighty university students from across the country. Reliability and the validity of the scales is measured through Cronbach alpha and Conformity Factor Analyses (CFA), and the results indicate an adequate fit for the measurement model. Further, present study used SEM technique to test the causal effects of independent variables on dependent variable, as this technique is particularly suitable to test a multilevel theoretical framework and make it possible to evaluate several relationships between observed and latent variables simultaneously (Bagozzi and Yi, 2012). The path coefficients for suggested model provide empirical support to all the hypothetical relationships proposed in this study. So, in line with the previous research findings, present study confirm that both the entrepreneurship education (Franke and Lüthje, 2004; Huffman and Quigley, 2002; Liñán et al., 2011; Jansen et al., 2015; Zhang et al., 2015) and business incubation (Mian, 1994; Mian, 1997; Nelson and Monsen, 2014; Jansen et al., 2015; Grimaldi and Grandi, 2005) positively influence the entrepreneurial intention of the students. In the meantime, the result of this study also suggest that the relationship between entrepreneurship education, business incubation and, entrepreneurial intention is mediated by entrepreneurial self-efficacy of the respondents. Most of the studies (Arenius and Minniti, 2005; Barnir et al., 2011; Kristiansen and Indarti, 2004; Wilson et al., 2007; Shinnar et al., 2014) proclaim that entrepreneurship education and incubation strength an individual's belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur that ultimately create an urge to start and manage his/her own business.

IMPLICATIONS

Present study has number of implications for the educational experts and policy makers. First, the study suggests that to promote entrepreneurship culture, only the entrepreneurship education is not sufficient, but the business incubation has a significant influence and it considered a prerequisite to be an entrepreneur. According to (Nelson and Monsen, 2014), only the classroom teaching is not enough for successful university entrepreneurship and technology commercialization, but a close linkages between business, science & technology and the other parties is necessary to understand the whole university entrepreneurial ecosystem. The business incubators provide a real platform to the young entrepreneurs from where they start their journey toward new venture creation and further it also impact on their firm survival and growth. Second, both the entrepreneurship education and business incubation strength the students'

entrepreneurial self-efficacy that create an urge in them to start and manage their own business instead of becoming an employee and work for some one other. Third and the most important implication for the governments of developing countries, where the unemployment is a burning issue for the policy makers, is that the entrepreneurship education along with the business incubation provide the opportunities to the young and educated unemployed labor force to start their own businesses and create new employment opportunities for unemployed labor force. So, along with the entrepreneurship education, the government should established business incubation centers in all the educational institutions to promote entrepreneurship culture, as entrepreneurship plays an important role in employment creation, poverty alleviation, revenue generation and overall economic development of a country.

CONCLUSION

Present study extends the existing body of knowledge by exploring the importance of business incubation centers along with entrepreneurship education in fostering entrepreneurship. Most of the studies stress on entrepreneurship education and there are only few studies that shed light on the significance of business incubation centers for entrepreneurship development. Present study suggest that to promote an entrepreneurship culture in the country, the governments of developing countries should focused on incubation along with education for universities' students as only the classroom teaching is not enough to understand the whole entrepreneurship ecosystem.

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