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Mediating Role of Entrepreneurial Self-efficacy between Business Incubation Centre and Entrepreneurial Intention of Pakistani Students

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ABSTRACT

Purpose: The business incubation center is a buzzword in the academic world and a relatively new concept in public sector universities of Pakistan. Business Incubation center helps university students for developing entrepreneurship intention and decrease the unemployment rate. But many of the publicly funded incubation centers are unable to create an entrepreneurial intention in students therefore; this study develops to evaluate the impact of business incubation centers on entrepreneurial intention through entrepreneurial self-efficacy. This study is based on the resource-based view theory.

Design and Methodology: It has used random sampling and data has been collected from Government College University of Faisalabad and Punjab University Lahore Pakistan. Data is collected via questionnaires which were e-mailed to students, valid 166 responses were received. This study used Smart-PLS for data analysis of Structural Equation Modeling (SEM).

Findings: The result of the current study explains that the entrepreneurial intention of Pakistani university students is influenced by the business incubation center and entrepreneurial self-efficacy. There were three hypotheses of this study; the entire three hypotheses were accepted.

Implications: This study concludes that a business incubation center plays an important role in influencing university students' entrepreneurial intention but is only possible if a business incubation center develops such strategies which increase the entrepreneurial self-efficacy of students.

Keywords: Business Incubation Center, Entrepreneurial self-efficacy, Entrepreneurial Intention, University students.

1. Introduction

Pakistan is a developing country, ranks 5th highest populated country in the world according to United Nation. The median age is 22.8 years and consists of a greater number of youth from the population (HEC, 2021). Most of the graduates are unemployed, employed graduates are not well paid for the time and effort they are putting into their jobs. Most of them are threatened to be fired because companies have a huge number of CVs as many unemployed graduates can be replaced easily. People shift their homes and change cities in search of jobs. This tells that Pakistan has very

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small number of businessmen or parents who promote business intention among their children (Rachmawan et al., 2015). In fact, universities are also not working much on this issue as they can develop an interest of students in business.

The federal government of Pakistan wants to overcome this problem. Hence, it started to promote business incubation centers; a platform for university students with strong entrepreneurial self-efficacy. The promotion of business is started by launching the new schemes in the Kamyab Jawan program which is for youth; the government will give 50 thousand or more rupees if they liked the business ideas of university students.

The reason that students are not aware of programs and schemes launched by the government is that Pakistan is slow in developing and growing its economy. Pakistani people think industrialization means investing in huge and expensive machines and a large number of employees/workers whereas, it can be a small or medium-scale enterprise as well according to the budget.

Unemployment of graduates can be overcome by promoting entrepreneurship among university students and sharing benefits plus discussing examples of successful entrepreneurs as a role model with the students (Kamariah et al., 2014). Short-term programs, training, and degrees are to be developed in business studies (Cheng & Chan, 2009). It is all about how one can run his own business successfully from small level to medium and then large scale. Many universities are providing opportunities for completing Bachelor and Master degree in Business Administration which directly supports entrepreneurship in Pakistan. National Business Education Accreditation Council (NBEAC) works on visiting colleges and universities who challenge to be the best institute for providing business studies. There are total of 30 universities are accredited by NBEAC among which the Government College University Faisalabad and Punjab University Lahore are also affiliated plus from these universities the sample data was collected, and questionnaires were sent through e-mails.

Global Entrepreneurial Monitor (GEM) Report has delivered a broad aspect on entrepreneurial intention, observations, and actions covering 50 economies including Pakistan in 2019. Global Entrepreneurial Monitor (GEM) introduced questions in 2019 to measure motivation, attitude, activity, and entrepreneurship impact. The survey was conducted with a large sample of respondents and 150,000 survey responses were received. Entrepreneurial framework analysis by Global Entrepreneurship Monitor show different Entrepreneurial Framework Conditions scale (EFCs) where 0 is inadequate and 10 is satisfactory. Different dimensions of Government policies, physical infrastructure, culture, taxes, market dynamics, R & D transfer, and social norms were studied in the report. Meanwhile, Entrepreneurial finance has 3.65/10 and Government Entrepreneurial programs 3.40, Entrepreneurial education at schools was 2.77 out of 10 & post-school contains 4.22 in the report. On the other hand, Physical infrastructure contains the highest scale percentage 6.61/10, and government policies & bureaucracy stand at the lowest scale of 2.69. Global Entrepreneurship Monitor (GEM) report conceptualized that tax policies characterize the

major difficulties to entrepreneurial growth. The GEM report focuses on policymaking and other aspects which are involved in entrepreneurial intentions (Bosma & Kelley 2018).

Global University Entrepreneurial Spirit Students' Survey (GUESSS) is an international research body that was started in 2003 by the Research Institute of Small Business and Entrepreneurship, at the University of St. Gallen. GUESS collect data from more than 208,636 respondents and 54 countries. The 9th edition of GUESSS has expanded internationally with participation from 58 nations and a total of 266,943 responses and Pakistan had participate third time in this report. 896 students from Pakistan are enrolled in 18 different public and private sectors. Universities took part in the poll. According to the GUESSS 2021 data, there has been a 56 percent increase in students beginning there then the students in GUESS 2018, who started their own businesses right after finishing their courses. This fashion is an indication of the student's willingness to launch their own businesses in various colleges in Pakistan. According to the GUESSS 2021, the majority of students polled plan to launch their business in contrast to those in information technology (IT) and marketing, advertising, design, and Speaking GUESSS 2018. According to the GUESSS 2021 results, the majority of students think that the university environment encourages the creation of innovative business concepts. According to the results of GUESSS 2021, there are 1.8 percent fewer entrepreneurs in Pakistan who are actively running businesses than there were in GUESSS 2018. These reports clear the scope of this study in developing countries specially Pakistan (Samo & Channa 2021).

CAI and Zhang (2020) examined that a relatively strong relationship exist between entrepreneurial self-efficacy and entrepreneurial intention of university students and in this study entrepreneurial self-efficacy is mediating variable. Scholars have analyzed that employee's productivity improves through the advancement of technology, the use of various software, and social networking which enables them to collect knowledge and share information. The entrepreneurial intention of students can be developed only if teachers are skilled and are using up-to-date and modern teaching methods. In the class of 40-plus students, the teacher must have the skills to groom the intention individually. Up-to-date methods are not strict but they are flexible, and bolds individual intention makes their entrepreneurial self-efficacy stronger (Hallinger & Wang, 2020).

The mediator in between business incubation center and entrepreneurial intention is entrepreneurial self-efficacy. Hence, influencing entrepreneurial self-efficacy can develop student's entrepreneurial intention. Problem is that students graduated or undergraduate in business degree are also provided business incubation center for developing their entrepreneurial intention but there is lack of entrepreneurial self-efficacy in them. Sometimes, the awareness of business incubation center can develop entrepreneurial self-efficacy but sometimes not. The research questions of the study are as follow:

1. Does business incubation center play role in developing entrepreneurial intention of university students?

2. Does entrepreneurial self-efficacy play role in influencing student's entrepreneurial intention in presence of business incubation center?

The objectives of the study are:

1. To understand the contribution of business incubation centers in developing entrepreneurial intention of university students.
2. To understand mediating effect of entrepreneurial self-efficacy on business incubation center and entrepreneurial intention.

The importance of business incubation center is recognized by various studies but there is less research on developing individual entrepreneurial intention specifically, the students who choose their subject as entrepreneurship already have strong entrepreneurial intention (Norashidah & Hussain, 2015).

Seventeen sustainable development goals were introduced by United States known as SDGs also; this study is based on the 8th goal which is "Decent work and Economic growth". As SDGs want to increase economic growth for this, they promote entrepreneurship, bring innovations in technology and increase level of productivity by developing more number of student's entrepreneurial intention.

More entrepreneurs mean a higher chance of employment and ultimately growth of economy (United Nations Development Programme, 2020). This study discusses the independent variable business incubation center. There are many businesses incubation centers in which large number of students share their innovative business ideas and run their businesses. Business incubation center in actual develop and strengthen entrepreneurial intention of student's which shows that they play a vital role in increasing number of entrepreneurs (Afraz Gillani et al., 2020; Alpenidz & Sanyal, 2019; Cai et al., 2019; Fernandez et al., 2015; Giordano et al., 2018; Stal et al., 2016) .

2. Literature Review

Now a days entrepreneurship has been studied with more interest globally and many studies on it have been increased. Government, academic institutes, NGO's and small medium enterprise corporations have a major and vital role in developing entrepreneurial intention of students. Plus, universities should introduce new and more business educational programs, trainings and games. For exploring the linkages of articles about entrepreneurship intention influenced by business incubation centers this study used VOSviewer version 1.6.17 and concluded a visualization map analysis through it. With the help of this software the global map analysis is shown below in figure 1.1.

This map visualization analysis shows us three different color dominating clusters like green, blue, red and yellow with their names. Incubation written in green cluster represents business incubation center which links with the blue cluster education. It is visible that how many networks does incubation and education have with each other.

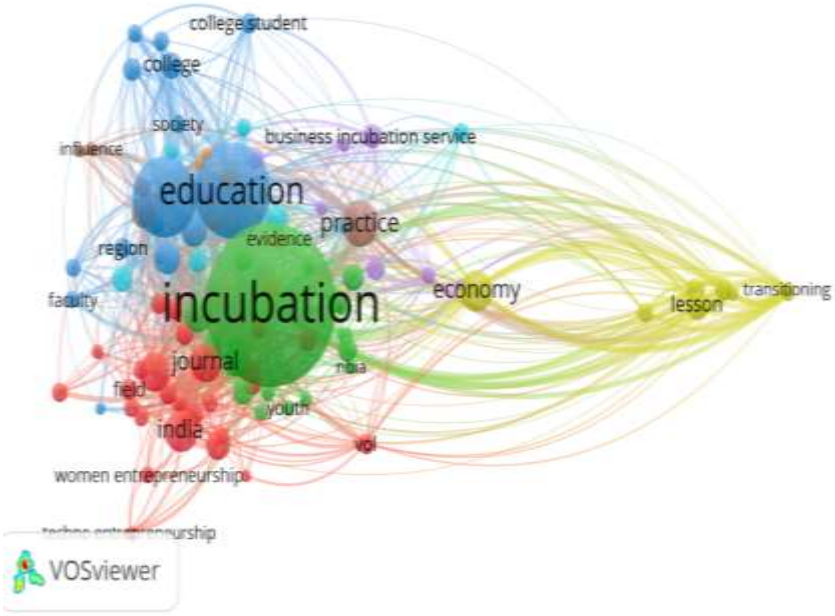

Figure 1.1 Map visualization of networking

Below figure 1.2 represents a map visualization of authors who used entrepreneurial intention as their dependent variable and the word business incubation center co-occurred. In figure 1.2 there are four color clusters: red, blue, green and purple. The largest or heavy weighted cluster is of red than green, blue and purple respectively. All the clusters are linked with each other which represent the networking of keyword co-occurrence of business incubation center. The most popular scholar who works on entrepreneurship is Wadid Lamine as it is the heaviest cluster in red color in the map the second heaviest cluster is also in red color of Alain Fayolle as he is also well known for working on entrepreneurship intention. All other shown authors are also known for working on entrepreneurship intention.

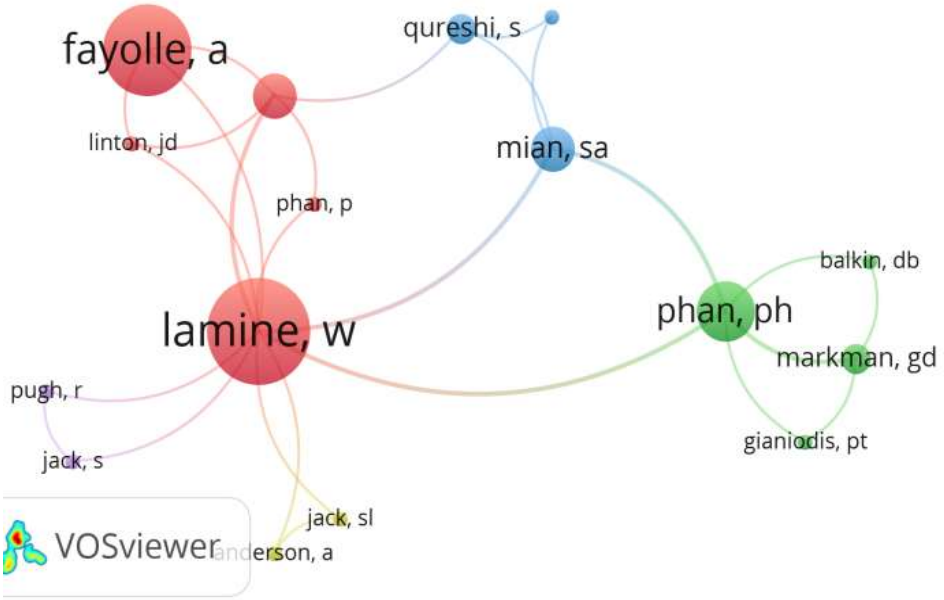

Figure 1.2 Map visualization of keyword co-occurrence

2.1 Relation of Business Incubation Centers and Entrepreneurial Intention

The business rising process is developed very systematically by business incubation centers, they give their full to strengthen entrepreneurial intention of university students which impacts economic growth of country and bring an increase in employment (Barbero et al., 2014). Li et al. (2019b) says that business incubation center play three major and important roles: training students for consistency, providing funds and platform for starting up businesses. By developing relation of students with small industries corporation and organizations related to their business the business incubation centers develop the entrepreneurial intention (Pearce et al., 2019). Many studies examined that business incubation center plays important and essential role in developing entrepreneurial intention of university students hence, the relation of business incubation center and entrepreneurial intention is positive. Entrepreneurial intention is influenced by business incubation center (Akpoviroro et al., 2021; Hallinger & Wang, 2020; Li et al., 2019a; Nagayya & Rao, 2014; Ramar et al., 2020; Yuldinawati et al., 2018; Zegeye & Singh, 2019).

2.2 Relation of Entrepreneurial Self-Efficacy and Entrepreneurial Intention

To reinforce entrepreneurial self-efficacy on an individual business incubation center play a vital role in accelerating business practices and activities in university students (Jansen et al., 2015).

It has been suggested by a previous study that Entrepreneurial Self-Efficacy plays a vibrant and spirited role in establishing and encouraging one's entrepreneurial intention but also increases business activities and decreases unemployment (Mauer et al., 2017). Students with high level of self-efficacy have strong entrepreneurial intention and strong will to run their own businesses rather than becoming a job seeker this opinion has been highly sustained by many researchers and their studies (Fayolle et al., 2006; Mauer et al., 2017).

2.3 Theoretical Background

To evaluate the impact of business incubation center on the entrepreneurial intention of students this study base on the resource based view theory which is represented by Jay Barney in 1991 (Barney et al., 2001). Resource-based view theory was developed on the basis of well re-known theory "theory of reasoned action" which was presented by Ajzen and Fishbein 1975 (Fishbein, 1979). The resource-based view theory is a managerial framework used to regulate the strategic resources through which business incubation center can exploit to develop successful and sustainable start-ups for university students who won the idea competition and are selected as business incubates (Somsuk et al., 2010).

2.4 Theoretical Framework and Hypothesis Development

Theoretical framework is to measure the relevancy and dependency of variables in developing entrepreneurial intention of university students. The following diagram shows the link of constructs discussed in the current study.

Following is a diagram which consist all three constructs on which this study is based. Endogenous construct (dependent variable) is entrepreneurial intention whereas, business incubation center and entrepreneurial self-efficacy are exogenous construct (independent variable). The diagram clearly shows the relation of constructs with each other. Entrepreneurial self-efficacy is playing mediating role between the relation of business incubation center and entrepreneurial intention. There is a different arrow used in the diagram for the direct relation and different arrow for mediating relation. The style and color both are different; arrows which show direct relation are black and continuous whereas an arrow which shows mediation is blue and dashed.

Martinez et al. (2017) says that for developing new firms a reliable environment, platform and mentors are provided by business incubation centers to entrepreneurs. An individual if gains entrepreneurial experience or training his attitude, beliefs and intentions are strongly affected positively (Jansen et al., 2015; Stephen & Onofrei, 2012). When an individual is incubated, his intention is developed for entrepreneurship through the learning and training or business experience gained from business incubation center. An individual's intention, perception, attitude and behavior receives a great positive effect (Martinez et al., 2017). Stephen and Onofrei (2012) says that for enhancing business, developing capabilities and to strengthen the entreprenurial self-efficacy

business incubation centers play vital roles. A study says that if one is having strong entrepreneurial self-efficacy because of business incubation center than he also have solid and substantial entrepreneurial intention (Bacq et al., 2017). This study generated following three hypothesis which were established by providing essential theoretical frame work support. It is visible in theoretical framework figure 2.4 that which relation generated which hypothesis.

H1: Business Incubation Center has positive impact on Entrepreneurial Intention of University students.
H2: Business Incubation Center puts positive impact on student's Entrepreneurial self-efficacy.
H3: Entrepreneurial Intention puts positive impact on Entrepreneurial Self-efficacy.

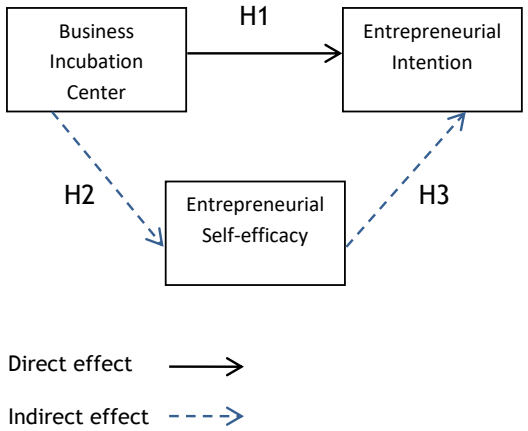

Figure 2.4 Research model

3. Methodology

This study has used simple random sampling to make a sample frame. We have targeted people from population who are gone through Business incubation center's business activities or have gained some business experience from there and now are able to start up their own businesses. All the elements of research design of this study are shown in figure 3.1. This figure shows how the whole process of research was done and which measures, tools, sampling design, data collection and time span were used.

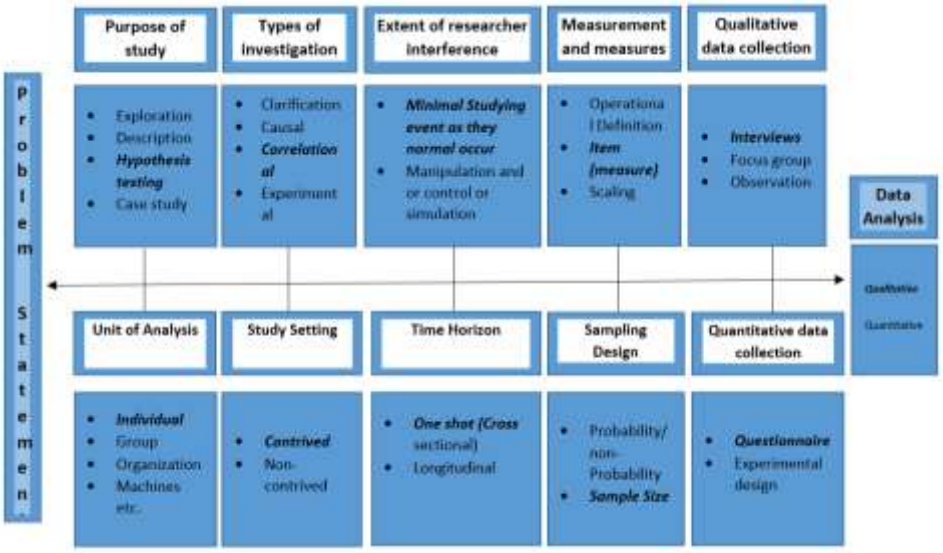

Figure 3 Research Design

After this we have figure 3.2 shows research onion model which explain the research philosophy, research approach, research method, research strategy, research time Horizon and data collection method of this study

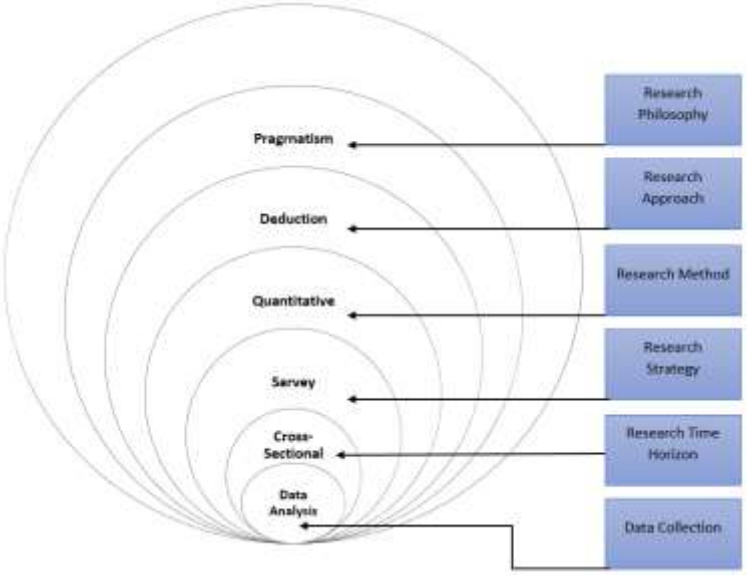

Figure 3.2 Research Onion Model

The sample data has been collected from Government College University of Faisalabad, during the visit a Business Incubation Center was seen very productive for student entrepreneurs where more than 18 new start-up businesses were seen. This study is quantitative and data is collected via questionnaire, 5 Likert scale is used in questionnaires to understand the hypothesis. Questionnaire was mailed to students, 184 were sent and 173 responses were received. Among which 12 responses had missing values finally 166 responses were stated accurate to understand the relation of variables used in the study. Ringle and Sarstedt (2016) narrate that most of the recent used Partial Least Square (PLS) method structure equation modeling (SEM). This study also used PLS-SEM for data analysis. Smart PLS version 3.3.3.2 is very popular tool for the analysis of Structure Equation Modeling (Farooq et al., 2018; Hair et al., 2019). This study also used VOSviewer version 1.6.17 for map analysis of articles about entrepreneurship intention in the title and business incubation center in the keywords.

4. Data analysis and results

This study uses three steps performance for data evaluation. In first step, the measurement model was checked for reliability and the validity PLS-Algorithm of the endogenous and exogenous constructs (Sarstedt et al., 2014). In the second step the bootstrapping is being done for calculating direct and indirect path-analysis through Smart-PLS and in the last step the blindfolding takes place for calculating Q square also through software Smart-PLS.

4.1 Measurement model

Hair et al. (2011) says that while using Structure Equation Modeling the measurement model was evaluated and Average Varience Extracted (AVE), Cronbach Alpha, Composite Relaibility (CR), Heterotrait-Monotrait Ratio (HTMT), R square and f square were tested. Measurement model refer to the understood or crystal-clear model that relates with the latent variable to its indicators. Focus on effect indicators that where the indicators depend on the latent variable. Measurement model of current study is shown below in figure 4.1.

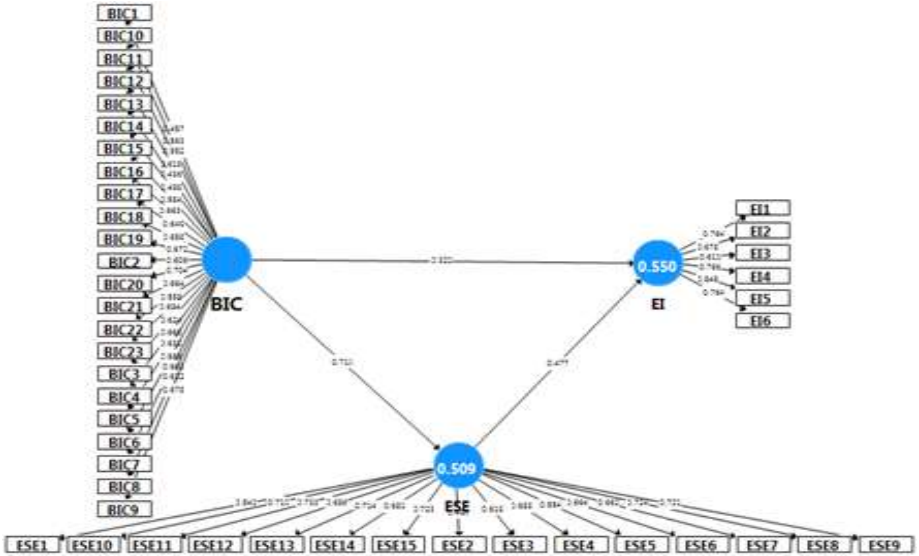

Figure 4.1 Measurement Model

4.2 Construct Reliability and Validity

The AVE is the sum/addition of the squared loadings divided by the number of indicators (Hair et al., 2016). As a rule of thumb, the AVE of a construct should be higher than 0.50 the results of this study have concluded in table 1 as shown below that AVE is higher than 0.50 of all three variables (Farooq et al., 2018; Hair et al., 2011). Cronbach's alpha is a reliability measure which should be above than 0.70 as a threshold value but different authors have mentioned different threshold alpha values (Cooper & Schindler, 2014). The current study, has all the cronbach values more than 0.70. Composite Reliability is used to measure the internal consistency reliability (Ringle & Sarstedt, 2016). The values of CR are greater than 0.70 of all variales which shows that the results are reliable (Hair et al., 2019). All the three results shown in table 1 are reliable and valid (Hair Jr et al., 2017).

Table 4.2: Construct Reliability and Validity

	Average Variance Extracted	Cronbach Alpha	Composite Reliability
BIC	0.581	0.967	0.969
ESE	0.636	0.959	0.963
EI	0.788	0.946	0.957

Note. BIC=Business Incubation Center, ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

4.3 R Square

Through Smart-PLS the bootstraping was run from which three results were concluded shown in table 2,3 and 4. The table 2 shown below represents the values of R square and adjusted R square in two columns of entrepreneurial intention and entrepreneurial self-efficacy. R-squared represents the proportion for the variance of dependent variable entreprneeurial intention and entrepreneurial self-efficacy which is explained by an independent variable. If R^2 of a model is above 0.50, then it is reliable and current study have both r squared values above 0.50 as shown in table 4.3 below.

Table 4.3: R Square

	R Square	R Square Adjusted
EI	0.550	0.544
ESE	0.509	0.506

Note. ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

4.4 F Square

The second analysis through running PLS Algorithm was of f square which is effect size (>=0.02 is small; >= 0.15 is medium;>= 0.35 is large). It measures and explains each exogenous variables variance in the models. F square is suitable for computing the effect size within a multiple regression model in which the independent variable of interest and the dependent variable are both continuous. As shown below in table 4.4 one f square value is small (0.0113), second is medium (0.248) and third is large effect size (1.036).

Table 4.4: F Square

	BIC	EI	ESE
BIC		0.113	1.036
EI			
ESE		0.248	

Note. BIC=Business Incubation Center, ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

4.5 Q Square

In Smart-PLS by running the calculation of blindfolding for concluding the Q^2 value. The threshold for Q2 is that the value should be above than zero, the path model's predictive relevance exists for this construct. This process cannot be practical to a model with determinative endogenous constructs. Blindfolding technique with certain omission distance is used to calculate the Q2. As shown in below table 4.5 both the values of q square are above than zero hence, the results are reliable.

Table 4.5 Q square

	Q^2 (=1-SSE/SSO)
EI	0.287
ESE	0.215

Note. ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

4.6 Discriminant Validity

Discriminant Validity is the "level to which a construct is actually different from other constructs by empirical standards" (Hair Jr et al., 2017). Heterotrait-Monotrait criteria is used for evaluating Discriminant Validity (Hair Jr et al., 2014). The discriminant validity can be evaluated by using cross-loading of indicator, Fornell & Larcker criterion and Heterotrait-monotrait (HTMT) ratio of correlation. This study used HTMT ratio for evaluating discriminant validity.

Moreover, was used to assess the discriminant validity, which is presented in table 5. The third calculation concluded through bootstrapping was Heterotrait-Monotrait Ratio (HTMT). The HTMT is for measuring discriminant validity and measure of similarity between latent variables. If the HTMT is smaller than one only than the discriminant validity can be regarded as established. As seen in below table 4.6 the three values of HTMT are smaller than 1. Usually, AVE is established when the values of Ave is greater than the constructs correlations but, in this study, it is not established because the sample size is very small to establish it.

Table 4.6: Discriminant Validity

	BIC	EI	ESE
BIC			
EI	0.721		
ESE	0.756	0.785	

Note. BIC=Business Incubation Center, ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

4.7 Path Analysis

A path coefficient specifices the direct effect of a variable expected to be a cause on another variable assumed to be an effect. Path coefficients are consistent because they are estimated from correlations. Path coefficients are written with two subscripts, direct path and indirect path. Below table 4.7(a) shows the path coefficients of the direct relations, t-values, p-values, standard deviation of all three direct relations are shown below in the table 4.7(a). T-value should be greater than ± 1.96 which indicates significant relationship between the variables existing in the structural path. P-value should be less than . As shown in the table 4.7(a) the t-values and p-values are reliable hence, the relations shown below in table 4.7(a) are significant.

Table 4.7(a): Direct Path

Direct Path	STDEV	T values	P values
BIC -> EI	0.077	4.210	0.000
BIC -> ESE	0.035	20.333	0.000
ESE -> EI	0.078	6.126	0.000

Note. BIC=Business Incubation Center, ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

Indirect path is shown in table 4.7(b) and according to the above discussed thresholds the following values are reliable hence, this study have significant mediation path analysis. The standard deviation is also shown in table 4.7(b) of the indirect path analysis (Wan et al., 2014). All the values shown in table 4.7(b) are reliable.

Table 4.7(b): Indirect Path

Indirect Path	STDEV	T value	P value
BIC -> ESE -> EI	0.057	5.992	0.000

Note. BIC=Business Incubation Center, ESE=Entrepreneurial Self-efficaicy, EI=Entrepreneurial Intention

5. Implications of the Study

The present study has some implications for educational experts and policy makers. First of all, this study helps the policy maker to understand the importance of business incubation centers in both public and private universities as it promotes entrepreneurial culture among students. Business incubation centre in universities provides a platform for young graduates to start their own business and it is also playing an important role for the economic development.

Secondly, the university management will recognize the importance of entrepreneurial activities to develop the individual self-efficiency in students. Entrepreneurial self-efficacy encourages the young graduates to set up a new business and earn their bread instead relaying on salary.

Finally, this study also highlights the role of business startups in boosting the economy which policy maker to make such policies which encourage students towards business startups. This will decrease the number of job seekers and lower the rate of unemployment in the country.

6. Conclusion and future directions

On the whole business incubation center has a positive impact on entrepreneurial intention of public sector universities in Pakistan. High youth population ought to increase in number of job creators instead of job seekers. Hence, Pakistan needs to generate new policies that students with business studies must participate in business ideas presenting competitions so, they would get funds for start-up. As a result, business incubation center could influence the entrepreneurial intention of public sector university students in Pakistan.

In accordance with the results of this study it is verified that for developing entrepreneurial intention of university students business incubation center and entrepreneurial self-efficacy plays a vital role. This current study is limited to two number of universities of two different cities and the data is collected from business undergraduate students but future researches should target more number of universities from different provinces with students who are from business, public administration, literature, medicine and other departments also. In limitation this study collected data from public sector universities only but future research should collect data from public and private both universities. Future research should also increase the number of variables like entrepreneurship education, family background, technological factor, business simulation game, etc. This study also collected cross-sectional data due to financial and time limitation. Therefore, it is suggested to conduct a longitudinal study to measure more validity and reliability of said variables.

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