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CICLO XXVII

**INDIVIDUAL-LEVEL CAPABILITIES AND ENTREPRENEURIAL INTENTION: THE CONTINGENT  
ROLE OF INSTITUTIONAL AND ORGANIZATIONAL CONTEXT**

**Direttore della Scuola:** Ch.mo Prof. Cipriano Forza

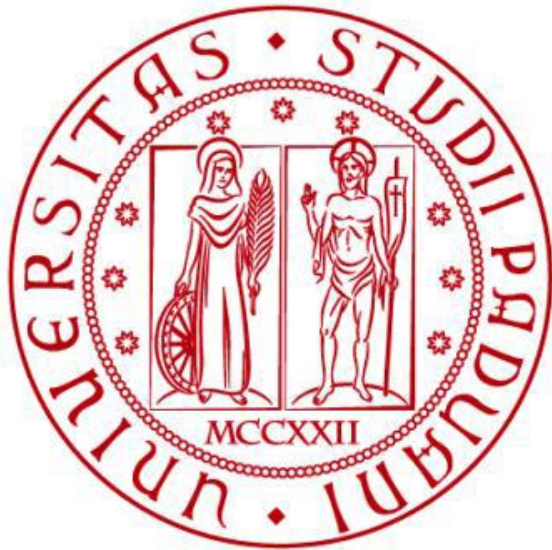
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# UNIVERSITÀ DEGLI STUDI DI PADOVA

SCUOLA DI DOTTORATO DI RICERCA IN INGEGNERIA GESTIONALE ED ESTIMO  
INDIRIZZO INGEGNERIA GESTIONALE  
XXVII CICLO

## *Individual-Level capabilities and Entrepreneurial Intention: The contingent Role of Institutional and Organizational Context*

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## **ABSTRACT**

Entrepreneurs affect our daily lives by exploiting new inventions or ideas and taking them to the market. Entrepreneurship research has shown its significant impact on a country's economy. Thus, entrepreneurship can be considered as the engine driving many nations' economic growth and competitiveness. As a consequence, entrepreneurs are essential drivers of economic growth. Entrepreneurs not only increase competition, and bring variety of products but they also generate new jobs by founding new firm, which create its impact on economy of a country. Founding a new venture is a challenging job in which some individuals able to bear high level of uncertainty and others not.

Firstly, I have extended the entrepreneurship literature by introducing a multi-level perspective of individual, organizational, and institutional factors to understand the entrepreneurial intention of university students. The current study proposed and tested an integrative, multiperspective framework. I have hypothesized that the three dimensions of university support, that is, perceived educational support, concept development support, and business development support, together with institutional support, shape students' entrepreneurial self-efficacy. In turn, entrepreneurial self-efficacy and individual motivations constitute the fundamental elements of the intention to start a business.

Secondly, I have employed multi-level modeling to study the influence of university/department-level factors on entrepreneurial intentions, which helps to resolve some of the controversies in previous research. This study examines how a university's support impacts students' entrepreneurial intentions and finds that entrepreneurship education, concept-development support, and business-development support increase such intentions. The university role is found to be critical to the growth of entrepreneurial intentions, and I argue that an individual's decision in favor of or against becoming an entrepreneur depends on the multilevel context provided by the university.

Thirdly, my research shows that individuals whose parent or close family member is self-employed are more likely than others to pursue an entrepreneurial career. In this research, I take the family embeddedness perspective, which describes the impact and the importance of parents on their children's entrepreneurial careers to argue that the breadth and quality of family business experience matter. I address previous research is inconclusive on the origins of the intergenerational transfer of entrepreneurship gap in the literature by exploring the intergenerational transmission of entrepreneurial intentions using Shapero and Sokol's (1982) model of intention in entrepreneurial events (SEE). I analyze the role of an entrepreneurial family background as an intergenerational influence on entrepreneurial intention and the underlying mediating effect of the perceived desirability and perceived feasibility of starting a business. I hypothesize that individuals with prior family business experience may develop positive perceptions toward entrepreneurial feasibility and desirability, which can result in entrepreneurial action.

Fourth, in this research, I illuminated gender differences among university students on the intent to start businesses, and I specifically examine perceived feasibility and desirability. Although self-efficacy has been rarely used as an outcome measure, my study found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business (entrepreneurial self-efficacy), which can ultimately enhance entrepreneurial intentions. Universities support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it is crucial to gauge the extent to which it could have an impact on students' intentions to start businesses. This can be achieved by measuring students' perceptions of the university support they receive or "perceived university support". Therefore, my study takes a multi-perspective approach to assess the impact of entrepreneurship education with gender perspective. My findings will help policy-makers and

university managers to understand the effectiveness of current practices and initiatives, particularly among women.

## **ABSTRACT (Italian Version)**

Imprenditori influenzano la nostra vita quotidiana, sfruttando le nuove invenzioni o idee e portarli al mercato. Ricerca imprenditorialità ha mostrato il suo impatto significativo dell'economia di un Paese. Così, l'imprenditorialità può essere considerato come il motore trainante della crescita economica molte nazioni e la competitività. Di conseguenza, gli imprenditori sono i driver essenziali della crescita economica. Gli imprenditori non solo aumentare la concorrenza, e portare varietà di prodotti, ma anche di generare nuovi posti di lavoro fondando nuova società, che creano il suo impatto sull'economia di un paese. Fondare una nuova impresa è un lavoro impegnativo, in cui alcuni individui in grado di sopportare elevato livello di incertezza e altri no.

In primo luogo, ho esteso la letteratura dell'imprenditorialità introducendo una prospettiva a più livelli di fattori individuali, organizzative e istituzionali per capire l'intenzione imprenditoriale degli studenti universitari. L'attuale studio ha proposto e testato un integrativo, quadro multiprospettica. Ho ipotizzato che le tre dimensioni del supporto dell'università, cioè, il sostegno percepito educativo, sostegno allo sviluppo concetto, e il sostegno allo sviluppo di affari, insieme con il supporto istituzionale, imprenditoriale forma di auto-efficacia degli studenti. A sua volta, imprenditoriale auto-efficacia e motivazioni individuali costituiscono gli elementi fondamentali del l'intenzione di avviare un business.

In secondo luogo, ho impiegato modellazione multilivello per studiare l'influenza dei fattori università / a livello di reparto sulle intenzioni imprenditoriali, che aiuta a risolvere alcune delle controversie in ricerche precedenti. Questo studio esamina come le intenzioni imprenditoriali di una università impatti supporto degli studenti e trova che l'educazione all'imprenditorialità, supporto concetto-sviluppo, e aumentare il sostegno alle imprese, lo sviluppo di tali intenzioni. Il ruolo dell'università è risultato essere fondamentale per la crescita delle intenzioni imprenditoriali, e sostengono che la decisione di un individuo in favore o contro di diventare un imprenditore dipende dal contesto multilivello fornita dall'università.

In terzo luogo, la mia ricerca mostra che le persone il cui genitore o parente stretto è lavoratori autonomi sono più probabilità di altri di perseguire una carriera imprenditoriale. In questa ricerca, prendo la prospettiva radicamento familiare, che descrive l'impatto e l'importanza dei genitori sulla carriera imprenditoriale dei loro figli a sostenere che l'ampiezza e la qualità della

materia esperienza di business di famiglia. Rivolgo ricerca precedente è inconcludente sulle origini del trasferimento intergenerazionale di insufficienza imprenditoriale nella letteratura esplorando la trasmissione intergenerazionale delle intenzioni imprenditoriali utilizzando Shapero e (1982) il modello di Sokol dell'intenzione a eventi imprenditoriali (VEDI). Analizzo il ruolo di un background imprenditoriale di famiglia come un'influenza intergenerazionale sulla volontà imprenditoriale e l'effetto di mediazione alla base della desiderabilità percepita e la fattibilità percepita di avviare un'impresa. Ipotizzo che le persone con esperienza di business prima di famiglia possono sviluppare una percezione positiva verso fattibilità imprenditoriale e opportunità, che può risultare in azione imprenditoriale.

In quarto luogo, in questa ricerca, ho venire illuminato differenze di genere tra gli studenti universitari su l'intento di avviare imprese, e in particolare esaminare la fattibilità percepita e desiderabilità. Anche se l'auto-efficacia è stato raramente utilizzato come misura di outcome, il mio studio ha rilevato che la partecipazione ad un programma imprenditoriale significativo aumento fattibilità percepita di avviare un'impresa (imprenditoriale autoefficacia), che alla fine possono migliorare intenzioni imprenditoriali. Università sostengono l'imprenditorialità in molti modi misurati oggettivamente, al fine di comprendere l'effetto di tali misure è fondamentale per valutare la misura in cui esso potrebbe avere un impatto sulle intenzioni degli studenti a creare un'impresa. Ciò può essere ottenuto misurando la percezione del supporto università che ricevono o "Supporto e percepita" degli studenti. Pertanto, il mio studio ha un approccio multi-prospettico per valutare l'impatto della formazione imprenditoriale con la prospettiva di genere. I miei risultati aiuteranno i responsabili politici e dirigenti universitari per capire l'efficacia delle pratiche e delle iniziative in corso, in particolare tra le donne.





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My all scientific advisors has been a continuous source of support, scientific insights and a bright guiding light in the field of entrepreneurship. I doubt very much that my work would be as rich without the help of my scientific advisors!

My personal social context has also been invaluable during the doctoral studies and generally during my whole life. Sincere thanks for the great working atmosphere, support and a lot of fun also go to my colleagues at the *Scuola di Dottorato in Ingegneria Gestionale ed Estimo, Università degli Studi di Padova*. Without their support writing my thesis would not only have been much harder, but definitely also less fun!

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### 1 Introduction

Entrepreneurs are playing vital role in my daily lives through the exploitation of new ideas.

Entrepreneurs affect my daily lives by exploiting new inventions or ideas and taking them to the market. For example, entrepreneurs develop innovative technical gadgets, lifesaving pharmaceuticals, and new, convenient services. As a consequence, entrepreneurs are essential drivers of economic growth (Audretsch, 2003). Entrepreneurs do not only increase the variety of products and services for, they also increase the competition in a market, crowd out inefficient firms, and create new jobs by founding new firms (Audretsch & Keilbach, 2004; Barrett, 2004; Fritsch & Mueller, 2004). However, the success of a new venture is everything but certain, and two thirds of all new ventures fail within their first ten years (Shane, 2008). Thus, founding a venture is challenging and entrepreneurs have to bear high levels of uncertainty (Knight, 1946; McKelvie, Haynie, & Gustavsson, 2011; McMullen & Shepherd, 2006), particularly when they are pioneers in a market. Due to their willingness to bear high levels of uncertainty (Knight, 1946), entrepreneurs are often seen as bold and courageous heroes (C. A. Allen & Lee, 1997; S. Cooper, 2000; Dimov, 2007a) who pursue their plans with high levels of energy, optimism, and determination (Smilor, 1997). They are alert for opportunities (Kirzner, 1997) and have a high need for achievement (McClelland, 1961). On the downside, however, being a hero entrepreneur is often associated with feelings of loneliness because inside the firm there are hardly people with the same status and the time for contacts outside the firm is limited (Gumpert & Boyd, 1984).

The motivations and inspirations behind an individual's entrepreneurial intention have received increased academic attention (Carter et al. 2003; Zellweger et al. 2011; Laspita et al. 2012). In today's increasingly competitive and growth-oriented world, entrepreneurship is considered one of the best strategies to enhance a country's economic development and to achieve



sustainable competitiveness (Schaper and Volery 2004; Venkatachalam and Waqif 2005). Through entrepreneurial activities, several countries have been able to generate wealth, improve firm survival rate, enhance technological change adoption, and create job opportunities (Gurol and Atsan 2006; Lena and Wong 2003). Thus, entrepreneurship can be considered as the engine driving many nations' economic growth and competitiveness (Scarborough and Zimmerer 2003; Kuratko and Hodgetts 2004). As a result, entrepreneurship has emerged as one of the most popular topic among scholars, students and policy makers and is becoming an emerging disciplinary field (Chuluunbaatar et al. 2011; Davidsson and Wiklund 2001).

In today's highly competitive job environment with limited opportunities, both undergraduate and graduate students are interested in studying entrepreneurship (Dickson et al. 2008; Solomon 2002) because the wage employment or permanent employment is not guaranteed in organizations (Collins et al. 2004; Kamau-Maina 2006; Postigo et al. 2006). Furthermore, the premise that university graduates are the elite and the intelligent group in society who can easily acquire a job upon graduation, no longer reflects the realities of today's employment market (Seet and Seet 2006).

### **1.1 Entrepreneurial Intentions**

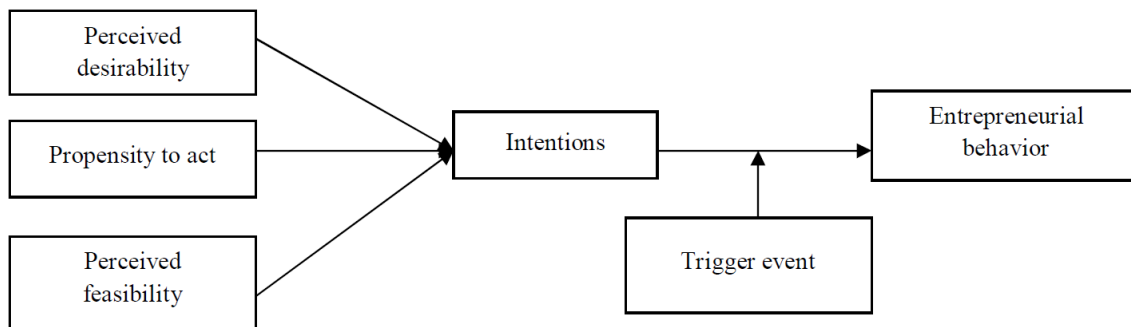
As mentioned earlier, entrepreneurial intentions are usually defined as one's desire to own one's own business (Crant, 1996) or to start a business (Krueger, Reilly, & Carsrud, 2000). Historically, intentions have been used to describe a self-prediction to engage in a behavior (Ajzen, 1991; Ajzen & Fishbein, 1977). That is, once the formation of intentions occurs, actual behavior is expected. Social-psychological studies assume that intention is the single best predictor of actual behavior (Bagozzi, Baumgartner, & Yi, 1989). Many studies have supported the predictive validity of intentions on actual behaviors. For example, according to Sheeran's

# 1 Introduction

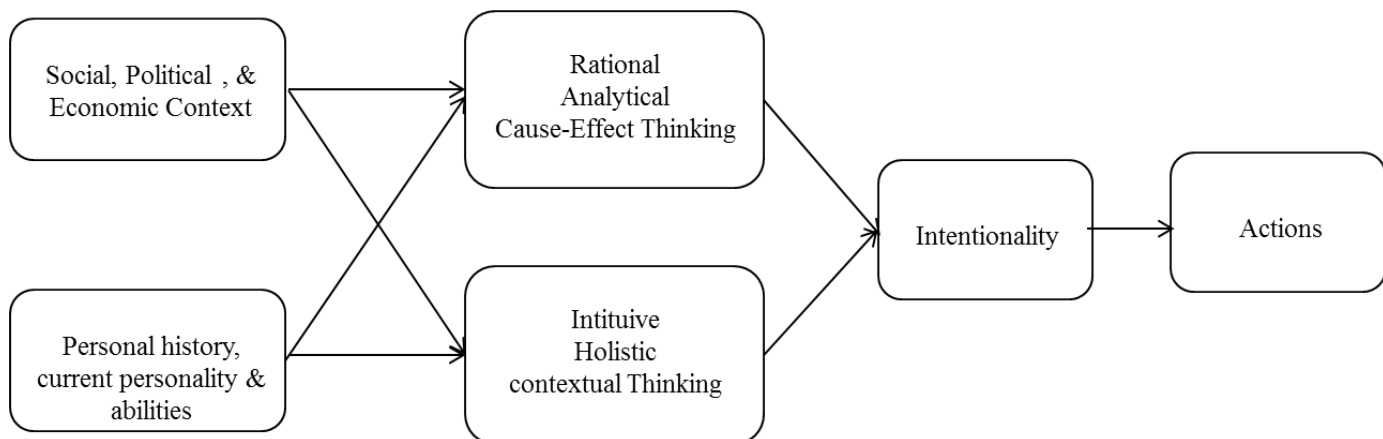
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(2002) meta-analysis covering 422 studies during its previous 10 years, the mean correlation between intentions and behavior was .53, accounting for 28% of the variance in behavior. In entrepreneurship, however, other scholars have cast doubt on whether intentions predict actual entrepreneurial behavior (Douglas & Shepherd, 2002). Nonetheless, multiple studies still regard entrepreneurial intentions as one of the crucial antecedents of actual entrepreneurial actions (Krueger et al.; Lee, Wong, Foo, & Leung, 2011).

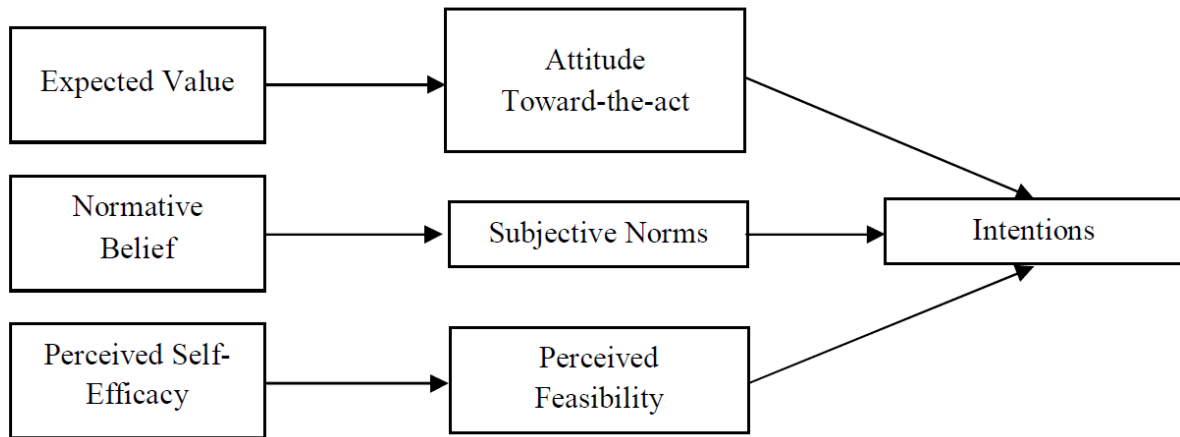
Three models primarily serve as a guide to an understanding of the development of entrepreneurial intentions: 1) Shapero and Sokol's (1982) model of the entrepreneurial event; 2) Bird's (1988) model for implementing entrepreneurial ideas; and 3) Ajzen's (1991) theory of planned behavior (Carsrud & Brännback, 2009; Shook, Priem, & Mcgee, 2003; Fayolle & Liñán, 2013)



Source Shapero and Sokol (1982)  
**Figure 1 Entrepreneurial Event Model**



Source Bird (1988)  
**Figure 2 Implementing Entrepreneurial Ideas**



Source Ajzen, (1991)

Figure 3 Theory of Planned Behavior

### 1.2 Literature Search and Selection Strategy

A comprehensive search was conducted in the following bibliographic databases for studies published before December 2013: ABI/INFORM, PsycINFO, EBSCO (Business Source Elite), EconLit, ERIC (Expanded Academic Index), JSTOR Databases, Science Direct, and Wilson Business Abstracts using variations of keywords of entrepreneurial intentions (e.g., 'intention'; 'entrepreneurship', 'start-up intention', 'enterprise attitude', 'entrepreneurship education', and 'motivation') and determinants according to the TPB (theory of planned behaviour), according to the EEM (Entrepreneurial Event Model) organizational factors (e.g. entrepreneurship education support, university culture, perceived support) and institutional factors (e.g. structural support, perceived, access to capital barriers). Second, I manually searched relevant journals including *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Strategic Management Journal*, *Journal of Small Business Management*, *Academy of Management Journal*, *Journal of Applied Psychology*, *Administrative Science Quarterly*, and the *Entrepreneurship and Regional Development*. Third, I searched major management and entrepreneurship conference proceedings, such as Frontiers of Entrepreneurship Research, Academy of Management Proceedings, United States Association

for Small Business and Entrepreneurship, and Southern Management Association. Fourth, I identify unpublished papers and working papers. Fifth, the reference lists from the studies identified in these four steps were examined for additional studies. Finally, I consulted review articles (Krueger, 2009; Kuehn, 2008; Shooket al., 2003) and previous meta-analyses (Haus, Steinmetz, Isidor, & Kabst, 2013; Martin, McNally, & Kay, 2013; Zhao, Seibert, & Lumpkin, 2010), the following selection criteria framed the scope of my study:

- (1) Studies had to assess the performance effect of entrepreneurial intentions (EI) at the individual level;
- (2) EI had to address decision-making process at the individual level. Thus studies testing organizational-level entrepreneurial intentions or orientation were excluded;
- (3) I did not consider qualitative research. To be included in the meta-analysis table 1.

On completion of the search process in December 2013, my final database consisted of 88 studies which represent a strong empirical base for a meta-analysis (Haus, Steinmetz, Isidor, & Kabst, 2013; Martin, McNally, & Kay, 2013; Zhao, Seibert, & Lumpkin, 2010). Table 1 present a list of studies included in the meta-analysis. Complete bibliography is available from the authors.

I prepared a coding manual developed and iteratively revised to incorporate details of the included studies to reduce coding error (Lipsey and Wilson, 2001; Stock, 1994). I coded all the studies. The main data items extracted from the included studies were individual level, organizational level and institutional level factors. Figure 4 explains the overall overview of the literature on Entrepreneurial Intentions.

# 1 Introduction

**Table 1: Determinants of Entrepreneurial Intentions among students (2000-2013)**

Year	Authors	Journal	Sample	Individual Factors	Org. Factors	Institutional Factors
1.	2013	Solesvik	Education + Training	192- university Students	X	X
2.	2013	Wurthmann	Int. Entrepreneurship and Management Journal	314- university Students	X	
3.	2013	Zhang et al.	Int. Entrepreneurship and Management Journal	494- university Students	X	X
4.	2012	Laspita et al.	J of Buss. Venturing	43,764 - university Students	X	
5.	2012	Åstebro et al.	<i>Research Policy</i>	University graduates	X	X
6.	2012	Díaz-Casero et al.	Int'l Entrep Management J	1043-University students	X	
7.	2011	Zellweger et al.	<i>J of Buss. Venturing</i>	5363 - Students	X	
8.	2011	Wang & Verzat	<i>J of Small Buss. &amp; Enterprise Develop.</i>	12 interviews - Engineering students	X	X
9.	2011	Zarafshani & Rajabi	<i>Int'l J of Mgmt.</i>	280 - Entrepreneurship course students	X	
10.	2011	Jones et al.	<i>Education + Training</i>	122 - Buss. related students	X	
11.	2011	Davey et al.	<i>Education + Training</i>	1055 – Students	X	X
12.	2011	Ertuna & Gurel	<i>Education + Training</i>	767 - Mgmt. & Engineering students	X	
13.	2011	Sandhu at al.	<i>Int'l J of Entrepreneurial Beh. &amp; Research</i>	267 - Buss. Mgmt. & other courses PG students	X	
14.	2011	Lakovleva et al.	<i>Education + Training</i>	2225 - Buss. related (79%)& non Buss. related	X	
15.	2011	Keat et al.	<i>Int'l J of Buss. &amp; Social Science</i>	417 - UG students	X	X
16.	2011	Chuluunbaatar et al.	<i>Asian Academy of Mgmt. J</i>	361 - MBA students	X	
17.	2011	Fatoki & Chindoga	<i>Int'l Buss. Research</i>	357 - Undergrad & grad	X	
18.	2011	Fitzsimmons & Dolas	<i>J of Buss. Venturing</i>	414 - MBA students	X	
19.	2011	Gelard & Saleh	<i>African J of Buss. Mgmt.</i>	200 - Accounting-Mgmt. Students	X	X
20.	2011	Ahmetoglu et al.	<i>Personality &amp; Individual Differences</i>	528 - General population & Students	X	
21.	2011	Brück et al.	<i>European J of Political Economy</i>	12000 - General Population	X	
22.	2011	Byabashaija & Katono	<i>J of Develop. Entrepreneurship</i>	167 - University students	X	X
23.	2011	Moi et al.	Journal of Arts, Science & Commerce	787-University students	X	X
24.	2011	Klyver & Schøtt	Journal of Global Entrepreneurship Research	2001-general population	X	
25.	2010	BarNir et al.	<i>J of Applied Social Psychology</i>	393 - UG students	X	
26.	2010	Moriano et al.	<i>J of Career Development</i>	1074 - Psychology (37%), Buss. (42) other	X	
27.	2010	Engle et al.	<i>Int'l J of Entrepreneurial Beh. &amp; Research</i>	1748 - Buss. Students	X	
28.	2010	Nabi et al.	<i>J of Small Buss. &amp; Enterprise Development</i>	8000 – students	X	
29.	2010	Carey et al.	<i>J of Develop. Entrepreneurship</i>	169 – students	X	
30.	2010	Yordanova & Tarrazon	<i>J of Develop. Entrepreneurship</i>	366 - Economics or Buss. Administration	X	
31.	2010	Millman et al.	<i>J of Small Buss. &amp; Enterprise Development</i>	303 - General students	X	
32.	2010	Franco et al.	<i>Education + Training</i>	988 – UG & PG students	X	X
33.	2010	Giacomin et al.	<i>Int'l Entrepreneurship and Management J</i>	2093 - UG & PG	X	X
34.	2010	Drost Ellen A.	<i>Advances In Mgmt.</i>	168 - UG Buss. students	X	X

## 1 Introduction

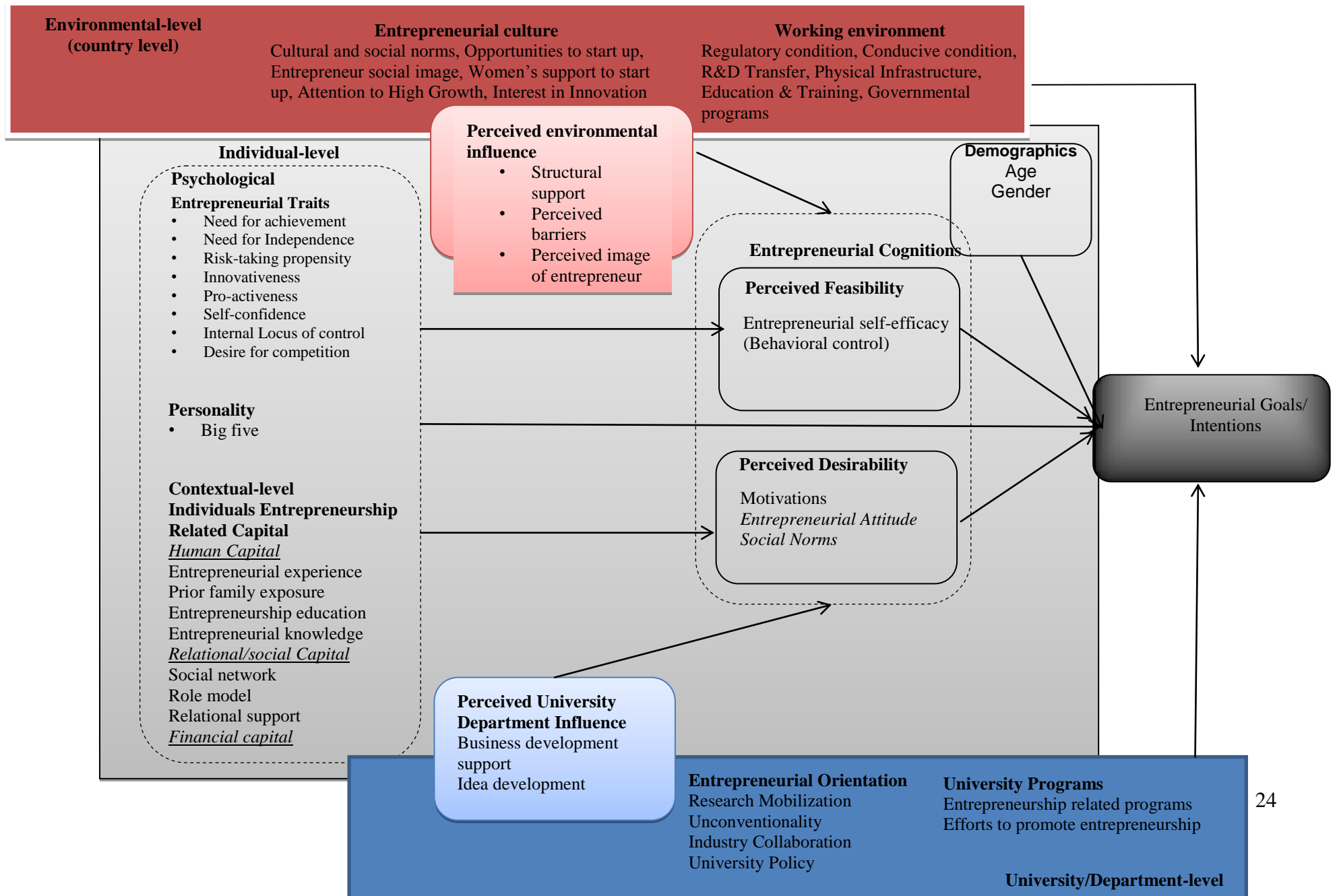
35.	2010	Aghazamani & Roozikhah	<i>European J of Social Sciences</i>	125		X	
36.	2010	Teixeira & Davey	<i>Industry and Higher Education</i>	4413		X	
37.	2009	Nasurdin et al.	<i>European J of Scientific Research</i>	237 - General youth		X	
38.	2009	Liñán & Chen	<i>Entrepreneurship Theory &amp; Practice</i>	387 - Buss., Economics & engineering		X	
39.	2009	Turker & Selcuk	<i>J of European Industrial Training</i>	300 – students		X	X
40.	2009	Wilson et al.	<i>J of Develop. Entrepreneurship</i>	4292 - MBA Students, Middle/High School		X	X
41.	2009	Gupta et al.	<i>Entrepreneurship Theory &amp; Practice</i>	277 - Buss. Students		X	
42.	2009	Pruett et al.	<i>Int'l J of Entrepreneurial Beh. Research</i>	General students		X	
43.	2009	Rosti & Chelli	<i>Education + Training</i>	National Statistical Office database		X	
44.	2009	Cheng et al.	<i>Education + Training</i>	300 – PG students		X	X
45.	2009	Schwarz et al.	<i>Education + Training</i>	2124 - Students		X	X
46.	2009	Zampetakis et al.	<i>Int'l J of Entrepreneurial Beh. &amp; Research</i>	280 - Buss., engineering & science students		X	
47.	2009	Kickul et al.	<i>Entrepreneurship Theory &amp; Practice</i>	138 - MBA students		X	
48.	2009	Ismail et al.	<i>Int'l J of Buss. &amp; Mgmt.</i>	123 - UG students		X	
49.	2008	Linan, F.	<i>Int'l Entrepreneurship &amp; Mgmt. J</i>	702 -UG students		X	
50.	2008	Wu & Wu	<i>J of Small Buss. &amp; Enterprise Development</i>	150 – students		X	X
51.	2008	Mueller & Dato-On	<i>J of Develop. Entrepreneurship</i>	216 - MBA students		X	
52.	2008	van Gelderen et al.	<i>Career Development Int'l</i>	1301 - Buss. Students		X	
53.	2008	Gurbuz & Aykol	<i>J of Global Strategic Mgmt.</i>	324 - Economics, administrative & engineering		X	X
54.	2008	Basu & Virick.	<i>Annual Meeting of the National Collegiate Inventors</i>	124 - University students		X	X
55.	2008	Jones et al.	<i>Education þ Training</i>	122 - Specialized course students		X	
56.	2008	Radu & Loué	<i>J of Enterprising Culture</i>	44 UG students		X	
57.	2008	Gerry et al.	Problems and Perspectives in Management	640-Undergraduate students		X	X
58.	2008	Hamidi et al.	J of Small Buss. & Enterprise Development	78- Entrepreneurship course students		X	
59.	2007	Carr & Sequeira	<i>J of Buss. Research</i>	308 - General population		X	
60.	2007	Wilson et al.	<i>Entrepreneurship Theory &amp; Practice</i>	933 - MBA Students, 4292 - High School		X	X
61.	2007	Sequeira et al.	<i>J of Develop. Entrepreneurship</i>	389 – Organizations students		X	
62.	2007	Liñán & Santos	<i>Career Development Int'l</i>	354 - Economics & Mgmt. students		X	
63.	2007	Pillis & Reardon	<i>Career Development Int'l</i>	208 - UG & MBA students		X	
64.	2007	Souitaris. et al.	<i>J of Buss. Venturing</i>	science & engineering students		X	
65.	2007	Li	<i>J of Develop. Entrepreneurship</i>	364 – students		X	X
66.	2007	Frank et al.	<i>Entrepreneurship &amp; Regional Development</i>	417 - High school, 777 - university, 314 - founders of Buss. & 746 -successors		X	X
67.	2006	Urban	<i>J of Develop. Entrepreneurship</i>	150 - MBA students		X	
68.	2006	van Auken at al.	<i>Entrepreneurship Theory &amp; Practice</i>	82 - General students		X	
69.	2006	Gurol & Atsan	<i>Education + Training</i>	400 - Buss. UG		X	
70.	2006	Klapper & Le´ger-Jarniou	<i>Industry and Higher Education</i>	538 - Buss. & engg. UG		X	X

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71.	2006	Levenburg et al.	<i>Journal of Education for Business</i>	728 UG students			X	
72.	2005	Zhao et al.	<i>J of Applied Psychology</i>	265 - MBA Students			X	
73.	2005	Segal et al.	<i>Int'l J of Entrepreneurial Beh. &amp; Research</i>	114 - UG <i>Buss.</i> students			X	
74.	2005	Veciana et al.	Int'l Entrepreneurship and Management J	1272 - Buss. & Engineering UG & PG			X	
75.	2005	Fitzsimmons, and Douglas	Babson-Kauffman conf.	414-University students			X	
76.	2005	Fitzsimmons, and Douglas	AGSE Entrepreneurship Exchange	90-MBA students			X	
77.	2004	Kristiansen & Indarti	<i>J of Enterprising Culture</i>	251 - <i>Buss.</i> & Economics students			X	X
78.	2004	Wang & Wong	<i>Technovation</i>	5326 – students			X	
79.	2004	Franke & Lüthje	<i>Int'l J of Innovation &amp; Technology Mgmt.</i>	1313 - <i>Buss.</i> Students			X	
80.	2003	Peterman & Kennedy	<i>Entrepreneurship Theory &amp; Practice</i>	220 - Specialized program students		X	X	
81.	2003	Luthje & Franke	<i>R&amp;D Mgmt.</i>	512-University students			X	X
82.	2003	Lena & Wong	<i>Journal of Enterprising Culture</i>	11660 - <i>Buss.</i> UG			X	
83.	2003	Carter et al.	<i>J of Buss. Venturing</i>	3126- General population			X	
84.	2002	Drnovsek & Glas	<i>J of Buss. Venturing</i>	302 - MBA students & innovators			X	
85.	2002	Oakey et al.	Int'l J of Entrepreneurship and Innovation Mgmt.	247 - UG & PG students			X	
86.	2002	Douglas and Shepherd	<i>Entrepreneurial Theory and Practice</i>	300-Alumni students			X	
87.	2000	Krueger et al.	<i>J of Buss. Venturing</i>	97 - <i>Buss.</i> Students			X	
88.	2000	Mueller & Thomas	<i>J of Buss. Venturing</i>	1800 - UG <i>Buss.</i> students			X	

Note: Reference can be obtained from the authors through email.

Figure 4: Overall Overview of Entrepreneurial Intention Research in Literature





## 1 Introduction

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**Table 2: Entrepreneurship Studies by Country**

Europe	Asia	Africa	America	Australia & New Zealand
Switzerland	Bangladesh	Egypt	Brazil	New Zealand (2)
Austria (5)	China (9)	Ghana	Canada (2)	Australia (5)
Belgium (2)	India (5)	South Africa (3)	Costa Rica	
Bulgaria	Indonesia (2)	Uganda (2)	Mexico (2)	
Croatia	Iran (4)	Kenya	Puerto Rico	
Czech Republic (3)	Malaysia (7)		USA (24)	
France (7)	Singapore (2)			
Finland (5)	Turkey (6)			
Germany (9)	Taiwan (2)			
Hungary (2)	Thailand (2)			
Greece (2)				
Ireland (4)				
Italy				
Portugal (5)				
Poland (3)				
Russia (2)				
Slovenia (2)				
Spain (10)				
Sweden (3)				
Nederland (3)				
Norway (3)				
Romania				
Ukraine (2)				
United Kingdom (5)				

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### 1.3 What we know and what we do not know?

Entrepreneurship “seeks to understand how opportunities to bring into existence ‘future’ goods and services are discovered, created, and exploited, by whom, and with what consequences” (Venkataraman, 1997, p. 120), but many agree that entrepreneurship is rather young field of research and struggling with its definition (Audretsch, 2003). According to Shane and Venkataraman (2000) entrepreneurial opportunities refer to “situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production” (p. 220)

Becoming an entrepreneur is a voluntary and conscious decision (Krueger et al. 2000). However, to become a novice, a serial, and even a portfolio entrepreneur, an individual must first become a nascent entrepreneur (Westhead and Wright 1998a&b). Previous research provides some alternative explanations of the process that underlies the emergence of entrepreneurial intention and behavior. Some scholars primarily focus on individual-level factors as the potential determinants of entrepreneurial intention. For example, studies have identified creativity (Schumpeter, 1934), risk taking propensity (Knight, 1946), and achievement motivation (McClelland, 1961) as typical characteristics of entrepreneurs. Until today, a substantial part of research has investigated personality traits of entrepreneurs (see for example the meta-analyses by Rauch & Frese, 2007; Zhao & Seibert, 2006). As this research has been criticized for being too static (e.g. Gartner, 1988; Rauch & Frese, 2007), subsequent research on the person of the entrepreneur has started to focus more on their cognitive and affective processes – a stream of research subsumed under the term entrepreneurial behavior (Shaver & Scott, 1991; Welter & Smallbone, 2011). Many researchers criticize the trait approach in entrepreneurship is that it does not take into account the context the entrepreneur acts in (Gartner, Shaver, Gatewood, & Katz, 1994; Mitchell et al., 2002). Implicitly, research focusing

on the individual entrepreneur draws the picture of a lonely hero who bears the challenges of entrepreneurial action.

At the organizational level, other scholars have focused on the factors of organizational culture and organizational norms (Louis, Blumenthal, Gluck, and Stoto 1989), university quality (Di Gregoria and Shane 2003), and the impact of entrepreneurship education on students' entrepreneurial intention (Souitaris et al. 2007), among other factors. Finally, at institutional level researchers have focused on economic stability (Harper 1998; McMillan and Woodruff 2002), capital availability (de Bettignies and Brander 2007; Shane 1996), and reduced personal income taxes (Gentry and Hubbard 2000) as the most important factors for entrepreneurial development. Although these three different levels might interact with each other to synergize entrepreneurial intention, most investigators have treated them independently, rather than considering the effects of their potential interrelations and interdependency. Many scholars have primarily focused either on individual-level, organizational-level, or institutional-level factors to measure entrepreneurial intention. However these three streams of research have evolved in relative isolation and have not been compared collectively within a multi-level perspective. Hitt et al. (2007) and Ireland and Webb (2007) argue that single-level perspective in behavioral studies give incomplete information, and so researchers must consider institutional, organizational, and individual factors to understand entrepreneurial intention. My research has following objectives.

My **first objective** is to extend the entrepreneurship literature by introducing a multi-level perspective of individual, organizational, and institutional factors to understand the entrepreneurial intention of university students. Following Shapero and Sokol (1982), I have examined the impact of perceived feasibility and perceived desirability on entrepreneurial intention through individual-level factors, organizational-level factors, and institutional-level factors. At the individual level, I have used eight factors which differentiate individuals on the

basis of how they discover, evaluate, and exploit entrepreneurial opportunities. Perceived desirability is measured by five factors: need for achievement (Collins et al. 2004), need for independence (Douglas and Shepherd 2002), financial success (Carter et al. 2003), self-realisation (Carter et al. 2003), and social norms (Elster 1989). Perceived feasibility is measured by three factors: entrepreneurial self-efficacy (Chen et al. 1998), risk-taking propensity (Stewart and Roth 2001), and social network support (Turker and Selcuk 2009). At the organizational level, I measured perceived university support. Perceived university support considers students' perception of their university's support, which includes: educational support, cognitive support, and business development support (Kraaijenbrink et al. 2010). At the institutional level, I measured perceived institutional support, which refers to the policies, regulations and programs run by governments of a country to support entrepreneurship (Turker and Selcuk, 2009).

**Secondly**, Different studies conducted by SMEDA, GEM (2010), ILO (2011) and WBES (2010) found a correlation between a country's per capita GDP, national economic growth rate, and the level and type of entrepreneurial activity in the country. This indicates that an individual's entrepreneurial intention is a reflection of the economic potential, political stability, and economic environment of the country. The Global Employment Trends for Youth (2011) highlighted the statement made by the International Labour Organization (ILO) which indicated that the recent global economic crisis has led to a *substantial* increase in youth unemployment rates, which has reversed the earlier favorable trends observed during the past decade. The new economic environment's realities reflect the frustration and anger that 4.5 millions of currently unemployed young individuals around the world are feeling. Therefore, my second contribution is to provide an understanding of these issues in order to facilitate the development of institutional-level and organizational-level strategies. my third contribution is

to extend my understanding of entrepreneurial intention in the context of developing countries<sup>1</sup>.

**Third**, A family business is “governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families” (Chua et al., 1999: 25). This definition suggests that familial exposure to self-employment can affect young people’s occupational choices such that they perceive self-employment as desirable and feasible (Krueger et al., 2000; Sorensen, 2007). Research has shown that parents’ entrepreneurial background can initiate entrepreneurial intentions in their children (Altinay et al., 2012; Carr and Sequeira, 2007; Laspita et al., 2012; Matthews and Moser, 1996; Scherer et al., 1989). In fact, having a parent who is an entrepreneur increases the probability that a person will become an entrepreneur by a factor of 1.3 to 3.0 (Dunn and Holtz-Eakin, 2000; Arum and Mueller, 2004; Sørensen, 2007; Colombier and Masclet, 2008; Andersson and Hammarstedt, 2010, 2011).

Research has focused on multiple individual-level factors (e.g. achievement orientation, risk tolerance, desire for independence, extraversion, economic motivation, ability to identify new opportunities, creativity are among some) to explain phenomena related to entrepreneurial intentions. However, researchers have rarely focused on family background and its influence on the development of entrepreneurial intentions (Laspita et al., 2012; Getz and Petersen, 2005). People whose parent or close family member is self-employed are more likely than others to pursue an entrepreneurial career (Matthews and Moser, 1996; Drennan et al., 2005). A family business background may present lower barriers to entrepreneurial entry, since those with such backgrounds may be able to capitalize on their social ties and social capital (Greve and Saleff, 2003).

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<sup>1</sup> I conducted review of literature between year 2000 to 2013 and out of 88 most relevant papers only few has addressed the developing part of the world and none of them has addressed Pakistan (See Table 2).

Previous research is inconclusive on the origins of the intergenerational transfer of entrepreneurship (Lindquist et al., 2012). I address this gap in the literature by exploring the inter-generational transmission of entrepreneurial intentions using Shapero and Sokol's (1982) model of intention in entrepreneurial events (SEE). I analyze the role of an entrepreneurial family background as an intergenerational influence on entrepreneurial intention and the underlying mediating effect of the perceived desirability and perceived feasibility of starting a business. I hypothesize that individuals with prior family business experience may develop positive perceptions toward entrepreneurial feasibility and desirability, which can result in entrepreneurial action. My goal is to make a theoretical and empirical contribution to Shapero and Sokol's (1982) model.

**Fourth**, the role of entrepreneurial education and experience has been highlighted as critical to the ability to recognize entrepreneurial opportunities (Shane 2000; Davidsson and Honig, 2003) and to using these opportunities effectively (Robinson and Sexton 1994; Bates 1995). It has been recognized as one of the crucial factors in developing positive perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao, Seibert, and Hills 2005), development of favorable attitudes toward self-employment (Gorman, Hanlon, and King 1997; Hegarty 2006; Johannisson 1991; Krueger and Brazeal 1994), and related entrepreneurship preferences and intentions (Chen, Greene, and Crick 1998).

However, despite the increasing interest in academic entrepreneurship and new venture creation by students, very little empirical research has identified entrepreneurship education and support factors that can foster entrepreneurship among university students (Walter, Auer, and Ritter 2006). Furthermore, in spite of the growth in the number of entrepreneurship courses and curricula and the link between entrepreneurship education and entrepreneurial behavior (Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink, Groen, and Bos 2010).

Drawn on a dataset from surveys completed by 805 undergraduate university students from Pakistan, my findings have important implications for entrepreneurship research and teaching. My multi-level study extends the literature, as it acknowledges the important but neglected influence of organization-level factors on entrepreneurial behavior, thus helping to resolve some of the controversies in previous research (Gartner et al. 1992). My main objective is to extend the entrepreneurship literature by employing a multi-level perspective of individual- and organizational-level factors in order to understand the roots of university students' entrepreneurial intentions. In testing my research propositions, I have used hierarchical linear modeling (HLM) to avoid the estimation errors that are associated with traditional regression models (Bommer et al. 2007; Marrone et al. 2007; Martin 2007). My findings will help university managers and national-level policy-makers to understand the effectiveness of initiatives undertaken to stimulate entrepreneurship.

**Fifth**, Women are considered not only less involved in entrepreneurship, but they have also been found to be less interested (Blanchflower et al., 2001; Grilo & Irigoyen, 2006; Grilo & Thurik, 2005a, 2008). The scholarly domain of women's entrepreneurship has grown dramatically in recent years, but a lot of work remains to be done (Hughes, Jennings, Brush, Carter, & Welter, 2012), especially in terms of women's lower entrepreneurial intentions (Davis & Shaver, 2012) and the effects of entrepreneurship education and programs. As I explain, by distinguishing between feasibility and desirability and the moderating role of gender on the decision to become an entrepreneur, I aim to investigate the existence of gender differences.

Also, despite an increasing interest in stimulating new venture creation by university students, very little empirical research has identified entrepreneurship education and support factors that can foster entrepreneurship among students (Walter, Auer, and Ritter 2006), and how this might differ by gender. In spite of the growth in the number of entrepreneurship

courses and curricula, and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures remain low (Kraaijenbrink, Groen, and Bos 2010). Previous studies that have attempted to examine the effectiveness of formal entrepreneurship education have been inconclusive, perhaps due to the outcome measures they have used, including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox, Mueller, and Moss 2002).

With this, I am interested in gender differences among university students on the intent to start businesses, and I specifically examine perceived feasibility and desirability. Although self-efficacy has been rarely used as an outcome measure, one study found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business (entrepreneurial self-efficacy) (Peterman and Kennedy 2003), which can ultimately enhance entrepreneurial intentions (Peterman and Kennedy 2003; Dhaliwal 2010). Kraaijenbrink et al. (2010) suggested that although universities support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it is crucial to gauge the extent to which it could have an impact on students' intentions to start businesses. This can be achieved by measuring students' perceptions of the university support they receive or "perceived university support".

The main objective of the paper therefore consists on the distinction between feasibility and desirability, and linking them with entrepreneurial decision making in women and men. This will provides with new insights regarding whether women's lower levels of entrepreneurial interests are driven by feasibility and desirability levels. I examine this within the context of other influences, such as institutional support and individual motivations, which allows me to assess the relative importance of the perception of entrepreneurship education and support by gender, in an integrative, multi-perspective framework. I also follow Carter and her



associates (2003) and examine the moderating role of gender in the venture creation process, based on effort-performance-outcome (conceptualized by the desirability of starting a new venture) (Gatewood, 1993; Gatewood et al., 2002). My findings will help policy-makers and university managers to understand the effectiveness of current practices and initiatives, particularly among women.

### **1.4 Structure and scope of this thesis**

The four empirical studies of this thesis cover a broad spectrum of entrepreneurial intentions. This thesis considers three different contexts of entrepreneurial individuals, i.e. university/department where they study, country level conditions (institutional) and their family. I dedicate a separate chapter to each empirical study which represents one research paper. Each chapter is introduced by a description of the general topic and underlying theories to place it in the context of existing research. I will then present the methodological approaches and the findings of the studies. Further, I will discuss the results, illustrate limitations, and suggest opportunities for future research.

In the following, I will present an overview over the four chapters which represent four empirical studies. Therefore, I will briefly introduce the general topic and highlight main findings. Further, I will describe my individual contribution to each chapter as four of them are co-authored which is also indicated at the beginning of each chapter. An overview of the empirical chapters, the basic research questions addressed in them, and my individual contribution is also illustrated in Table 1.

Chapter 2 provides a multilevel perspective of entrepreneurial intentions. This model considers university/department level support (perceived educational support, concept development

support, and business development support), institutional level support to enhance entrepreneurial self-efficacy, which will increase entrepreneurial intention. In turn, entrepreneurial self-efficacy and individual motivations constitute the fundamental elements of the intention to start a business. This model is tested on a sample of 805 university student.

Chapter 3 provides a model of the transmission of entrepreneurial intentions within families. Complementing research that emphasizes the parents' role in the formation of offspring's entrepreneurial intentions (Matthews & Moser, 1996; Wang & Wong, 2004), it is shown that over and above the direct transmission of entrepreneurial intentions from parents to children.

Chapter 4 provides a multilevel-model of entrepreneurial intentions based on entrepreneurship education perspective. Chapter 5 provides a multilevel perspective of entrepreneurial intentions in gender context. This model considers how male and females perceive university/department level support (perceived educational support, concept development support, and business development support) and institutional level support to enhance entrepreneurial self-efficacy. This model also focuses on which motivational factors are more important in male and females to build their entrepreneurial intentions respectively. Chapter 6 provided overall summary of my results and new directions for future research.

**Table 3: Overview of empirical chapters, and research questions**

<i>Chapter</i>	<i>Title</i>	<i>Context</i>	<i>Research questions</i>
2	The Role of Perceived University and Institutional Support in the Formation of Students' Entrepreneurial Intention	Organizational and institutional support	Under what conditions of university and institutional support are individuals able have high entrepreneurial self-efficacy? How entrepreneurial desirability and self-efficacy form entrepreneurial intention in university environment?
3	Exploring Intergenerational Influence on Entrepreneurial Intention: The Mediating Role of Perceived Desirability and Perceived Feasibility	Family of origin	How are entrepreneurial intentions transmitted through entrepreneurial parents? What role does Perceived Desirability and Perceived Feasibility play in this process?
4	A Multi-Level Study Of Entrepreneurship Education Among Pakistani University Students	Entrepreneurship education	This study examines how characteristics of university departments' entrepreneurship education impact students' self-employment intentions?
5	Formation of Male and Female's Entrepreneurial Intentions through Perceived Feasibility and Perceive Disability: Gender based Implications for Academic Institutions and Policy Makers	Gender role in organizational and institutional support	How conditions of university and institutional support effect differently to male and females' entrepreneurial self-efficacy differently? How gender play moderating role in entrepreneurial desirability and self-efficacy form entrepreneurial intention in university environment?

## 1.5 Publications

- a. Based on my thesis I have following publications in international journals.
  1. Saeed, S., Yousafzai, S., Yani-de-Soriano, M., and Muffatto, M. (2014). “The Role of Perceived University Support in the Formation of Students' Entrepreneurial Intention”, *Journal of Small Business Management* (forthcoming)
  2. Saeed, S., Muffatto, M., and Yousafzai, S. (2014). “A Multi-level Study of Entrepreneurship Education among Pakistani University Students”, *Entrepreneurship Research Journal* (forthcoming)
  3. Saeed, S., Muffatto, M. and Yousafzai, S. (2014). “Exploring inter-generational influence on entrepreneurial intention: the mediating role of perceived desirability and perceived feasibility”. *International Journal of Entrepreneurship and Innovation Management* (forthcoming)
  
- b. Working paper based on same data used in this thesis
  4. Saeed, S. (work in process). The Role of Institutions in Formation of Male and Female's Entrepreneurial Intentions through Perceived Feasibility and Perceived Disability: Gender based Implications for Academic Institutions and Policy Makers.
  5. Saeed, S. (work in process). Entrepreneurial Knowledge as Exogenous Influence and Entrepreneurial Intent: A Theory of Planned Behavior Approach

## **2 The Role of Perceived University Support and Formation of Students' Entrepreneurial Intention**

Entrepreneurship education is central to student entrepreneurship. Previous research has attempted to understand the role of entrepreneurship education in the formation of students' entrepreneurial intention and behavior, albeit in an isolated manner. Universities can support entrepreneurship in many ways, but it is important to measure students' perception of the support that they receive in order to understand the extent of such support and its impact on students. The current study proposed and tested an integrative, multi-perspective framework. I have hypothesized that the three dimensions of university support, that is, perceived educational support, concept development support, and business development support, together with institutional support shape students' entrepreneurial self-efficacy. In turn, entrepreneurial self-efficacy and individual motivations constitute the fundamental elements of the intention to start a business. A sample of 805 university students took part in the study and data were analyzed using structural equation modelling (SEM). My findings showed that perceived educational support exerted the highest influence on entrepreneurial self-efficacy, followed by concept development support, business development support and institutional support. Self-efficacy in turn had a significant effect on entrepreneurial intention. Individual motivations such as self-realization, recognition and role had an additional impact on intention. However, intention was not related to financial success, innovation and independence. The findings suggest that a holistic perspective provides a more meaningful understanding of the role of perceived university support in the formation of students' entrepreneurial intention. Theoretical and practical implications are discussed.

### **2.1 Introduction**

The impact of entrepreneurship education (EE), training and support has been recognized as one of the crucial factors in developing positive perceptions of competence for start-up firms

(Hartshorn and Hannon 2005; Zhao, Seibert, and Hills 2005), the development of favorable attitudes toward self-employment (Krueger and Brazeal 1994), and related entrepreneurship preferences and intentions (Chen, Greene, and Crick 1998). Despite the increasing interest in academic entrepreneurship and new venture creation by students, very little empirical research has identified EE and the support factors that can foster entrepreneurship among university students (Walter, Auer, and Ritter 2006). Furthermore, in spite of the growth in the number of entrepreneurship courses and curricula and the link between EE and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink, Groen, and Bos 2010).

Previous studies, which have attempted to examine the effectiveness of formal EE, have been inconclusive, perhaps due to the outcome measures they have used including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox, Mueller, and Moss 2002). Although self-efficacy has been rarely used as an outcome measure, one study by Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased the perceived feasibility of starting a business, which implies that EE can enhance entrepreneurial intention (EI). Kraaijenbrink et al. (2010) suggested that although universities can support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it was crucial to gauge the extent to which they could have an impact on students. This can be achieved by measuring students' perceptions of the university support that they receive or "perceived university support" (PUS).

Although EE can increase EI, it is not the only influence affecting it. Therefore, it is important to understand the process that underlies the emergence of EI. Some scholars have focused primarily on individual factors as the potential determinants of EI. These factors include: demographic characteristics, the status of parents and grandparents, role models, entrepreneurial self-efficacy (ESE), locus of control, self-realization, independence,

recognition, entrepreneurial experience, personality traits and subjective norms. Other researchers have focused on organizational factors, such as organizational culture and organizational norms (Louis, Blumenthal, Gluck, and Stoto 1989), university quality (Di Gregorio and Shane 2003), and the impact of EE on students' EI (Souitaris, Zerbinati, and Allaham 2007). Finally, when looking at some of the institutional factors affecting entrepreneurial development, researchers have focused on economic stability (McMillan and Woodruff 2002), capital availability (de Bettignies and Brander 2007), and reduced personal income taxes (Gentry and Hubbard 2000)

These multi-level factors may interact with each other to synergize EI, but most researchers have treated them independently rather than considering the effects of their potential inter-relations and inter-dependency. However, social science research expects a more holistic view to explain phenomena by taking into account the inter-connections of various factors. Research has emphasized that although individual-level factors have some impact on EI, it may be better to consider the impact of some contextual factors as well (Turker and Selcuk 2009). Following the argument of Ireland and Webb (2007) that a single perspective in behavioral studies offers an incomplete account of phenomena, my study takes a multi-perspective approach to assess the impact of EE on EI.

This paper proposes the following research questions: (1) How do students perceive EE and the support that they receive from their universities? (2) Does PUS have an impact on students' ESE? (3) How important is PUS in influencing students' EI within the context of other factors, such as institutional support (IS) and individual motivations? (4) How can universities be more effective in their provision of EE and support to their students? To answer these questions, I have developed a conceptual framework that reflects the role of EE within the context of other influences such as IS and individual motivations, rather than studying it in an isolated manner. This should permit a deeper and more meaningful analysis and understanding of the topic.

In my conceptual framework, EI represents a university student's intent to start a new business (Krueger and Brazeal 1994). Such intention is a conscious state of mind that precedes action and directs attention toward the goal of establishing a new business (Bird 1988). In order to understand how this intention is formed, I have followed Shapero and Sokol (1982) by examining the impact of perceived desirability and perceived feasibility on EI. Perceived desirability constitutes my individual-level perspective, comprising six individual motivation factors used by Carter, Gartner, Shaver, and Gatewood (2003): self-realization, financial success, role, innovation, recognition and independence. These factors differentiate individuals on the basis of how they discover, evaluate and exploit entrepreneurial opportunities. Perceived feasibility has been conceptualized as ESE (Chen et al. 1998). I propose that individuals with a sense of ESE may be drawn to the desirable opportunities and benefits of self-employment and thus they are likely to form intentions and goals for self-employment. Previous research indicates that self-efficacy is not a static trait, but that it can be changed (Hollenbeck and Hall 2004). Considering that changes may come from targeted educational and institutional efforts, I examine the possible link between EE, IS and ESE.

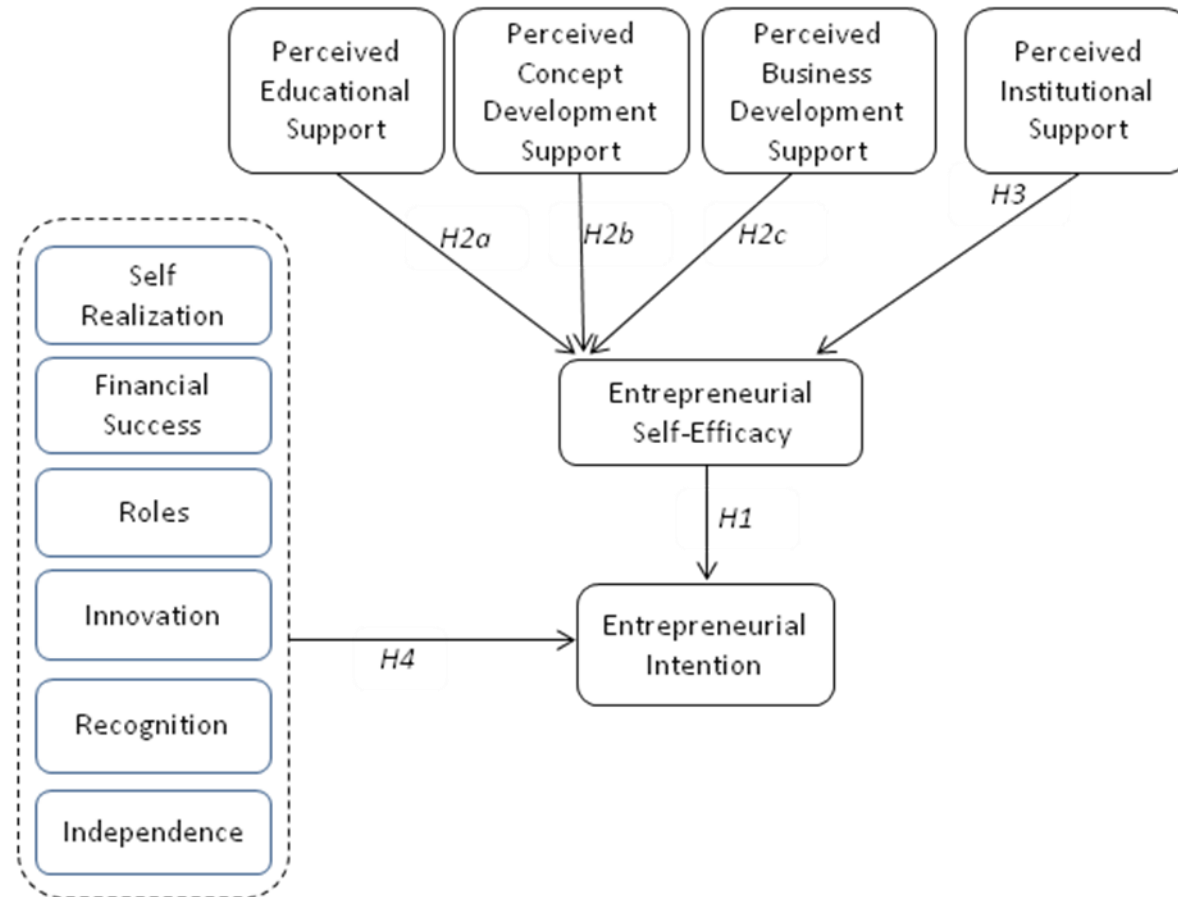
Entrepreneurship education is the focus of my article and constitutes my organizational-level perspective. Following Kraaijenbrink et al. (2010), I have conceptualized PUS by means of three separate but related constructs: perceived educational support (ES), perceived concept development support (CDS) and perceived business development support (BDS). In my framework I have integrated an institutional-level perspective by conceptualizing students' perception of the support that they receive from the government as perceived IS. This refers to the policies, regulations and programs that the country has undertaken to support entrepreneurship (Turker and Selcuk, 2009). I have hypothesized that the three constructs of PUS and perceived IS would increase perceived feasibility, as measured by ESE.

The main contribution of the article is to provide a better understanding of the role of EE and support and its impact on EI. The aim of the study is to assess the extent of students'



PUS and whether it affects their ESE. In turn, ESE may have an impact on EI. I examine this within the context of other influences, such as IS and individual motivations, which allow me to assess the relative importance of EE. Considering that there are few studies measuring the impact of EE, my research fills a gap in the literature by measuring the impact of EE within an integrative, multi-perspective framework, thus providing a broader view of this topic. The findings will help university managers and policy-makers to understand the effectiveness of current practices and initiatives, particularly in developing economies such as Pakistan. During the last decade, Pakistan has been trying to build its economic growth on the basis of educational policies. The Higher Education Commission (HEC) of Pakistan has recently developed the National Business Education Accreditation Council (NBEAC) to promote business education, particularly with the aim to stimulate EE and culture in Pakistani universities. Entrepreneurship has been selected by students as an elective subject during the final semester of their undergraduate programs. Nevertheless, the NBEAC seeks to promote entrepreneurship as a major field of study in higher education, thus making Pakistan a model context for my study. My proposed research framework is presented in Figure 4.

Figure 4: Proposed Research Framework



## 2.2 Theory development

### 2.2.1 *Entrepreneurial Intention*

Entrepreneurship is the process of venture creation and EI is crucial in this process. EI identifies the link between ideas and action which is critical for understanding the entrepreneurial process (Bird 1988; Krueger and Carsrud 1993). According to Ajzen (1991), intention captures the degree to which people show their motivation and willingness to execute the desired behavior. Intention has also been defined as a state of mind that directs a person's attention (and therefore experience and actions) toward a specific object (goal) or path in order to achieve something (for example, becoming an entrepreneur) (Bird 1988). Intention has been shown to be the best predictor of planned behavior (Bagozzi, Baumgartner, and Yi 1989), particularly when that behavior is rare, hard to observe, or involves unpredictable time lags (Bird 1988; Krueger and Brazeal 1994). A new business emerges over time and involves considerable planning and thus entrepreneurship is exactly the type of planned behavior (Bird 1988) for which intention models are ideally suited.

Previous research has proposed several conceptual models for understanding EI, including the Entrepreneurial Event Model (Shapero and Sokol 1982); the Intentional Basic Model (Krueger and Carsrud 1993); the Entrepreneurial Potential Model (Krueger and Brazeal 1994); and the Davidsson Model (Davidsson 1995). However, research has shown that there is little difference in the approaches taken by these models (Krueger et al. 2000). In the current study, my understanding of EI has been guided primarily by two models: (1) Ajzen's (1991) Theory of Planned Behavior (TPB) and (2) Shapero and Sokol's (1982) model of Entrepreneurial Event (SEE). While these models vary in terms of their underlying concepts, they provide comparable interpretations of EI (Krueger et al. 2000).

Ajzen (1991) argues that intentions in general depend on the attitude toward the act, social norms, and perceived behavioral control. The attitude toward the act reflects individuals' assessment of the personal desirability of creating a new business. Subjective norms reflect individuals' perceptions of what important people in their lives think about business creation. Finally, perceived behavioral control reflects individuals' perception of their ability to initiate a new business successfully. Interestingly, the domain of entrepreneurship had already provided a model quite similar to the TPB well before Ajzen formulated it. Shapero (1975) proposed that the entrepreneurial event (defined as initiating entrepreneurial behavior) depends on the presence of a salient, personally credible opportunity, which in turn depends on perceptions of desirability and feasibility. Shapero (1975) defined perceived desirability as the attractiveness (both personal and social) of starting a business, and perceived feasibility (both personal and social) as the degree to which an individual feels capable of starting a business.

The fact that two scholars in two different academic areas produced highly similar models attests to the value of intention models. Krueger, Reilly, and Carsrud (2000) tested the TPB and SEE, and found support for both models. They demonstrated that attitudes and subjective norms in the TPB model are conceptually related to perceived desirability in the SEE, while perceived behavioral control in the TPB corresponds with perceived feasibility in the SEE model. Considering that perceived behavioral control is largely synonymous with ESE (Boyd and Vozikis 1994), ESE would be the main indicator of perceived feasibility. Essentially, it can be concluded that perceived desirability and perceived feasibility are the fundamental elements of EI (Douglas and Shepherd 2002).

### *2.2.2 Perceived feasibility: entrepreneurial self-efficacy*

If the perception that a new venture is feasible is a predictor of the intention to launch it, then it is critical to examine the key indicator of perceived feasibility: ESE. Self-efficacy is the academic term for the belief that one can execute a target behavior. It is firmly based in

individuals' self-perceptions of their skills and abilities (Bandura 1986). It reflects individuals' innermost thoughts on whether they have what is needed to perform a certain task successfully. Actual abilities only matter if individuals have self-confidence in those abilities, and also the self-confidence that they will be able to convert those skills effectively into a chosen outcome (Bandura 1989). Evidence suggests that general self-efficacy is central to most human functioning and is based more on what people believe than on what is objectively true (Markham, Balkin, and Baron 2002). Research in this area has consistently emphasized the importance of perceived self-efficacy as a key factor in determining human agency (Bandura 1989), and has shown that those with high perceptions of self-efficacy for a certain task are more likely to pursue and persist in that task (Bandura 1992).

In the field of entrepreneurship, ESE has proved to be a remarkable predictor of EI (Chen et al. 1998; Krueger et al. 2000). Boyd and Vozikis (1994, p. 66) defined ESE as “an important explanatory variable in determining both the strength of entrepreneurship intentions and the likelihood that those intentions will result in entrepreneurial actions”. Similarly, Krueger and Brazeal (1994) proposed that ESE constitutes one of the key prerequisites for the potential entrepreneur. Therefore, I hypothesize that:

*H1. Entrepreneurial self-efficacy positively influences entrepreneurial intention.*

In turn, ESE can be influenced by experience, vicarious learning, social persuasion, and support and personal judgments or physiological states, such as arousal (Boyd and Vozikis 1994; Krueger and Brazeal 1994). Peterman and Kennedy (2003) showed that exposure to EE programs increases ESE. Subsequently, I discuss the role of PUS and perceived IS in shaping ESE.

### *2.2.2.1 Perceived university support and entrepreneurial self-efficacy*

The development of entrepreneurial universities constitutes a widespread phenomenon across the world, which has attracted the attention of policy-makers. Entrepreneurial universities are

valued because of their economic outputs (such as patents, licenses and start-up firms) and technology transfer mechanisms (Tijssen 2006). Furthermore, a significant amount of scholarship has considered universities as seedbeds for fostering an entrepreneurial spirit and culture. Universities can play an important role in identifying and developing entrepreneurial traits and inclinations among students and making them capable of starting their own venture, thus effectively contributing to economic prosperity and job creation (Debackere and Veugelers 2005). It is, therefore, important for universities to position themselves as a hub of new venture creation by nurturing an entrepreneurial environment and contributing substantially to the economy and society (Gnyawali and Fogel 1994).

Previous research has recognized the value of EE and support in the development of favorable perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao et al. 2005). EE has been associated with enhanced attitudes and intentions toward starting a new business (Chen et al. 1998; Krueger and Brazeal, 1994). In fact, university students who took entrepreneurship courses had a greater interest in becoming entrepreneurs compared with those who did not take it (Kolvereid and Moen 1997). Upton, Sexton, and Moore (1995) reported that 40 percent of those who attended entrepreneurship courses had started their own businesses. Previous research has suggested that certain university support policies and practices can foster entrepreneurial activities among students, for example, technology transfer offices and faculty consultants (Mian 1996); university incubators and physical resources (Mian 1997); and university venture funds (Lerner 2005). It is clear that an effective EE program and the entrepreneurial support provided by universities are efficient ways of obtaining the necessary knowledge about entrepreneurship and motivating young people to seek an entrepreneurial career (Henderson and Robertson 2000).

However, despite the increasing number of entrepreneurship courses and the link between EE and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink et al. 2010). Wang and

Wong (2004, p. 170) pointed out to the fact that the entrepreneurial dreams of many students are hindered by inadequate preparation: “their business knowledge is insufficient, and more importantly, they are not prepared to take risks to realize their dreams”. Timmons and Spinelli (2004) suggested that EE is effective when it enables participants to develop a higher capacity for imagination, flexibility and creativity, as well as developing the ability to think conceptually and perceive change as opportunity.

One way for an EE program to increase the ESE of students is to provide mastery experiences or “learning by doing”. This includes the opportunity to conduct feasibility studies, and develop business plans, and to benefit from business simulation, case studies, guest speakers and meaningful apprenticeships (Cox et al. 2002). Another way is to foster a supportive environment, for example, by offering resources such as a network of individuals who can provide specific expertise in areas such as marketing or accounting, the inclusion of role models, and the provision of one-to-one support. This support may give some people the confidence to initiate their own business venture (Kraaijenbrink et al. 2010). Previous studies have suggested that the attitude model of entrepreneurship has implications for EE programs, as attitudes are open to change and, therefore, can be influenced by educators and practitioners (Souitaris et al. 2007; Wang and Wong 2004). However, empirical research attempting to identify university support factors that can foster entrepreneurship among university students have remained limited (Walter et al. 2006).

Kraaijenbrink et al. (2010) suggested that although universities can support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures, it was crucial to gauge the extent to which they could have an impact on students. This can be achieved by measuring students' perceptions of the university support that they receive. They proposed three aspects of PUS. First, as part of their traditional teaching role, universities can provide ES by teaching students the general knowledge and skills that are needed to initiate a new venture. Second, considering their commercialization role, universities

can also provide individual students or groups of students with a more targeted and specific support for starting their own firm. This targeted support can be of two types: CDS and BDS. CDS can provide awareness, motivation and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000). BDS is typically given to the start-up firm rather than to individual students in the later stages of the entrepreneurial process.

Krueger and Brazeal (1994) suggested that EE should improve perceived feasibility of entrepreneurship by increasing the knowledge of students, building confidence and promoting self-efficacy. Thus, it can be inferred that the entrepreneurship programs and related support provided by academic institutions can play an important role in fostering ESE among their students. I propose:

**H2a.** *Perceived educational support positively influences entrepreneurial self-efficacy.*

**H2b.** *Perceived concept development support positively influences entrepreneurial self-efficacy.*

**H2c.** *Perceived business development support positively influences entrepreneurial self-efficacy.*

### 2.2.2.2 *Perceived institutional support and entrepreneurial self-efficacy*

Entrepreneurs do not exist in isolation and many social, cultural, economic and political factors may affect their entrepreneurial behavior. A country's public and private institutional structures establish the rules of the game for organizations and determine which specific skills and knowledge result in the maximum payoff (North 2005). While public institutions create laws, regulations and policies regarding government assistance for the promotion of entrepreneurship, private institutions define the culture, norms, beliefs and expectations of this activity (Ingram and Silverman 2002). A recent study by Bosma, Wennekers, and Amoros (2011) found a correlation between a country's GDP per capita, national economic growth rate,



and the level and type of entrepreneurial activity in the country. Previous research has also found that some key factors for entrepreneurial development included: economic stability (McMillan and Woodruff 2002), capital availability (de Bettignies and Brander 2007), and reduced personal income taxes (Gentry and Hubbard 2000). These studies suggest that individuals' EI is a reflection of the institutional structure and the economic and political stability of their country. This means that productive entrepreneurship would be at low levels where the incentives supporting it are weak (Baumol 1993). Some of these incentives include access to capital and markets and the availability of information (Basu 1998). Studies on students have revealed that the lack of funds is a major barrier to entrepreneurship (Henderson and Robertson 2000, Robertson et al. 2003; Li 2007).

An institutional environment can use both tangible and intangible measures to support entrepreneurship activities. Tangible measures include flexible and friendly credit conditions, venture capital availability, physical infrastructure, corporate physical assets, R&D laboratories, training opportunities and business plan competition. Intangible measures include making human capital available and providing sufficient legitimacy for entrepreneurship. If individuals perceive that the institutional environment is supportive, they will be more confident in their ability to become entrepreneurs and thus their ESE would increase (Luthje and Franke 2003; Schwarz, Wdowiak, Almer-Jarz, and Breitenecker 2009; Turker and Selcuk 2009). Therefore, I propose:

***H3. Perceived institutional support positively influences entrepreneurial self-efficacy.***

### *2.2.3 Perceived desirability: individual motivations*

Schumpeter (1934) defined entrepreneurs as those individuals who attempt to reform or revolutionize the pattern of production by exploiting an invention or untried technical possibility for producing a new commodity or producing an old one in a new way. He further mentioned that these efforts require aptitudes that are present in only a small fraction of the

population. It can be inferred from Schumpeter's definition that, in addition to a supportive organizational and institutional environment, the success of entrepreneurial activity depends upon the attitudes, interests and values of the individuals who are likely to form a new venture (Bird 1988). Thus, the reasons that these potential entrepreneurs give for starting a business should have a significant influence on whether they would actually engage in entrepreneurial activity, that is, their EI (Ajzen 1991; Krueger and Brazeal 1994; Krueger and Carsrud 1993; Kolvereid 1996). In the TPB, these reasons are salient beliefs which determine individuals' attitudes toward self-employment. Similarly, within the SEE framework, they can be seen as perceived desirability factors leading to the formation of EI.

Although a number of researchers have attempted to identify relevant reasons for new business formation, the specific individual motives that are consistently related to EI have shown mixed results. For example, Scheinberg and MacMillan (1988) reported that the need for approval, the perceived instrumentality of wealth, the degree of community, the need for personal development, the need for independence, and the need for escape are factors which have led individuals toward new firm formation. However, these motivational factors were not always supported in other studies (Stewart et al. 1999). Following a thorough review of the entrepreneurship literature and after careful consideration, I decided to represent perceived desirability by means of the six factors identified by Carter et al. (2003) as major reasons or motivations for starting a new venture, namely: self-realization, financial success, role, innovation, recognition and independence.

*Self-realization* refers to the motivations involved in pursuing self-directed goals (Carter et al. 2003). This measure corresponds to Birley and Westhead's (1994) need for personal development and McClelland's (1961) need for achievement. Individuals with a high level of self-realization are expected to show a greater willingness to engage in entrepreneurial activity because this provides them with challenges that are associated with goal achievement and personal development (Carree and Thurik 2005). Selecting an entrepreneurial career is no

longer under-employment or a “mom and pop” establishment; it is a way to achieve a variety of personal goals (Kirchhoff 1996). Higher self-realization will result in a higher level of EI.

*Financial success* is described as an individual's desire to earn more money and achieve financial security (Carter et al. 2003). Previous research has shown mixed results for this construct. On the one hand, McQueen and Wallmark (1991) found that most of the founders of new ventures did not establish their companies to generate wealth, but rather to fulfil their goal of commercializing their technologies. On the other hand, Scheinberg and MacMillan (1988) and Birley and Westhead (1994) both labelled financial success as perceived instrumentality of wealth and found it to be related to EI. I have included financial success to clarify these findings.

*Role* is the individual's desire to follow family tradition and emulate the example of others (Birley and Westhead 1994; Carter et al. 2003; Shane, Kolvereid, and Westhead 1991). Research has shown that individuals are attracted to role models who can help them to develop themselves further by learning new tasks and skills (Gibson 2004). It has long been acknowledged that role models may have a profound influence on career decisions (Kolvereid 1996; Krueger et al. 2000).

*Innovation* relates to an individual's desire to accomplish something new (McClelland 1961). It is often referred to as a primary motive behind EI (Mueller and Thomas 2001) and has been shown to have a significant effect on venture performance (Utsch and Rauch 2000). Feldman and Bolino (2000) found that individuals with a strong desire for innovation were motivated to become self-employed because of the opportunity to use their skills and be creative as well as to capitalize on a good business idea.

*Recognition* describes an individual's desire to gain status, approval and recognition from family, friends and the community (Carter et al. 2003). Manolova, Brush and Edelman (2008) defined recognition as an individual's position relative to others in a given social situation. According to Gatewood (1993), recognition is a second-level outcome or reason for

desiring to start a new venture. In my proposed framework, recognition corresponds to the measures “recognition” in Shane et al.’s (1991) new firm formation typology, and “need for approval” in the studies of Birley and Westhead (1994), and Schienberg and MacMillan (1988).

*Independence* describes an individual’s desire for freedom, control and flexibility in the use of time (Carter et al. 2003; Birley and Westhead 1994; Scheinberg and MacMillan 1988). As a general rule, individuals requiring a strong need for independence seek careers with more freedom. They choose an entrepreneurial career because they prefer to make decisions independently, set their own goals, develop their own plans of actions, and control goal achievement themselves (Wilson, Kickul and Marlino 2004). Thus I propose:

**H4:** *Perceived desirability (measured by self-realization, financial success, role, innovation, recognition, and independence) positively influences entrepreneurial intention.*

## 2.3 Methodology

### 2.3.1 Sample and procedure

To ensure the variability and representativity of respondents, I selected universities in the largest province of Pakistan, Punjab. In Punjab I targeted Lahore, Faisalabad and Sahiwal, which are considered the educational hub in this region. First, I selected five universities on the basis of their provision of EE and whether they were registered with HEC and thus offered approved programs. Second, I contacted undergraduate students who had studied or were studying a course of entrepreneurship in those universities and had agreed to participate in my study. One thousand questionnaires were distributed and 850 were returned, of which 45 were subsequently discarded. The final sample consisted of 805 participants. Of these, 547 were males (68%) and 258 females (32%). The average age was 21 years ( $SD = 0.54$ ).

### 2.3.2 Measurement variables

Table 5 presents the scales used to measure the main variables. *EI* was measured with three statements to assess whether participants intended to start a new business. The first statement, “Have you ever seriously considered becoming an entrepreneur?” was adapted from Veciana, Aponte, and Urbano (2005) and was measured on a dichotomous scale of “yes/no”. The other two statements were adapted from Liñán and Chen (2009). *Perceived feasibility* was measured through *ESE* by employing a task-specific scale from Chen et al. (1998). Respondents were asked to rate their skill level in 26 roles and tasks in five areas of entrepreneurship: marketing, innovation, management, risk-taking, and financial control.

*Perceived ES* was measured with a six-item scale rating students' perception of the traditional teaching role of universities, and included statements such as “my university offers project work focused on entrepreneurship” (Kraaijenbrink et al. 2010). *Perceived CDS* was measured with a four-item scale rating students' perception of the support that the university provides beyond teaching, and included statements such as “my university provides students with ideas to start a new business” (Kraaijenbrink et al. 2010). *Perceived BDS* was measured by means of a three-item scale rating students' perception of the support that the university provides to the start-up firm, and included statements such as “my university provides students with the financial means to start a business” (Kraaijenbrink et al. 2010). *Perceived IS* was measured through a four-item scale developed by Turker and Selcuk (2009). The questions were related to the opportunities provided to entrepreneurs in terms of the ease or difficulty in taking loans from banks, the legal constraints of running a business, and the economic stability in Pakistan. Finally, *Perceived desirability* was assessed by means of these six factors identified by Carter et al. (2003): *Self-realization* (four items); *Financial Success* (four items); *Role* (three items); *Innovation* (two items); *Recognition* (two items); and *Independence* (two items).

### 2.4 Results

#### 2.4.1 Assessment of measures

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted. Structural equation modelling (SEM) (AMOS version 18.0) was employed for the CFA and to test the structural models and to conduct multi-group moderator analysis by using the maximum likelihood estimation procedure. The inter-correlations and square root of the average variance extracted (AVE) are presented in Table 4. These results suggest that each construct shared more variance with its items than with other constructs. In addition, the correlation matrix provides no evidence of multi-collinearity among the variables as all the coefficients were within an acceptable range ( $r = 0.16$  to  $r = 0.73$ ) and none of them exceeded the cut-off point of 0.85 (Fornell and Larcker 1981). These analyses provide evidence of discriminant validity. Furthermore, as shown in Table 5, all items loaded significantly on their corresponding constructs with factor loadings ranging from 0.50 to 0.94, thus meeting the threshold of 0.50 set by Hair et al. (2006), and demonstrating convergent validity at the item level. Following Fornell and Larcker (1981), I assessed the convergent validity through item reliability, composite reliability (CR) and the AVE. The Cronbach's alpha for all the constructs were well above the threshold level of 0.70 (Nunnally and Bernstein 1994), with the exception of the newly developed scales by Kraaijenbrink et al. (2010), which showed somewhat lower reliabilities: perceived ES ( $\alpha = 0.60$ ), perceived CDS ( $\alpha = 0.65$ ), perceived BDS ( $\alpha = 0.60$ ). However, Kraaijenbrink et al. (2010) showed reliabilities around 0.90 in their original work. To address this problem, I followed Hair et al.'s (2006) recommendation that the CR should be used in conjunction with SEM to address the tendency of the Cronbach's alpha to understate reliability. Nunnally and Bernstein (1994) recommended a value of 0.70 and higher for CR to be adequate. The CRs for the three Kraaijenbrink et al.'s (2010) variables ranged between 0.90 and 0.92, which indicates good reliability.

The final indicator of convergent validity is achieved when AVE equals or exceeds 0.50. In addition, comparisons of the AVE with its shared variance ( $\Phi^2$ ) and other constructs indicated that the measures exhibit discriminant validity, since, in each case, the AVE was greater than the proportion of the shared variance (Fornell and Larcker 1981). In addition, a test was performed to investigate the presence for common method variance. The initial EFA with oblique rotation of items measuring the ten constructs of interest produced ten factors with eigen values larger than one, which collectively accounted for 65 percent of the variance. The first factor accounted for 41 percent of the variance, which suggests that common method bias may not be a major concern (Podsakoff et al. 2003).

## 2 The Role of Perceived University Support in the Formation of Students' Entrepreneurial Intention

**Table 4: Correlations and Square Roots of Average Variance Extracted**

Constructs	1	2	3	4	5	6	7	8	9	10	11	12
1. Entrepreneurial Intentions	<i>0.96</i>											
2. Entrepreneurial Self-Efficacy	0.49*	<i>0.89</i>										
3. Perceived Educational Support	0.43*	0.63*	<i>0.88</i>									
4. Perceived Concept Development Support	0.38*	0.55*	0.63*	<i>0.89</i>								
5. Perceived Business Development Support	0.35*	0.53*	0.60*	0.58*	<i>0.93</i>							
6. Perceived Institutional Support	0.16*	0.31*	0.21*	0.25*	0.28*	<i>0.87</i>						
7. Self-Realization	0.43*	0.49*	0.35*	0.30*	0.25*	0.19*	<i>0.90</i>					
8. Financial Success	-0.09	0.04	-0.01	0.01	0.01	0.17*	0.01	<i>0.89</i>				
9. Role	0.40*	0.59*	0.29*	0.25*	0.19*	0.26*	0.44*	0.05	<i>0.91</i>			
10. Innovation	0.24	0.28*	0.25*	0.19*	0.21*	0.07*	0.22*	0.02	0.29*	<i>0.89</i>		
11. Recognition	0.73*	0.57*	0.28*	0.15*	0.05*	0.20*	0.45*	-0.10	0.45*	0.26*	<i>0.87</i>	
12. Independence	0.37*	0.52*	0.38*	0.31*	0.30*	0.23*	0.44*	0.04	0.48*	0.23*	0.42*	<i>0.93</i>
<i>Mean</i>	3.51	3.75	4.55	4.13	3.48	3.44	3.70	3.0	3.80	3.97	3.52	3.92
<i>Standard Deviation</i>	1.04	0.69	1.21	1.31	1.4	0.84	0.99	1.14	0.95	0.99	0.98	1.01

\*Significant at  $p < .01$

Diagonal values represented in italics are square roots of AVE; off-diagonal values are correlations between constructs.



## 2 The Role of Perceived University Support in the Formation of Students' Entrepreneurial Intention

**Table 5:** Results of Confirmatory Factor Analysis

Construct (Items)	Factor loading (t-values*)
<b>Entrepreneurial Intention</b> ( $\alpha = 0.80$ ; $CR=0.90$ ; $AVE=0.93$ ; $\Phi^2=0.03-0.52$ )	
1. Have you ever seriously considered becoming an entrepreneur? (Yes/No)	0.810 (84.163)
2. I will make every effort to start and run my own firm. <sup>a</sup>	0.820 (94.293)
3. I have got firm intention to start a firm someday. <sup>a</sup>	0.816 (86.577)
<b>Entrepreneurial Self-Efficacy</b> <sup>c</sup> ( $\alpha = 0.92$ ; $CR=0.90$ ; $AVE=0.89$ ; $\Phi^2=0.03-0.52$ )	
26 items were used. Respondents were asked to rate their skill level in marketing, innovation, management, risk-management, financial control.	0.835 (73.886)
<b>Perceived Educational Support</b> <sup>a</sup> ( $\alpha = 0.6$ ; $CR=0.92$ ; $AVE=0.88$ ; $\Phi^2=0.02-0.42$ )	
1. My university offers elective courses on entrepreneurship.	0.812 (88.692)
2. My university offers project work focused on entrepreneurship.	0.826 (81.260)
3. My university offers internship focused on entrepreneurship.	0.830 (90.886)
4. My university offers a bachelor or master study on entrepreneurship.	0.854 (89.345)
5. My university arranges conferences /workshops on entrepreneurship.	0.621 (80.110)
6. My university brings entrepreneurial students in contact with each other.	0.652 (78.907)
<b>Perceived Concept Development Support</b> <sup>a</sup> ( $\alpha = 0.65$ ; $CR=0.90$ ; $AVE=0.89$ ; $\Phi^2=0.02-0.38$ )	
7. My university creates awareness of entrepreneur-ship as a possible career choice.	0.788 (84.849)
8. My university motivates students to start a new business.	0.609 (66.566)
9. My university provides students with ideas to start a new business from.	0.812 (78.191)
10. My university provides students with the knowledge needed to start a new business.	0.826 (88.471)
<b>Perceived Business Development Support</b> <sup>a</sup> ( $\alpha = 0.6$ ; $CR=0.92$ ; $AVE=0.93$ ; $\Phi^2=0.02-0.32$ )	
11. My university provide students with the financial means to start a new business.	0.854 (69.541)
12. My university use its reputation to support students that start a new business.	0.621 (75.540)
13. My university serve as a lead customer of students that start a new business.	0.652 (73.823)
<b>Perceived Institutional Support</b> <sup>a</sup> ( $\alpha = 0.80$ ; $CR=0.82$ ; $AVE=0.75$ ; $\Phi^2=0.04-0.45$ )	
1. In Pakistan, entrepreneurs are encouraged by an institutional structure.	0.605 (75.297)
2. Pakistani economy provides many opportunities for entrepreneurs.	0.683 (84.468)
3. Taking bank loans is quite difficult for entrepreneurs in Pakistan. (R)	0.589 (92.943)
4. Pakistani state laws are averse to running a business. (R)	0.509 (92.943)
<b>Self-Realization</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.78$ ; $CR=0.84$ ; $AVE=0.81$ ; $\Phi^2=0.03-0.38$ )	
1. To challenge myself.	0.835 (84.235)
2. To fulfil a personal vision.	0.720 (78.231)
3. To grow and learn as a person.	0.701 (76.325)
4. To lead and motivate others.	0.781 (81.254)
<b>Financial Success</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.75$ ; $CR=0.78$ ; $AVE=0.79$ ; $\Phi^2=0.15-0.25$ )	
1. To earn a larger personal income.	0.948 (71.258)
2. To give myself, my spouse and children financial security.	0.731 (65.320)
3. To have a chance to build great wealth/high income.	0.746 (81.269)
4. To build business my children can inherit.	0.680 (78.362)
<b>Role</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.80$ ; $CR=0.87$ ; $AVE=0.83$ ; $\Phi^2=0.07-0.30$ )	
1. To continue a family tradition.	0.701 (72.356)
2. To follow example of a person I admire.	0.710 (78.246)
3. To be respected by my friends.	0.670 (80.234)
<b>Innovation</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.74$ ; $CR=0.80$ ; $AVE=0.80$ ; $\Phi^2=0.10-0.35$ )	
1. To be innovative at the forefront of technology.	0.832 (87.390)
2. To develop an idea for a product.	0.726 (80.236)
<b>Recognition</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.84$ ; $CR=0.87$ ; $AVE=0.76$ ; $\Phi^2=0.12-0.47$ )	
1. To achieve something/ get recognition.	0.839 (77.230)
2. To gain a higher position for myself.	0.849 (73.258)
<b>Independence</b> <sup>b</sup> To what extent is the following reason important to you in establishing a new business: ( $\alpha = 0.90$ ; $CR=0.92$ ; $AVE=0.86$ ; $\Phi^2=0.09-0.18$ )	
1. To get greater flexibility for personal life.	0.777 (75.361)
2. To be free to adapt my approach to work.	0.614 (83.697)
<b>Model Fit Statistics:</b> $\chi^2_{(94)}=612.50$ ( $p=.036$ ); $RMSEA=0.046$ ; $GFI=0.95$ ; $NFI=0.95$ ; $CFI=0.98$ ; $TLI=0.85$	
(R) reversed coding; $\alpha$ = Cronbach's alpha, $CR$ = composite reliability, and $AVE$ = average variance extracted.	
*Significant at $p \leq .01$ ; <sup>a</sup> 5-point Likert Scale (1) strongly disagree (5) strongly agree ; <sup>b</sup> 5-point Likert Scale (1) to no extent (5) to a very great extent; <sup>c</sup> 5-point Likert scale (1) = None, (2) = Basic, (3) = Competent, (4) = Advanced, (5) = Expert	

2.4.2 Testing the structural model (without moderator variables)

The results of the structural model presented in Table 6 are within the recommended values, thus providing support to proceed with hypotheses testing. my first hypothesis, H1, was supported, that is, ESE positively influenced EI ( $\beta = 0.47; p < .05$ ). The results showed a highly significant influence of perceived ES ( $\beta = 0.37; p < .01$ ), perceived CDS ( $\beta = 0.34; p < .01$ ) and perceived BDS ( $\beta = 0.32; p < .01$ ) which provide support for H2a, H2b and H2c, respectively. The results also showed a highly significant influence of perceived IS ( $\beta = 0.17; p < .01$ ) on ESE, thus supporting H3. These results explained a substantial proportion of the variance in ESE (42 percent). In H4, I proposed that the six perceived desirability factors would be positively associated with EI. The results, presented in Table 6, partially support this hypothesis. Out of the six variables tested, three showed no significant effect on EI: financial success, innovativeness and independence. However, self-realization ( $\beta = 0.37; p < .05$ ), role ( $\beta = 0.30; p < .05$ ) and recognition ( $\beta = 0.65; p < .01$ ) showed a significant positive influence on EI. These variables and ESE explained most of the variance in EI (64 percent).

**Table 6:** Results of the Structural Model

Hypothesis	Hypothesized Path	Standardized Estimates	Results
H1	ESE → EI	0.47*	Supported
H2a	Perceived Educational Support → ESE	0.37**	Supported
H2b	Perceived Concept Development Support → ESE	0.34**	Supported
H2c	Perceived Business Development Support → ESE	0.32**	Supported
H3	Perceived Institutional Support → ESE	0.17**	Supported
H4a	Self-Realization → EI	0.37*	Supported
H4b	Financial Success → EI	-0.02	Not Supported
H4c	Role → EI	0.30*	Supported
H4d	Innovativeness → EI	0.20	Not Supported
H4e	Recognition → EI	0.65**	Supported
H4f	Independence → EI	0.18	Not Supported

Model Fit Statistics:

$\chi^2_{(94)} = 612.50 (p = .036)$ , RMSEA = 0.046, GFI = 0.95, NFI = 0., NNFI = 0.95, CFI = 0.98, TLI = 0.85

\*\*Significant at  $p < .01$ ; \*Significant at  $p < .05$

EI = Entrepreneurial Intention; ESE = Entrepreneurial Self-Efficacy

### **2.5 Discussion and conclusions**

The main aim of this study was to assess the extent of students' PUS and its impact on their ESE, which in turn would influence their EI. I examined this proposition within the context of IS and individual motivations. Overall, my results support my hypotheses. In line with previous studies, the results in Table 6 showed the important role of students' ESE in the prediction of their EI (Boyd and Vozikis 1994; Chen et al. 1998; Krueger et al. 2000) and its usefulness in representing perceived feasibility. They also reflected the importance of perceived organizational-level and institutional-level factors in influencing students' ESE. My results revealed that perceived ES, perceived CDS, perceived BDS and perceived IS exerted a significant positive influence on students' ESE, which characterizes perceived feasibility. This suggests that self-efficacy is not a static trait, but rather that it can be changed (Hollenbeck and Hall 2004). This has implications for targeted educational and institutional efforts.

My findings have demonstrated the significant role of EE and entrepreneurial support as students perceived the education and support that they received from their universities as the most important influence on their ability to become entrepreneurs, which is consistent with previous research (Peterman and Kennedy 2003). However, despite the link between EE and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures are still considered to be low (Kraaijenbrink et al. 2010). More specifically, the results showed that of the three measures of PUS, perceived ES was the most important in developing students' ESE, followed by perceived CDS and perceived BDS. Although students perceived that their university was helpful in providing them with the general knowledge and skills to initiate a new venture, they needed more targeted support in terms of concept development and business development. These results are consistent with those of Kraaijenbrink et al. (2010) and help to demonstrate the usefulness of their measures to

assess PUS. Therefore, universities are able to measure the impact of their provision of EE and support in order to address the specific needs of their students.

In light of my findings and considering that most researchers agree that entrepreneurial perceptions and intentions can be enhanced by EE (Cox et al. 2002; Chen et al. 1998; Hatten and Ruhland 1995; Kraaijenbrink et al. 2010; Krueger and Brazeal 1994; Peterman and Kennedy 2003; Wang and Wong 2004), I can say that the initiatives taken by the HEC of Pakistan, such as the creation of the NBEAC, seem to be effective. This implies that the institutional efforts to promote business education by stimulating EE and culture in Pakistani universities have been implemented by universities and are being well received by students in general. Perceived ES showed the highest mean scores of PUS ( $M = 4.55$ ) indicating that students were highly satisfied with the provision of general knowledge and skills to initiate a new venture, which includes programs, electives, projects, internships, conferences, and workshops. The variety of these learning strategies is positive as it helps to build students' self-confidence (Bandura 1992; Cox et al. 2002). Additionally, universities can increase students' ESE by providing them with opportunities to conduct feasibility studies, develop business plans, perform business simulation, use case studies, listen to guest speakers, and take part in meaningful apprenticeships (Cox et al. 2002).

However, while students seemed satisfied with traditional entrepreneurship learning, they required more support from their universities regarding both concept development and business development. This considers the commercialization role of universities and translates into providing individual students or groups of students with a more targeted and specific support for starting their own firm. As shown in Table 4, perceived CDS had lower means than perceived ES ( $M = 4.13$ ). Therefore, universities should provide awareness, motivation and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000). In addition, universities could provide start-up firms with BDS at the later stages of the entrepreneurial

process. This support was perceived as the weakest by students ( $M = 3.48$ ). This type of support includes providing students with the funding to start a new business, use the university's reputation to support them, and serve as a lead customer for the new venture. This is important as previous studies have shown that the lack of funding is a major barrier to student entrepreneurship (Henderson and Robertson 2000; Robertson et al. 2003). Therefore, it can be inferred that the broader support provided by academic institutions, beyond their traditional teaching role, can play an important role in fostering ESE among their students.

In addition to perceived ES, IS had a highly significant effect on EI ( $\beta = 0.17$ ), albeit it was less important to students than PUS ( $\beta = 0.33$ ). This suggests that although the main focus of IS is on existing entrepreneurs, students are aware of it as it could affect them in the future, which again seems to confirm the effectiveness of the initiatives taken by the HEC in Pakistan. My findings are in line with previous research which argued that institutional factors were key to the development of entrepreneurs as a hostile institutional environment hinders individuals' willingness to engage in entrepreneurship activities (Luthje and Franke 2003; Schwarz et al. 2009; Turker and Selcuk, 2009).

The strong impact of individual motivation on students' EI is an important finding. This indicates that the perceived desirability of starting a business is a fundamental element in the formation of EI. Three factors exerted a significant influence on the formation of EI: self-realization, recognition and role. No significant impact was found for financial success, innovation and independence. These findings are in line with previous studies which found that EI is related to self-realization (Carter et al. 2003; Kolvereid 1996), recognition (Birley and Westhead 1994; Schienberg and MacMillan 1988; Shane et al. 1991), and role (Birley and Westhead 1994; Shane et al. 1991). However, my results do not support previous studies which have found that the intention to be an entrepreneur is stronger for those with more positive attitudes toward innovation (Birley and Westhead 1994; Carter et al. 2003; Mueller and Thomas 2001; Schienberg and MacMillan 1988; Shane et al. 1991) and independence (Carter

et al. 2003; Birley and Westhead 1994; Shane et al. 1991). my finding that financial success is not significantly important to EI is in line with some previous studies (McQueen and Wallmark 1991), but not with others which found the opposite to be true (Birley and Westhead 1994; Carter et al. 2003).

However, the lack of support in the current study for two important influences on EI, namely, innovation and independence, needs further qualification. A possible explanation may be provided in light of the cultural context of the study. According to Hofstede's (1980) cultural dimensions theory, Pakistan ranks high on power distance (PD), masculinity (MAS) and uncertainty avoidance (UA), but low on individualism (IDV). High PD means that individuals accept and expect that power in organizations and institutions will be unequally distributed, and that there would be strong hierarchies and control mechanisms. High MAS refers to traditional male values, such as income and recognition. In high UA, individuals are likely to avoid novel or unknown situations. Finally, while low IND means that collectivism is valued and individuals exhibit long-term commitment and loyalty to their families and relationships, there is less freedom and autonomy to pursue individual interests.

Considering Pakistan's low IND, high PD and high UA, it is possible to explain the poor results for innovation and independence. This reasoning has been supported by previous research, which has found that high rates of innovation were associated with high IND, low PD and low UA (Shane et al. 1991), and entrepreneurial activity was positively associated with high IND (Gupta et al. 2010; Hofstede 1980). In addition, Pakistan, as a collectivist society, places significant importance on "face" and so the potential loss of face from failure may also discourage innovativeness. This has been demonstrated in the Global Innovation Index published by INSEAD in 2012, which ranked Pakistan 133 out of 141 countries, indicating very low levels of innovativeness. However, low IND in Pakistan can help to explain the strong influence of the role factor on EI. Considering that conformity is emphasized as social ties are important for all members of society, the decision to select a career might be influenced

by the individual's family members and friends. Finally, the country's high MAS means that Pakistan is characterized by values such as income and recognition, in which people "live in order to work" and there is emphasis on competition, achievement and success. Self-realization and recognition were shown to have strong effects on EI, thus reflecting these cultural characteristics.

On the basis of my findings, I can answer the four questions I posed in this paper: (1) students have a positive perception of the EE and support that they receive from their universities; (2) PUS has a significant impact on ESE. Students perceive ES as the most important variable influencing their ESE, followed by CDS, and BDS; (3) PUS exerts a much stronger impact on EI than IS and individual motivations; (4) students are satisfied with the traditional EE that they receive, but they need more targeted support from their universities in terms of concept development and business development. Universities should then address these needs in order to be more effective.

In conclusion, I argue that the role of EE and support is fundamental to student entrepreneurship. Therefore, to enhance student entrepreneurship, I suggest that universities should continuously assess the extent of their support and its impact on students. My findings show that universities are perceived to be strong in their traditional teaching role, but they are falling short in their commercialization role. They can strengthen their provision with appropriate support throughout the entrepreneurial process. EE is an important influence on EI, but it is not the only one. Thus, I have proposed that the three-dimensional support of universities together with IS increases students' perceived feasibility, as measured by ESE. In turn, ESE and perceived desirability, represented by individual motivations such as self-realization, recognition and role, shape EI to start a business. My findings suggest that this holistic approach provides a more meaningful understanding of the role of EE and support in the formation of students' EI.

## **2.6 Limitations and directions for future research**

My study is subject to some limitations. First, like the vast majority of studies in the literature, my focus is on behavioral intention rather than actual behavior. Although the predictive validity of intention has been established in a general context, it has yet to be established in the entrepreneurial context. As a consequence, my study is unable to predict how many students will actually materialize their EI. A longitudinal study could reveal a better understanding of whether EI actually turns into entrepreneurial behavior. Second, I made a selection of individual, organizational and institutional variables that were found to be most influential in predicting EI through my extensive literature review, but other variables could be also important. Finally, my study examines university students in Pakistani universities, thus my findings may be mostly generalizable to developing countries. However, my framework provides a meaningful understanding of the topic and other researchers can apply it in different contexts in the future.



### **3 Exploring Intergenerational Influence on Entrepreneurial Intention: The Mediating Role of Perceived Desirability and Perceived Feasibility**

Children of self-employed parents are twice as likely as other children to become self-employed themselves, as family background exerts a significant influence on the values, attitudes, and behavior one adopts. This study explores how entrepreneurial intentions are transmitted across generations within families. Using the data from 805 respondents and expanding upon Shapero and Sokol's model of intention in entrepreneurial events (SEE), I analyze the role of an entrepreneurial family background as an intergenerational influence on entrepreneurial intention and the underlying mediating effect of perceived desirability and perceived feasibility in starting a business.

#### **3.1 Introduction**

A family business is “governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families” (Chua et al., 1999: 25). This definition suggests that familial exposure to self-employment can affect young people's occupational choices such that they perceive self-employment as desirable and feasible (Krueger et al., 2000; Sorensen, 2007). Research has shown that parents' entrepreneurial background can initiate entrepreneurial intentions in their children (Altinay et al., 2012; Carr and Sequeira, 2007; Laspita et al., 2012; Matthews and Moser, 1996; Scherer et al., 1989). In fact, having a parent who is an entrepreneur increases the probability that a person will become an entrepreneur by a factor of 1.3 to 3.0 (Dunn and Holtz-Eakin, 2000; Arum and Mueller, 2004; Sørensen, 2007; Colombier and Masclet, 2008; Andersson and Hammarstedt, 2010, 2011).

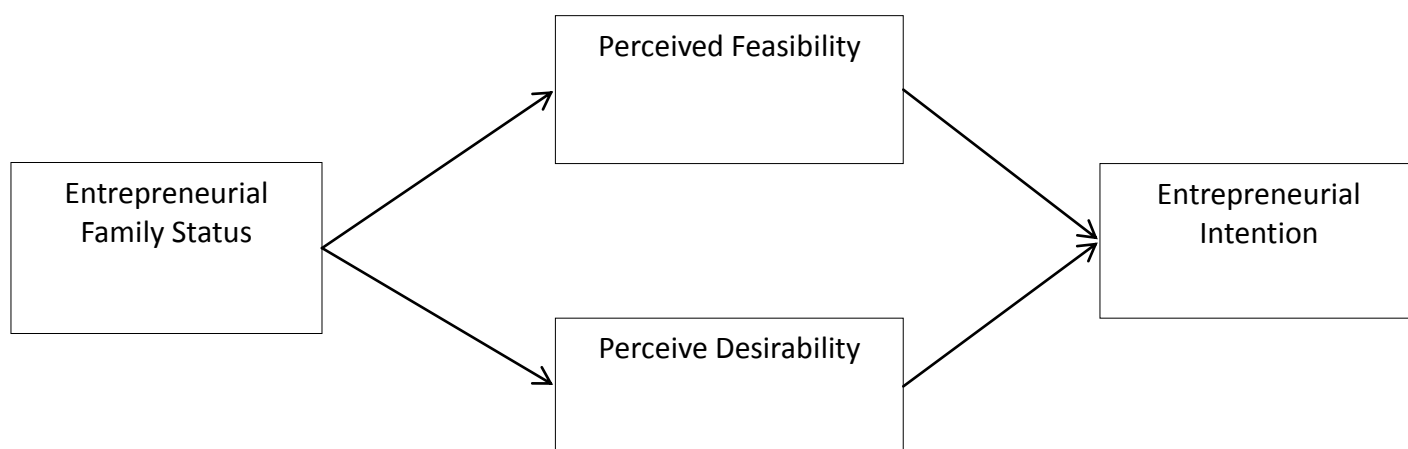
Research has focused on multiple individual-level factors to explain phenomena related to entrepreneurial intentions. In explaining the differences between entrepreneurs and non-entrepreneurs, the literature has focused on heritable traits like achievement orientation (Collins et al., 2004), risk tolerance (Stewart and Roth, 2004; Cesarini et al., 2009a), desire for independence (Douglas and Shepherd, 2002), extraversion (Bouchard and Loehlin, 2001), willingness to try new products and services and to create new firms or new material by destroying the existing economic order (Schumpeter, 1934), overconfidence (Cesarini et al., 2009b), ability to identify new opportunities (Thompson 1999), and creativity (Lee and Wong, 2004). The entrepreneurship literature also asserts a number of contextual factors that influence the entrepreneurial choice, including capital constraints (Blanchflower and Oswald, 1998), peer effects (Nanda and Sørensen, 2010), and regional influences (Reynolds, Storey, and Westhead, 1994). However, researchers have rarely focused on family background and its influence on the development of entrepreneurial intentions (Laspita et al., 2012; Getz and Petersen, 2005).

People whose parent or close family member is self-employed are more likely than others to pursue an entrepreneurial career (Matthews and Moser, 1996; Drennan et al., 2005). A family business background may present lower barriers to entrepreneurial entry, since those with such backgrounds may be able to capitalize on their social ties and social capital (Greve and Saleff, 2003). Family capital, which refers to the family members' total resources, has three components: human, social, and financial (Danes et al., 2009). Family *social* capital, described as non-financial resources and support family members offer to the entrepreneur, affects the decision to start a business positively (Chang et al., 2009). I take the family embeddedness perspective, which describes the impact and the importance of parents on their children's entrepreneurial careers (Aldrich and Cliff, 2003) to argue that the breadth and quality of family business experience matter (Krueger, 1993). Parents are always role models for their children, and parents who are active in a family business influence their children's

future entrepreneurial intentions by modeling attitudes and beliefs like self-efficacy (Shapero and Sokol, 1982; Krueger et al., 2000). However, there is still room to clarify the role that family businesses play in encouraging future entrepreneurial inclinations, as little is known about the process behind the inter-generational transmission of entrepreneurial intentions (Laspita et al., 2012).

Previous research is inconclusive on the origins of the intergenerational transfer of entrepreneurship (Lindquist et al., 2012). I address this gap in the literature by exploring the inter-generational transmission of entrepreneurial intentions using Shapero and Sokol's (1982) model of intention in entrepreneurial events (SEE). I analyze the role of an entrepreneurial family background as an intergenerational influence on entrepreneurial intention and the underlying mediating effect of the perceived desirability and perceived feasibility of starting a business. I hypothesize that individuals with prior family business experience may develop positive perceptions toward entrepreneurial feasibility and desirability, which can result in entrepreneurial action. My goal is to make a theoretical and empirical contribution to Shapero and Sokol's (1982) model. Figure 5 depicts my proposed theoretical extension of the SEE in relation to entrepreneurial family background and entrepreneurial intention.

**Figure 5: Proposed Model for Entrepreneurial Family Background and Entrepreneurial Intention**



The paper is organized as follows. First, I lay out the theoretical foundations of the study and derive the hypotheses for the mediating role of perceived desirability and perceived feasibility in the relationship between an entrepreneurial family background and entrepreneurial intentions. Next, I describe my methodology and present the results. Finally, I discuss my findings, state the implications of my study, and identify directions for future research.

## **3.2 Theoretical Background**

### *3.2.1 Entrepreneurial intentions*

Entrepreneurial intention is central to the process of venture creation. Entrepreneurial intentions, defined as “one's judgements about the likelihood of owning one's own business” (Crant, 1996: 43), identify the critical link between ideas and action (Bird 1988; Krueger and Carsrud, 1993). According to Ajzen (1991), intention captures the degree to which people are motivated and willing to execute a behavior. Intention has also been defined as a state of mind that directs a person's attention (and, therefore, experiences and actions) toward a specific object (goal) or path in order to achieve something (e.g., becoming an entrepreneur) (Bird, 1988). Research has proposed several conceptual models for understanding entrepreneurial intention (e.g., Davidsson, 1995; Krueger and Brazeal, 1994; Krueger and Carsrud, 1993, Robinson, Stimpson, Huefner, and Hunt, 1991; Shapero and Sokol, 1982), but there is little difference in the approaches these models take (Krueger et al., 2000).

My understanding of entrepreneurial intention as it relates to the current study is guided by two models: Azjen's (1991) theory of planned behavior (TPB) and Shapero and Sokol's (1982) model of intention in entrepreneurial events (SEE). Although the models differ in their underlying concepts, they provide comparable interpretations of entrepreneurial intention (Krueger et al., 2000; Kolveried et al., 2007; Engle et al., 2010; Moriano et al., 2011). Krueger et al. (2000) demonstrates that the attitudes and subjective norms in the TPB model are

conceptually related to SEE's perceived desirability (perceptions of the personal appeal of starting a business), while perceived behavioral control in TPB corresponds with SEE's perceived feasibility (the degree to which one feels capable of performing a behavior). Perceived desirability and perceived feasibility are fundamental elements of entrepreneurial intention (Douglas and Shepherd, 2002). Shapero and Sokol (1982) propose that the entrepreneurial event (defined as initiating entrepreneurial behavior) requires a salient, personally credible opportunity, which depends on the individual's perception of the desirability and feasibility of starting a new business. Shapero and Sokol define perceived desirability as the personal and social attractiveness of an action (starting a business), and perceived feasibility as the personal and social degree to which an individual feels capable of performing the action (starting a business). SEE proposes that individuals experience positive or negative displacement events that lead to a change in their behavior. A positive event trigger for pursuing entrepreneurship could be the provision of necessary start-up capital, whereas a negative event trigger could be the loss of a job (Krueger et al., 2000). The entrepreneurship literature agrees that perceived desirability and perceived feasibility are fundamental elements in explaining the formation of entrepreneurial intention (Douglas and Shepherd, 2002; Fitzsimmons and Douglas, 2011; Krueger et al., 2000), so the present study uses these two constructs to explain the intergenerational transmission of entrepreneurial intentions (Carsrud et al., 2011; Laspita et al., 2012).

#### *3.2.2 Entrepreneurial family background*

The sociological and psychological theories related to the socialization of children highlight that the socialization that occurs within families helps children to embrace the social roles and behavior that they need if they are to partake in society (Brim, 1968). This socialization, as an on-going process of reflection and action, ultimately defines the perceptions that individuals

develop regarding their social interactions, life choices, life styles, and work roles. The symbolic interactionism literature defines an entrepreneurial family background as an intergenerational influence agent that acts as a socialization source and a mechanism for understanding future entrepreneurial intentions (Mead, 1934; Menaghan and Parcel, 1995; Moore et al., 2002; Parcel and Menaghan, 1994). Family business research contends that family influences are decisive factors in young people's occupational intentions (Jodl et al., 2001) and demonstrates that entrepreneurs have often been exposed early to entrepreneurship, experience in the family business, and a family history in which their mother and/or father was self-employed (Dyer, 1992; Dyer and Handler, 1994; Fairlie and Robb, 2005; Menaghan and Parcel, 1995). In a study of British undergraduate students, Brown (1990) finds that the fathers of 38 percent of the students who were very interested in starting their own businesses had their own businesses, which was higher than the level of entrepreneurial fathers in the general population of students. Similar findings on self-employment choice include evidence from the UK (Hakim, 1988; Taylor, 1996) and the US (Crant, 1996; Schiller and Crewson, 1997). Sørensen (2007) also finds that the children of entrepreneurs choose the same industry as that in which their parents work more often than do the children of non-entrepreneurs. Lindquist, Sol, and Van Praag (2013) find that having an entrepreneur for a parent increases the probability of becoming an entrepreneur by 60 percent; and Andersson and Hammarstedt (2010, 2011) reach conclusions that are along the same lines.

Therefore, it is likely that entrepreneurial ambitions are increased by the presence of an entrepreneurial family member who serves as a role model (Altinay and Altinay, 2006; Liao and Welsch, 2001; Pruett et al., 2009; Samuelsson, 2001). On other hand, the performance of a start-up is not guaranteed by the presence of self-employed parents. Fairlie and Robb (2007) find that having self-employed parents increases profits and sales and lowers closure rates but only when the entrepreneur has work experience in the parents' business. There is no evidence

that the children of self-employed parents perform better as entrepreneurs (Sørensen, 2007; Roberts, 1991).

According to the parental model, a child's unique biology and experience can lead to preferences for activities that develop into well-defined interests, the pursuit of which leads to the development of specialized competencies (Holland, 1985). Some researchers have even suggested that entrepreneurial intention can be an inherited genetic disposition through the transmission of certain genes from entrepreneurial parents to their offspring (Nicolaou and Shane, 2010). These genes, they argue, can affect brain mechanisms and develop entrepreneurial traits in the children's personalities, such as the need for achievement, a locus of control, a propensity for risk-taking, and innovativeness (Altinay et al., 2012). These traits can lead an individual to be disposed towards entrepreneurship as a career option (Rauch and Frese, 2007).

Furthermore, entrepreneurial family members might provide encouragement by reinforcing entrepreneurship-related interests, preferences, and competencies. They can provide opportunities for business ownership and pass on the business-related knowledge, skills, support, and resources required to pursue these opportunities (Nicolaou et al., 2008). Klyver (2007) finds that family members are most heavily involved in the early stages of the entrepreneurial lifecycle, when the decision to start a business is yet to be made. Research has also shown that students whose parents owned a small business demonstrated the highest preference for self-employment and the lowest preference for employment in large corporations (Scott and Twomey, 1988). Therefore, I propose the following:

**H1.** *Entrepreneurial family background is positively related to entrepreneurial intention.*

### 3.2.3 *The mediating role of perceived desirability*

Research has shown that entrepreneurial intentions are partially the result of positive attitudes toward self-employment (Souitaris et al., 2007), as those with positive attitudes toward entrepreneurship are more likely to become entrepreneurs than are those who view entrepreneurship as undesirable. Many such attitudes are likely to have been inherited (Eaves et al., 1989, 1999; Olson et al., 2001), as individuals who come from entrepreneurial families are more likely than others to be aware of the financial rewards and the autonomy that comes with family business ownership (Fairlie and Robb, 2005). This awareness can lead to the formation of the entrepreneurial values and positive attitudes that make entrepreneurship a desirable career option (Kuratko and Hodgetts, 1995; Mauer et al., 2009). Parker's (2009) view is that entrepreneurial parents may transmit the taste for entrepreneurship through role modeling, which may be as subtle as increasing the child's awareness of entrepreneurship as a career option (Carroll and Mosakowski, 1987) or shaping the child's values, such as a taste for autonomy.

The theory of career choice suggests that individuals' interpretation of their experiences and their perception of the attitudes and expectations of socializers like parents, friends, and teachers influences their career choices (Dick and Rallis, 1991). Entrepreneurial parents can play a critical role in their children's socialization and education process through conscious and unconscious transferring of entrepreneurial values, knowledge, skills, and aptitudes (Spera and Matto, 2007). The child-rearing practices and values of self-employed parents may affect their offspring's values by shaping their basic orientation toward "what makes up 'earning a good living'" (Hout, 1984: 1384), which can lead to a preference for self-employment (Western and Wright, 1994; Aldrich, Renzulli, and Langton, 1998). Past research supports this contention. For example, Halaby's (2003) longitudinal study reveals that adult children of entrepreneurs are more likely to prefer careers with high levels of autonomy and self-direction.



Therefore, I expect that family background, childhood experiences, and exposure to others in business influence the development of positive attitudes toward entrepreneurship and argue that perceived desirability of business ownership mediates the relationship between entrepreneurial family background and entrepreneurial intentions. This argument reflects my next hypothesis:

**H2.** *Perceived desirability of business ownership mediates the relationship between entrepreneurial family background and entrepreneurial intention.*

### 3.2.4 *The mediating role of perceived feasibility*

Evidence from the social psychology literature suggests that self-efficacy is central to most human functioning and is based more on what people believe than on what is objectively true (Bandura, 1997). Research has consistently emphasized the importance of perceived self-efficacy as a key factor in determining human agency (Bandura, 1989) and has shown that those with strong perceptions of their ability to perform a task are more likely to pursue and persist in that task (Bandura, 1992). Therefore, increased levels of self-confidence regarding the accomplishment of entrepreneurial tasks can be seen as increased volitional control.

In the field of entrepreneurship, perceived feasibility and its key indicator, entrepreneurial self-efficacy, have been demonstrated to be sound predictors of entrepreneurial intention (Chen et al., 1998; Krueger et al., 2000). Boyd and Vozikis (1994: 66) characterize entrepreneurial self-efficacy as “an important explanatory variable in determining both the strength of entrepreneurial intentions and the likelihood that those intentions will result in entrepreneurial actions.” Similarly, Krueger and Brazeal (1994) suggest that entrepreneurial self-efficacy is one of the key prerequisites for entrepreneurship.

Individuals with entrepreneurial family backgrounds tend to gain knowledge about how to run a business by observing and working with their entrepreneurial parents. Like most

children, they see their parents as role models and so may come to see self-employment “as a realistic alternative to a conventional employment” (Carroll and Mosakowski, 1987: 576). In this process, they are likely to take on their parents’ work ethic as the norm for their own behavior (Aldrich et al., 1998; Carr and Sequeira, 2007; Lentz and Laband, 1990; Menaghan and Parcel, 1995). This entrepreneurial education and related experience develop their entrepreneurial self-efficacy and can increase the possibility that they will consider entrepreneurship a feasible career option (Krueger et al., 2000).

Entrepreneurial parents can also provide financial and non-financial resources for their children (Aldrich et al., 1998; Dunn and Holtz-Eakin, 2000). Financially well-off entrepreneurial parents can transfer their wealth and financial capital or help them gain access to loans. In addition, they can provide access to their social capital, including suppliers, customers, business partners, and their brand name (Laspita et al., 2012). Thus, the entrepreneurial parents’ financial and non-financial resources can help their children to explore new market opportunities (Sorensen, 2007) and to perceive entrepreneurship as a feasible career option, stimulating entrepreneurial intention. Therefore, I propose the following:

**H3.** *Perceived feasibility of business ownership mediates the relationship between entrepreneurial family background and entrepreneurial intention.*

### **3.3 Methodology**

#### *3.3.1 Context of the research*

During the last decade, Pakistan has been trying to stimulate economic growth through implementation of educational policies. The Higher Education Commission (HEC) of Pakistan recently developed the National Business Education Accreditation Council (NBEAC) to promote business education by focusing on entrepreneurial education and entrepreneurial culture in Pakistani universities. Students often choose entrepreneurship as an elective subject

during the final semester of their undergraduate programs, but the NBEAC encourages institutions of higher education to offer entrepreneurship as a major field of study. Pakistan's increasing focus on entrepreneurship education provides a favorable environment for entrepreneurial research, which can measure the new educational initiatives' effect on university students' entrepreneurial intentions.

### 3.3.2 *Setting and participants*

To ensure the variability and representativeness of respondents, I selected universities in the largest province of Pakistan, Punjab, and targeted Punjab's educational hubs of Lahore, Faisalabad, and Sahiwal. First, I reviewed universities' websites and course outlines and determined whether they were registered with the HEC with approved and relevant programs of study. From this review, I selected five universities that provide accredited entrepreneurship programs. Then, I contacted undergraduate students who had studied or were studying entrepreneurship at these selected universities and collected data from those who agreed to participate in my study during a period of eight weeks. The students provided written informed consent to participate before they were allowed to answer the questionnaire. I also obtained ethical approval from each university's ethics committee. Before completing the questionnaire, all respondents read a brief explanation of the purpose of the study and were informed of their rights as participants in accordance with the American Psychological Association's ethical principles for treatment of participants (APA, 2002).

Of the 1000 questionnaires distributed, 850 were returned, of which 45 were subsequently discarded because of incomplete information. The 805 fully completed questionnaires (response rate of 80.5%) were from 547 males (68%) and 258 females (32%). The average age of the respondents was 21 years ( $S.D. = 0.54$ ).

### 3.3.3 *Design and Measure*

The questionnaire was developed and pre-tested on a small sample of students for validation purposes. The study's constructs were entrepreneurial intention, perceived feasibility, perceived desirability, and entrepreneurial family background.

*Entrepreneurial Intention.* Entrepreneurial intention was measured through seven statements that assessed whether participants intended to start a new business. The first statement, "Have you ever seriously considered becoming an entrepreneur?" was adapted from Veciana et al. (2005) and was measured on a dichotomous scale (1 = Yes, 0 = No). The other six statements were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and were adapted from Linan and Chen (2009).

*Entrepreneurial family background.* Following Altinay et al. (2012), entrepreneurial family background was measured as a nominal variable (1 = Yes, 0 = No) based on whether anyone in the family had entrepreneurship experience.

*Perceived desirability.* Perceived desirability was assessed by means of six factors identified by Carter et al. (2003): self-realization (four items), financial success (four items), role (three items), innovation (two items), recognition (two items), and independence (two items).

*Perceived feasibility.* Following Krueger and Brazeal (1994) and Krueger et al. (2000), I operationalized perceived feasibility as an overall measure of self-efficacy across a range of entrepreneurial competencies. I used the entrepreneurial self-efficacy scale developed by Chen et al. (1998), who find significant and consistent support for this measure as a determinant of the intention to be an entrepreneur. The questionnaire asked respondents to indicate their abilities in performing each of 26 roles and tasks related to five main areas of entrepreneurship: marketing, innovation, management, risk taking, and financial control. The responses were based on a five-point Likert scale ranging from "completely unsure" (1) to "completely sure"

(5). Following Chen et al. (1998), I calculated the total entrepreneurial self-efficacy score by taking the average of responses to the 26 items.

### 3.3.4 Statistical Analysis

Prior to estimating the measurement model, I conducted exploratory (EFA) and confirmatory factor analyses (CFA) to assess the convergent and discriminant validity, reliability, and unidimensionality of the factor structures. I used structural equation modeling (AMOS version 18.0) for the CFA and the Sobel test statistic to test the mediation.

To test the hypothesized mediation effects, I followed the four-step hierarchical multiple regression approach from Baron and Kenny (1986), and I used the Sobel test to test the mediation effect of each model (Sobel, 1982). I conducted the regression analyses as follows. First, I regressed the control variables of gender, age, and education on entrepreneurial intention (Model 1). Then I added the main effect of entrepreneurial family background (Model 2), followed by each of the two mediators (Models 3 and 4). Finally, I calculated final model that regressed entrepreneurial family background and all of the mediating effects variables on entrepreneurial intention (Model 5).

## 3.4 Results

### 3.4.1 Assessment of measures and common method bias

I estimated a single measurement model to assess the validity of the measures. The chi-square statistic for the model is significant ( $\chi^2/(df) = 1.733$ ) as expected because of the large sample. The other fit indices indicate a good fit (comparative fit index (CFI) = .93; Tucker-Lewis index (TLI) = 0.92; root mean square error of approximation (RMSEA) = .059). All items load significantly on their respective constructs with factor loadings ranging from 0.50 to 0.84, which meets the threshold of 0.50 set by Hair et al. (2006) and demonstrates convergent

validity at the item level. At the construct level, the reliability coefficients (Cronbach’s alpha) and composite reliability for all constructs are well above the threshold level of 0.70 (Nunnally and Bernstein, 1994), and the average variance extracted (AVE) exceeds 0.50 (Fornell and Larcker, 1981), both of which provide evidence for convergent validity at the construct level. The AVE for each construct is greater than the squared correlation between the construct and any other construct in the model, providing evidence of convergent validity at the construct level (Fornell and Larcker, 1981). Table 7 presents the correlation matrix and summary statistics.

**Table 7: Descriptive statistics, correlation matrix, and square root of AVE (n = 805)**

Variable	Mean	SD	1	2	3	4
1. Entrepreneurial Intentions	3.50	1.04	<i>.93</i>			
2. Perceived Desirability	3.67	0.63	.569**	<i>.81</i>		
3. Perceived Feasibility	3.62	0.63	.425**	-.017**	<i>.89</i>	
4. Entrepreneurial Family Background	0.73	0.43	.101**	.25**	.14**	<i>.75</i>
<i>Cronbach’s Alpha (α)</i>			.80	.75	.92	---
<i>Average Variance Extracted (AVE)</i>			.93	.81	.89	---
<i>Composite Reliability (CR)</i>			.90	.78	.90	---

\*Significant at  $p \leq .01$

Diagonal values represented in italics are square root of AVE; off-diagonal values are correlations between constructs.

I used Harmon’s one-factor test to assess the possibility that common method bias affects my empirical results and research conclusions (Podsakoff and Organ, 1986). The results of the combined factor analysis indicate four factors with eigenvalues greater than 1. In addition, the variables load on their respective constructs consistently, suggesting that common method bias is not a primary concern.

### 3.4.2 Mediation Analysis

Table 8 presents the hierarchical multiple regression results. In support of H1, entrepreneurial family background is positively associated with entrepreneurial intention (Model 2:  $\beta = 0.150$ ;  $p < 0.001$ ). To test the mediation effects proposed in H2 and H3, I conducted regression analysis

using entrepreneurial family background as a predictor of the two mediating variables of perceived desirability and perceived feasibility. Next, I conducted regressions analyses for both the main effect and the mediating effects on entrepreneurial intention and found that, for each model, entrepreneurial family background significantly predicts the mediating variables, thus providing support for continuing with further mediation tests for each model. Subsequently, I examined the coefficient of the main effect (entrepreneurial family background) for Models 3 and 4 after loading the mediating effect of perceived desirability (Model 3) and perceived feasibility (Model 4).

The main effect in Model 3, which tests the mediating effect of perceived desirability, is significant, if smaller with the inclusion of perceived desirability. The Sobel test is strongly significant (Sobel test statistic=2.70,  $p<0.001$ ), suggesting that an individual's perception of the desirability of starting a business partially mediates the main effects of entrepreneurial family background on entrepreneurial intention. Similarly, in Model 4 perceived feasibility partially mediates the relationships between entrepreneurial family background and entrepreneurial intention (Sobel test statistic=2.20,  $p<0.001$ ). Finally in Model 5, which includes all main and mediation effects, entrepreneurial family background remains highly significant, suggesting that entrepreneurial family background is important in predicting entrepreneurial intention. For each mediating variable, the results support the hypothesis that perceived desirability and perceived feasibility of starting a new business are positively related to entrepreneurial intention. The next section discusses these results.

### 3 Exploring Intergenerational Influence on Entrepreneurial Intention: The Mediating Role of Perceived Desirability and Perceived Feasibility

**Table 8: Mediation regression analysis of study variables on entrepreneurial intentions**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
Gender (Female)	-.135***	.075	-.133***	.076	-.100	.075	-.125***	.075	-.102	.075
Age	-.009***	.068	-.004**	.067	-.004	.067	.007**	.067	.000	.067
Education	.015**	.035	.017	.035	.021	.035	-.002	.035	.016	.035
Entrepreneurial Family Background	---	---	.150***	.078	.118**	.077	.117***	.077	.115***	.077
Perceived Desirability	---	---	---	---	.560***	.070	---	---	.487***	.071
Perceived Feasibility	---	---	---	---	---	---	.423***	.070	.114***	.070
<i>Sobel Test for Mediation</i>	---	---	---	---	2.70**		2.20**		---	
<i>R<sup>2</sup></i>	.16*		.24**		.45**		.43***		.63.50***	
<i>Adjusted R<sup>2</sup></i>	.17**		.25**		.47**		.44***		.64.56***	
<i>Change in R<sup>2</sup></i>			.08**		.22***		.19**		---	
<i>Max variance inflation factor (VIF)</i>	2.1		2.0		2.3		2.3		2.3	

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p = 0.000$



### 3.5 Discussion and Implications

The entrepreneurship literature has grown considerably over the last decade. An expanded understanding of how entrepreneurial intention is transmitted may help to guide public policies and entrepreneurship education. My results suggest that people can be steered in the direction of entrepreneurship by public policies or the education system and that familial factors play an important role in determining this occupational choice. My findings also suggest that further exploration of the effects of entrepreneurial role models may be fruitful; Bosma et al. (2012) take a first step in this direction.

Although research has highlighted the important role of family businesses in job creation in supporting economic development and providing revenues to local governments (Laspita et al., 2012), entrepreneurial family can also act as an incubator for future business start-ups by serving as a training ground for its children (Carr and Sequeira, 2007). However, the specific role of an entrepreneurial family background in developing entrepreneurial intentions has been under-researched in the entrepreneurship literature (Getz and Petersen, 2005), and little is known about the mechanism that underlies the transmission of entrepreneurial intentions from entrepreneurial parents to their children (Laspita et al., 2012). The present study investigates the intergenerational transmission of entrepreneurial intention using the congruence between the parents' entrepreneurial occupation and their children's preference for creating and intention to create entrepreneurial ventures. Drawing on data from 805 individuals, my results suggest a significant direct and indirect transmission of entrepreneurial intentions from parents to their children, which is partially mediated by the children's perceptions of the desirability and feasibility of starting a business.

My finding that an entrepreneurial family background has a positive effect on children's entrepreneurial intentions is consistent with previous research (e.g., Carr and Sequeira, 2007;

Laspita et al., 2012; Matthews and Moser, 1996; Wang and Wong, 2004). While there is considerable evidence about this relationship in the literature, my study develops a holistic framework by demonstrating that perceived desirability and perceived feasibility partially mediates the relationship. My findings provide additional insight into the intergenerational transmission of entrepreneurial intention by families.

My findings have several implications that can inform both theory and practice. The first implication is related to cross-cultural research. In the context of my study setting, Pakistan, which is characterized by a high level of in-group collectivism, the close familial relationship between parents and their children might lead to the initiation of entrepreneurial intentions. However, young people in collectivistic cultures who do not have entrepreneurial families and who work with entrepreneurs on a one-to-one basis in a friendly and familial environment may develop trusted relationships that could initiate entrepreneurial intentions (Laspita et al., 2012). Therefore, even absent on the prevalence of parental entrepreneurship in a country, policy makers and universities can motivate young people toward entrepreneurship by encouraging them to gain work experience in family-run businesses. Laspita et al. (2012) finds that individuals who live in countries characterized by low levels of in-group collectivism but who have an entrepreneurial family background absorb less of the knowledge and values conducive to entrepreneurship from their parents than do those who live in countries with high levels of in-group collectivism. Future research can shed more light on how different types of knowledge, attitudes, and values that are conducive to entrepreneurship are transmitted in families across cultures.

The second implication of my research relates to for the theory of career choice and the emotional side of the transmission of intergenerational entrepreneurial intention. The research on occupational transmission suggests that parental values and beliefs may powerfully shape their children's socialization and self-development (Dick and Rallis, 1991) as a result of the

characteristics children with which are born and contextual input, such as the parental model (Holland, 1997; Oren, Caduri, Tziner, 2013). While my study cannot determine which source is more important, my findings—especially the importance of perceived desirability and feasibility in predicting entrepreneurial intention to follow in parents' footsteps—support the importance of the contextual input. My findings also support the social selection literature with regard to socio-economic status, which states that the intergenerational transmission of occupational intention may result from practical reasons (Laband and Lentz, 1992). These initial results serve as an avenue for further exploration of the effect of exposure to family businesses and how the congruence or incongruence of parents' norms, values, and beliefs consciously or unconsciously shape their children's entrepreneurial intentions.

Third, my findings confirm Ajzen's (2002) arguments on the enduring effects of past behavior on future intentions, but it also suggests the two intervening factors of perceived desirability and perceived feasibility. These findings have considerable relevance to real life. A practical implication for entrepreneurial parents who prefer that their children pursue entrepreneurship is the opportunity to understand how to motivate their children toward entrepreneurial careers. Specifically, the interaction of an entrepreneurial family background with perceived feasibility and perceived desirability of an entrepreneurial career suggests that serving as a role model alone might not be sufficient to motivate one's offspring to take the entrepreneurial path. For example, children of entrepreneurial parents who have internalized from their parents the values and beliefs that are suitable for venture creation may not have developed entrepreneurial self-efficacy, decreasing the possibility of entrepreneurship as a feasible career option (Krueger et al., 2000). In this case, additional motivational measures may be necessary to encourage the children to seek an entrepreneurial career path; these measures include offering them higher levels of autonomy (Shane et al., 2003) and creativity within the family business, training them in entrepreneurship and leadership (Krueger, 2000), and making

the business as financially successful as possible (Dunn and Holtz-Eakin, 2000). These steps may be crucial in ensuring the development of entrepreneurial intentions in the next generation.

Another practical implication of the family environment as an important impetus for the development of entrepreneurial intentions is the need to create substitutes for the informal transfer of human capital that the entrepreneurial family environment provides. This need can be met through the development of entrepreneurial apprenticeship programs that focus on work experience in small business settings as a means to develop the general and specific human-capital skills necessary to become an entrepreneur (Fairlie and Robb, 2005).

### **3.6 Limitations and future studies**

There are several potential limitations in the present study that inform possibilities for future research. First, my sample is drawn from a collectivistic society (i.e., Pakistan) based on Hofstede's cultural typology (Hofstede, 1980, 2003) that is also a developing Asian country. Consequently, my findings may not be generalizable to developed economies in individualistic cultures like those of the UK or Europe. Second, entrepreneurial family background is a binary categorical variable that may offer limited insights into the mechanism that underlie this variable's influence on entrepreneurial intention. I recommend that future studies investigate the entrepreneurial family background by employing metric measures. Future studies should also include other related variables, such as the quality of the parent-child relationship, parental support, family values, and attachment styles. To clarify how entrepreneurial intentions are transmitted over a lifetime, longitudinal studies are required, and future research could fill this gap. Fifth, the results maintain that there is a role for the local culture. I suggest uncovering possible future directions of improvement through comparative, cross-cultural studies that investigate to what extent the model fits in different cultural contexts. Finally, I acknowledge that measuring students' entrepreneurial intention is not equivalent to

entrepreneurial action. Previous studies have used student samples to study the process of forming entrepreneurial intentions (e.g., Krueger et al., 2000), as students are approaching the point at which they will choose their careers (Lévesque and Minniti, 2006). Nevertheless, there is a debate in literature about student samples' ability to represent the general population (Robinson et al., 1991). Future studies should use a sample of managers and existing entrepreneurs to validate my proposed model.

#### **4 A Multi-Level Study Of Entrepreneurship Education Among Pakistani University Students**

This study examines how a university's support impacts students' entrepreneurial intentions and finds that entrepreneurship education, concept-development support, and business-development support increase such intentions. The university role is critical to the growth of entrepreneurial intentions, and I argue that an individual's decision in favor of or against becoming an entrepreneur depends on the multilevel context provided by the university. My findings suggest that students perceive the education and concept-development support (educational and cognitive) from their universities as highly influential on their entrepreneurial intentions. I conclude that a multi-level perspective offers a meaningful understanding of entrepreneurship and offer suggestions for university management and policy-makers for enhancing entrepreneurship. A sample of 805 undergraduate students in universities in Pakistan took part in the study.

### 4.1 Introduction

As the world becomes increasingly competitive and growth-oriented, entrepreneurship has become an efficient strategy with which to enhance a country's economic development and achieve sustainable competitiveness (Schaper and Volery 2004; Venkatachalam and Waqif 2005). Through entrepreneurial activities, several countries have been able to generate wealth, improve the survival rate of firms, enhance the adoption of technological change, and create job opportunities (Gurol and Atsan 2006). In fact, entrepreneurship is the engine that drives many nations' economic growth and competitiveness (Kuratko and Hodgetts 2007). Consequently, entrepreneurship has emerged as one of the most popular topics among scholars, students and policy-makers and has become an important disciplinary field (Davidsson and Wiklund 2001). The highly competitive job environment has increased the interest of both undergraduate and graduate students in studying entrepreneurship (Dickson et al. 2008; Solomon 2002) because permanent employment in organizations is no longer guaranteed (Collins et al. 2004). The supposition that university graduates can acquire a job easily no longer reflects the realities of employment market (Seet and Seet 2006).

In explaining the differences between entrepreneurs and non-entrepreneurs, scholars have primarily focused on individual-level factors (Shane 2004), characterizing entrepreneurs as more achievement-orientated (Collins et al. 2004), more risk-tolerant (Stewart and Roth 2004), more independence-seeking (Douglas and Shepherd 2002), more willing to be introduced to new products and services and to create new firms or new material by destroying the existing economic order (Schumpeter 1934), more able to identify new opportunities (Thompson 1999), and more creative (Lee and Wong 2004) than non-entrepreneurs. Although the definitions of an entrepreneur vary, there is consensus that an entrepreneur has a unique character, mindset, motivation, and vision is committed to conceptualizing ideas and

implementing them through a business plan and sees change as an opportunity to innovate (Cheng et al. 2009). This consensus implies that entrepreneurs are a function of their personality traits, so they are “born” rather than “made” as a result of training and teaching. According to this argument, the entrepreneurial character depends on personal background, previous experience, and environmental influences, which are not teachable (transferable from one person to another).

On the other hand, at the organizational-level, scholars have focused on the factors of organizational culture and organizational norms (Louis et al. 1989), university quality (Di Gregoria and Shane 2003), and entrepreneurship education (Souitaris et al. 2007), among other factors, as the most important factors in influencing the development of students’ entrepreneurial intention. The role of entrepreneurial education and experience has been highlighted as critical to the ability to recognize entrepreneurial opportunities (Shane 2000; Davidsson and Honig, 2003) and to using these opportunities effectively (Robinson and Sexton 1994; Bates 1995). Previous research has recognized the impact of entrepreneurship education, training and support as critical factors in developing positive perceptions of competence for start-up firms (Zhao et al. 2005), favorable attitudes toward entrepreneurship (Krueger and Brazeal 1994), and related entrepreneurship preferences and intentions (Chen et al. 1998). Consequently, the number of entrepreneurship-related subjects at the university level around the world has grown rapidly (Klandt 2004). Still, the question remains concerning how such offerings can motivate and train students for entrepreneurial careers? Previous research is inconclusive about whether entrepreneurship can be taught and learned in universities (Aronsson 2004; Gendron 2004).

Drawn on a dataset from surveys completed by 805 undergraduate university students from Pakistan, my findings have important implications for entrepreneurship research and teaching. my multi-level study extends the literature, as it acknowledges the important but



neglected influence of organization-level factors on entrepreneurial behavior, thus helping to resolve some of the controversies in previous research (Gartner et al. 1992). my main contribution is to extend the entrepreneurship literature by employing a multi-level perspective of individual- and organizational-level factors in order to understand the roots of university students' entrepreneurial intentions. Following Kraaijenbrink et al. (2010), I measure organizational-level factors through entrepreneurship-related educational support, concept-development support, and business-development support. my focus on the role of universities in promoting entrepreneurship is grounded in capabilities-based views of strategy, which suggest that universities are the primary resource underlying entrepreneurs' ability to create value and competitive advantage. The view that universities' entrepreneurial activities increase entrepreneurial knowledge is typically applied to the development and growth of existing firms, but if knowledge is the primary source of value-added and competitive advantage in existing firms, the question concerning how to access relevant knowledge should be important for anyone who is planning to set up a new enterprise. Hence, it is straightforward to assume that the prospect of having (or not having) access to superior sources of knowledge through university education is central to the decision in favor or against starting a new venture.

At the individual level, I use eight factors that differentiate individuals on the basis of how they discover, evaluate, and exploit entrepreneurial opportunities: the need for achievement (Collins et al. 2004), independence (Douglas and Shepherd 2002), financial success (Carter et al. 2003), and self-realization (Carter et al. 2003), as well as social norms (Elster 1989), entrepreneurial self-efficacy (Chen et al. 1998), risk-taking propensity (Stewart and Roth 2004), and social network support (Turker and Selcuk 2009). I selected the relevant variables using five selection criteria in a review of extant studies: (a) heterogeneity in their relationship with entrepreneurial intention, (b) a history of use in the literature, with well-defined structure

and theories, (c) consistent use in student-specific populations, (d) high reliability and validity, and (e) independence from one another.

My second contribution is to extend my understanding of entrepreneurial intention in the context of developing countries. I conducted a review of the literature published between 2000 to 2012 and found that, among the 85 most relevant papers, only a few addresses the developing part of the world, and none address Pakistan.

In testing my research propositions, I use hierarchical linear modeling (HLM) to avoid the estimation errors that are associated with traditional regression models (Bommer et al. 2007; Marrone et al. 2007; Martin 2007). my findings will help university managers and national-level policy-makers to understand the effectiveness of initiatives undertaken to stimulate entrepreneurship.

The paper is organized as follows. First, I lay out the theoretical foundations and derive the hypotheses for the role of entrepreneurial education and entrepreneurial intention. Next, I describe my methodology and present the results. Finally, I discuss my findings, state the implications of my study, and identify directions for future research.

## **4.2 Entrepreneurship Education and Entrepreneurial Intention**

Entrepreneurial universities are valued because of their economic output (such as patents, licenses, and start-up firms) and technology transfer mechanisms (Tijssen 2006). It is important for universities to position themselves as hubs of entrepreneurship by nurturing an entrepreneurial environment and providing substantial contributions to the economy and society (Gnyawali and Fogel 1994). The development of entrepreneurial universities is a widespread phenomenon that has attracted policy-makers' attention. However, despite the increasing interest in academic entrepreneurship and new-venture creation by students, little

empirical research has identified organization-level factors that can foster entrepreneurial intention among university students (Walter et al. 2006).

Extant literature has demonstrated significant relationships among education, training and entrepreneurship (Henry et al. 2005), and a significant amount of scholarship has seen universities as seedbeds for entrepreneurship-specific human capital (Becker 1964; Ucbasaran et al. 2008). Entrepreneurial universities can play an important role in identifying and developing students' entrepreneurial traits and ability to start their own ventures, thus effectively contributing to economic prosperity and job creation (Debackere and Veugelers 2005; Mowery et al. 2001; O'Shea et al. 2005; Binks et al. 2006). Research shows that university students who take entrepreneurship courses have more interest in becoming entrepreneurs than do those who did not take such courses (Kolvereid and Moen 1997). Upton et al. (1995) find that 40 percent of those who attend entrepreneurship courses start their own businesses.

People tend to avoid careers and environments that do not fit with their competencies and to select those that match them. An individual's entrepreneurial self-efficacy, which refers to the belief in one's own abilities to perform the skills necessary to pursue a new venture opportunity, plays an important role (Chen et al. 1998), as research has shown that entrepreneurial self-efficacy has a significant impact on entrepreneurial intention and entrepreneurial behavior (McGee et al. 2009; Townsend et al. 2010). This finding suggests that entrepreneurial intention can be enacted through educational infrastructure and university support (Segal et al. 2005). Along the same lines, Wang and Wong (2004: p. 170) point out that the entrepreneurial dreams of many students are hindered by inadequate preparation: "their business knowledge is insufficient, and more importantly, they are not prepared to take risk to realize their dreams." Therefore, it is likely that academic institutions play an important role in fostering entrepreneurial behavior. However, while research has demonstrated the positive and

significant relationship between entrepreneurship education and entrepreneurial behavior (Lüthje and Franke 2003; Galloway and Brown 2002) and the number of entrepreneurship courses and curricula has grown, student entrepreneurship remains low (Kraaijenbrink et al. 2010).

According to Chen et al. (1998), an entrepreneurship education program should have a support system to increase students' entrepreneurial self-efficacy, including engaging students in "real-life" business situations to encourage risk-taking and innovation, as opposed to general management skills or more specific technical skills. Research has proposed that entrepreneurship-related support may give some people the confidence to initiate their own business ventures (Kraaijenbrink et al. 2010) and has attempted to explain students' entrepreneurial intent as being the result of their education. For example, Hatten and Ruhland (1995) analyze the effect of an entrepreneurship course on students' attitudes and conclude that entrepreneurship attitudes can be measured and changed. Similarly, other researchers suggest that the attitude model of entrepreneurship has implications for entrepreneurship education programs, as attitudes are open to change and can be influenced by educators and practitioners (Souitaris et al. 2007; Wang and Wong 2004).

Kraaijenbrink et al. (2010) suggests that, although universities can support entrepreneurship in many objectively measured ways, to understand the effect of such measures, it is important to gauge the extent to which they can influence students by measuring students' perceptions of the university support they receive. Kraaijenbrink et al. (2010) propose three aspects of university support. First, in their traditional teaching role, universities can provide educational support by teaching students the knowledge and skills that are needed in order to initiate a new venture. Second, in their commercial role, universities can provide students with targeted and specific support for starting their own firms through concept-development support and business-development support. Concept-development support can

provide awareness, motivation and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000), while business-development support is typically given to the start-up firm (rather than to individual students) in the later stages of the entrepreneurial process.

In addition, Krueger and Brazeal (1994) suggest that entrepreneurship education should improve students' perceptions of the feasibility of entrepreneurship by increasing their knowledge, building confidence and promoting self-efficacy. Therefore, I present the following hypotheses:

***H1.** Students' perceptions of the educational support provided by their universities have a positive influence on their entrepreneurial intention.*

***H2.** Students' perceptions of the concept-development support provided by their universities have a positive influence on their entrepreneurial intention.*

***H3.** Students' perceptions of the business-development support provided by their universities have a positive influence on their entrepreneurial intention.*

### **4.3 Methodology**

The present study's findings will help university managers and policy-makers to understand which practices and initiatives are effective in fostering entrepreneurship, particularly in developing economies like Pakistan. According to Global Entrepreneurship Monitor (GEM) data, Pakistan has the lowest number of established firms among factor-driven countries like Bangladesh, India, and Egypt. The number of registered businesses in Pakistan was 7 percent versus 10.2 percent over the same period in industrialized countries (World Bank Group entrepreneurship survey 2010). Nevertheless, Pakistan has many firms that remain unregistered and that play a significant role in the informal business sector. According to the Small and Medium Enterprise Development Authority (SMEDA), in Pakistan businesses with fewer than

100 employees constitute nearly 90 percent of the 3.5 million private firms that employ 80 percent of the non-agricultural labor force. These businesses generate 25 percent of exports and 40 percent of the annual GDP (Economic Census of Pakistan 2005). Over the last few decades, Pakistani economic policy-makers have undervalued the role of entrepreneurship in the country's economic development, so they have neglected small firms (GEM Pakistan Report 2011). However, more recently, these policy-makers have come to understand the potential of entrepreneurial growth and innovation as a critical contributor to the nation's economy and have shifted their focus to entrepreneurship by improving the country's infrastructure and governance policies (Framework for Economic Growth Pakistan, Planning Commission Government of Pakistan 2011). Pakistan has taken the initiative to promote entrepreneurial culture in the country by increasing R&D investment by 600 percent, which stood at 0.7 percent of GDP (USD 1.176 billion) in the period from 1997 to 2007. With two-thirds of Pakistan's population under age 30, considerable potential lies in training of these young people and helping them launch entrepreneurial ventures.

Pakistan provides a favourable environment for my research because its increasing focus on entrepreneurship education will allow me to measure the impact of the new initiatives on university students' entrepreneurial intention. During the last decade Pakistan has worked to build its economic growth through educational policies. The Higher Education Commission (HEC) of Pakistan developed the National Business Education Accreditation Council (NBEAC) to encourage universities to invest in infrastructure that supports entrepreneurship, to promote business education, and to focus on stimulating entrepreneurial education and culture. Universities are increasingly considered key institutions for providing important learning and inspirational resources that can nurture entrepreneurship. As a result, the number of technology-licensing offices and entrepreneurship courses in universities has grown significantly.

### 4.3.1 *Setting and participants*

To ensure that the sample of respondents is varied and representative, I selected universities in the largest province of Pakistan, Punjab, where I targeted Lahore, Faisalabad and Sahiwal, the educational hubs in the region. I selected five universities that provide entrepreneurship education by examining their websites, reviewing their course outlines, and determining whether they were registered with HEC with approved and relevant programs of study. Then I contacted undergraduate students who had studied or were studying a course of entrepreneurship in the universities that agreed to participate in my study. I obtained written informed consent to participate from students before allowing them to answer the questionnaire. In addition, ethical approval was obtained from each university's Ethics Committee. Before completing the questionnaire, the respondents read a brief explanation of the study and were informed of their rights as participants in accordance with the American Psychological Association's Ethical Principles for the treatment of participants.

Data were collected over a period of eight weeks. One thousand questionnaires were distributed and 850 were returned (response rate of 85%), of which 45 were discarded. The 805 fully completed questionnaires (usable response rate of 80.5%) comprised a sample of 547 males (68%) and 258 females (32%). The average age was 21 years ( $S.D. = 0.54$ ).

### 4.3.2 *Measurement Variables*

A questionnaire was developed and pre-tested on a small sample of students for validation purposes. Appendix I presents the scales used to measure the study variables.

*Dependent variable.* Entrepreneurship is the process of venture creation (Gartner et al. 1992) and entrepreneurial intention is crucial in this process as it is the proximal cognitive state that is temporally and causally prior to entrepreneurial action. According to Ajzen (1991) and Fishbein and Ajzen (1975), intention captures the degree to which people show their

motivations and willingness to execute the desired behavior. Intention has also been defined as a state of mind that directs a person's attention (and therefore experience and actions) toward a specific object (goal) or path in order to achieve something (for example, becoming an entrepreneur) (Bird 1988; Bird and Jelinek 1988; Katz and Gartner 1988). I focused on entrepreneurial intentions because these are measurable without an unpredictable time lag, potential survival bias, ex-post rationalization by the respondents, or the risk of identifying the consequences instead of the determinants of self-employment. Thus, entrepreneurial intentions are likely to reflect entrepreneurship education influences directly. Armitage and Conner's (2001) meta-analytic review shows that intentions account for up to 31 percent of the variance in general, and self-reported behavior accounts for 20 percent of the variance in observed behavior. Entrepreneurial intention was measured through seven statements that assess whether participants intended to start a new business. The first statement, "Have you ever seriously considered becoming an entrepreneur?" was adapted from Veciana et al. (2005) and was measured on a dichotomous scale (1 = Yes, 0 = No). The other six statements were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and were adapted from Linan and Chen (2009).

*Explanatory variables.* *Perceived educational support* was measured using Kraaijenbrink et al.'s (2010) six-item scale, which measures students' perceptions of the universities' traditional teaching role of universities and includes statements like "my university offers project work focused on entrepreneurship." *Perceived concept development support* was measured using Kraaijenbrink et al.'s (2010) four-item scale, which measures students' perceptions of the support the university provides students (beyond teaching) at the early stages of the entrepreneurial process to help them with opportunity recognition. For example, the items included statements like "my university provides students with ideas to start a new business." *Perceived business development support* was measured by means of Kraaijenbrink



et al.'s (2010) three-item scale, which measures students' perceptions of the support the university provides to start-up firms, rather than individual students, in the later stages of the entrepreneurial process, such as helping a new firm with financial resources. The items included statements like "my university provides students with the financial means to start a business."

*Control Variables.* I controlled for eight individual-level influences: (1) *Need for achievement* refers to an individual's expectations of doing something better or faster than anyone else or better than the individual's own earlier accomplishments (Hansemark 2003). Individuals who are motivated by a need to achieve are more likely than other people to choose entrepreneurial careers because of the associated challenging activities (Collins et al. 2004). I employed a formative measure for this variable that was developed and validated by Cassidy and Lynn (1989). (2) *Need for independence* or autonomy is a characteristic of entrepreneurs (Kolvereid 1996). Carter et al. (2003) define independence as freedom, control, and flexibility in the use of one's time. I adopted a formative measure of this construct that was developed and validated by Carter et al. (2003). (3) *Risk-taking propensity* is influenced by an individual's personality, the nature of the task, cognitive and situational factors, and the tendency to avoid or not avoid risk while making decisions (Sitkin and Pablo 1992). Research has shown that an entrepreneur takes more risks than others (Stewart and Roth 2004). The scale is comprised of two items adopted from Zhao et al. (2005), where scores indicate the extent to which an individual is willing to participate in events that have uncertain outcomes and for which the consequences of failure are significant. (4) *Self-realization* refers to the reasons involved with pursuing self-directed goals. I measured self-realization through the three-item scale from Carter et al. (2003). (5) *Financial success* involves the reasons that describe an individual's intention to earn money and achieve financial security (Carter et al. 2003). I measured financial success using the three-item scale from Carter et al. (2003). (6) *Social*

*norms* describe an individual's need for status, approval, and recognition from his or her family, friends, and community (Schienberg and MacMillan 1988; Shane et al. 1991). I measured this variable using two items from Carter et al. (2003). (7) *Entrepreneurial self-efficacy* was measured using a task-specific scale in which respondents indicated their ability to perform 26 roles and tasks related to five areas of entrepreneurship: marketing, innovation, management, risk taking, and financial control (Chen et al. 1998). (8) *Social network support* refers to support from one's family members, partner, friends, or other connections (Henderson and Robertson 2000). An individual's perception of social network support plays an important role in influencing his or her career choice, as such support promotes psychological well-being and reduces risk aversion (Dwyer and Cummings 2001). This variable was measured using two items from Turker and Selcuk (2009).

## 4.4 Results

### 4.4.1 Assessment of measures

Table 9 presents the correlation matrix and summary statistics. The bivariate relationships indicate that all of the independent variables related significantly to entrepreneurial intention, with the individual-level factors of need for achievement ( $r = 0.72$ ;  $p < 0.01$ ) and entrepreneurial self-efficacy ( $r = 0.55$ ;  $p < 0.01$ ) relating most significantly to entrepreneurial intention. Entrepreneurial intention was also significantly correlated with other control variables, where the associations ranged between  $r = -0.10$  and  $r = 0.72$ . Entrepreneurial intention was also significantly correlated with perceived education support ( $r = 0.43$ ;  $p < 0.01$ ), perceived concept-development support ( $r = 0.38$ ;  $p < 0.01$ ), and perceived business-development support ( $r = 0.35$ ;  $p < 0.01$ ). The eight control or individual-level variables were not highly correlated to each other, as the correlation coefficients among all other variables were all below 0.60 (Kennedy 1992), and none of the variance inflation factors (VIFs) for the

variables was greater than 2, which was below Chatterjee and Price's (1991) guideline of 10. Therefore, it is unlikely that multi-collinearity among the independent variables affected the findings.

#### 4 A Multi-Level Study Of Entrepreneurship Education Among Pakistani University Students

**Table 9: Descriptive statistics and correlation matrix**

Study Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Perceived Educational Support	---											
2. Perceived Concept Development Support	0.63**	---										
3. Perceived Business Development Support	.60*	.58*	---									
4. Need for Achievement	0.28**	0.15**	.05*	---								
5. Need for Independence	0.38**	0.38**	.30**	0.42**	---							
6. Risk Taking Propensity	0.25**	0.20**	.10**	0.44**	0.34**	---						
7. Self-Realization	0.35**	0.30**	.25**	0.45**	0.44**	0.59**	---					
8. Financial success	0.00	0.01	-.01	-0.10*	0.04	-0.03	0.01	---				
9. Social norms	0.32**	0.27**	.10**	0.46**	0.48**	0.36**	0.44**	0.05	---			
10. Entrepreneurial Self-efficacy	0.63**	0.55**	.43**	0.56**	0.52**	0.43**	0.49**	0.05	0.58**	---		
11. Social Network Support	0.25**	0.29*	.12**	0.34**	0.29**	0.25**	0.26**	0.05	0.35**	0.40**	---	
12. Self-employment Intention	0.43**	0.38**	0.35**	0.81**	0.37**	0.41**	0.43**	-0.10*	0.46**	0.55**	0.32**	---
<i>Mean</i>	3.73	3.61	2.37	3.52	3.93	3.57	3.79	3.09	3.86	3.76	3.57	3.54
<i>Standard Deviation</i>	1.28	1.15	1.25	0.99	1.08	1.17	1.09	1.14	0.94	0.71	0.73	0.96
<i>Chronbach's Alpha</i>	0.60	0.65	0.60	0.84	0.90	0.92	0.78	0.75	0.80	0.92	0.84	0.80

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$

Chandler and Lyon (2001) propose several procedures for validity analysis. I considered content validity carefully while choosing and operationalizing the constructs of the study and took care to ensure that items were both relevant and representative of the construct being measured (Messick 1988) and that the opinion of expert judges was considered (Rossiter 2002). I also examined substantive validity, which is the extent to which a measure is reflective of or theoretically linked to a construct under study (Holden and Jackson 1979) and which refers to the convergent and discriminant validity. I assessed substantive validity using exploratory and confirmatory factor analysis, as many researchers have recommended (Klein et al. 2005). My sample's Kaiser–Meyer–Olkin test, which indicate the adequacy of the sample, was notably high (0.92), and Bartlett's sphericity test was highly significant ( $p < 0.001$ ). I analyzed the nomological (or criterion) validity of a measure, which refers to the expected behavior of a measure with theoretically related constructs (Cadogan et al. 1999), by examining the correlations between the measures (Jarvis et al. 2003). Entrepreneurial intention can be assumed to depend largely on perceived organizational support (education, conceptual and business development support) and individual-level factors (e.g., need for achievement, need for independence, risk-taking propensity). This correlation was also significant, supporting the nomological validity of the proposed organizational-level factors and entrepreneurial intention. Finally, Chronbach's alphas for entrepreneurial intention and the other variables were above the acceptable threshold of 0.70, indicating the reliability of the variables.

#### 4.4.2 *Hierarchical Linear Modeling (HLM)*

Hierarchical Linear Modeling, also known as the random-effects model (Laird and Ware 1982), the mixed linear model (Diggle et al. 1994), and the random-coefficient model (Strenio et al. 1983), overcomes the shortcomings of traditional methods of analyzing hierarchical data (Hofmann 1997) by helping control for clustering of observations and

heteroskedasticity. In addition, given that the assumptions of the HLM are correct, it improves the efficiency of estimated impacts, and even if the assumptions are violated, HLM still produces a best “HLM” fit, similar to the best linear unbiased estimate property of an OLS model (Goldberger 1991). Finally, a variation of the HLM model with group mean centering produces unbiased slope estimates under the same conditions that are normally used to justify a fixed effects model in economics.

My study adopted a multi-level theoretical lens and methodology to integrate existing work on entrepreneurial intention. I considered two levels of analysis based on the hierarchical pattern in my data. My hypotheses estimate the main effects of variables at both levels of intention, which lead me to use intercepts-as-outcomes models. I preferred intercepts-as-outcomes models over slopes-as-outcome models because individual-level slopes across university departments have less variation (Raudenbush and Bryk 2002).

My cross-level study, which is inspired by quasi-experimental research, links between-department variances in entrepreneurial intentions to within-department influences. My cross-level design controls individual-level influences by complementing prior work, so it focuses on only main hypotheses at the organizational-level, which helps to establish the external validity of prior findings. I avoided multicollinearity issues in my analyses by centralizing all individual-level predictors around their group mean in order to make my intercepts more interpretable (Hofmann 1997). I also checked to ensure that the six assumptions of hierarchical linear models for my two-level model were satisfactory (Raudenbush and Bryk 2002)

*The null model.* I proposed that a student’s entrepreneurial intention would be associated with eight individual-level factors and three organization-level factors. Therefore, a necessary precondition for the support of these propositions is significant within-group and

between-group variance in entrepreneurial intention (Hofmann 1997). I estimated this significance by computing HLM with no level-1 or level-2 predictors as follows:

$$\text{Level-1: Entrepreneurial Intention} = b_{0j} + e_{ij}$$

$$\text{Level-2: } b_{0j} = g_{00} + u_{0j}$$

As Raudenbush and Bryk (2002) describe, this model essentially forces all of the within-group variance in entrepreneurial intention into the level-1 residual term (i.e., variance in  $e_{ij}$ ) and all of the between-group variance in entrepreneurial intention into the level-2 residual term (i.e., the variance in  $u_{0j}$ ). In other words, this two-level model partitions the variance in entrepreneurial intention into its within-group (i.e., the level-1 residual variance) and between-group (i.e., the level-2 residual variance) components. My result shows that the within-group variance component was 0.993 and the between-group variance component was 2.42.

*Random coefficient regression model.* Having confirmed that entrepreneurial intention varies both within and between groups, I tested for the individual-level factors. Specifically, I assumed that higher individual-level factors would result in higher entrepreneurial intention. The HLM model used to test this assumption can be written as:

*Level 1: Individual level*

$$\begin{aligned} \text{Entrepreneurial Intention} = & b_{0j} + b_{1j} (\text{need for achievement}) + b_{2j} (\text{need for} \\ & \text{independence}) + b_{3j} (\text{risk propensity}) + b_{4j} (\text{self-realization}) + b_{5j} (\text{financial success}) + \\ & b_{6j} (\text{social norms}) + b_{7j} (\text{entrepreneurial self-efficacy}) + b_{8j} (\text{social network support}) + \\ & e_{ij} \end{aligned}$$

*Level 2: Organization level*

$$b_{0j} = g_{00} + g_{01} (\text{perceived educational support}) + g_{02} (\text{perceived concept development support}) + g_{03} (\text{perceived business development support}) + u_{0j}$$

$$b_{1j} = g_{10} + u_{1j}; \quad b_{2j} = g_{20} + u_{2j}; \quad b_{3j} = g_{30} + u_{3j}; \quad b_{4j} = g_{40} + u_{4j}; \quad b_{5j} = g_{50} + u_{5j}; \quad b_{6j} = g_{60} + u_{6j};$$

$$b_{7j} = g_{70} + u_{7j}; \quad b_{8j} = g_{80} + u_{8j}$$

where  $g_{i0}$  ( $i=1 \dots 8$ ) provides a direct test of each individual-level variable. Specifically, the Level-2 slope model specifies no predictor. Therefore, the actual regression equation consists of the Level-1 slopes regressed onto a unit vector, which is used to modulate the intercept term so the regression parameter estimated is equal to the mean of the outcome variable. The results of this model reveal the pooled within-group slopes [ $g_{i0}$  ( $i=1 \dots 8$ )], which are reported in Table 10. The residual from the Level-1 equation (i.e., the variance in  $e_{ij}$ ) now represents the residual within-group variance.

**Table 10: Results for HLM Analysis**

Variables	Model 1		Model 2	
	<i>B</i>	<i>SE</i>	$\beta$	<i>SE</i>
<i>Organizational-Level Factors</i>				
Perceived Educational Support ( $\gamma_1$ )			0.16**	0.04
Perceived Concept Development Support ( $\gamma_2$ )			0.13* *	0.05
Perceived Business Development Support ( $\gamma_3$ )			0.05	0.06
<i>Individual-Level Factors</i>				
Need for Achievement ( $\beta_1$ )	0.69***	0.03	0.69***	0.03
Need for Independence ( $\beta_2$ )	0.08*	0.25	0.12*	0.03
Risk Taking Propensity ( $\beta_3$ )	-0.02	0.02	-0.02	0.02
Self-Realization ( $\beta_4$ )	0.10***	0.03	0.11***	0.03
Financial Success ( $\beta_5$ )	-0.04	0.02	-0.04	0.02
Social Norms ( $\beta_6$ )	0.05†	0.03	0.05	0.03
Entrepreneurial Self-Efficacy ( $\beta_7$ )	0.08**	0.04	0.07**	0.05
Social Network Support ( $\beta_8$ )	0.08*	0.00	0.10**	0.03
	$R^2$	0.53 (Individual level)		0.75 (Organizational level)

Note: †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

I describe two sets of regression models—one at the individual level and the other at the organization level. As Raudenbush and Beryk (2002) suggest, I followed all of the assumptions for the two levels of analysis and estimated the variance explained at each level. The organization-level variables accounted for 75 percent of the between-department



variance (Model 2), while the individual-level variables explained 53 percent (Model 2) of entrepreneurial intention.

The organization-level results, adjusted for individual-level factors, partially support the hypotheses. H1, that perceived educational support enhances entrepreneurial intention ( $\beta = 0.16$ ;  $p < 0.01$ ), is fully supported, as is H2, that perceived concept-development support enhances entrepreneurial intention ( $\beta = 0.13$ ;  $p < 0.01$ ). However, I did not find support for H3, that perceived business-development support enhances entrepreneurial intention, as I found a positive but non-significant relationship between perceived business-development support and entrepreneurial intention ( $\beta = 0.05$ ;  $p = \text{n.s.}$ ).

The results of my individual-level factors are mixed. I found a positive, highly significant relationship between entrepreneurial intention and the need for achievement ( $\beta = 0.69$ ;  $p < 0.001$ ), the need for independence ( $\beta = 0.12$ ;  $p < 0.05$ ), self-realization ( $\beta = 0.11$ ;  $p < 0.001$ ), entrepreneurial self-efficacy ( $\beta = 0.07$ ;  $p < 0.01$ ) and social network support ( $\beta = 0.10$ ;  $p < 0.01$ ). The next section discusses these results.

#### **4.5 Discussion and Implications**

My study extends the entrepreneurial intention literature and answers the calls of Hmieleski and Baron (2009) and Phan et al. (2009) for additional multi-level research in the field of entrepreneurship by introducing a multi-level perspective of the factors that contribute to entrepreneurial intention. I supplement prior evidence that neither individual nor organizational factors alone can sufficiently explain the dynamic nature of entrepreneurial intentions (Davidsson and Wiklund 2001) but that it is the combination that provides insights into this process. Theoretically, my study offers a new perspective in the entrepreneurial intention literature by demonstrating the combined multi-level perspective.

Organization-level factors are represented by perceived educational support, perceived concept-development support and perceived business-development support.

Supporting Peterman and Kennedy's (2003) findings that participation in an entrepreneurship program positively affects entrepreneurial intentions, my results demonstrate the significant role of educational and concept-development support in influencing students' entrepreneurial intentions. Even though previous research has established the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Luthje and Franke 2003), student entrepreneurship figures remain low (Kraaijenbrink et al. 2010). Previous research has suggested that entrepreneurship education could improve entrepreneurship levels by increasing students' knowledge, building confidence and promoting self-efficacy (Krueger and Brazeal 1994). For example, Timmons and Spinelli (2004) suggest that, to be effective, entrepreneurship education must enable students to increase their capacity for imagination, flexibility and creativity and develop their ability to think conceptually and to perceive change as an opportunity.

More specifically, my findings show that, of the three measures of university support, perceived educational support was the most important in developing students' entrepreneurial self-efficacy, followed by perceived conceptual-development and perceived business-development support. Although students perceived that their universities were helpful in providing the general knowledge and skills required to initiate a new venture (educational support), they needed more targeted support in concept development and business development. These results, which are consistent with those of Kraaijenbrink et al. (2010), help to demonstrate the validity of Kraaijenbrink et al.'s (2010) measures to assess perceived university support. These scales should enable universities to measure the impact of their provision of entrepreneurship education and support, thus helping them to address their students' specific needs.

One explanation for the lack of support for the hypothesis on business-development support is that entrepreneurship education has just been introduced in universities in Pakistan,

so the faculties at these universities are not necessarily entrepreneurship-oriented. Therefore, a collective effort is required in order to promote entrepreneurship among younger faculty members. Business schools in Pakistan need to develop the activities that support entrepreneurship in order to prepare the business leaders of the future. Universities can also work to develop strong industry networks and initiate new sources for the support of business-development consultancies. The results for individual-level factors show that individuals are motivated toward entrepreneurship by their need for achievement, need for independence, self-realization, entrepreneurial self-efficacy and social network support, so strategies at the university level can be designed to strengthen and enhance these factors that enhance individuals' attitudes toward entrepreneurship.

Considering that most researchers agree that entrepreneurial perceptions and intentions can be enhanced by entrepreneurship education (Chen et al. 1998; Kraaijenbrink et al. 2010; Krueger and Brazeal 1994; Peterman and Kennedy 2003; Wang and Wong 2004), it is important to discuss the implications of my results for university managers and policymakers, particularly those involved with entrepreneurship-driven programs. Organizations can support universities efforts by introducing entrepreneurial activities (e.g., business plan competitions, idea development workshops) to cultivate an innovative climate that will motivate individuals and develop their entrepreneurial skills. Policymakers can target educational and training programs to raise students' individual-level competencies. Entrepreneurial education programs can expose students to the business environment, market opportunities, and real-life entrepreneurship situations to strengthen their confidence in pursuing entrepreneurship as a career choice.

Entrepreneurship education is fundamental to student entrepreneurship, so universities should measure their students' perceptions of the support they receive in choosing and pursuing entrepreneurial ventures. my findings show that universities are perceived to be

strong in their traditional teaching role but that they fall short in their commercialization role. They can strengthen this weakness by providing awareness, motivation and business ideas in the early stages of the entrepreneurial process and by offering business-development support to start-ups. Entrepreneurship education has an important influence on entrepreneurial intention, but it is not the only important influence, so I propose universities' three-dimensional support (education, concept support, and business support), together with institutional support, to increase students' perceptions of the feasibility of entrepreneurship, as measured by entrepreneurial self-efficacy. Entrepreneurial self-efficacy and perceived desirability, represented by individual motivations like the need for self-realization and recognition shape the entrepreneurial intention. my findings suggest that this holistic approach will provide meaningful support in the formation of students' entrepreneurial intention.

#### **4.6 Limitations and Future Research**

My study is subject to some limitations. First, my focus is on measuring behavioral intention instead of actual behavior. Although the predictive validity of intention has been established in a general context (Armitage and Conner 2001), it has yet to be established in the entrepreneurial context. As a consequence, my study does not predict how many students will materialize their entrepreneurial intentions. Second, I selected individual and organizational variables that an extensive literature review revealed were most influential in predicting entrepreneurial intention, but other variables could be also important which might include internal events in college and external events . Events occurring inside the school curricula (program contents and pedagogies, culture of the school, etc.), and events outside the school (such as meeting with entrepreneurs, getting insightful information about entrepreneurship, and developing experiences implying entrepreneurial behaviors), might affect the results. Obviously, this kind of internal and external events should be taken into

account in the design of future research aiming at studying the persistence of entrepreneurial behavior. Third, a longitudinal study could reveal the degree to which entrepreneurial intention turns into entrepreneurial behavior. Finally, my study examines university students in Pakistani universities, so my findings are mostly generalizable to developing countries. Future research could conduct a comparative analysis between developing and advanced economies in order to reveal relevant variations.

## **5 Formation of Male and Female's Entrepreneurial Intentions through Perceived Feasibility and Perceive Disability: Gender based Implications for Academic Institutions and Policy Makers**

Entrepreneurship education is central to student entrepreneurship. Previous research has attempted to understand the role of entrepreneurship education in the formation of students' entrepreneurial intention and behavior, albeit in an isolated manner. Universities can support entrepreneurship in many ways, but it is important to measure students' perception of the support they receive in order to understand the extent of such support and its impact on students. The current study proposed and tested an integrative, multi-perspective framework. I have hypothesized that the three dimensions of university support: perceived educational support, concept development support, and business development support, together with institutional support shaped students' entrepreneurial self-efficacy. In turn, entrepreneurial self-efficacy and individual motivations constituted the fundamental elements of intention to start a business. A sample of 805 university students took part in the study and data were analyzed using structural equation modelling (SEM). My findings showed that perceived educational support exerted the highest influence on entrepreneurial self-efficacy, followed by concept development support, business development support, and institutional support. Self-efficacy in turn had a significant effect on entrepreneurial intention. Individual motivations such as self-realization, recognition and role had an additional impact on intention. However, intention was not related to financial success, innovation and independence. Furthermore, the results provided evidence for the moderating role of gender in the formation of entrepreneurial intention. The findings supported the relationships proposed in my conceptual framework. This suggests that a holistic perspective provides a more meaningful understanding of the role of perceived entrepreneurship education and

support in the formation of students' entrepreneurial intention. Practical implications are discussed.

## 5.1 Introduction

The impact of entrepreneurship education, training, and support has been recognized as one of the crucial factors in developing positive perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao, Seibert, and Hills 2005), development of favorable attitudes toward self-employment (Gorman, Hanlon, and King 1997; Hegarty 2006; Johannisson 1991; Krueger and Brazeal 1994), and related entrepreneurship preferences and intentions (Chen, Greene, and Crick 1998; Moriano, Palací, and Morales 2006). Therefore, and because entrepreneurship is considered important for the economic growth of a country, policy makers are continuously looking for ways to encourage groups and individuals that are underrepresented in the entrepreneurial population to start new businesses (European Commission, 2002). Around the world, women are less likely than men to engage in entrepreneurship (Minniti, Arenius, & Langowitz, 2005; Reynolds, Bygrave, Autio, Cox, & Hay, 2002). With my research, I apply a dynamic approach that views entrepreneurship as a process consisting feasibility (cognition) and desirability (behavioral, attitude), which enables me to gain insight into the question of why some people become entrepreneurs and other do not (Baron, 2004)

Women are considered not only less involved in entrepreneurship, but they have also been found to be less interested (Blanchflower et al., 2001; Grilo & Irigoyen, 2006; Grilo & Thurik, 2005a, 2008). The scholarly domain of women's entrepreneurship has grown dramatically in recent years, but a lot of work remains to be done (Hughes, Jennings, Brush, Carter, & Welter, 2012), especially in terms of women's lower entrepreneurial intentions (Davis & Shaver, 2012) and the effects of entrepreneurship education and programs. As I explain, by distinguishing between feasibility and desirability and the moderating role of

gender on the decision to become an entrepreneur, I aim to investigate the existence of gender differences.

Also, despite an increasing interest in stimulating new venture creation by university students, very little empirical research has identified entrepreneurship education and support factors that can foster entrepreneurship among students (Walter, Auer, and Ritter 2006), and how this might differ by gender. In spite of the growth in the number of entrepreneurship courses and curricula, and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures remain low (Kraaijenbrink, Groen, and Bos 2010). Previous studies that have attempted to examine the effectiveness of formal entrepreneurship education have been inconclusive, perhaps due to the outcome measures they have used, including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox, Mueller, and Moss 2002).

With this, I am interested in gender differences among university students on the intent to start businesses, and I specifically examine perceived feasibility and desirability. Although self-efficacy has been rarely used as an outcome measure, one study found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business (entrepreneurial self-efficacy) (Peterman and Kennedy 2003), which can ultimately enhance entrepreneurial intentions (Peterman and Kennedy 2003; Dhaliwal 2010). Kraaijenbrink et al. (2010) suggested that although universities support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it is crucial to gauge the extent to which it could have an impact on students' intentions to start businesses. This can be achieved by measuring students' perceptions of the university support they receive or "perceived university support".



Although entrepreneurship education can increase entrepreneurial intentions, there are also individual factors (e.g. demographic characteristics, entrepreneurial self-efficacy, entrepreneurial experience), organizational factors (e.g. organizational culture and norms, and university quality), and institutional factors (e.g. capital availability) to consider. These multi-level factors can interact to synergistically affect entrepreneurial intentions, but most researchers have treated them independently (e.g. Louis, Blumenthal, Gluck, and Stoto 1989; Di Gregorio and Shane 2003; (de Bettignies and Brander 2007). Social science research needs a more holistic view in order to explain complex phenomena, by taking into account the interrelations and interdependencies of various factors (Ireland and Webb 2007; Turker and Selcuk 2009). Therefore, my study takes a multi-perspective approach to assess the impact of entrepreneurship education.

This paper proposes the following questions: (1) How do males and females perceive the entrepreneurship education and support that they receive from their universities? (2) Does gender play moderating role between perceived university support and entrepreneurial self-efficacy? (3) How important is perceived university support for influencing students' entrepreneurial intentions within the context of other factors, such as institutional support and individual motivations, in males and females? (4) How can universities be more effective in their provision of entrepreneurship education and support to their male and female students? To answer these questions, I have developed a conceptual framework that reflects the role of entrepreneurship education within the context of other influences, such as institutional support and individual motivations.

The contribution of the paper therefore consists on the distinction between feasibility and desirability, and linking them with entrepreneurial decision making in women and men. This provides me with new insights regarding whether women's lower levels of entrepreneurial interests are driven by feasibility and desirability levels. I examine this within

the context of other influences, such as institutional support and individual motivations, which allows me to assess the relative importance of the perception of entrepreneurship education and support by gender, in an integrative, multi-perspective framework. I also follow Carter and her associates (2003) and examine the moderating role of gender in the venture creation process, based on effort-performance-outcome (conceptualized by the desirability of starting a new venture) (Gatewood, 1993; Gatewood et al., 2002). My findings will help policy-makers and university managers to understand the effectiveness of current practices and initiatives, particularly among women.

## **5.2 Theory Development and Hypotheses**

### *5.2.1 Conceptual Model Development*

Entrepreneurship is the process of venture creation (Gartner, Bird, and Starr 1992) and entrepreneurial intention is crucial in this process. In my conceptual framework, entrepreneurial intent represents a university student's intent to start a new business (Krueger and Brazeal 1994). Such intention is a conscious state of mind that precedes action but directs attention toward the goal of establishing a new business (Bird 1988). In order to understand how this intention is formed, following Shapero and Sokol (1982), I aim to examine the impact of perceived desirability and perceived feasibility on entrepreneurial intent (Figure 6).

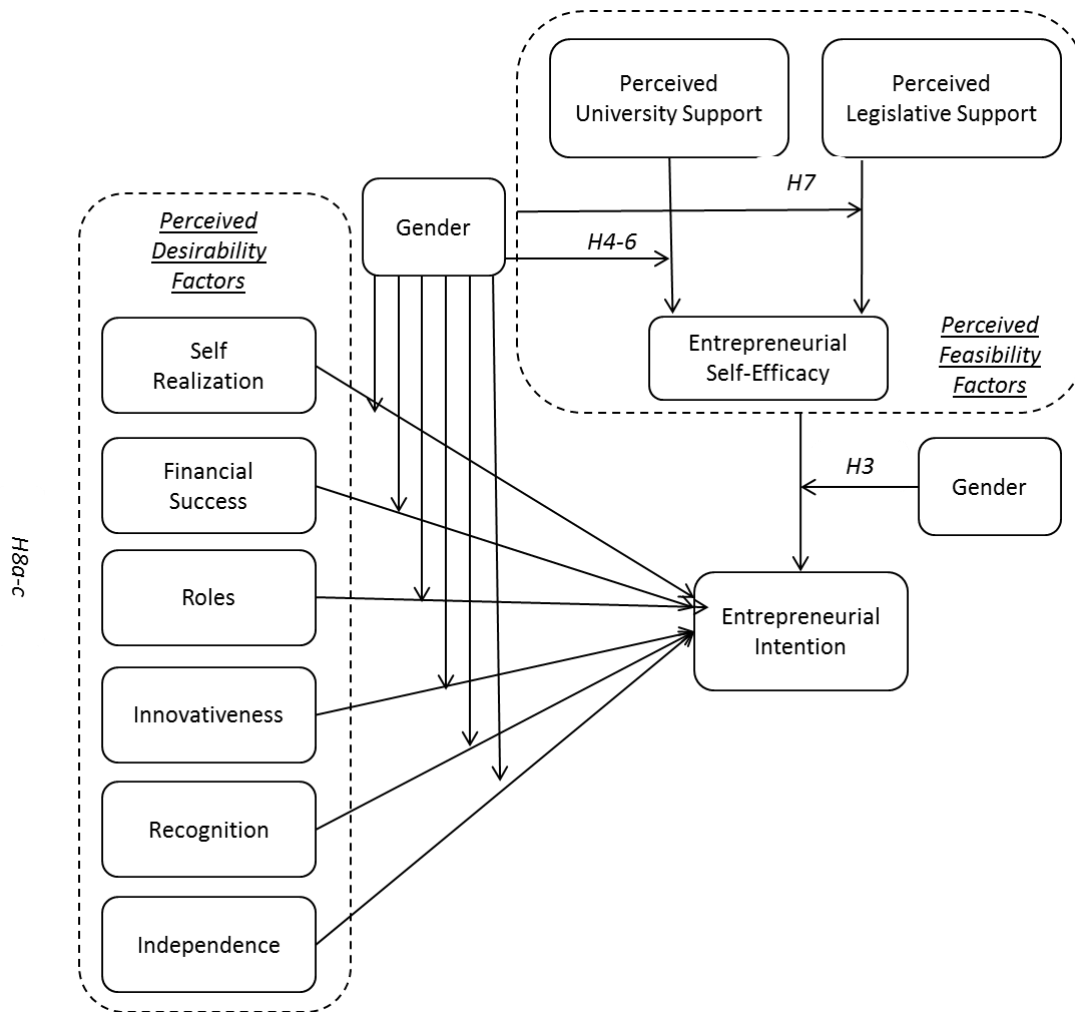
Perceived desirability, which is the attractiveness of starting a business (Shapiro, 1975), constitutes my individual-level perspective, comprised of six individual motivation factors used by Carter, Gartner, Shaver, Gatewood (2003): self-realization, financial success, role, innovation, recognition, and independence. These factors differentiate individuals on the basis of how they discover, evaluate, and exploit entrepreneurial opportunities.

Perceived feasibility has been conceptualized as entrepreneurial self-efficacy (Chen et al. 1998), which is a person's belief that he or she is capable of doing what it takes to be an

entrepreneur. I propose that individuals with a sense of entrepreneurial self-efficacy may be drawn to self-employment's desirable opportunities and benefits, and thus they are likely to form intentions and goals for self-employment. As a dynamic trait that can be changed (Hollenbeck and Hall 2004) this implies that the changes may come from targeted educational and institutional efforts. Therefore, I aim to examine whether there is a link between entrepreneurship education, institutional support, and entrepreneurial self-efficacy.

Entrepreneurship education is the focus of my paper and constitutes my organizational-level perspective. Following Kraaijenbrink et al. (2010), I have conceptualized perceived university support by means of its three separate but related constructs: perceived educational support, perceived concept development support, and perceived business development support. In my framework I have integrated an institutional-level perspective by conceptualizing students' perception of the support they receive from the government as perceived institutional support. This support refers to the policies, regulations and programs that the country has undertaken to support entrepreneurship (Turker and Selcuk, 2009). I have hypothesized that perceived educational support, perceived concept development support, and perceived business development support, in addition to perceived institutional support would increase perceived feasibility, as measured by entrepreneurial self-efficacy. In addition, I have considered the role of gender as a potential moderator of the hypothesized relationships.

**Figure 6:** Results for the moderating effect of gender



### 5.2.2 *Entrepreneurial Career, Gender, and Culture*

The issue of gender differences in entrepreneurial career choices has been discussed in every field of research due to its explicit differences, such as economics (Brenner, 1987), psychology (Bird, 1992; Katz, 1992), and population ecology (Aldrich, 1990, 1999), to name just a few. Empirical evidence shows that men differ from women in their entrepreneurial behaviour and men have been found to be more active (de Bruin, Brush, & Welter, 2007; Díaz-García & Jiménez-Moreno, 2010; Gupta, Turban, Wasti, & Sidkar, 2009). In spite of many efforts to promote women's entrepreneurship (e.g. Goldman Sachs 10,000 Women Program, the U.S. Department of State's African Women's Entrepreneurship Program, the World Bank's Female Entrepreneurship Resource Point), still almost twice as many males are entrepreneurs (Reynolds, Carter, Gartner, Greene, & Cox, 2002; Bosma & Levie, 2009). The latest report, from the Global Entrepreneurship Monitor (Minnitti, Arenius, & Langowitz, 2005), shows that the largest gaps occur in middle-income nations where men are 75% more likely than women to be active entrepreneurs, compared with 33% in high income countries and 41% in low-income countries.

The role of women has been witnessed to impact entrepreneurship throughout the world (Wilson, Kickul & Marlino, 2007). Women has there large share in entrepreneurship of advance market economies (Africa, Asia, Eastern Europe and Latin America), and considered important stakeholder of entrepreneurship (Estes, 1999; Jalbert, 2000; Kolvereid, Alsos, & Åmo, 2004; Ljunggren, 1998). In spite of growing rates of women participation in new venture creation it is still a male-dominated activity in the twenty-first century (Alsos, Isaksen & Ljunggren, 2006). Research has showed that among teenagers, girls are less interested in an entrepreneurial career than boys (Kourilsky & Walstad, 1998; Marlino & Wilson, 2003).

This increasing focus on entrepreneurship education allows me to measure the impact of the new government initiatives on university students' entrepreneurial intentions, thus making Pakistan a model context for my study.

### *5.2.2.1 Gender and Entrepreneurial Intention as Strong Predictor*

Entrepreneurial intention identifies the link between ideas and action, which is critical for understanding the entrepreneurial process (Bird 1988; Krueger and Carsrud 1993). According to Ajzen (1991), intention captures the degree to which people show their motivations and willingness to execute the desired behavior. Intention has also been defined as a state of mind that directs a person's attention (and therefore experience and actions) toward a specific object (goal) or path in order to achieve something (for example, becoming an entrepreneur) (Bird 1988; Katz and Gartner 1988).

Intention has been shown to be the best predictor of planned behavior (Bagozzi, Baumgartner, and Yi 1989), particularly when that behavior is rare, hard to observe, or involves unpredictable time lags (Bird 1988; Krueger and Brazeal 1994). A new business emerges over time and involves considerable planning. Thus, entrepreneurship is exactly the type of planned behavior (Bird 1988; Katz and Gartner 1988) for which intention models are ideally suited. However, intention-based models examine the intent, but not the timing, of business creation (Krueger, Reilly, and Carsrud 2000). After the intent develops, it may take a relatively long or short time before a new business opportunity is even identified. Intention-based models contend that business creation must be preceded by the development of intention to create a new business, and that by understanding intention I can better predict business creation. If intention models can prove useful in understanding entrepreneurial intention, they would offer a coherent, parsimonious, highly generalizable, and robust theoretical framework for understanding and prediction.

Previous research has proposed several conceptual models for understanding entrepreneurial intention, including the Entrepreneurial Event Model (Shapero and Sokol 1982); the Entrepreneurial Attitude Orientation (Robinson, Stimpson, Huefner, and Hunt 1991); the Intentional Basic Model (Krueger and Carsrud 1993); the Entrepreneurial Potential Model (Krueger and Brazeal 1994); and the Davidsson Model (Davidsson 1995). However, research has shown that there are little differences in the approach taken by these models (Krueger et al. 2000). In the current study, my understanding of entrepreneurial intention has been guided primarily by two models: (1) Ajzen's (1991) Theory of Planned Behavior (TPB) and (2) Shapero and Sokol's (1982) model of Entrepreneurial Event (SEE). Although both models vary in terms of their underlying concepts, they provide comparable interpretations of entrepreneurial intention (Krueger et al. 2000; Moriano et al. 2012).

Ajzen (1991) argues that intentions in general depend on attitude toward the act, social norms, and perceived behavioral control. Attitude toward the act reflects the individual's assessment of the personal desirability of creating a new business. Subjective norms reflect an individual's perceptions of what important people in his or her life think about business creation. Finally, perceived behavioral control reflects an individual's perception of his or her ability to successfully initiate a new business. Interestingly, the domain of entrepreneurship had already provided a model quite similar to the TPB well before Ajzen formulated it. Shapero (1975) proposed that the entrepreneurial event (defined as initiating entrepreneurial behavior) depends on the presence of a salient, personally-credible opportunity which in turn depends on perceptions of desirability and feasibility. Shapero defined perceived desirability as the attractiveness (both personal and social) of starting a business, and perceived feasibility (both personal and social) as the degree to which an individual feels capable of starting a business.

The fact that two different scholars in two different domains converged on highly similar models speaks to the value of intention models. Krueger et al. (2000) tested the TPB and SEE, and found support for both models. They demonstrated that attitudes and subjective norms in the TPB model are conceptually related to perceived desirability in the SEE, while perceived behavioral control in the TPB corresponds with perceived feasibility in the SEE model. Considering that perceived behavioral control is largely synonymous with entrepreneurial self-efficacy (Boyd and Vozikis 1994), then entrepreneurial self-efficacy would be the main indicator of perceived feasibility. Essentially, it can be concluded that perceived desirability and perceived feasibility are the fundamental elements of entrepreneurial intention (Douglas and Shepherd 2002).

***Hypothesis 1:** Entrepreneurial intention will be significantly different in males and females, such that it will be higher in males as compare to females.*

### *5.2.3 Perceived Feasibility and Gender: Contingent role of Entrepreneurial Support*

#### *5.2.3.1 Entrepreneurial Self-efficacy and Gender*

Research has shown, not only women's intentions to launching business may differ from men's (), but also self-efficacy hold promise for explaining why gender differences lead to differential self-employment choices. Several researchers have indicated that women are less likely than men to prefer occupations that have been traditionally male-dominated because of the tendency for women to have lower self-efficacy perceptions in relation to these occupations (Baughn, Cao, Le, Lim & Neupert, 2006; Hackett, Betz, Casas & Rocha-Sinjh, 1992; Wheeler, 1983). Gender plays an import role in business performance, it influence perception of abilities and in result effects business start and growth (Anna, Chandler, Jansen & Mero, 2000).



Self-efficacy is the academic term for the belief that one can execute a target behavior. It is firmly based in a person's self-perceptions of their skills and abilities (Bandura 1986). It reflects an individual's innermost thoughts on whether they have what is needed to successfully perform a certain task. Actual abilities only matter if a person has self-confidence in those abilities, and also the self-confidence that they will be able to effectively convert those skills into a chosen outcome (Bandura 1989). Evidence suggests that general self-efficacy is central to most human functioning and is based more on what people believe than on what is objectively true (Markham, Balkin, and Baron 2002). Research in this area has consistently emphasized the importance of perceived self-efficacy as a key factor in determining human agency (Bandura 1989), and has shown that those with high perceptions of self-efficacy for a certain task are more likely to pursue and persist in that task (Bandura 1992).

One possible link, that why women feel less self-efficacy, is social learning theory. This theory argue that women's different socialization experience then men, they may lack strong expectations of personal efficacy in relationship to many career-related behaviour and therefore may not fully attain their potential (Bandura, 1977; Hackett and Betz, 1981). Many studies has shown that females were less confident in their abilities (Kourilsky and Walstad, 1998) which result in low self-efficacy (Chen et al., 1998; Shaver et al., 2001). Women vary in there managerial skills abilities and particular strengths in generating ideas and dealing with people (Birley & Norburn, 1987; Brush & Hisrich, 1991; Hisrich & Brush, 1984; Hoad & Rosko, 1964) were important for a woman entrepreneur in establishing a business

In the field of entrepreneurship, entrepreneurial self-efficacy has proved to be a remarkable predictor of entrepreneurial intention (Chen et al. 1998; DeNoble, Jung, and Ehrlich 1999; Krueger et al. 2000; Scott and Twomey 1988). Entrepreneurial self-efficacy refers to the strength of an individual's belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur (Boyd and Vozikis 1994). Boyd and Vozikis

(1994, p. 66) proposed entrepreneurial self-efficacy as “an important explanatory variable in determining both the strength of entrepreneurial intentions and the likelihood that those intentions will result in entrepreneurial actions.” Similarly, Krueger and Brazeal (1994) proposed that entrepreneurial self-efficacy constitutes one of the key prerequisites for the potential entrepreneur. Self-efficacy has been applied in contexts as diverse as education, learning, health, business, and entrepreneurship to measure not just the belief, but also the actual likelihood of taking action. Self-efficacy has been used as a proxy for entrepreneurial performance (cf. Baron, 1999, 2008; Chen, Greene, & Crick, 1998), its connection with opportunity recognition (Krueger & Brazeal, 1994), career intention, and the decision to pursue an entrepreneurial career (Kickul, Gundry, Barbosa, & Whitkanack, 2009).

Raising entrepreneurial efficacies will raise perceptions of venture feasibility for women entrepreneurs, thus increasing their perceptions of opportunity recognition (Wilson et al., 2007), as well as self-efficacy perceptions which are pivotal to entrepreneurial intentions (Scherer et al., 1989). Kickul, Wilson, and Marlino (2004) found that entrepreneurial self-efficacy had a stronger effect on entrepreneurial career interest for teenage girls than for boys, this results shows that women in particular shun entrepreneurial endeavors because they think they lack the required skills (Chen, Greene, & Crick, 1998). These results were further supported by Almobaireek and Manolova (2012) and BarNir, Anat Watson, & Hutchins (2011). There exists contradiction as well, Wilson, Kickul and Marlino (2007) , Martínez Campo, (2011), did not find a significant moderating effect of gender on the self-efficacy-intention relationship.

Therefore, considering that high levels of entrepreneurial self-efficacy serve as a potent motivational lever for entrepreneurial action, I hypothesize that:

***Hypothesis 2: Gender moderates the influence of entrepreneurial self-efficacy on entrepreneurial intention, such that relationship will be stronger for females than males.***

In turn, entrepreneurial self-efficacy can be influenced by experience, vicarious learning, social persuasion, and support and personal judgments or physiological states, such as arousal (Boyd and Vozikis 1994; Krueger and Brazeal 1994). In addition, Peterman and Kennedy (2003) showed that exposure to entrepreneurship education programs increases entrepreneurial self-efficacy. Next I discuss the role of perceived university support and perceived institutional support in shaping entrepreneurial self-efficacy.

### 5.2.3.2 Perceived University Support and Entrepreneurial self-efficacy

Recent research shows that people who start businesses have a higher level of education than people who do not (Robinson & Sexton, 1994; Bates, 1995; Bowen & Hisrich, 1986), which dismiss the previous argument that entrepreneurs are less well educated than the general population (Jacobowitz & Vilder, 1982). Segal, Borgia, and Schoenfeld (2002) found that certain educational initiatives were successful in boosting students' entrepreneurial self-efficacy by enhancing their expectations of the potential for, and possibility of, positive outcomes from entrepreneurial action. Despite the relationship between education and entrepreneurial activity, it is noticed that formal education prepares student's mind for corporate domain, and promote "take-a-job" mentality (Kourilsky, 1995) and this quashes entrepreneurial mentality (Chamard, 1989; Plaschka & Welsch, 1990). Entrepreneurship education programs in university promote entrepreneurial behavior (Chen et al. 1998; Krueger and Brazeal, 1994; Gorman et al. 1997; Hegarty 2006; Donckels, 1991; Gasse, 1985; Dainow, 1986; Gorman, 1997) and the development of favorable perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao et al. 2005; Moriano et al. 2006). While considering the aspect of university entrepreneurship education I also consider is the presence of entrepreneurship support programs. Entrepreneurship support programs measure the berth and depth of the institutional activities that aim at sensitizing, qualifying, and supporting students for an entrepreneurial career which includes activities such as promotion of offers (e.g.,

presentations in lectures), business plan competitions, extra-curricular counseling (e.g., on venture financing), and material support (e.g., start-up capital) (Walter et al., 2011). It is worthwhile to argue that students at universities with more active entrepreneurship support programs are more likely to pursue entrepreneurial careers (McMullan et al., 2002)

The development of entrepreneurial universities constitutes a widespread phenomenon across the world, which has attracted the attention of policy-makers. Entrepreneurial universities are valued because of their economic outputs (such as patents, licenses, and start-up firms) and technology transfer mechanisms (Tijssen 2006). Furthermore, a significant amount of scholarship has considered universities as seedbeds for fostering entrepreneurial spirit and culture. Universities can play an important role in identifying and developing entrepreneurial traits and inclinations among students and making them capable of starting their own venture, thus effectively contributing to economic prosperity and job creation (Binks, Starkey, and Mahon 2006; Debackere and Veugelers 2005; O'Shea, Allen, Chevalier, and Roche 2005). It is therefore important for universities to position themselves as a hub of new venture creation by nurturing an entrepreneurial environment and contributing substantially to the economy and the society (Gnyawali and Fogel 1994).

Previous research has suggested that certain university support policies and practices can foster entrepreneurial activities among students, for example technology transfer offices and faculty consultants (Mian 1996); university incubators and physical resources (Mian 1997); and university venture funds (Lerner 2005). Research has also shown that university students who took entrepreneurship as a course had greater interest in becoming entrepreneurs as compared to others who did not take it (Kolvereid and Moen 1997). Upton, Sexton, and Moore (1995) reported that 40 percent of those who attended entrepreneurship courses had started their own businesses. It is clear that an effective entrepreneurship education program and the entrepreneurial support provided by universities are efficient ways of obtaining the

necessary knowledge about entrepreneurship and motivating young people toward an entrepreneurial career (Henderson and Robertson 2000).

However, despite the increasing number of entrepreneurship courses and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink et al. 2010). Wang and Wong (2004, p. 170) pointed out to the fact that the entrepreneurial dreams of many students are hindered by inadequate preparation "...their business knowledge is insufficient, and more importantly, they are not prepared to take risk to realize their dreams". Timmons and Spinelli (2004) suggested that entrepreneurship education is effective when it enables participants to develop higher capacity for imagination, flexibility, and creativity as well as developing the ability to think conceptually and perceive change as opportunity.

Empirical research attempting to identify university support factors that can foster entrepreneurship among university students has remained limited (Walter et al. 2006). Previous studies which have attempted to examine the effectiveness of formal entrepreneurship education have been inconclusive, perhaps due to the outcome measures that they have used, including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox et al. 2002). Although self-efficacy has been rarely used as an outcome measure, one study by Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased perceived feasibility (entrepreneurial self-efficacy) of starting a business. In addition, those who perceived their entrepreneurship education to be a positive experience showed higher scores of perceived feasibility than those who thought it was negative. Therefore, entrepreneurial education can enhance entrepreneurial intention (Peterman and Kennedy 2003; Dhaliwal 2010).

One way for an entrepreneurship education program to increase the entrepreneurial self-efficacy of students is to provide mastery experiences or "learning by doing". This type of

learning can give them more self-confidence in their abilities to successfully perform specific future tasks that are perceived to be similar or related (Bandura 1992; Cox et al. 2002). Therefore, entrepreneurial self-efficacy can be developed through entrepreneurship education which provides students with elements such as the opportunity to conduct feasibility studies, develop business plans, and benefit from business simulation, case studies, guest speakers, and meaningful apprenticeships (Aronsson 2004; Cox et al. 2002). Another way for an entrepreneurial education program to increase entrepreneurial self-efficacy of students is to have a supportive environment, for example, by offering resources such as a network of individuals to provide specific expertise in areas such as marketing or accounting, the inclusion of role models, and the provision of one-to-one support.

According to Chen et al. (1998), the design of an entrepreneurship education program should have a support system to increase students' entrepreneurial self-efficacy. This could include engaging students in "real-life" business situations to encourage risk-taking and innovation, as opposed to general management skills or more specific technical skills. Previous research has proposed that entrepreneurship-related support (for example, specialized courses in entrepreneurship or training of how to start a business) may give some people the confidence to initiate their own business venture (Dyer 1994; Kraaijenbrink et al. 2010). Most previous studies have attempted to explain students' entrepreneurial intent as a result of the education they have received. Hatten and Ruhland (1995), for example, analyzed the effect of an entrepreneurship course on students' attitude and concluded that entrepreneurship attitudes can be measured and changed. Similarly, other researchers have suggested that the attitude model of entrepreneurship has implications for entrepreneurship education programs, as attitudes are open to change and therefore they can be influenced by educators and practitioners (Robinson et al. 1991; Souitaris et al. 2007; Wang and Wong 2004).

Kraaijenbrink et al. (2010) suggested that although universities can support entrepreneurship in many objectively measured ways, however, in order to understand the effect of such measures it was crucial to gauge the extent to which they could have an impact on students. This can be achieved by measuring students' perceptions of the university support they receive. Kraaijenbrink et al. (2010) proposed three aspects of perceived university support. First, as part of their traditional teaching role, universities can provide educational support by teaching students the general knowledge and skills that are needed to initiate a new venture. Second, considering their commercialization role, universities can also provide individual students or groups of students with a more targeted and specific support for starting their own firm. This targeted support can be of two types: concept development support and business development support. Concept development support can provide awareness, motivation, and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000). Business development support is typically given to the start-up firm rather than to individual students in the later stages of the entrepreneurial process.

In addition, Krueger and Brazeal (1994) suggested that entrepreneurship education should improve perceived feasibility of entrepreneurship by increasing the knowledge of students, building confidence, and promoting self-efficacy. Therefore, it can be inferred that the entrepreneurship programs and related support provided by academic institutions can play an important role in fostering entrepreneurial self-efficacy among their students. Hence, I propose:

***Hypothesis 3:*** *Gender moderates the relationship between perceived entrepreneurship educational support and entrepreneurial self-efficacy such that it will be stronger in females as compare to males.*

**Hypothesis 4:** *Gender moderates the relationship between perceived concept development support and entrepreneurial self-efficacy such that it will be stronger in females as compare to males.*

**Hypothesis 5:** *Gender moderates the relationship between perceived business development support and entrepreneurial self-efficacy such that it will be stronger in females as compare to males.*

### 5.2.3.3 Perceived Institutional Support and Entrepreneurial Self-efficacy

Entrepreneurs do not exist in isolation and many social, cultural, economic, and political factors may affect their entrepreneurial behavior. A country's public and private institutional structures establish the rules of the game for organizations and determine which specific skills and knowledge result in the maximum payoff (North 2005). While public institutions create laws, regulations and policies regarding government assistance for the promotion of entrepreneurship, private institutions define the culture, norms, beliefs and expectations of this activity (Ingram and Silverman 2002). Some studies have found a correlation between a country's GDP per capita, national economic growth rate, and the level and type of entrepreneurial activity in the country (Bosma, Wennekers, and Amoros 2011; Kaufmann and Stone 2010). The positive relationship between economic growth and entrepreneurial activity has been demonstrated by means of different measures, including capital availability (de Bettignies and Brander 2007), economic stability (McMillan and Woodruff 2002), and reduced personal income taxes (Gentry and Hubbard 2000). These studies suggest that an individual's entrepreneurial intention is a reflection of the institutional structure and the economic and political stability of the country.

Entrepreneurship research indicates that institutional support is an important determinant of the entrepreneurial process. Previous studies have shown the significant impact that institutional support factors have on determining new directions for entrepreneurial



activity, which lead to economic development (Shane 2004; Sobel 2008). Baumol (1993) emphasized the role that the institutional environment plays in fostering entrepreneurial development by suggesting that productive entrepreneurship would be at low levels where the incentives supporting it are weak. This means that institutional structures are crucial as they provide the incentives for different types of economic activity. Some of the critical incentives that impact the success and growth of entrepreneurial ventures include capital access, access to markets, and availability of information (Basu 1998; Ramayah and Harun 2005). Entrepreneurs who are setting up a new business face the obstacle of obtaining the necessary funds in a banking system where collaterals and track records are required (Cressey 2002). In addition, potential entrepreneurs have argued that raising capital is their principal problem (Blanchflower and Oswald 1998). Similarly, studies on students revealed that the lack of funds is a major barrier to entrepreneurship (Henderson and Robertson 2000; Li 2007; Robertson, Collins, Medeira, and Slater 2003).

An institutional environment can use both tangible and intangible measures to support entrepreneurship activities. Intangible support measures include flexible and friendly credit conditions, venture capital availability, physical infrastructure, corporate physical assets, R&D laboratories, training opportunities, and business plan competition. Intangible support measures include making human capital available and providing sufficient legitimacy for entrepreneurship. Clearly, if individuals perceive the institutional environment as being supportive they will be more confident in their ability to become entrepreneurs and thus their entrepreneurial self-efficacy would increase (Luthje and Franke 2003; Schwarz, Wdowiak, Almer-Jarz, and Breitenacker 2009; Turker and Selcuk 2009). Therefore, I propose:

***Hypothesis 6:*** *Gender moderates the influence of perceived institutional support on entrepreneurial self-efficacy; such that is will be stronger in males as compare to females.*

#### 5.2.4 *Perceived Desirability and Gender*

Pioneering work on desirability and gender was started with Collins & Moore, (1964) and Eleanor Brantley Schwartz's (1976) work, since then, many researchers studying the main motivators for gender in entrepreneurship and looking for similarities and differences between them for entrepreneurial performance (see Hackett and Betz, 1981; Brush, 1992; Cliff, 1998; Carter and Brush, 2004; Orser and Hogarth-Scott; 2005). Although a number of researchers have attempted to identify relevant reasons for new business formation, the specific individual motives that are consistently related to entrepreneurial intention have shown mixed results (Orhan, 2005). Authors have tended to conclude that there are more similarities than differences between male and female's motivation to start a business (Chaganti, 1986; Longstreth et al., 1987; Orhan and Scott, 2001) and on other hand some focus on more differences (Brush, 1992; Buttner and Moore, 1997; APCE, 2001; Alsos and Ljunggren, 1998; Carter and Brush, 2004). For example many scholars has independence and self-realization (achievement) as the primary motivators for women to start their own businesses (see Shane et al., 1991; Hisrich el al., 1997; Feldman and Bolino, 2000; Carter and Anderson, 2001; Orhan, 2005). Significantly, these findings indicated that entrepreneurial women were not that different from their male counterparts as independence was a strong motivator for men too (Brush, 1992; Gatewood et al., 1995; Orhan and Scott, 2001; Shane at el., 1991; Hisrich et al., 1997; Feldman and Bolino, 2000; Orhan and Scott, 2001; Orhan<sup>i</sup>, 2005). Furthermore, self-realization is another major motivator, which is characterized in both genders equally (Brush, 1992; Gatewood et al., 1995; Orhan and Scott, 2001). Achieving recognition (higher position in society, status and prestige) were more important for men than women (Shane at el., 1991; Orhan and Scott, 2001). Although, in gender based entrepreneurial context, accomplishments and vicarious learning are two other major sources of difference (Hackett and Betz, 1981) of differentiation between men and women. In terms of goals accomplishments, men might be

more interested in gaining experience related to mechanical skills or sports while women in in home-related activities (Macoby and Jacklin, 1974). In another comparison of men and women based desirability factors, Ljungren and Kolvereid (1996) concluded that economic expectancies (innovation and financial success) more related to men and personal expectancies (independence and self-realization) more women related these results were further supported by Cliff (1998). On other hand, vicarious learning includes role model, sex role, and occupational stereotypes that can increase efficacy expectations from observing others succeed (Hackett and Betz, 1981).

Schumpeter (1934 p. 132) defined entrepreneurs as those individuals who attempt to reform or revolutionize the pattern of production by exploiting an invention or untried technical possibility for producing a new commodity or producing an old one in a new way. He further mentioned that these efforts require aptitudes that are present in only a small fraction of the population. It can be implied from Schumpeter's definition that in addition to a supportive organizational (entrepreneurship education) and institutional (government) environment, the success of entrepreneurial activity depends upon the attitudes, interests, and values of the individuals that are likely to form a new venture (Bird 1988; Reynolds 1991). Thus, the reasons that these potential entrepreneurs offer for starting a business should have a significant influence on whether they would actually engage in entrepreneurial activity, that is, their entrepreneurial intentions (Ajzen 1991; Krueger and Brazeal 1994; Krueger and Carsrud 1993; Kolvereid 1996). According to the TPB, these reasons are salient beliefs which determine individuals' attitudes toward self-employment. Similarly, within the SEE framework, these reasons can be identified as perceived desirability factors leading to the development of entrepreneurial intention.

Following a thorough review of the entrepreneurship literature and after careful consideration, I decided to represent perceived desirability by means of the six factors

identified by Carter et al. (2003) as major reasons or motivations for starting a new venture, namely: self-realization, financial success, role, innovation, recognition, and independence.

*Self-realization* refers to the motivations involved in pursuing self-directed goals (Carter et al. 2003). This measure corresponds to Birley and Westhead's (1994) need for personal development and McClelland's (1961) need for achievement. Individuals with a high level of self-realization are expected to show higher willingness to engage in entrepreneurial activity because this provides them with challenges that are associated with goal achievement and personal development (Carree and Thurik 2005). Selecting an entrepreneurial career is not anymore under-employment or a "mom and pop" establishment; it is a way to achieve a variety of personal goals (Kirchhoff 1996). A high level of propensity toward self-realization will result in a higher level of entrepreneurial intention. Self-realization (achievement) is a primary motivators for women to start their own businesses (see Shane et al., 1991; Hisrich et al., 1997; Feldman and Bolino, 2000; Carter and Anderson, 2001; Orhan, 2005), so it could be concluded that

***Hypothesis 7a:*** *Gender moderates the influence of self-realization, on entrepreneurial intention; such that it will be stronger in females as compare to males.*

*Financial success* is described as an individual's desire to earn more money and achieve financial security (Carter et al. 2003). Previous research has shown mixed results for this construct. On the one hand, McQueen and Wallmark (1991) found that most of the founders of new ventures did not establish their companies to generate wealth, but rather to fulfil their goal of commercializing their technologies; and similarly, other researchers found that the prospect of making more money typically ranks low in entrepreneurs' stated motivations for founding their own business (Cromie 1988; Hamilton 1988). On the other hand, Scheinberg and MacMillan (1988) and Birley and Westhead (1994) both labelled financial success as perceived instrumentality of wealth and found it to be related to

entrepreneurial intention. In addition, a high valuation of money was the second most imperative variable in Lynn's (1991) study. Therefore, financial success has been included in the current study in order to clarify these previous findings. According to latest research conducted by Manolova, Brush, & Edelman (2008), in which authors has used Panel Study of Entrepreneurial Dynamics data (n = 441) and concluded that financial success is more important for female than men.

***Hypothesis 7b:*** *Gender moderates the influence of financial success, on entrepreneurial intention; such that it will be stronger in females as compare to males.*

*Role* is the individual's desire to follow family tradition and emulate the example of others (Birley and Westhead 1994; Carter et al. 2003; Shane, Kolvereid, and Westhead 1991). Research into role models and family background has demonstrated that individuals are attracted to role models who can help them to further develop themselves by learning new tasks and skills (Gibson 2004) and then further enhancing their interest in entrepreneurship (Shapero, 1975; Matthews and Moser, 1996; Haynes, 2003; Orhan, 2005). Having role models not only provide inspirations and motivation for entrepreneurial career, but may also give first-hand experience on business management skills. It has long been acknowledged that role models may have a profound influence on career decisions (Kolvereid 1996; Krueger et al. 2000). Wernerfelt (1984) argued that individuals who obtain resources from successful entrepreneurial role models in their social network are more likely to choose an entrepreneurial career. Belcourt et al.'s (1991) study reported that 33 percent of Canadian women entrepreneurs surveyed stated their fathers were entrepreneurs. This is logical as parent-child relationship promotes achievement striving and independence (Stein & Bailey, 1973; Henning & Jardim, 1978). But the research has suggested that role model has more influence for men than for women (Matthews and Moser, 1996).

***Hypothesis 7c:*** *Gender moderates the influence of roles models, on entrepreneurial intention; such that it will be stronger in males as compare to females.*

*Innovation* relates to an individual's desire to accomplish something new (McClelland 1961). It is often referred to as a primary motive behind entrepreneurial intention (Mueller and Thomas 2001; Gürol and Atsan 2006) and has been shown to have a significant effect on venture performance (Utsch and Rauch 2000). Feldman and Bolino (2000) found that individuals with a strong desire for innovation were motivated to become self-employed because of the opportunity to use their skills and be creative as well as to capitalize on a good business idea. Similarly, Shane et al. (1991) found that the opportunity to innovative and be in the forefront of new technology was frequently given as a reason for starting a business, although they labelled it "learning".

***Hypothesis 7d:*** *Gender moderates the influence of innovation, on entrepreneurial intention; such that it will be stronger in males as compare to females.*

*Recognition* describes an individual's desire to gain status, approval, and recognition from family, friends, and the community (Bonjean 1966; Nelson 1968; Carter et al. 2003). Manolova, Brush and Brush (2008) defined recognition as an individual's position relative to others in a given social situation. According to Gatewood (1993) recognition is a second-level outcome or reason for desiring to start a new venture. In my proposed framework, recognition corresponds to the measures "recognition" in Shane et al.'s (1991) new firm formation typology, and "need for approval" in the studies of Birley and Westhead (1994) and Schienberg and MacMillan (1988). Achieving a higher position in society, status and prestige were more important for men than for women in starting a business (Shane et al., 1991; Hisrich et al., 1997)

***Hypothesis 7e:*** *Gender moderates the influence of recognition, on entrepreneurial intention; such that it will be stronger in males as compare to females.*

*Independence* describes an individual's desirability for freedom, control, and flexibility in the use of time (Carter et al. 2003; Birley and Westhead 1994; Scheinberg and MacMillan 1988). As a general rule, individuals possessing high need for independence seek for careers with more freedom. They choose the entrepreneurial career because they prefer to make decisions independently of supervisors, set their own goals, develop their own plans of actions, and control goal achievement themselves (Cromie 2000; Wilson, Kickul and Marlino 2004). Many authors found that independence is another main driver for women to start a business (Holmquist and Sundin, 1988; Shane et al., 1991; Capowski, 1992; Buttner and Moore, 1997; Hisrich et al., 1997; Orhan and Scott, 2001; APCE, 2001). I found that moderated effect of independence is stronger for male as compare to female (Manolova, Candida & Edelman, 2008; Walter, Parboteeah, & Walter, 2011), and postulate following relationship

***Hypothesis 7f:*** *Gender moderates the influence of independence, on entrepreneurial intention; such that is will be stronger in males as compare to females.*

## **5.3 Methodology**

### ***5.3.1 Sample and procedure***

Pakistan is a traditional Asian and male dominated culture which may discourage women from working either as an employee or as an employer. Pakistan was ranked 133 of 134 countries in the Global Gender Gap Index 2011, indicating a huge gender disparity in terms of economic participation and opportunity, educational attainment, health and survival, and political empowerment in the country. Thus, there is a need to design effective measures to reduce this gap and promote gender equality (Hausmann, Tyson, and Zahidi 2011). Furthermore, factors such as shortage of manpower, increasing cost of living, and economic growth have been pushing many females into the workforce in the last few decades. The statistics on labor force participation shows a steady increase in females in the total workforce, which has almost

doubled in the last decade from 13.9 percent in 1990 to 16.4 percent in 2000 to 23 percent in 2010 (OECD 2012). In the entrepreneurship context, the Global Entrepreneurship Monitor report for 2011 (Bosma, Wennekers, and Amoros 2011) shows that the rate of males' early-stage entrepreneurial activity in Pakistan is more than four times that of females. The gender gap is very high compared to other countries and it is not surprising that males would have a more positive attitude toward entrepreneurship than females. This suggests the need for public policy to place more emphasis on generating higher levels of interest in entrepreneurship activity, particularly in females, which in turn will have important implications for entrepreneurial education.

However, during the last decade Pakistan has been trying to build its economic growth on the basis of educational policies. The Higher Education Commission (HEC) of Pakistan has recently developed the National Business Education Accreditation Council (NBEAC) to promote business education, particularly with the aim to stimulate entrepreneurship education and culture in Pakistani universities. Entrepreneurship has been generally selected by students as an elective subject during the final semester of their undergraduate programs. Nevertheless, the NBEAC seeks now to promote entrepreneurship as a major field of study in higher education. This increasing focus on entrepreneurship education allows me to measure the impact of the new government initiatives on university students' entrepreneurial intentions, thus making Pakistan a model context for my study.

To ensure variability and representativity of respondents, I selected universities in the largest province of Pakistan, Punjab. In Punjab I targeted Lahore, Faisalabad and Sahiwal, which are considered the educational hub in this region. First, I selected five universities on the basis of their provision of entrepreneurship education and whether they were registered with HEC and thus offered approved programs. Second, I contacted undergraduate students who had studied



or were studying a course of entrepreneurship in those universities that had agreed to participate in my study.

One thousand questionnaires were distributed and 850 were returned, of which 45 were subsequently discarded. The final sample consisted of 805 participants. Of these, 547 were males (68%) and 258 females (32%). The average age was 21 years ( $SD = 0.54$ ).

### 5.3.2 *Measurement variables*

Table 12 presents the scales used to measure the main variables. All the constructs were measured on a five-point Likert scale that ranged from (1) strongly disagree (1) to (5) strongly agree, unless otherwise indicated.

*Entrepreneurial Intention* was measured with three statements to assess whether participants intended to start a new business. The first statement, "Have you ever seriously considered becoming an entrepreneur?" was adapted from Veciana, Aponte, and Urbano (2005) and was measured on a dichotomous scale of "yes/no". The other two statements were adapted from Liñán and Chen (2009).

*Perceived feasibility* was measured through *entrepreneurial self-efficacy* by employing a task-specific scale from Chen et al. (1998). Given the multifaceted nature of the entrepreneurial process, it is widely recognized the importance of using multi-item measures of entrepreneurial self-efficacy which cover different aspects of venture creation (Chen et al. 1998; DeNoble et al. 1999). Respondents were asked to indicate their skill level in 26 roles and tasks related to five main areas of entrepreneurship: marketing, innovation, management, risk taking, and financial control. The four factors hypothesized as having an impact of self-efficacy: perceived educational support, perceived concept development support, perceived business development support, and perceived institutional support were measured as follows:

*Perceived educational support* was measured by means of a six-item scale developed by Kraaijenbrink et al. (2010), which measure students' perception of the traditional teaching role

of universities, and included statements such as “my university offers project work focused on entrepreneurship”.

*Perceived concept development support* was measured by means of a four-item scale developed by Kraaijenbrink et al. (2010), which measure students' perception of the support that the university can provide to students beyond teaching, and this would be at the early stages of the entrepreneurial process to help them with opportunity recognition, for example. It included statements such as “my university provides students with ideas to start a new business”.

*Perceived business development support* was measured by means of a three-item scale developed by Kraaijenbrink et al. (2010), which measures students' perception of the support that the university can provide to the start-up firm rather than individual students in the later stages of the entrepreneurial process, for example, to help the new firm with financial resources. It included statements such as “my university provides students with the financial means to start a business”.

*Perceived institutional support* was measured through a four-item scale developed by Turker and Selcuk (2009). The questions were related to the opportunities provided to entrepreneurs in terms of the ease or difficulty in taking loans from banks, the legal constraints of running a business, and the economic stability in Pakistan.

*Perceived desirability* was assessed by means of the following six factors identified by Carter et al. (2003): *Self-realization* (four items); *Financial Success* (four items). *Role* (three items) *Innovation* (two items); *Recognition* (two items); and *Independence* (two items).

## **5.4 Results**

### **Assessment of measures**

Prior to the estimation of the measurement model, both exploratory (EFA) and confirmatory factor analyses (CFA) were conducted to assess the convergent and discriminant validity,

reliability, and unidimensionality of factor structures. Structural equation modelling (AMOS version 18.0) was employed for the CFA and to test the structural models and multi-group moderator analysis by using the maximum likelihood estimation procedure.

*Discriminant validity.* Discriminant validity measures the extent to which constructs differ from each other. It is considered adequate when the variance shared between a construct and any other construct in the model (AVE) is less than the variance that the construct shares with its measures (Fornell and Larcker 1981). The variance shared by any two constructs is obtained by squaring the correlation between the two constructs. For discriminant validity to be judged adequate, the square root of the AVE for a given construct should be greater than the off-diagonal elements in the corresponding rows and columns. The inter-correlations and square root of AVE are presented in Table 11. These results suggest that each construct shared more variance with its items than with other constructs. In addition, the correlation matrix provides no evidence of multi-collinearity among the variables as all the coefficients were within an acceptable range ( $r = 0.16$  to  $r = 0.73$ ) and none of them exceeded the cut-off point of 0.85. These analyses provide evidence of discriminant validity.

*Convergent validity.* As shown in Table 12, all items loaded significantly on their corresponding constructs with factor loadings ranging from 0.50 to 0.94, thus meeting the threshold of 0.50 set by Hair et al. (2006), and demonstrating convergent validity at the item level. In addition, Fornell and Larcker (1981) recommended assessing convergent validity through item reliability of each measure, composite reliability (CR) of each construct, and the average variance extracted (AVE). The reliability coefficients (Cronbach's alpha) for all the constructs were well above the threshold level of 0.70 (Nunnally and Bernstein 1994). Expect for the newly developed scales by Kraaijenbrink et al. (2010), which showed somewhat lower reliabilities: perceived educational support ( $\alpha = 0.60$ ), perceived concept development support ( $\alpha = 0.65$ ), perceived business development support ( $\alpha = 0.60$ ). However, in their original work

the authors showed reliabilities around 0.90. To address this problem, I followed Hair et al's. (2006) recommendation that the CR should be used in conjunction with SEM to address the tendency of the Cronbach's alpha to understate reliability. Nunnally and Bernstein (1994) recommended a value of 0.70 and higher for CR to be adequate. The CR for the three Kraaijenbrink et al's. (2010) variables ranged between 0.90 and 0.92 indicating good reliability. The final indicator of convergent validity is the AVE, which measures the amount of variance captured by the construct in relation to the amount of variance attributable to measurement error (Fornell and Larcker, 1981). Convergent validity is judged to be adequate when AVE equals or exceeds 0.50. In addition, comparisons of the average variance extracted (AVE) by each underlying construct with its shared variance ( $\Phi^2$ ) and other constructs indicated that the measures exhibit discriminant validity, since in each case, the AVE was greater than the proportion of the shared variance (Fornell and Larcker 1981). As shown in Table 12, the convergent validity for the proposed constructs used in the current study is adequate.

Finally, a test was performed to investigate the presence for common method variance. The initial EFA with oblique rotation of items measuring the ten constructs of interest (Figure 6) produced ten factors with eigen values larger than one, which collectively accounted for 65 percent of the variance. The first factor accounted for 41 percent of the variance, which suggests that common method bias may not be a major concern (Podsakoff et al. 2003).

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**Table 11:** Correlations and Square roots of average variance extracted

<b>Constructs</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
1. Entrepreneurial Intentions	<i>0.96</i>											
2. Entrepreneurial Self-Efficacy	0.49*	<i>0.89</i>										
3. Perceived Educational Support	0.43*	0.63*	<i>.88</i>									
4. Perceived Concept development Support	0.38*	0.55*	0.63*	<i>.89</i>								
5. Perceived Business Development Support	0.35*	0.53*	0.60*	0.58*	<i>0.93</i>							
6. Perceived institutional Support	0.16*	0.31*	0.21*	0.21*	0.21*	<i>0.87</i>						
7. Self-Realization	0.43*	0.49*	0.35*	0.35*	0.35*	0.19*	<i>0.90</i>					
8. Financial Success	-0.09	0.04	-0.01	-0.01	-0.01	0.17*	0.01	<i>0.89</i>				
9. Role	0.40*	0.59*	0.39*	0.39*	0.39*	0.26*	0.44*	0.05	<i>0.91</i>			
10. Innovation	0.24	0.28*	0.28*	0.28*	0.28*	0.07	0.22*	0.02	0.29*	<i>0.89</i>		
11. Recognition	0.73*	0.57*	0.37*	0.37*	0.37*	0.20*	0.45*	-0.10	0.45*	0.26*	<i>0.87</i>	
12. Independence	0.37*	0.52*	0.38*	0.38*	0.38*	0.23*	0.44*	0.04	0.48*	0.23*	0.42*	<i>0.93</i>

\*Significant at  $p < .01$

Diagonal values represented in italics are square root of AVE; off-diagonal values are correlations between constructs.

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**Table 12: Results of Confirmatory Factor Analysis**

Construct (Items)	Overall		Male		Female	
	Factor loading	t-values*	Factor loading	t-values*	Factor loading	t-values*
<b>Entrepreneurial Intention</b>	$\alpha = 0.80$ ; $CR=0.90$ ; $AVE=0.93$ ; $\Phi^2=0.03-0.52$		$\alpha = 0.81$ ; $CR = 0.72$ ; $AVE = 0.81$		$\alpha = 0.78$ ; $CR = 0.78$ ; $AVE = 0.75$	
1. Have you ever seriously considered becoming an entrepreneur? (Yes/No)	0.810	84.163	0.800	78.125	0.780	83.100
2. I will make every effort to start and run my own firm. <sup>a</sup>	0.820	94.293	0.831	95.368	0.782	84.930
3. I have got firm intention to start a firm someday. <sup>a</sup>	0.816	86.577	0.856	76.700	0.726	88.671
Mean (SD)	3.51 (1.04)		3.61 (.99)		3.30 (1.10)	
<b>Entrepreneurial Self-Efficacy <sup>c</sup></b>	$\alpha = 0.92$ ; $CR=0.90$ ; $AVE=0.89$ ; $\Phi^2=0.03-0.52$		$\alpha = 0.91$ ; $CR = 0.85$ ; $AVE = 0.78$		$\alpha = 0.85$ ; $CR = 0.82$ ; $AVE = 0.85$	
26 items were used. Respondents were asked to rate their skill level in marketing, innovation, management, risk-management, financial control.	0.835	73.886	0.956	84.680	0.885	75.365
Mean (SD)	3.75 (0.69)		3.76 (.70)		3.70 (.68)	
<b>Perceived Educational Support <sup>a</sup></b>	$\alpha = 0.6$ ; $CR=0.92$ ; $AVE=0.88$ ; $\Phi^2=0.02-0.42$		$\alpha = 0.58$ ; $CR = 0.90$ ; $AVE = 0.78$		$\alpha = 0.61$ ; $CR = 0.85$ ; $AVE = 0.80$	
My university...						
1. ...offers elective courses on entrepreneurship.	0.812	88.692	0.888	98.354	0.788	90.235
2. ...offers project work focused on entrepreneurship.	0.826	81.260	0.850	85.235	0.850	83.568
3. ...offers internship focused on entrepreneurship.	0.830	90.886	0.812	91.600	0.782	91.854
4. ...offers a bachelor or master study on entrepreneurship.	0.854	89.345	0.876	88.256	0.800	78.555
5. ...arranges conferences /workshops on entrepreneurship.	0.621	80.110	0.750	81.111	0.600	82.235
6. ...brings entrepreneurial students in contact with each other.	0.652	78.907	0.760	79.350	0.650	88.253
Mean (SD)	4.55 (1.21)		4.70 (1.21)		4.4 (1.21)	
<b>Perceived Concept Development Support <sup>a</sup></b>	$\alpha = 0.65$ ; $CR=0.90$ ; $AVE=0.89$ ; $\Phi^2=0.02-0.38$		$\alpha = 0.60$ ; $CR = 0.95$ ; $AVE = 0.76$		$\alpha = 0.63$ ; $CR = 0.80$ ; $AVE = 0.78$	
My university...						
7. ...creates awareness of entrepreneur-ship as a possible career choice.	0.788	84.849	0.820	88.253	0.766	78.253
8. ...motivates students to start a new business.	0.609	66.566	0.705	75.550	0.596	60.254
9. ...provides students with ideas to start a new business from.	0.812	78.191	0.913	79.256	0.550	68.125
10. ...provides students with the knowledge needed to start a new business.	0.826	88.471	0.850	87.444	0.650	60.21
Mean (SD)	4.13 (1.31)		4.27 (1.01)		3.99 (1.22)	
<b>Perceived Business Development Support <sup>a</sup></b>	$\alpha = 0.6$ ; $CR=0.92$ ; $AVE=0.93$ ; $\Phi^2$		$\alpha = 0.61$ ; $CR = 0.92$ ; $AVE$		$\alpha = 0.65$ ; $CR = 0.95$ ; $AVE$	

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		=0.02–0.32		= 0.76		= 0.76
My university...						
11. ...provide students with the sources of possible financial means to start a new business.	0.854	69.541	0.864	78.250	0.740	60.258
	0.621	75.540	0.720	76.230	0.700	65.245
12. ...use its reputation to support students that start a new business.	0.652	73.823	0.758	77.254	0.755	66.214
13. ...serve as a lead customer of students that start a new business.						
	<i>Mean (SD)</i>	3.48 (1.4)		3.88 (1.28)		3.08 (1.01)
<b>Perceived Institutional Support<sup>a</sup></b>		$\alpha = 0.80; CR=0.82; AVE=0.75; \Phi^2=0.04-0.45$		$\alpha = 0.79; CR = 0.81; AVE = 0.73$		$\alpha = 0.78; CR = 0.80; AVE = 0.68$
1. In Pakistan, entrepreneurs are encouraged by an institutional structure including private, public, and non-governmental organizations.	0.605	75.297	0.700	78.235	0.600	70.412
2. Pakistani economy provides many opportunities for entrepreneurs.	0.683	84.468	0.785	88.897	0.655	69.985
3. Taking bank loans is quite difficult for entrepreneurs in Pakistan. (R)	0.589	92.943	0.685	95.456	0.605	70.247
4. Pakistani state laws are averse to running a business. (R)	0.509	92.943	0.659	98.154	0.600	75.254
	<i>Mean (SD)</i>	3.44 (0.84)		3.45 (0.85)		3.43 (0.81)
<b>Self-Realization<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.78; CR=0.84; AVE=0.81; \Phi^2=0.03-0.38$		$\alpha = 0.81; CR = 0.82; AVE = 0.79$		$\alpha = 0.74; CR = 0.78; AVE = 0.75$
1. To challenge myself.	0.835	84.235	0.956	88.350	0.735	78.245
2. To fulfil a personal vision.	0.720	78.231	0.888	88.457	0.650	77.584
3. To grow and learn as a person.	0.701	76.325	0.788	86.254	0.777	75.478
4. To lead and motivate others.	0.781	81.254	0.835	70.245	0.758	72.254
	<i>Mean (SD)</i>	3.70 (0.99)		3.80 (1.10)		3.76 (1.0)
<b>Financial Success<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.75; CR=0.78; AVE=0.79; \Phi^2=0.15-0.25$		$\alpha = 0.77; CR = 0.81; AVE = 0.72$		$\alpha = 0.71; CR = 0.77; AVE = 0.67$
1. To earn a larger personal income.	0.948	71.258	0.900	75.458	0.756	77.235
2. To give myself, my spouse and children financial security.	0.731	65.320	0.831	75.856	0.666	66.235
3. To have a chance to build great wealth/high income.	0.746	81.269	0.854	88.345	0.756	71.457
4. To build business my children can inherit.	0.680	78.362	0.875	89.247	0.700	77.145
	<i>Mean (SD)</i>	3.0 (1.14)		3.03 (1.14)		3.24 (1.13)
<b>Role<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.80; CR=0.87; AVE=0.83; \Phi^2=0.07-0.30$		$\alpha = 0.83; CR = 0.90; AVE = 0.88$		$\alpha = 0.81; CR = 0.85; AVE = 0.71$
1. To continue a family tradition.	0.701	72.356	0.852	88.245	0.702	75.235
2. To follow example of a person I admire.	0.710	78.246	0.750	88.235	0.652	77.254
3. To be respected by my friends.	0.670	80.234	0.750	78.478	0.686	78.456
	<i>Mean (SD)</i>	3.80 (0.95)		3.62 (0.72)		3.45 (0.75)
<b>Innovation<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.74; CR=0.80; AVE=0.80; \Phi^2=0.10-0.35$		$\alpha = 0.75; CR = 0.81; AVE = 0.78$		$\alpha = 0.76; CR = 0.80; AVE = 0.77$
1. To be innovative at the forefront of technology.	0.832	87.390	0.885	88.250	0.750	76.520
2. To develop an idea for a product.	0.726	80.236	0.850	85.235	0.700	88.235

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	<i>Mean (SD)</i>	3.97 (0.99)	4.0 (1.06)	3.89 (0.90)
<b>Recognition<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.84$ ; $CR=0.87$ ; $AVE=0.76$ ; $\Phi^2=0.12-0.47$	$\alpha = 0.88$ ; $CR = 0.88$ ; $AVE = 0.81$	$\alpha = 0.85$ ; $CR = 0.78$ ; $AVE = 0.75$
1. To achieve something/ get recognition.		0.839 77.230	0.888 76.528	0.780 67.850
2. To gain a higher position for myself.		0.849 73.258	0.876 78.235	0.777 69.356
	<i>Mean (SD)</i>	3.52 (0.98)	3.90 (0.92)	3.80 (0.96)
<b>Independence<sup>b</sup></b> To what extent is the following reason important to you in establishing a new business:		$\alpha = 0.90$ ; $CR=0.92$ ; $AVE=0.86$ ; $\Phi^2=0.09-0.18$	$\alpha = 0.92$ ; $CR = 0.88$ ; $AVE = 0.85$	$\alpha = 0.90$ ; $CR = 0.92$ ; $AVE = 0.81$
1. To get greater flexibility for personal life.		0.777 75.361	0.860 75.365	0.777 70.235
2. To be free to adapt my approach to work.		0.614 83.697	0.785 88.768	0.614 85.235
	<i>Mean (SD)</i>	3.92 (1.01)	3.99 (1.06)	3.80 (1.12)
<u>Model Fit Statistics:</u>		$\chi^2_{(94)} = 612.50$ ( $p=.036$ ); $RMSEA = 0.046$ ; $GFI = 0.95$ ; $NFI = 0.95$ ; $NNFI = 0.97$ ; $CFI = 0.98$ ; $TLI = 0.85$	$\chi^2_{(47)} = 449.450$ ( $p=.000$ ); $RMSEA = 0.006$ ; $GFI = 0.860$ ; $NFI = 0.90$ ; $NNFI = 0.88$ ; $CFI = 0.93$ ; $TLI = 0.80$	$\chi^2_{(37)} = 162.951$ ( $p=.001$ ); $RMSEA = 0.035$ ; $GFI = 0.89$ ; $NFI = 0.85$ ; $NNFI = 0.90$ ; $CFI = 0.91$ ; $TLI = 0.82$

(R) reversed coding

$\alpha$  = Cronbach's alpha,  $CR$  = composite reliability, and  $AVE$  = average variance extracted.

\*Significant at  $p \leq .01$

<sup>a</sup> 5-point Likert Scale (1) strongly disagree (5) strongly agree

<sup>b</sup> 5-point Likert Scale (1) to no extent (5) to a very great extent

<sup>c</sup> 5-point Likert scale (1) = None, (2) = Basic, (3) = Competent, (4) = Advanced, (5) = Expert



#### 5.4.1 Multigroup analysis for the moderating effect of gender

##### **Hypothesis 1**

In order to test my Hypothesis 1 on whether entrepreneurial self-efficacy is differed by gender, I conducted t-test with gender as independent variable and self-efficacy as dependent variable. my results revealed significant difference between gender on self-efficacy ( $t=2.56; p < .01$ ), and male (M) score higher than female (F) on self-efficacy. For my Hypothesis 2, I used again t-test to investigate entrepreneurial intention difference in genders, and again I found significant difference by gender on entrepreneurial intention ( $t=5.99; p < .01$ ) in which males had higher intentions (M) than females (F).

Table 13 and Figure 6 present the results of this test, which was performed by comparing chi-square differences between the restricted model (beta coefficient between groups is set to be equal) and the non-restricted model (beta coefficient between groups is unconstrained). This test evaluates the null hypothesis that the restrictive model is correct, that is, the moderator does not have any effect on the proposed relationships. The significant value for  $\Delta\chi^2(\Delta df)$  in Table 13 [17.8 (10),  $p = 0.05$ ] rejects the null hypothesis, suggesting that some equality constraints do not hold across male and female groups. Thus, gender moderates the hypothesized relationships.

5 Formation of Male and Female's Entrepreneurial Intentions through Perceived Feasibility and Perceive Disability: Gender based Implications for Academic Institutions and Policy Makers

**Table 13:** Results of multiple-group moderator analysis (moderated by gender)

Hypothesis	Hypothesized Path (Moderated by Gender)	Standardized Estimates		z-scores	Results
		Male (N = 547)	Female (N = 258)		
H2	Entrepreneurial Self-Efficacy → EI	0.20**	0.30**	2.779**	Supported
H3	Perceived Entrepreneurship Educational Support → ESE	0.30**	0.38**	1.678*	Supported
H4	Perceived Concept Development Support → ESE	0.28**	0.36**	1.576*	Supported
H5	Perceived Business Development Support → ESE	0.30**	0.32**	1.453*	Supported
H6	Perceived Institutional Support → ESE	0.19**	0.14*	1.651*	Supported
H7a	Self-Realization → EI	0.15*	0.97**	1.548*	Supported
H7b	Financial Success → EI	0.03	0.14*	0.56	Not Supported
H7c	Role → EI	0.29**	0.20*	1.356*	Supported
H7d	Innovativeness → EI	0.33*	0.17	1.200	Not Supported
H7e	Recognition → EI	0.67**	0.57**	1.678*	Supported
H7f	Independence → EI	0.24**	0.20**	1.418*	Supported

Unconstrained Model:  $\chi^2 (df) = 602.5(94)$   
Fully Constrained Model:  $\chi^2 (df) = 620.30 (84)$   
 $\Delta\chi^2 (\Delta df) = 17.8 (10), p = 0.05$

\*\*Significant at  $p < .01$ ; \*Significant at  $p < .05$ ; EI = Entrepreneurial Intention; ESE = Entrepreneurial Self-Efficacy

### **Hypothesis 2-6**

The results support Hypothesis 2 which suggests that gender moderates the influence of entrepreneurial self-efficacy on entrepreneurial intention such that the effect is significant both for male ( $\beta = 0.20$ ;  $p < .01$ ) and female respondents ( $\beta = 0.30$ ;  $p < .01$ ) but stronger for females. The results provide support for Hypothesis 3 which suggests that gender moderates the influence of perceived educational support on entrepreneurial self-efficacy both for males ( $\beta = 0.30$ ;  $p < .01$ ) and females ( $\beta = 0.38$ ;  $p < .01$ ), but it was stronger for females. The results provide support for Hypothesis 4 which suggests that gender moderates the influence of perceived concept development support on entrepreneurial self-efficacy both for males ( $\beta = 0.28$ ;  $p < .01$ ) and females ( $\beta = 0.36$ ;  $p < .01$ ), but it was stronger for females. In addition, the results provide support for Hypothesis 5, which suggests that gender moderates the influence of perceived business development support on entrepreneurial self-efficacy both for males ( $\beta = 0.29$ ;  $p < .01$ ) and females ( $\beta = 0.32$ ;  $p < .01$ ), but it was stronger for females. Similarly, in support of Hypothesis 6 it was found that gender moderated the effect of perceived institutional support on entrepreneurial self-efficacy. The effect was significant for both male ( $\beta = 0.19$ ;  $p < .01$ ) and female ( $\beta = 0.14$ ;  $p < .05$ ) respondents, but stronger for males.

### **Hypothesis 7(a-f)**

Now I will investigate the hypothesized moderating effect of gender on the relationships between the six perceived desirability factors and entrepreneurial intention. It was found that gender moderated the effects of self-realization, role, recognition and independence on entrepreneurial intention (Hypothesis 7a, 7c, 7e and 7f). The effect of self-realization on entrepreneurial intention was significant for both male ( $\beta = 0.15$ ;  $p < .05$ ) and female ( $\beta = 0.97$ ;  $p < .05$ ) respondents, but stronger for female, which provide support for Hypothesis 7a. The effect of financial success on entrepreneurial intention was significant for female only ( $\beta =$

0.15;  $p < .05$ ), which provide no support for Hypothesis 7b. The effect of role model on entrepreneurial intention was significant for both male ( $\beta = 0.29$ ;  $p < .05$ ) and female ( $\beta = 0.20$ ;  $p < .05$ ) respondents, but stronger for male, which provide support for Hypothesis 7c. The effect of innovativeness on entrepreneurial intention was significant for male ( $\beta = 0.33$ ;  $p < .05$ ) only, which provide no support for Hypothesis 7d. The effect of recognition on entrepreneurial intention was significant for both male ( $\beta = 0.67$ ;  $p < .05$ ) and female ( $\beta = 0.57$ ;  $p < .05$ ) respondents, but stronger for male, which provide support for Hypothesis 7e. The effect of independence on entrepreneurial intention was significant for both male ( $\beta = 0.24$ ;  $p < .05$ ) and female ( $\beta = 0.20$ ;  $p < .05$ ) respondents, but stronger for male, which provide support for Hypothesis 7f. Overall, all the results were consistent with the relationships hypothesized in my conceptual framework.

## 5.5 Discussion and conclusions

The main aim of this study was to find out how male and female student's perceived feasibility and desirability impact on their entrepreneurial intentions. I find out how male and female students perceived entrepreneurship education and support and whether this had an impact on their entrepreneurial self-efficacy (feasibility), which in turn would impact on their entrepreneurial intentions. I also examined this within the context of institutional support and individual motivations, in order to assess the relative importance of entrepreneurship education and support. The study explored the possibility of gender differences and the role of universities in addressing students' specific needs, which is first in its kind of study. To meet the aim of my study I presented a conceptual model and I developed five hypotheses to test the proposed relationships. I analyzed the responses of 805 university students using SEM. Overall, the results support my hypotheses which are subsequently discussed in the order they were introduced.

The results in Table 13 show the important role of self-efficacy in the prediction of entrepreneurial intention and its usefulness in representing perceived feasibility in males and females respectively. This means that, as expected, the degree to which students feel capable of starting their own business directly affects their intention to do so. This finding is consistent with a number of previous studies (Boyd and Vozikis 1994; Chen et al. 1998; DeNoble et al. 1999; Krueger and Brazeal 1994; Krueger et al. 2000; Scott and Twomey 1988; Wilson et al., 2007). Table 13 shows that women's level of entrepreneurial intention was affected more by entrepreneurial self-efficacy, showing its moderating role and its relative importance for females. This is consistent with previous research ( Almobaireek & Manolova, 2012; BarNir, Anat Watson, & Hutchins, 2011).

The importance of perceived organizational-level and institutional-level factors in influencing students' entrepreneurial self-efficacy was reflected in the results shown in Table 13. Organizational-level factors were represented by the three separate variables of perceived university support: perceived educational support, perceived concept development support and perceived business development support, while institutional-level was represented by perceived institutional support. These results revealed that all these variables exerted a significant positive influence on both gender's entrepreneurial self-efficacy, which characterizes perceived feasibility. The effects were important for both males and females, though they were stronger for females, as indicated in Table 13. Therefore I seem to have provided support for my assumption regarding the relationship between perceived university support, perceived institutional support, and entrepreneurial self-efficacy. This suggests that self-efficacy is not a static trait, but rather that it can be changed (Hollenbeck and Hall, 2004), which has implications for targeted educational and institutional efforts.

In males and females, the significant role of entrepreneurship education and support has been demonstrated in my results. These results showed that students perceived that the

education and support they received from their universities exerted the most important influence on their ability to become entrepreneurs. This result is consistent with a previous study by Peterman and Kennedy (2003) who found that participation in an entrepreneurship program positively affected perceived feasibility (entrepreneurial self-efficacy) of starting a business. Despite this result, and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures are still considered to be low (Kraaijenbrink et al. 2010). This has been attributed to a lack of adequate preparation (Wang and Wong 2004) which in turn seems to hinder entrepreneurial self-efficacy. Therefore, it has been suggested that entrepreneurship education should improve perceived feasibility of entrepreneurship by increasing the knowledge of students, building confidence, and promoting self-efficacy (Krueger and Brazeal 1994). Timmons and Spinelli (2004) argued for a more demanding role for entrepreneurship education. They suggested that for entrepreneurship education to be effective it needs to enable students to develop higher capacity for imagination, flexibility, and creativity as well as developing the ability to think conceptually and perceive change as an opportunity.

My results showed that the three measures of perceived university support: perceived educational support, perceived concept development support, and perceived business development support were important in developing entrepreneurial self-efficacy for both men and women, although they were stronger for females. Perceived educational support was the most important element, followed by perceived conceptual development and perceived business development. These results are consistent with those of Kraaijenbrink et al. (2010) and help to demonstrate the validity of the measures they developed to assess perceived university support. The strength of this result was more in females, which shows that, entrepreneurship education effects more to them and institutions can foster “women entrepreneurship” thorough female focused initiative during entrepreneurship education

programs. These scales should allow universities to measure the impact of their provision of entrepreneurship education and support, thus providing a broader insight to help them address the specific gender based needs of their students. my findings showed that students perceived that their university was helpful in providing them with the general knowledge and skills that are needed to initiate a new venture (educational support). However, students perceived that they needed more targeted support in terms of concept development and business development. Considering that most researchers agree that entrepreneurial perceptions and intentions can be enhanced by entrepreneurship education (Aronsson 2004; Cox et al. 2002; Chen et al. 1998; Dabic et al. 2012; Kraaijenbrink et al. 2010; Krueger and Brazeal (1994); Hatten and Ruhland (1995); Peterman and Kennedy 2003; Dhaliwal 2010; Robinson et al. 1991; Wang and Wong 2004; Souitaris et al. 2007), it is important to discuss the implications of my results for university managers and policy-makers.

Perceived institutional support had a highly significant effect on entrepreneurial intention for both males and females, but it was stronger for males. This type of support is less important to students than university support as shown by its lower betas ( $\beta = 0.17$  versus 0.33). This suggests that although the main focus of institutional support is on existing entrepreneurs, students are nevertheless aware of it as it might affect them in the future. This result is important as it means that the initiatives recently taken by the Higher Education Commission of Pakistan to promote business education, particularly focusing on stimulating entrepreneurial education and culture in Pakistani universities are being well received by students in general. This finding supports previous research which argues that institutional factors are key to the development of entrepreneurs as a hostile institutional environment hinders individuals' willingness to engage in entrepreneurship activities (Luthje and Franke 2003; Schwarz et al. 2009; Turker and Selcuk, 2009).

The result that women had a weaker perception of institutional support is consistent with previous research which showed that women perceive themselves and their business environment less positively than men (Goheer 2003; Langowitz and Minniti 2007). This is perhaps not too surprising as in many countries around the world women still face many barriers due to the lack of governmental and institutional support (Singh and Belwal, 2008). Goheer (2003) studied female entrepreneurs' perceptions on government policies, regulations and support and found that most of them perceived that they were discriminated against, while over half of the respondents did not know about such institutional support. Although, most governments are making efforts to encourage female entrepreneurship (De Bruin et al. 2007), many women are still unaware of these schemes (Itani et al. 2011). According to the Global Entrepreneurship Monitor (GEM 2011), Pakistanis scored high on their perception of new opportunities and on having the skills and abilities to start a new business. However, the report showed that the rate of males' early-stage entrepreneurial activity in Pakistan is more than four times that of females. Therefore, policy-makers should promote an entrepreneurship culture in the country, particularly toward women.

I suggest that governments around the world, particularly in developing countries, should undertake new initiatives to enhance the perception of women toward an entrepreneurial career by addressing their particular needs. For example, efforts should be made to disseminate information to women regarding the institutional support available to start a business, as the majority of them are not aware of this support (Goheer 2003, Itani et al. 2011). Another initiative would be to ease women's access to credit to start their own business, as currently funding constitutes a major hindrance (Halkias et al. 2011; Roomi et al. 2009; Nadgrodkiewicz 2011).

The strong impact of individual motivations on students' entrepreneurial intention is important. This indicates that the attractiveness or perceived desirability of starting a business



is a fundamental element in the formation of entrepreneurial intention. Four factors showed an important difference between males and females in the formation of entrepreneurial intention: self-realization, recognition, role and independence, while no significant impact was found for financial success and innovativeness.

These findings are partially consistent with the previous research. They are in line with previous studies which found that entrepreneurial intention is related to self-realization (Carter et al. 2003; Kolvereid 1996), recognition (Birley and Westhead 1994; Schienberg and MacMillan 1988; Shane et al. 1991), and role (Birley and Westhead 1994; Shane et al. 1991; Wernerfelt 1984). However, my results do not support previous studies which have found that the intention to be an entrepreneur is stronger for those with more positive attitudes toward innovation in females (Birley and Westhead 1994; Carter et al. 2003; Mueller and Thomas 2001; Gurol and Atsan 2006; Schienberg and MacMillan 1988; Shane et al. 1991). my finding that financial success is not significantly important to male's entrepreneurial intention is in line with some previous studies (McQueen and Wallmark 1991; Cromie 1988; Hamilton 1988) but not with others which found the opposite (Birley and Westhead 1994; Carter et al. 2003; Lynn 1991).

Entrepreneurship is an activity that requires traits such as independence, aggressiveness, autonomy, and courage, which are often associated with males (Gupta, Turban, and Bhawe 2008), and therefore, it is not surprising that self-realization and financial success were more important to women than men. Considering that masculine societies discourage female leadership (Dzisi 2008), women in such societies strive to achieve self-fulfilment and accomplishment through self-employment (Roomi et al. 2009) and prove themselves to others (Goheer 2003; Itani et al. 2011). Role was the third factor which was shown to exert a strong influence on entrepreneurial intention, although its importance was greater to men than women. This result may be expected for a collectivist culture such as Pakistan where social ties are

important for all members of society. Taking into account that this culture emphasizes conformity, the decision to select a career might be influenced by the individual's family members and friends. Men, in particular, would be expected to continue a family tradition.

On the basis of my findings, I can answer the five questions I posed in this paper: (1) students have a positive perception of the entrepreneurship education and the support that they receive from their universities; (2) perceived university support has a significant impact on entrepreneurial self-efficacy. Students perceive educational support as the most important variable influencing their entrepreneurial self-efficacy, followed by concept development support, and business development support; (3) compared to institutional support and individual motivations, perceived university support exerts a much stronger impact entrepreneurial intention; (4) female students showed lower scores on all three measures of perceived university support and they showed a weaker effect of these measures on self-efficacy; (5) students seem satisfied with the traditional entrepreneurship education that they receive, but they perceived that they needed more targeted support from their universities in terms of concept development and business development. Universities should then address these needs to be more effective. They should also address the gender gap revealed by devising differential and effective strategies by focusing on enhancing females' self-efficacy and strengthening their particular motivations.

In conclusion, my findings suggest that an integrated, multi-perspective approach provides a more meaningful understanding of the role of perceived feasibility and desirability in the formation of students' entrepreneurial intention. The conceptual framework that I have developed and tested can therefore be employed in future research.

## **5.6 Limitations**

My study is subject to some limitations. Firstly, similar to the vast majority of studies in the literature my focus is on measuring behavioral intention instead of actual behavior.

Although, the predictive validity of intention has been established in a general context, it has yet to be established in the entrepreneurial context. As a consequence, my study is unable to predict how many students will actually materialize their entrepreneurial intention. Furthermore, I made a selection of individual, organizational and institutional variables that were found to be most influential in predicting entrepreneurial intention, through my extensive literature review, but other variables not included could be also important. Thirdly, a longitudinal study could reveal a better understanding of whether entrepreneurial intention actually turns into entrepreneurial behavior. Finally, my study examines university students in Pakistani universities. Therefore, my findings are mostly generalizable to developing countries. Future research can conduct a comparative analysis between developing and advanced economies to understand relevant variations.

## **6 Discussion and Conclusion**

In this thesis I present four empirical studies which focus on important and innovative issues in the field of entrepreneurial intentions in institutional, entrepreneurship education, their family and gender contexts. The chapters of this thesis investigate different phenomena, i.e. cognitive and affective factors, in three different contexts of entrepreneurial individuals. To address my research questions I use original primary source data. In the following Section 6.1, I conclude this thesis by briefly summarizing the main results of the studies. I highlight their contributions to previous research in the field of entrepreneurship as well as to institutional, entrepreneurship education, family and gender contexts. In Section 6.2, I will – based on this thesis' findings discuss new avenues for research in the field of entrepreneurship and individual behavior. The overall goal of this thesis is to investigate the social context for entrepreneurial individuals and, in particular, how this context influences and is influenced by their capabilities, feelings, and actions. The individual chapters focus on different contexts which represent important surroundings for entrepreneurial individuals at different steps of the entrepreneurial process

### **6.1 Summary of results and contributions**

#### *6.1.1 Organizational and institutional support context*

Many scholars have primarily focused either on individual-level, organizational-level, or institutional-level factors to measure entrepreneurial intention. However these three streams of research have evolved in relative isolation and have not been compared collectively within a multi-level perspective. Hitt et al. (2007) and Ireland and Webb (2007) argue that single-level perspective in behavioral studies give incomplete information, and so researchers must consider institutional, organizational, and individual factors to understand entrepreneurial intention.

In this chapter, my study is based on the premise that organizational and institutional-level factors enhance university students' entrepreneurial intention, when controlling for individual-

level influences. I extend the entrepreneurial intention literature by introducing a multi-level perspective to develop a broader understanding of the factors that lead to the development of new venture creation. Previous literature has suggested that individual or organizational factors alone are insufficient in their ability to explain the nature of entrepreneurial intention. Rather, it is the combination of individual, organizational and institutional factors that can provide better insights into this dynamic process. Theoretically, my study offers a new perspective in the entrepreneurial intention literature by demonstrating the combined influence of desirability and feasibility factors. My findings support arguments from Hmieleski and Baron (2009) and Phan et al. (2009) that more multi-level research is needed in the field of entrepreneurship.

Another contribution is following Shapero and Sokol (1982), I have examined the impact of perceived feasibility and perceived desirability on entrepreneurial intention through individual-level factors, organizational-level factors, and institutional-level factors. At the individual level, I have used perceived desirability and feasibility on the basis of how they discover, evaluate, and exploit entrepreneurial opportunities. Perceived desirability constitutes my individual level perspective, comprising six individual motivation factors used by Carter et al. (2003): self-realization, financial success, role, innovation, recognition, and independence. These factors differentiate individuals on the basis of how they discover, evaluate, and exploit. At the organizational level, I measured perceived university support. Perceived university support considers students' perception of their university's support, which includes: educational support, cognitive support, and business development support (Kraaijenbrink et al. 2010). At the institutional level, I measured perceived institutional support, which refers to the policies, regulations and programs run by governments of a country to support entrepreneurship (Turker and Selcuk, 2009). Specifically, I am studying the role of organizational-level and institutional-level factors in influencing students' entrepreneurial intention while controlling for individual-level factors. Another contribution is to extend researchers' understanding of entrepreneurial intention in the context of developing countries.

### 6.1.2 *Entrepreneurship Education*

My multi-level study extends the literature as it acknowledges the important but neglected influence of university/department-level factors on entrepreneurial behavior, thus helping to resolve some of the controversies in previous research. This study examines how a university's support impacts students' entrepreneurial intentions and finds that entrepreneurship education, concept-development support, and business-development support increase such intentions. The university role is found to be critical to the growth of entrepreneurial intentions, and I argue that an individual's decision in favor of or against becoming an entrepreneur depends on the multilevel context provided by the university. In testing my research propositions, I also used hierarchical linear modeling (HLM) to avoid estimation errors associated with traditional regression models while looking at the specific effect of entrepreneurship education. My findings will help university managers and country policy-makers to understand the effectiveness of current initiatives taken to stimulate academic entrepreneurship.

### 6.1.3 *Family of origin*

My research shows that individuals whose parent or close family member is self-employed are more likely than others to pursue an entrepreneurial career. A family business background may present lower barriers to entrepreneurial entry, since those with such backgrounds may be able to capitalize on their social ties and social capital. I have considered family capital, which refers to the family members' total resources, has three components: human, social, and financial. Family *social* capital, described as non-financial resources and support family members offer to the entrepreneur, affects the decision to start a business positively (Chang et al., 2009). I take the family embeddedness perspective, which describes the impact and the importance of parents on their children's entrepreneurial careers to argue that the breadth and quality of family business experience matter. I address previous research is

inconclusive on the origins of the intergenerational transfer of entrepreneurship gap in the literature by exploring the inter-generational transmission of entrepreneurial intentions using Shapero and Sokol's (1982) model of intention in entrepreneurial events (SEE). I analyse the role of an entrepreneurial family background as an intergenerational influence on entrepreneurial intention and the underlying mediating effect of the perceived desirability and perceived feasibility of starting a business. I hypothesize that individuals with prior family business experience may develop positive perceptions toward entrepreneurial feasibility and desirability, which can result in entrepreneurial action. My goal is to make a theoretical and empirical contribution to Shapero and Sokol's (1982) model. My proposed theoretical contribution includes extension of the SEE in relation to entrepreneurial family background and entrepreneurial intention.

#### *6.1.4 Gender role in Organizational and Institutional support*

With this, I am interested in gender differences among university students on the intent to start businesses, and I specifically examine perceived feasibility and desirability. Although self-efficacy has been rarely used as an outcome measure, my study found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business (entrepreneurial self-efficacy), which can ultimately enhance entrepreneurial intentions. Universities support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it is crucial to gauge the extent to which it could have an impact on students' intentions to start businesses. This can be achieved by measuring students' perceptions of the university support they receive or "perceived university support".

Although entrepreneurship education can increase entrepreneurial intentions, there are also individual factors (e.g. demographic characteristics, entrepreneurial self-efficacy, entrepreneurial experience), organizational factors (e.g. organizational culture and norms, and

university quality), and institutional factors (e.g. capital availability) to consider. These multi-level factors can interact to synergistically affect entrepreneurial intentions, but most researchers have treated them independently. There was need for a more holistic view in order to explain complex phenomena, by taking into account the interrelations and interdependencies of various factors. Therefore, my study takes a multi-perspective approach to assess the impact of entrepreneurship education with gender perspective.

This paper proposes the following questions: (1) How do males and females perceive the entrepreneurship education and support that they receive from their universities? (2) Does gender play moderating role between perceived university support and entrepreneurial self-efficacy? (3) How important is perceived university support for influencing students' entrepreneurial intentions within the context of other factors, such as institutional support and individual motivations, in males and females? (4) How can universities be more effective in their provision of entrepreneurship education and support to their male and female students? To answer these questions, I have developed a conceptual framework that reflects the role of entrepreneurship education within the context of other influences, such as institutional support and individual motivations.

The contribution of the paper therefore consists on the distinction between feasibility and desirability, and linking them with entrepreneurial decision making in women and men. This provides me with new insights regarding whether women's lower levels of entrepreneurial interests are driven by feasibility and desirability levels. I examine this within the context of other influences, such as institutional support and individual motivations, which allows me to assess the relative importance of the perception of entrepreneurship education and support by gender, in an integrative, multi-perspective framework. My findings will help policy-makers and university managers to understand the effectiveness of current practices and initiatives, particularly among women.



Table 14: Final results from all chapters

Chapters	Hypotheses	Statements	Data analysis techniques used	Results
2	H1.	Entrepreneurial self-efficacy positively influences entrepreneurial intention.	SEM	Supported
2	H2a.	Perceived educational support positively influences entrepreneurial self-efficacy.	SEM	Supported
2	H2b.	Perceived concept development support positively influences entrepreneurial self-efficacy.	SEM	Supported
2	H2c.	Perceived business development support positively influences entrepreneurial self-efficacy.	SEM	Supported
2	H3.	Perceived institutional support positively influences entrepreneurial self-efficacy.	SEM	Supported
2	H4a.	Perceived desirability (measured by self-realization) positively influences entrepreneurial intention.	SEM	Supported
2	H4b.	Perceived desirability (measured by financial success) positively influences entrepreneurial intention.	SEM	Not Supported
2	H4c.	Perceived desirability (measured by role model) positively influences entrepreneurial intention.	SEM	Supported
2	H4d.	Perceived desirability (measured by innovation) positively influences entrepreneurial intention.	SEM	Not Supported
2	H4e.	Perceived desirability (measured by recognition) positively influences entrepreneurial intention.	SEM	Supported
2	H4f.	Perceived desirability (measured by independence) positively influences entrepreneurial intention.	SEM	Not Supported
3	H1.	Entrepreneurial family background is positively related to entrepreneurial intention.	Regression (mediation)	Supported
3	H2.	Perceived desirability of business ownership mediates the relationship between entrepreneurial family background and entrepreneurial intention.	Regression (mediation)	Supported
3	H3.	Perceived feasibility of business ownership mediates the relationship between entrepreneurial family background and entrepreneurial intention.	Regression (mediation)	Supported

## 6 Conclusion

4	H1.	Students' perceptions of the educational support provided by their universities have a positive influence on their entrepreneurial intention.	HLM	Supported
4	H2.	Students' perceptions of the concept-development support provided by their universities have a positive influence on their entrepreneurial intention.	HLM	Supported
4	H3.	Students' perceptions of the business-development support provided by their universities have a positive influence on their entrepreneurial intention.	HLM	Not Supported
5	H1.	Entrepreneurial intention will be significantly different in males and females, such that it will be higher in males as compare to females.	t-test	Supported
5	H2.	Gender moderates the influence of entrepreneurial self-efficacy on entrepreneurial intention, such that relationship will be stronger for females than males.	multiple-group moderator analysis by SEM	Supported
5	H3.	Gender moderates the relationship between perceived entrepreneurship educational support and entrepreneurial self-efficacy such that is will be stronger in females as compare to males.	multiple-group moderator analysis by SEM	Supported
5	H4.	Gender moderates the relationship between perceived concept development support and entrepreneurial self-efficacy such that is will be stronger in females as compare to males.	multiple-group moderator analysis by SEM	Supported
5	H5.	Gender moderates the relationship between perceived business development support and entrepreneurial self-efficacy such that is will be stronger in females as compare to males.	multiple-group moderator analysis by SEM	Supported
5	H6.	Gender moderates the influence of perceived institutional support on entrepreneurial self-efficacy; such that is will be stronger in males as compare to females.	multiple-group moderator analysis by SEM	Supported
5	H7a.	Gender moderates the influence of self-realization, on entrepreneurial intention; such that it will be stronger in females as compare to males.	multiple-group moderator analysis by SEM	Supported
5	H7b.	Gender moderates the influence of financial success, on entrepreneurial intention; such that it will be stronger in females as compare to males.	multiple-group moderator analysis by SEM	Not Supported
5	H7c.	Gender moderates the influence of roles models, on entrepreneurial intention; such that it will be stronger in males as compare to females.	multiple-group moderator analysis by SEM	Supported

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5	H7d.	Gender moderates the influence of innovation, on entrepreneurial intention; such that it will be stronger in males as compare to females.	multiple-group moderator analysis by SEM	Not Supported
5	H7e.	Gender moderates the influence of recognition, on entrepreneurial intention; such that it will be stronger in males as compare to females.	multiple-group moderator analysis by SEM	Supported
5	H7f.	Gender moderates the influence of independence, on entrepreneurial intention; such that is will be stronger in males as compare to females.	multiple-group moderator analysis by SEM	Supported

## 6.2 Future Research Avenues

My research on entrepreneurial intentions draws on the research categories, or conceptual approaches, are in line with of the literature. I have contributed to mainly following four categories

- a) I analyze the role of organizational and institutional context in the configuration of entrepreneurial intentions.
- b) Secondly addresses the interrelationship between entrepreneurship education and the entrepreneurial intention.
- c) Thirdly, the role family context play in the configuration of entrepreneurial intentions constitutes.
- d) Finally, the role gender context in the configuration of entrepreneurial intentions constitutes in males and females differently.

### ***Individual level factors and entrepreneurial intention***

My systematic literature review and own research has developed and improved the EI research by developing deep assumptions underpinning intentions, I call for more research on entrepreneurial intention that could make significant progress. One suggestion could be to measure the role and the importance of mental prototypes, cognitive scripts, mental schemas, and maps may shed light on the formation of entrepreneurial intentions and the process leading from intention to behavior (Prabhu, McGuire, Drost, & Kwong, 2012; Shinnar, Giacomini, & Janssen, 2012). These concepts will help to gain a better understanding of how human decision making occurs via automatic processing (Krueger & Day, 2010). Although, There is need to conduct research on importance of resilience depending on the level of adversity in a country, and whether less desirable conditions actually breed stronger, more resilient entrepreneurs.

### ***Entrepreneurship education and entrepreneurial intentions***

My empirical research discloses positive impact of entrepreneurship education on enhancing entrepreneurial self-efficacy and later on intentions; this raises possibility for future research to advance our knowledge in entrepreneurship education–entrepreneurial intentions relationship.

Future research should try to measure the effect of educational variables or impact of entrepreneurship education on entrepreneurial intentions specifically measure in terms of growth and/or independence oriented suggested by some researchers recently (Douglas, 2013; Bae et al., 2014). Future research should also see how business plan, type of pedagogy and profile of educators, affects intentions (Fayolle and Liñán, 2013).

Finally, future entrepreneurship education research can extend our knowledge about the effects of entrepreneurship education on entrepreneurial intentions by investigating mediating and moderating effects. I suggest that future research can include the possible predictors of entrepreneurial intentions such as perceived desirability and feasibility that can mediate the entrepreneurship education–entrepreneurial intentions relationship in different cultural context. As moderator, Future research could investigate whether an instructor’s attributes such as passion, enthusiasm, or emotion (Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009) could moderate the relationship between entrepreneurship education and entrepreneurial intentions.

### ***The role of context and institutions***

Researchers have shown that entrepreneurship can be better understandable within its institutional and social context (Welter, 2011). Many possibilities exist extending the cross-country analysis with cultural variables, such as the collectivistic or individualistic nature of a society. Dimensions of the regulatory regime regarding setting up a new business may also provide valuable insights to explain the large between-country variation in the development of entrepreneurial intentions. Future research may contribute, by integrating country level

institution's effect including normative and cognitive pillars on intention and/or behavior (attitudes, values, entrepreneurial self-efficacy etc.) and intentions.

Further, scholars using a multilevel lens might illuminate university/department-level factors. Specifically, the development and impact of an "entrepreneurial culture" at universities is an important direction for future research. Future studies might also examine whether university contextual factors moderate the relationships between individual-level factors and entrepreneurial behaviors. Institutions can both constrain and enable self-employment and entrepreneurship (Welter & Smallbone, 2012).

### *Limitations*

My study is subject to some limitations. Firstly, similar to the vast majority of studies in the literature my focus is on measuring behavioral intention instead of actual behavior. Although, the predictive validity of intention has been established in a general context (Armitage and Conner 2001), it has yet to be established in the entrepreneurial context. As a consequence, my study is unable to predict how many students will actually materialize their entrepreneurial intention. Furthermore, I made a selection of individual, organizational and institutional variables that were found to be most influential in predicting entrepreneurial intention, through my extensive literature review, but other variables not included could be also important. Thirdly, a longitudinal study could reveal a better understanding of whether entrepreneurial intention actually turns into entrepreneurial behavior. Finally, my study examines university students in Pakistani universities. Therefore, my findings are mostly generalizable to developing countries. Future research can conduct a comparative analysis between developing and advanced economies to understand relevant variations.

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## Questionnaire

### Factors Influencing Entrepreneurial Intention

Dear Madam/Sir,

This questionnaire aims at understanding the factors that influences Entrepreneurial Intention among students. Your support is the most important factor for the success of this research. You are free to ask any questions at any time. If for any reason you experience discomfort during participation in this project, you are free to withdraw or discuss your concerns with us. Your participation is entirely voluntary. It is estimated that the questionnaire will take no longer than 20 minutes.

Please **circle** the appropriate number to indicate your level of agreement or disagreement with the following statements:

<b>Q1: Entrepreneurial intentions</b>	Strongly Disagree		Strongly Agree		
Have you ever seriously considered becoming an entrepreneur? (Yes/No)	Yes			No	
I will make every effort to start and run my own firm. <sup>a</sup>	1	2	3	4	5
I have got firm intention to start a firm someday.	1	2	3	4	5
<b>Q2: Need for achievement</b>	Strongly Disagree		Strongly Agree		
Hard work is something I like to avoid	1	2	3	4	5
I frequently think about ways I could earn a lot of money	1	2	3	4	5
I believe I would enjoy having authority over other people	1	2	3	4	5
I find satisfaction in exceeding my previous performance even if I don't outperform others	1	2	3	4	5
"I care about performing better than others on a task	1	2	3	4	5
I would rather do tasks at which I feel confident and relaxed than ones which appear challenging and difficult.	1	2	3	4	5
I would like an important job where people look up to me	1	2	3	4	5
<b>Q3: Need for independence</b> <b>"In group- and projectized work . . ."</b>	Strongly Disagree		Strongly Agree		
having freedom of choice over when I do my work is important to me	1	2	3	4	5
I prefer to determine the content of my work as far as possible on my own	1	2	3	4	5
I would rather set the sequence of my work tasks on my own	1	2	3	4	5
I dislike being subordinated to other people	1	2	3	4	5
<b>Q4. University support...</b>	Strongly Disagree		Strongly Agree		
My university offers elective courses on entrepreneurship.	1	2	3	4	5
My university offers project work focused on entrepreneurship.	1	2	3	4	5
My university offers internship focused on entrepreneurship.	1	2	3	4	5
My university offers a bachelor or master study on	1	2	3	4	5

## Appendix

entrepreneurship.					
My university arranges conferences /workshops on entrepreneurship.	1	2	3	4	5
My university brings entrepreneurial students in contact with each other.	1	2	3	4	5
My university creates awareness of entrepreneur-ship as a possible career choice.					
My university motivates students to start a new business.					
My university provides students with ideas to start a new business from.					
My university provides students with the knowledge needed to start a new business.					
My university provide students with the financial means to start a new business.					
My university use its reputation to support students that start a new business.					
My university serve as a lead customer of students that start a new business.					
<b>Q5. Institutional Support .....</b>	Strongly Disagree		Strongly Agree		
In Pakistan, entrepreneurs are encouraged by an institutional structure.	1	2	3	4	5
Pakistani economy provides many opportunities for entrepreneurs.	1	2	3	4	5
Taking bank loans is quite difficult for entrepreneurs in Pakistan.	1	2	3	4	5
Pakistani state laws are averse to running a business.	1	2	3	4	5
In Pakistan, entrepreneurs are encouraged by an institutional structure.	1	2	3	4	5
<b>Q6: Desirability. .... .</b>	Strongly Disagree		Strongly Agree		
To challenge myself.	1	2	3	4	5
To fulfill a personal vision.	1	2	3	4	5
To grow and learn as a person.	1	2	3	4	5
To lead and motivate others	1	2	3	4	5
To earn a larger personal income.	1	2	3	4	5
To give myself, my spouse and children financial security.	1	2	3	4	5
To have a chance to build great wealth/high income.	1	2	3	4	5
To build business my children can inherit.	1	2	3	4	5
To continue a family tradition.	1	2	3	4	5
To follow example of a person I admire.	1	2	3	4	5
To be respected by my friends.	1	2	3	4	5
To be innovative at the forefront of technology.	1	2	3	4	5
To develop an idea for a product.	1	2	3	4	5
To achieve something/ get recognition.	1	2	3	4	5
To gain a higher position for myself.	1	2	3	4	5
To get greater flexibility for personal life.	1	2	3	4	5
To be free to adapt my approach to work.	1	2	3	4	5



## Appendix

<b>Q7: Entrepreneurial Self-Efficacy</b> please indicate your degree of certainty in performing each of the following roles/task	Completely Unsure					Completely sure				
<b><u>Marketing</u></b>										
Set and meet market share goals	1	2	3	4	5	1	2	3	4	5
Set and meet sales goals	1	2	3	4	5	1	2	3	4	5
Set and attain profit goals	1	2	3	4	5	1	2	3	4	5
Establish position in product market	1	2	3	4	5	1	2	3	4	5
Conduct market analysis	1	2	3	4	5	1	2	3	4	5
Expand business	1	2	3	4	5	1	2	3	4	5
<b><u>Innovation</u></b>										
New venturing and new ideas	1	2	3	4	5	1	2	3	4	5
New products and services	1	2	3	4	5	1	2	3	4	5
New markets and geographic territories	1	2	3	4	5	1	2	3	4	5
New methods of production, marketing and management	1	2	3	4	5	1	2	3	4	5
<b><u>Management</u></b>										
Reduce risk and uncertainty	1	2	3	4	5	1	2	3	4	5
Strategic planning and develop information system	1	2	3	4	5	1	2	3	4	5
Manage time by setting goals	1	2	3	4	5	1	2	3	4	5
Establish and achieve goals and objectives	1	2	3	4	5	1	2	3	4	5
Define organizational roles, responsibilities and policies	1	2	3	4	5	1	2	3	4	5
<b><u>Risk-taking</u></b>										
Take calculated risks	1	2	3	4	5	1	2	3	4	5
Make decisions under uncertainty and risk	1	2	3	4	5	1	2	3	4	5
Take responsibility for ideas and decisions	1	2	3	4	5	1	2	3	4	5
Work under pressure and conflict	1	2	3	4	5	1	2	3	4	5
<b><u>Financial control</u></b>										
Perform financial analysis	1	2	3	4	5	1	2	3	4	5
Develop financial system and internal controls	1	2	3	4	5	1	2	3	4	5
Control cost	1	2	3	4	5	1	2	3	4	5
<b>Q8: Social network support. .... .</b> To what extent would the following social groups support you if you became selfemployed after your studies? (Please answer even though you do not plan on becoming self-employed)	No Support					Great Support				
<b><u>Family</u></b>										
Material support	1	2	3	4	5	1	2	3	4	5
Procurement of contacts	1	2	3	4	5	1	2	3	4	5
Information and good advice (regarding business development and management)	1	2	3	4	5	1	2	3	4	5
Emotional support (motivation, encouragement in times of crisis, etc.)	1	2	3	4	5	1	2	3	4	5
<b><u>Friends</u></b>										

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Material support	1	2	3	4	5
Procurement of contacts	1	2	3	4	5
Information and good advice (regarding business development and management)	1	2	3	4	5
Emotional support (motivation, encouragement in times of crisis, etc.)	1	2	3	4	5
<b><u>Acquaintances</u></b>					
Material support	1	2	3	4	5
Procurement of contacts	1	2	3	4	5
Information and good advice (regarding business development and management)	1	2	3	4	5
Emotional support (motivation, encouragement in times of crisis, etc.)	1	2	3	4	5
To gain a higher position for myself.	1	2	3	4	5
To get greater flexibility for personal life.	1	2	3	4	5
To be free to adapt my approach to work.	1	2	3	4	5

**Q9: To conclude, just few question about yourself:**

My gender is:	<input type="checkbox"/> Male	<input type="checkbox"/> Female
My age is:	<input type="checkbox"/> 18-25 Years	<input type="checkbox"/> 26-45 Years
	<input type="checkbox"/> 46-60 Years	<input type="checkbox"/> 60 years or above
Your undergraduate programme?:	<input type="checkbox"/> Business Administration <input type="checkbox"/> Computer science <input type="checkbox"/> Engineering	
Father entrepreneur:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Female entrepreneur:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN THIS STUDY**

